Joint UNESCO World Heritage Centre/IUCN Reactive Monitoring Mission

to the World Heritage Property

“Volcanoes of Kamchatka“ - Russian Federation

08-14 August 2019

Photo: South Kamchatka Nature Park, © R. Brunner, IUCN

1. Acknowledgements

The Mission team would like to thank the Permanent delegation of the Russian Federation to UNESCO, the Federal Ministry of Natural Resources and Environment, the regional authorities of the Kamchatka Region, the regional and local authorities of the Federal Reserve and regional Nature Parks in charge of the six components of the World Heritage property Volcanoes of Kamchatka for their warm welcome and the organisation of the mission. The mission is grateful to Irina B FOMINYKH, deputy director, Department of international cooperation, Ministry of Natural Resources (MNR) and her team, to Vasily I. PRIYDUN, Minister of Natural Resources and Ecology of Kamchatka region and his team and to Peter SHPILENOK, director of the Kronotsky Reserve and his team, for their valuable contribution in all the discussions as well as documents provided. The team would also like to thank all the staff members, experts and stakeholders who participated in the various meetings and field trips.

2. Content

3. Executive Summary[1]

The joint World Heritage Centre (WHC)/IUCN Reactive Monitoring mission visited the World Heritage (WH) property Volcanoes of Kamchatka from 8 to 14 August 2019 in line with **Decision 42 COM 7B.79**.

Unfortunately, meetings with the Federal Ministry of Natural Resources and Environment in Moscow scheduled on 8 August were cancelled. However, representatives of the Ministry accompanied the mission on the field visit to Kamchatka. An informal side meeting between the Mission team and representatives of Greenpeace Moscow took place on 8 August.

The mission visited selected locations in four of the six components: Kronotsky Zapovednik (Kronotsky State Reserve),[2] Nalychevo Nature Park, South Kamchatka Nature Park and South Kamchatka Sanctuary. A visit to Kluchevskoy[3] as requested in the Terms of Reference could not be organised due to the great distance, as was explained by the State Party. The State Party provided information on various issues to the mission, but unfortunately mainly in Russian. Additional documents and translations were delivered on the mission's request, but only after the visit. Presentations of the status of the World Heritage property, meetings with civil society and stakeholders and an appointment with the Vice-Governor of the Kamchatka Region completed the monitoring mission. A final debriefing was organized with the regional authorities and the representatives of the Federal Reserve and Nature Parks in charge of the six components of the World Heritage property.

The Mission team wishes to note that a representative of the private investment company Rosa Khutor LLC was present throughout the mission. The unexpected participation of a representative of the company was not agreed beforehand with the State Party. At the time of preparation of the mission, although WHC had received third party information on the potential tourism resort project by Rosa Khutor LLC in the South Kamchatka Nature Park, called "Three Volcano Park"[4] project, no official response from the State Party, nor official information regarding this project as per paragraph 172 of the *Operational Guidelines* had been received. The review of the tourism development project, envisaged within the boundaries of the northern cluster of the South Kamchatka Nature Park component, was therefore not in the terms of reference of the mission. However, the mission had the opportunity to fly over the potential location (Viluchinskaya Bay) of the tourist cluster project and a small-scale map was distributed to the mission team. Although not common for the usual procedures for Reactive Monitoring missions, the presence of the representative of the private company Rosa Khutor gave the mission team the opportunity to raise awareness on the potential threats to the World Heritage property and their consequences. It also gave the opportunity to engage in an early and informal dialogue with the company as the project would cause major threats to the component and would possibly undermine the Outstanding Universal Value (OUV) of the whole property. The representative of the private company participated in all meetings and discussions.

Since 2007, possible threats to the property and problems arising from various projects like mining and the use of geothermal energy, from poaching and illegal hunting, but also from uncoordinated and uncontrolled tourism, have been regularly discussed by the World Heritage Committee, but have not diminished substantially. The representatives of the Ministry and of the protected areas authorities confirmed that no mining activities are planned within the boundaries of the property, and that existing mines in its vicinity do not affect the property. An assessment of planned or ongoing resource extractions was part of the Terms of Reference

[1] All paragraphs written in *ITALIC* are copied from the mentioned sources in the original wording
[2] For definitions of the categories of protected areas used in this report see Annex III
3 In some documents also Klyuchevskoy
[4] The official title of the project

of the mission, but in conformity with the agenda received, no visit to any mining compound was organised. The geothermal plant south of Petropavlovsk Kamchatsky and close to the borders of the South Kamchatka Nature Park was observed from the helicopter. The mission team is aware of the difficulties and costs implied by such a mission. The team is therefore grateful to the regional authorities for having organized numerous helicopter flights in order to visit as many locations as possible in a short time. However, most of the visits focused on touristic locations and no access to industrial compounds was foreseen.

According to the representatives of the Federal and regional ministries and the protected areas' authorities, no negative impacts from mining or other extraction of natural resources in the vicinity of the property are to be expected. All activities hold official licenses. As none of the mining complexes could be visited during the mission, the assessment of impacts arising from industrial compounds can only be built on oral and written reports from the State Party. It has to be considered that deposits, wastewater or any other emissions from production processes could affect the respective component, no matter how distant they are from the components' boundaries. This coincides with a quotation in the Bystrinsky Nature Park management plan, which underlines that although the park boundaries were drawn in a way to exclude the areas for which gold mining licenses were given, *"… it does not guarantee that this unique area will never suffer from penetrating to its entrails later."* [5]

Third party information received confirmed that poaching is still continuing and growing, and uncontrolled tourism is posing threats to some areas of the property. However, insufficient measures were taken in the last decade to counteract these trends and avoid negative impacts on the property. In the view of the mission, these threats have not yet impacted the OUV nor the integrity of the property so far, but strong measures are becoming urgent to stop poaching activities, control and limit tourism, and avoid large scale projects in order to prevent additional threats to the property's integrity. The responsible authorities therefore need to ensure an adequate and harmonized management across all the components' areas of the property. This includes management strategies and plans for the property as a whole. To ensure adequate and homogenous protection of the property as a whole, the legal status of the different components of the property needs to be revised, including the proposal, originally foreseen by the State Party, to upgrade the Nature Park protection regime (applicable to components 3, 4, 5 & 6) to the national level, which is already in place for components 1 & 2. During the discussions with the mission regarding the idea of upgrading the protection regime of the components, the State Party clearly stated that this will not be implemented.

Unfortunately, the State Party and the authorities confirmed that no joint management plan for the property as a whole is envisaged. Whilst the four Nature Park components have newly approved management plans, effective for the period 2020-2024, the Federal Reserve components have no management plans. A management plan exists for the Man and the Biosphere (MAB) reserve, which does not mention the World Heritage status of the property and its management principles. The mission also notes that the four Nature Parks' new management plans, replacing the 2004-2008 management plans, all follow the same pattern and to a large part were just copied and not elaborated individually. The new management plans mention tourism, poaching, lack of financial resources and volcanism as the main threats. Although they address many subjects, the section on nature protection is rather short considering the quality of the property, and a detailed implementation timeline is missing. This can also be a result of the shortened English translation of the plan. The authorities acknowledged, during the mission, that they applied common principles and developed activities across all six components to ensure the protection of the property as a whole.

[5] Bystrinsky Nature Park Management Plan, English translation, p. 9

However, the management plans, in particular the one for the Federal Biosphere Reserve, do not reflect this cooperation.

According to the authorities, the proposed construction of a channel connecting Kronotsky Lake with the ocean was abandoned and is no longer under discussion.

Concerning the declining salmon population, although the Russian Federal Research Institute of Fisheries and Oceanography – Kamchatka Branch (Kamchat_NIRO) reported results of the salmon population monitoring in some components of the World Heritage site, no figure of salmon poaching and its impacts was made available to the mission. Other third party sources reported important threats to the salmon stock, with consequences for the bear population around Kurile Lake. The mission was told that regulations enforced in earlier years, namely to stop the catch of salmon on certain days in the spawning period to provide more food for the bear population in South Kamchatka Sanctuary, are not applied. The salmon monitoring by Kamchat_NIRO shows dramatic consequences of illegal fishing for the Nalycheva River (Nalychevo Nature Park) where the catch of Sockeye salmon decreased to more or less zero.

Kamchatka is the largest spawning ground of Sockeye salmon which is recognized as part of its OUV. Therefore, the protection of the population for reproduction and as a food source for wildlife is an integral part of the conservation of the World Heritage property. To that aim, quantification of the maximum catch based on scientific research is urgently needed. Prevention and strict control of any illegal catch also needs to be organised efficiently.

Concerning tourism, the mission concluded that the number of visitors in the various components remains manageable, though the figures are not fully reliable. However, even manageable, it requires a high number of helicopter flights, almost a unique means of transport, with all related negative impacts (e.g. noise, landing facilities, access to remote areas). The rising number of all-terrain-vehicles, both cars and motorbikes, in some parts of the property, widens the range of access for visitors, and causes visible damage to nature and disturbance to the wildlife. These increasing threats and damage to the property were witnessed by the mission team at Kurile Lake in South Kamchatka Sanctuary and in South Kamchatka Nature Park. Similar threats in other parts of the property were reported to the mission by local tourism actors. In the mission's view, the advantages of helicopter flights are the limited area of influence and possible numbers, but only as long as the flights are bound to certain locations, such as the Valley of Geysers or Uzon Geysernaya.

The mission expressed its concerns regarding the project proposal "Three Volcano Park". The "Three Volcano Park" project, presented to the mission, aims to establish a huge tourist resort at the edge of the property, with installations within it and serious impacts on this component of the property and the property's OUV. The proposed resort will provide 1,000 rooms and cover 10 sqkm. A marine terminal for cruise ships, planned in Viluchinskaya Bay, is planned to be built within the component, although the waters of the bay are not included in the World Heritage property. A planned mountain resort "Volcano Viluchinskiy" with two rope ways and 15 km ski slopes is at least planned partly within the component's boundaries. A highway connecting the harbour to the resort would run across the component from East to West.

Not only the planned location of the cruise ship port in the Viluchinskaya Bay would deteriorate the shore and boundary of one of the components of the property, but also the project itself will adversely affect the northern cluster of South Kamchatka Nature Park component turning a World Heritage component into an adventure park.

Consequently, to maintain the OUV and ensure the integrity of the entire property, the mission has put forward a list of recommendations as follows, with key recommendations in bold:

⇒ Rec. 1: Review the protected area system within the property and ensure a holistic integrated management approach is implemented to appropriately protect and manage

all components of the property, currently being managed under varying authorities and jurisdictions.

⇒ **Rec. 2: Develop a management plan for the entire property to guarantee that the six components are fully protected along the same standards, objectives and criteria in line with the World Heritage Convention's *Operational Guidelines*. Individual management plans for each component would be acceptable only if using the same objectives and criteria and providing clear references on the overall objective of conserving the OUV of the property. Additionally, a common vision and goals for further development of the entire property are required to guarantee a harmonization of the management and ensure mutual consideration of development goals. All existing management plans should be revised along these principles and at the same time should address specific situations and threats of the various components.**

⇒ Rec. 3: As no World Heritage property Management Plan was approved and may not be elaborated in the near future, the Kronotsky Biosphere Reserve Management Plan is the only instrument or guideline for the development of the two federal components. In the Mission's opinion, this management plan does not meet the requirements of the protection of nature and natural processes with respect to World Heritage, particularly in the Biosphere Transition Zone. Therefore, the proposed management objectives, primarily within the transition zone of the Biosphere Reserve, need to be reviewed with the primary objective of protecting the OUV of the property. Further, the State Party is requested to submit to the WHC a list of all activities permitted in the so-called transition zone.

⇒ **Rec. 4: The mission notes that since the previous mission, the zoning of all components of the property has been altered significantly, diminishing the area of the more strictly protected zones, and this in spite of the fact that the 2007 mission recommended to strengthen the zoning of the nature parks, to bring them in line with the OUV of the property. The mission therefore considers that the current zoning does not meet the requirements of the conservation of the OUV and needs to be strengthened significantly.**

⇒ Rec. 5: Buffer zones can be an essential tool to support the proper protection of the property. To date, a specific buffer zone is proposed for Kronotsky Zapovednik only. With the need for a better protection of species and with growing pressure on the property caused by tourism, the designation of buffer zones for the remaining five components of the property should be considered and officially proposed for the World Heritage property, following the defined procedures.

⇒ **Rec. 6: The mission team noted with satisfaction that the decrease of the budget of the Federal protected areas underlined by the previous mission has stopped. Financial support for the Federal protected areas has been raised significantly since then, whereas the budget for the regional nature parks has also increased but less. However, staffing and financing still differs widely according to the responsible authority (Federal Reserves & regional Nature Parks) although duties and requirements in all six components are comparable and equally demanding. As shortages in staff and funds do not guarantee a sufficient management and supervision of the regional Nature Parks, an alignment of human and financial resources should be secured.**

⇒ **Rec. 7: Develop, in parallel to management plans, a Tourism Development Master plan based on actual figures and projections, setting clear thresholds of the**

carrying capacity of the property in its entirety and of its individual components. Such master plan should include, besides the number of tourists/visitors, the number and directions of helicopter flights and other transportation means (four-wheel drive vehicles (ATV)), capacity of tourist infrastructure and the sensitivity of habitats and species. Although developed for the World Heritage property, the Tourism Development Master Plan should consider and search for attractive alternative areas outside the property to better channel tourist flows. In other words, the property should not be considered as a ready-made tourism package for the region and all efforts should be made to consider the wider region.

⇒ **Rec. 8: Noting the increasing worldwide interest for Nature Tourism in the Kamchatka Peninsula as well as the variety of actors involved (national, regional, local and foreign actors), the mission strongly recommends that a governance mechanism for Tourism development be established further to the Master Plan, which will also ensure that tourism empowers local communities and tourism revenues primarily benefit local communities.**

⇒ Rec. 9: Take immediate measures to counteract uncontrolled tourism, and any forms of tourism negatively impacting the environment, and avoid further damage by off-road transport vehicles, establish efficient control mechanisms for traffic and limit access through suitable measures like checkpoints, entrance fees etc.

⇒ Rec. 10: Define binding rules for helicopter flights including an accurate specification of flight routes and flight times.

⇒ Rec. 11: Reduce disruption of wildlife from tourism by appropriate measures, particularly in areas with a high frequency of tourists, including limitation in numbers, access restrictions and defined roaming areas.

⇒ **Rec. 12: Inform the World Heritage Centre, as soon as possible, in conformity with paragraph 172 of the *Operational Guidelines*, of any potential projects which might have an impact on the OUV of the property, such as the "Three Volcano Park" which has been *de facto* presented to the Mission team.**

⇒ **Rec. 13: On the basis of the documentation received during the mission, the mission team confirms that the "Three Volcano Park" is incompatible with the preservation of the integrity of the property and if allowed to proceed, the project would result in a severe deterioration of the natural beauty and scientific value of the component South Kamchatka Nature Park, to an extent that might warrant the inscription of the property on the List of World Heritage in Danger. If the State Party intends to submit a boundary modification request for the property (as indicated by the Governor), and given the potential impacts on the OUV, the mission notes that such a boundary modification will have to be considered as a significant boundary modification in line with paragraph 165 of the *Operational Guidelines*.**

⇒ Rec. 14: An Environmental Impact Assessment for such a project must be conducted prior to any decision, including possible changes of the South Kamchatka Nature Park's boundaries.

⇒ **Rec. 15: Regarding the statements in several management plans, it can be concluded that the authorities must be aware of potential serious impacts of existing mining primarily in the vicinity of Bystrinsky Nature Park and South Kamchatka Nature Park. These repercussions have to be taken seriously, and as a consequence precautionary measures and serious regulations must be**

imposed. It is requested that the State Party submits an Environmental Impact Assessment (EIA) and accompanying Environmental Management Plans, with details on the measures taken to prevent impacts on the OUV of the property, to the World Heritage Centre for review prior to a decision on these activities being taken, in line with para 172 of the *Operational Guidelines.* This should also apply to mining or extraction activities in the vicinity of all components, either active or temporarily closed.

⇒ **Rec. 16: The State party is requested to affirm its commitment not to allow mining activities inside the property. A boundary change to the property should not be proposed to accommodate mining operations, as already recommended by the 2004 and 2007 missions. Any newly proposed mining activities in the vicinity of the property, for example to develop the Mutnovskoye gold deposit, should be subject to rigorous Environmental Impact Assessment (EIA).**

⇒ **Rec. 17: The State Party could not provide accurate and up-to-date figures of the volume of salmon poaching in Kamchatka and particularly in the World Heritage property. It is emphatically recommended to step up efforts to enforce measures to prevent salmon poaching and illegal trading of salmon and by-products and to monitor poaching pressure and impacts.**

⇒ Rec. 18: Although, the project of a channel connecting Kronotsky Lake with the ocean will not be pursued, an official document on the reassurance of the abandonment of the project should be provided.

⇒ Rec. 19: Because of the important ecological interaction between salmon and brown bear populations and their impact on the OUV of the property, continue to develop baseline ecological information within and near the various sites in the property to better conserve these values throughout Kamchatka.

4. Background of the Mission

The Volcanoes of Kamchatka World Heritage Site was inscribed on the World Heritage List in 1996. It comprises six components and is one of the most outstanding volcanic regions in the world, with a high density of active volcanoes, a variety of types of volcanoes, and a wide range of related features.

At its 42nd session, the World Heritage Committee requested the State Party of the Russian Federation to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to the World Heritage property 'Volcanoes of Kamchatka' (**Decision 42 COM 7B.79**, Annex I). The main objective of the Reactive Monitoring mission is to evaluate the status of implementation of the 2007 Reactive Monitoring mission's recommendations and to assess the current conservation status of the property.

The 2007 mission was not the first to address the situation and identify problems and threats within the six components of the property. Another joint mission took place in 2004.[6] The 2004 report contains a comprehensive list of all WHC decisions taken between 1996 and 2004. The most acute threats mentioned repeatedly are poaching, mainly of salmon and bears; mining;

[6] Joint UNESCO-IUCN mission to the Volcanoes of Kamchatka (Russian Federation) 24-30 May 2004. The report is not accessible on the UNESCO website.

use of geothermal energy; hunting; a gas pipeline; lack of staffing and funding. Most of these problems continued as can be seen in the 2007 mission report.[7] After the presentation of the 2007 report, the WHC continuously requested the State Party to implement the recommendations as laid out in 2007. The state of conservation of the property was discussed in the World Heritage Committee meetings in 2008 (32nd meeting), 2010 (34th), 2012 (36th), 2013 (37th), 2015 (39th), 2016 (40th) and 2018 (42nd).

Twenty-two recommendations were presented in the 2007 report and served also as guidelines for the latest mission. These recommendations are:

RECOMMENDATIONS 2007 [8]

In order to address the above mentioned management and conservation issues and ensure the long term conservation of the OUV and underlying integrity of the property, the mission proposes the following recommendations:

Management of the Property

5.1. Upgrade the protection regime of the regional Nature Parks, either by upgrading them to National park status, as originally foreseen by the State Party, or by revising the zonation of the nature parks, to better conserve the OUV of the property, and in particular its biodiversity values.

5.2. Institute a management structure and institutional strategy for the Property, which can ensure that all resources in the Property are managed with the objective of conserving the OUV of the Property and its integrity. This could be achieved in different ways, either by upgrading the regional nature parks to national parks, by ensuring that the management of the nature parks lies entirely with their protected area authorities through a transfer of the federal lands in the nature parks to the regional authorities, or by establishing a specific legal framework for the management of the property, as was done in the case of Lake Baikal.

5.3. Develop a joint management plan and management framework for the entire Property, defining its management objectives based on its OUV and associated conditions of integrity, setting common standards for management to maintain the World Heritage values and define planning and management responsibilities for the different management entities.

5.4. On this basis, develop or revise the management plans for each of the six components of the Property, that detail how each will be managed to maintain the values for which the whole property was inscribed as well as how these plans will be resourced to ensure their implementation.

5.5. Consider addressing the issue of joint management plans, management frameworks and management standards for all natural World Heritage properties in Russia composed of federal and regional protected areas through a national law for the management of natural World Heritage properties that meets the State Party's obligations to the Convention. This would set the legal framework for federal authorities to oversee the management of protected areas included in World Heritage properties, whether under federal or regional jurisdiction, and set standards for their management and protection that meet the Operational Guidelines and conserve the various sites' OUV.

5.6. Translate the boundary of the property into geographical coordinates based on the boundary approved in the nomination file and record in the national land registry (cadastre).

[7] https://whc.unesco.org/en/documents/9900/

[8] Mission Report 2007. As the recommendations 2007 appear in chapter 5 the numbering starts with a 5.

5.7. Take the necessary measures to further increase staffing of the property and to close the funding gap. In this respect, the State Party should evaluate if it can revive the initiative for a conservation trust fund for the property.

5.8. As part of the management planning exercise, develop a comprehensive tourism management plan for the property, balancing its OUV with the great potential for ecologically sound tourism, taking into account the recommendations of the 2004 mission.

5.9. Before taking decisions on increasing visitation in KSNR, carefully study the potential impacts and in particular the resulting needs in increased infrastructure. Before opening up further parts of the strictly protected zone of NNP for recreation, carefully study the potential impacts, particularly on the populations of snow sheep.

5.10. Not to intervene in the natural restoration process of the Valley of Geysers in KSNR, but monitor and document the process and use the landslide in visitor interpretation in Valley of Geysers to explain the values under criterion (vii) and (ix).

Conservation issues

Mining, gas pipeline and mineral or geothermal exploration projects

5.11. Submit to the World Heritage Committee, in accordance with article 172 of the Operational Guidelines the environmental impact assessments that have been (or may be in the future) prepared for the existing mining and exploration projects situated near the boundaries of the Property, including any new, planned or proposed mining areas.

5.12. Monitor on-going mining, gas pipeline, and mineral or geothermal exploration activities close to the boundaries of the Property closely to ensure that the highest environmental standards are used and avoid impacts on the Property.

5.13. Consider adding the corridor separating the two blocks of SKNP to the Property, in case no mining will take place in the corridor.

5.14. Not to propose a boundary change to the Property purely to accommodate mining operations, as already recommended by the 2004 mission.

Salmon poaching

5.15. Report on the state of conservation of the salmon populations in Kamchatka as a whole and in particular as they relate to the Property and make this report timely available to the World Heritage Committee to be considered along with the report of this mission.

Access

5.16. As part of the proposed overall management framework, establish an access policy for the entire Property, based on a generalization of access control and limiting accessibility by limiting and regulating ATV road access as well as limiting helicopter access to clearly established landing areas.

Hunting and Bear Management

5.17. The mission recommends that the issue of hunting concessions is carefully assessed when reviewing the zoning of the nature parks (see also recommendation 1).

5.18. Because of the important ecological interaction between salmon and brown bear populations and their impact on the OUV of the Property, continue to develop baseline ecological information within and near the various sites in the Property to better conserve these values throughout Kamchatka.

Other

5.19. Continue the ban on logging concessions. Whilst addressing the management regime of the Nature Parks, commercial logging should be clearly excluded.

5.20. Not to go forward with the proposal of the Geological Agency to exploit hydrothermal and underground mineral waters in NNP as this proposal is contrary to the World Heritage status of this park and would affects its OUV and integrity.

5.21. Develop and implement mitigation measures to reduce the risk to the salmonid streams from the construction and operation of the gas pipeline, according to best available industrial practice.

5.22. Ensure that a proper system is put in place to ensure that upward migration of Salmon on the Bystraia river in BNP is possible and not blocked by the Esso hydropower plant.

Due to time constraints, the mission had only three and a half days in Kamchatka, of which two and a half days were field trips. Unfortunately, one day was lost as the meeting with the Ministry in Moscow was cancelled.

The report addresses the topics as laid out in the Terms of Reference, reflects the recommendations of the 2007 mission, and formulates or reformulates recommendations to the State Party. It has to be noted that only a few places of this large property could be visited and the report is partly based on the information provided through oral presentations and papers partly made available after the end of the mission only.

5. Description of the World Heritage Property with Reference to the OUV, and Threats to the OUV

This report does not aim to repeat detailed descriptions of geological, geomorphological or biological characteristics of the World Heritage property. These are laid out in various documents and reports, which could just be recapitulated. A deeper insight into the natural features of the World Heritage site would take more time than was foreseen for this Mission. Threats to certain phenomena are specified in the relevant chapters.

However, the criteria for the inscription of Volcanoes of Kamchatka are outlined below:[9]

The Committee inscribed the Volcanoes of Kamchatka as one of the most outstanding examples of the volcanic regions in the world on the basis of natural criteria (vii), (viii) and (ix). The site contains a high density of active volcanoes, a variety of different types and a wide range of volcanic features. The Peninsula location between a large continental landmass and the Pacific Ocean also exhibits unique characteristics with major concentrations of wildlife.

Criterion (viii): The addition of Kluchevskoy Nature Park as the sixth component of the site further adds to the overall coverage of the range of Kamchatka's natural features. The addition to the site clearly meets criterion (viii) in its own right as an outstanding example of geological processes and landforms and therefore contributes in a very significant way to the expanded site as a whole meeting criterion (viii).

Criterion (ix): The expanded site is also biologically analogous to six islands and its geographic location between a large continental landmass and the Pacific Ocean has given it unique characteristics. Natural processes continue with on-going volcanic activity and colonisation. Kluchevskoy Nature Park contributes significantly to the expanded site as a whole meeting criterion (ix).

Criterion (vii): The Kamchatka Volcanoes is a landscape of exceptional natural beauty with its large symmetrical volcanoes, lakes, wild rivers and spectacular coastline. It also contains superlative natural phenomena in the form of salmon spawning areas and major concentrations of wildlife (e.g. seabird colonies) along the coastal zone of the Bering Sea. Kluchevskoy Nature Park contributes very significantly to the site as a whole meeting criterion (vii).

Criterion (x): The Kamchatka Volcanoes contain an especially diverse range of palearctic flora (including a number of nationally threatened species and at least 16 endemics), and bird species such as the Stellar's Sea Eagle (50% of world population), white tailed eagle, gyr falcon and peregrine falcon, which are attracted to the availability of spawning salmon. The rivers inside and adjacent to the site contain the world's greatest known diversity of salmonid fish. All 11 species coexist in several of Kamchatka's rivers.

[9] Justification for inscription of Volcanoes of Kamchatka as World Heritage site (whc.unesco.org/en/list/765/). Please note that this list focusses on the enlargement of the WH property

6. Management and Conservation Issues

6.1 Legal Status of the Property, Zoning and Management Plans

As outlined in chapter 6.1.1, the six components of the property belong to different administrative levels. Two are federal protected areas, four are under the regional administration. As explained in chapter 6.2, the financial and human resources for the various components are substantially different. The 2007 report recommends the development of an overall management plan (recommendation 5.3) to build a framework for the entire property. The recommendation was never fulfilled. Instead, four management plans for the four (regional) nature parks and one for the two federal components exist, the latter developed under the umbrella of the Kronotsky Biosphere Reserve, which includes the Kronotsky Zapovednik as well as the South Kamchatka Federal Sanctuary. The plan was approved for the period 2017-2021, which means that the period of validity is almost half over.

The Mission was informed that, due mainly to the different levels of competence, a joint management plan cannot be developed. It was therefore appropriate to briefly analyze the various management plans and reflect their contents. This analysis is limited by the fact that the English translation of the management plans was only available as a summary. The mission further notes that there are examples of other World Heritage properties in the Russian Federation with federally and regionally managed components where an integrated management plan has been prepared (example of Western Caucasus).

6.1.1 Legal Status

As stated in the 2007 mission report, the six components of the property are under different management regimes. The 2007 report also says:

"It needs to be recalled that in the original nomination, the State Party had stated that the 4 regional Nature Parks would become federal protected areas with the status of National Parks (IUCN category II). The mission was informed, that the State Party currently had no plan to change the status." [10]

The situation did not change since then, and the Mission was told that there are no plans to revise the status. The federal components are directly under the authority of the Ministry of Natural Resources and Environment of the Russian Federation and managed by a single authority, the Federal State Institution (FSI) Kronotsky Federal Nature Biosphere Reserve, located in Petropavlovsk Kamchatsky. All four regional nature parks are under the legal competence and jurisdiction of the Kamchatka Kraj and jointly managed by the Regional Budget Institution (RBI) Volcanoes of Kamchatka. The mission refers to the recommendations of the 2007 mission, which already concluded that the legal protection of the nature parks is weak and needs to be strengthened.

As shown in chapter 6.2, financial and human resources depend very much on the legal status. Federal protected areas receive much larger funds and have more staff than protected areas under provincial or regional authority. It could therefore be an advantage for a protected area to be declared under federal law.

A perpetuation of the current status means that no overall management plan for the whole property is going to be elaborated. Although the property stretches across 600 kilometers from North to South, an overall management plan could help jointly manage the components of the property under the same conditions and with the same management principles. As it is obvious that no overall management is foreseen, it would make sense to at least provide general rules

[10] Mission Report 2007, chapter 3.1.1

and principles for each individual management plan. These should include a common vision for the property as a whole, as well as a common strategy for the protection and the development of the property. To achieve improved management results, the individual management plans would have to be adjusted to the overall principles. With regard to the Kronotsky Biosphere Reserve, a management plan considering the requirements of the World Heritage property remains essential.

The various components can bear different attributes and functions within the property. It must be ensured that all geomorphological, geological and biological phenomena and natural processes are efficiently preserved, and that species protection follows the same principles in all components. Furthermore, a general master plan for tourism should help to avoid disproportional tourist infrastructure projects while ensuring long-term management of tourism increase.

Assessment of progress achieved on the 2007 mission recommendations:

> *5.1. Upgrade the protection regime of the regional Nature Parks, either by upgrading them to National park status, as originally foreseen by the State Party, or by revising the zonation of the nature parks, to better conserve the OUV of the property, and in particular its biodiversity values.*

Any change in the protection regime of the nature parks is opposed both by the federal and regional authorities. The zonation of the regional nature parks follows common regulations, but differs widely from the zonation of the Kronotsky Biosphere Reserve, which is drafted for a different purpose. However, it is clear that the zonation of the nature parks has not been strengthened so far. See below.

> *5.2. Institute a management structure and institutional strategy for the Property, which can ensure that all resources in the Property are managed with the objective of conserving the OUV of the Property and its integrity. This could be achieved in different ways, either by upgrading the regional nature parks to national parks, by ensuring that the management of the nature parks lies entirely with their protected area authorities through a transfer of the federal lands in the nature parks to the regional authorities, or by establishing a specific legal framework for the management of the property, as was done in the case of Lake Baikal.*

The Mission is not confident that the responsible authorities have taken all possible initiatives to manage the Property efficiently, and measures to address the threats from illegal activities and growing tourism appear insufficient. Furthermore, it became clear that an upgrading of nature parks to national parks or other high quality protected areas is no longer being considered by the State Party.

> *5.3. Develop a joint management plan and management framework for the entire Property, defining its management objectives based on its OUV and associated conditions of integrity, setting common standards for management to maintain the World Heritage values and define planning and management responsibilities for the different management entities.*

Although neither a change in the management structure nor a transfer of land between the involved authorities are intended, the establishment of an IMP has been possible in other properties (see 6.1) and a more integrated approach should be completed as requested.

> *5.6. Translate the boundary of the property into geographical coordinates based on the boundary approved in the nomination file and record in the national land registry (cadastre).*

According to the representatives of the authorities, this recommendation is fulfilled and the boundaries are recorded in the national land cadastre. The more accurate data from the land survey show some minor deviations from the nomination file. Although, the shape of the components does not differ significantly from the nomination, two peculiar exceptions can be seen, namely in Nalychevo Nature Park to the north-east and in Klucheskoy to the south-east.

Recommendations 2019[11]

Rec. 1: Review the protected area system within the property and ensure a holistic integrated management approach is implemented to appropriately protect and manage all components of the property, currently being managed under varying authorities and jurisdictions.

6.1.2 Management Plans and Zoning

6.1.2.1 Management Plan and Zoning of the Kronotsky Biosphere Reserve Comprising Kronotsky Zapovednik and South Kamchatka Sanctuary[12]

It has to be noted that this management plan was prepared for the Kronotsky Biosphere Reserve and not separately for the two components of the World Heritage property, Kronotsky Zapovednik and South Kamchatka Sanctuary. Furthermore, World Heritage is not even mentioned in the biosphere reserve management plan. Although, in principle, the site protection should be guaranteed under both the World Heritage Convention and the MAB Programme, the special circumstances that just two components of a larger property are located within the biosphere reserve, should have been noted (see Map 1: Situation of the components Kronotsky Zapovednik and South Kamchatka Sanctuary, Annex II). Unfortunately, such zoning has resulted in a weakening of protection for areas previously under strict protection to be opened up for tourism and other activities.

The management plan contains a detailed description of the two areas, including a description of the geographical situation and the organizational structure, and an overview of important species and tourism.

The World Heritage components comprise only the core and transition zone of the Biosphere Reserve, but not the cooperation zone.[13] The size of the Kronotsky Zapovednik component is 1.147,619 ha or 11,476 sqkm, the size of the South Kamchatka Sanctuary component is 337,298 ha or 3,373 sqkm.

According to the IUCN protected area management categories, the Kronotsky Zapovednik is classified in category Ia – Strict Nature Reserve, whereas the South Kamchatka Sanctuary falls into category IV - Habitat/Species Management Area.

It has to be considered that the maps 2 and 3 (Annex II) reflect the current zonation of the Kronotsky Biosphere Reserve and differ widely from the zonation in the former management plan presented to the 2007 Mission. This makes it even more complicated to analyze a management plan, which was elaborated for a different designation than the World Heritage

[11] A summary of all recommendations can be found in chapter 7

[12] The analysis was made on the basis of a shortened English version of a Biosphere Reserve Management Plan, drafted in 2017, when the management plan was still being discussed with stakeholders and subject to final adjustments. The final version of the medium-term management plan was scheduled for approval in October 2017. It was confirmed that the approved version does not differ substantially from the excerpt.

[13] Nevertheless, the South Kamchatka Nature Park is situated in the South Kamchatka Sanctuary cooperation zone.

property. Nevertheless, the Biosphere Management Plan is the only management plan made available to the mission, and the only approved document.

The Kronotsky Biosphere Reserve Management Plan lists the objectives under the premises of the biosphere reserve:[14]

The main objectives of the activities in the core zone for the five-year period 2017-2021 are:

1) *to ensure the natural swing of natural processes;*
2) *to reduce at maximum the negative impacts on landscapes ;*
3) *to improve methods of long-term environmental monitoring and scientific research;*
4) *to contribute to the global monitoring of natural processes.*

The main objectives and priorities of the transition zone are:

1) *to develop interaction model between business, public administration, communities on the issues of environmental management, and ecotourism, and economic development; to involve maximum number of local population in planning and implementation of tourist programs in the transition zone of the reserve;*
2) *to improve the route network of the reserve by reference to priority to the development of complex routes, covering the resources of the cooperation and transition zones, and so that to enhance the benefits of tourism development for local communities in the cooperation zone; to arrange excursion-tourist routes on the territory through the creation of ecological paths and routes;*
3) *in the Southern section of the reserve – to approve use of natural resources (gathering of wild herbs, recreational fishing) within the boundaries of the transition zone.*

The objectives for the core zone are acceptable and precise to ensure a proper management in terms of the property, and to conserve the OUV in both concerned components, assuming that any legal or illegal intervention in contradiction to the aims of the management plan is precluded. In contrast, the objectives for the transition zone allow a broad interpretation. This concerns tourism in the first place. As long as tourism is restricted in terms of the number of flights and permits, the implications can be managed, but it is evident that the uncontrolled use of all-terrain vehicles and snow mobiles can have negative effects.

The core zone of the component South Kamchatka Sanctuary is very small, has been significantly reduced with the new zoning, compared to the situation in 2007, and does not include Kurile Lake, which is the most attractive tourist spot in the component. For the largest part of the component, the management objectives for the transition zone apply, which are likely to increase the pressure on the site, mainly from tourism. The most famous attraction of the area are the brown bears along Kurile Lake during the spawning season. Pictures show the pressure from tourists on the bear population.

[14] as listed in the Kronotsky Biosphere Reserve Management Plan

Fig. 1 (left): Boats with tourists getting too close to a bear hunting for salmon in Kurile Lake. **Fig. 2 (right):** While bears hunt for salmon, tourists get very close. To protect the photographers, a ranger with a riffle is on duty. FSI Kronotsky Biosphere Reserve.[15]

Policy documents related to the implementation of the World Heritage Convention acknowledge the need to enable ecologically sound tourism in World Heritage properties, but respectful of the protective role of the Convention. The situation shown in the photos underlines the need of a management plan and a tourist master plan addressing the principles of the World Heritage Convention.

6.1.2.2 Management Plans for the Regional Nature Parks[16]

Four of the six components of the property are under regional administration and therefore declared by regional law under the title “Volcanoes of Kamchatka” Nature Parks of Regional Significance, namely Bystrinsky Nature Park, Kluchevskoy Nature Park, Nalychevo Nature Park and South Kamchatka Nature Park, which is split into two clusters. Bystrinsky and Kluchevskoy Nature Park are very far from Petropavlovsk Kamchatsky, whereas Nalychevo and South Kamchatka Nature Park are closer to the capital and partly accessible also by car.

It is an advantage that all four management plans follow the same scheme, which makes the comparison easier. All management plans are valid for the period 2020 – 2024. However, the Mission gained the impression that the four management plans were written simultaneously by copying several paragraphs, including errors.

It corresponds to the character of a nature park that core zones or strict reserves are smaller and more space is given to the development of tourism and local business. However, under the regulations of a World Heritage site to preserve the OUV, there is an obvious need to have a joint management plan or at least common visions and criteria for the management.

A common weakness of all four components is poor funding, a shortage of field equipment and the inadequate number of field posts, the insufficient number of inspectors, and generally a shortage of qualified staff. In addition, the threats to the areas are more or less the same, mostly through tourism and recreation with an increased pressure on some key areas. This is a threat to the landscape and biological diversity as well as to some natural monuments. Although the number of visitors seems to be manageable, commercial tourism activities can undermine the efforts made to protect natural values. Poaching is also a common threat to all

[15] Take note of the guard carrying a riffle on the right photo.
[16] The analysis is based on a summary or shortened and translated version of the management plans of the various areas

four components. It remains unclear why potential impacts from natural factors, such as volcanic eruptions are listed as threats in the above-mentioned management plans, as natural processes should be preserved in the first place and the volcanoes constitute an integral part of the property's OUV.

Bystrinsky Nature Park

Compared to the zoning from 2007, explicit discrepancies are notable that directly oppose the 2007 mission recommendations requesting stricter protection[17] (see Map 4: Management Plan for Nature Park of Regional Significance "Bystrinsky": Zoning, Annex II). The largest special protection zone was reduced to what was defined as Ichinsky wildlife refuge in 2007. Other parts were included in the zone of regulated tourism. Larger economic zones were designated and the zone for regulated tourism is now the largest zone in the component.

The management plan of Bystrinsky Nature Park defines four different zones and it can be assumed that these definitions apply to all nature parks within the property:

The zone of special protection is designed for the preservation in pristine condition and restoration of special, irrecoverable, environmental, scientific and aesthetic significance of unique nature objects and landscapes. Pacific salmon spawning grounds, rare and endangered species of animals, plants, fungi, thermophilous and other organisms and their habitats which are included in the Red Book of the Russian Federation or the Red Book of Kamchatka krai and are of economic and scientific value.

The zone of unique nature complexes and objects protection is designed for the preservation in natural condition of some particular nature complexes and objects that are of special environmental, scientific, cultural, aesthetic, recreational and health-related importance, including discharge areas of natural thermal and mineral springs and their unique ecosystems in pristine condition, as well as isolated habitats of rare plant, fungus and animal species which are included in the Red Book of the Russian Federation or the Red Book of Kamchatka krai.

The economically intended zone is designed for the implementation of economic activity permitted by the current legislation and the given Provision, including activity on providing comfortable rest, recreational and tourist infrastructure, cultural and information service rendering to the visitors of the Nature Park.

The zone of regulated tourism and recreation is designed for organization of regulated tourism and recreation of citizens in the wild nature conditions, seeing the sights of the Nature park, permitted kinds of hunting, amateur and sports fishing.[18],[19]

The most serious threats to the nature park listed in the management plan are mining activities outside the nature park, but with possible negative impacts inside the protected area and a decline in biodiversity as a result of increased poaching, mainly of salmon, and an overexploitation of biological resources. Furthermore, spontaneous and unregulated development of recreational infrastructure threatening unique nature objects of the park, including communities of hydrothermal and mineral springs, unregulated traffic of cross-country vehicles, causing soil erosion and destroying vegetation and soil, and forest and tundra fires are mentioned as threats to the area.

While the official statistics provide accurate data on the number of visitors, the Bystrinsky Nature Park Management Plan criticizes that information about the number of visitors is not

[17] See Mission Report 2007, Chapter 3.1.1 and rec. 5.1 and 5.9
[18] Management plan of Bystrinsky Nature Park, p. 13-15
[19] Tourist infrastructure can be built in the zone of regulated tourism and recreation as well as in the economically intended zone.

reliable. Though tourists are obliged to register, some of them ignore the regulations and the park has insufficient mechanisms to secure a permanent control of the visitors' flow.

Kluchevskoy Nature Park[20]

The management plan (see Map 5: Management Plan for Nature Park of Regional Significance "Kluchevskoy": Zoning, Annex II) aims to preserve the integrity and natural state, the restoration of disturbed natural complexes, objects and landscapes as part of the UNESCO World Heritage Site, and the preservation of rare and unique natural systems. Besides the protection of natural processes, the management plan supports the creation of conditions for expanding the economic base of the Ust-Kamchatsky and Milkovsky municipal regions by developing the infrastructure of regulated tourism and recreation in accordance with the capacity of the site. An additional goal is environmental education, including the dissemination of information.

According to the authors of the management plan, the main threats to the area come from increasing recreational pressure on natural complexes, without reliable data on the recreational capacity affecting the biodiversity and the low awareness of the population for nature protection in this specific area, which raises the risk of poaching and illegal activities. In future, the priority of recreational activities over environmental protection will threaten the conservation of biodiversity and the development of eco-tourism.[21]

Nalychevo Nature Park

The zoning of Nalychevo Nature Park differs totally from the zoning analyzed in the 2007 mission report and is in no way comparable (see Map 6: Management Plan for Nature Park of Regional Significance "Nalychevo": Zoning, Annex II). While the 2007 mission recommended to increase the strict protection zone, this zone was further diminished, putting into question the adequate protection of the component.

The threats listed by the authors of the management plan are similar to those mentioned for Klucheskoy Nature Park, namely an increasing pressure on nature and natural complexes from tourism, the absence of reliable data on the carrying capacity of the protected area, and the low awareness of the population for protective measures, leading to illegal activities.[22]

In accordance with the Regulation on Nalychevo Nature Park and the Charter of KGBU "Nature Park Volcanoes of Kamchatka", the tasks of the park include:[23]

1) Preservation of typical and unique landscapes, ecosystems, flora and fauna, geological and water bodies, natural complexes with great environmental, aesthetic and recreational value;
2) Preservation of plant and animal species listed in the Red Books of IUCN, Russian Federation and Kamchatka Territory;
3) Protection of thermal and mineral water sources, provision of rational use of their resources;
4) Development and implementation of effective methods of nature preservation and maintaining an environmental balance in the recreational conditions for the use of the territory of the nature park, etc.

The lack of human and financial resources does not allow for proper management of the component. As can be read in the management plan, increasing recreational pressure and lack of data for the carrying capacity of tourism numbers can cause a degradation of the most valuable sections of the component. It is further noticed that the low awareness of the

[20] "Klyuchevskoy" Nature Park was created by a regulation of the Kamchatka Oblast Administration in 1999 and was included in the UNESCO World Heritage Property in 2000.
[21] Klucheskoy Nature Park Management Plan, p. 8
[22] Nalychevo Nature Park Management Plan, p. 7
[23] Nalychevo Nature Park Management Plan, p. 7

population of the restrictions imposed to preserve biodiversity and the OUV increases the likelihood of poaching and other violations that damage the biodiversity.

It is not clear whether the poorly controlled interference with nature and natural features is really unwanted. Numbers and effects of uncontrolled and unregistered tourism or poaching are scarcely documented, which allows the authority more flexibility in its decisions regarding the problems.

South Kamchatka Nature Park

The South Kamchatka Nature Park consists of two parts (see Map 7: Management Plan for Nature Park of Regional Significance "South Kamchatka:" Zoning, Annex II).

Similar to Nalychevo Nature Park, the management plan addresses serious threats through excessive uncontrolled tourism and poaching. In detail, the management plan says:

"The increasing recreational press on natural complexes in the absence of reasonable calculations of the recreational capacity of the territory and the lack of scientific recommendations for arranging unique natural sites can cause the degradation of the most valuable sections of the territory of Nalychevo Nature Park to preserve biodiversity.

Low awareness of the population about the goals of creating a specific protected area, the boundaries and regime of use of the territory, the lack of constant interaction with public, national, scientific, state environmental organizations contributes to the formation of a negative attitude to the activities of the administration and employees of the territory, which increases the likelihood of poaching and other violations that damage the biodiversity.

In the future, the priority of recreational activities over environmental protection threatens the preservation of the biodiversity of the territory and the development of ecological tourism." [24]

The Mission was aware of the repercussions of tourism on the protected area. All-terrain vehicles such as cars, buses and trucks, could be seen not only on the road leading to the area from Petropavlovsk-Kamchatsky, but also going off-road into the nature park, leaving tracks that may become wider and go further into the area year after year. This is not only in contradiction to the conservation principles of the property, but also to the management plan objectives supporting ecological tourism in the property. The proposed Three Volcano Park (see chapter 6.3.1) will definitely worsen the problem.

Statement on the relevant 2007 recommendations:

> *5.4. On this basis, develop or revise the management plans for each of the six components of the Property, that detail how each will be managed to maintain the values for which the whole property was inscribed as well as how these plans will be resourced to ensure their implementation.*

To a large part, the individual management plans of the four nature parks are just copied. It is therefore unclear whether the individual management plans are addressing the relevant issues of the respective site. Inappropriate staffing and financing cannot guarantee a full and efficient implementation of the management plans.

Recommendations 2019

Rec. 2: Develop a management plan for the entire property to guarantee that the six components are fully protected along the same standards, objectives and criteria in line with the World Heritage Convention's *Operational Guidelines*. Individual management plans for each component would be acceptable only if using the same objectives and criteria and providing clear references on the overall objective of conserving the OUV of the property. Additionally, a common vision and goals for further development of the

[24] South Kamchatka Nature Park Management Plan, English translation, p. 6

entire property are required to guarantee a harmonization of the management and ensure mutual consideration of development goals. All existing management plans should be revised along these principles and at the same time should address specific situations and threats of the various components.

Rec. 3: As no World Heritage property Management Plan was approved and may not be elaborated in the near future, the Kronotsky Biosphere Reserve Management Plan is the only instrument or guideline for the development of the two federal components. In the Mission's opinion, this management plan does not meet the requirements of the protection of nature and natural processes with respect to World Heritage, particularly in the Biosphere Transition Zone. Therefore, the proposed management objectives, primarily within the transition zone of the Biosphere Reserve, need to be reviewed with the primary objective of protecting the OUV of the property. Further, the State Party is requested to submit to the WHC a list of all activities permitted in the so-called transition zone.

Rec. 4: The mission notes that since the previous mission, the zoning of all components of the property has been altered significantly, diminishing the area of the more strictly protected zones, and this in spite of the fact that the 2007 mission recommended to strengthen the zoning of the nature parks, to bring them in line with the OUV of the property. The mission therefore considers that the current zoning does not meet the requirements of the conservation of the OUV and needs to be strengthened significantly.

6.1.3 Boundaries of the Property

When the Volcanoes of Kamchatka were inscribed on the World Heritage List in 1996 with an extension in 2000, the boundaries were drawn and the area surface calculated or estimated without accurate cartographic data, land cadastre and GIS technology. Between 2015 and 2018, the land data of the regional nature parks was updated, the boundaries fixed by coordinates and the area exactly calculated. The changes in the area of all nature parks are + 49,427.69 ha or about plus two percent. The exact data and the coordinates of the boundaries have been recorded in the land register (cadastre) since 1 January 2019.

The designation and functionality of a buffer zone ensures better preservation of World Heritage sites, as defined in the *Operational Guidelines*[25]. The six components within the Volcanoes of Kamchatka property do not have a buffer zone, although the Kronotsky Biosphere reserve is surrounded by a so-called cooperation zone. The Mission was informed about a proposal to designate a buffer zone for the Kronotsky Zapovednik (see Map 8: Buffer zone of Kronotsky Zapovednik, Annex II), aiming to conserve the wild Northern reindeer and bighorn sheep populations. The area of the buffer zone will cover 840,285 hectares.

Statement on the relevant 2007 recommendations:

> *5.6. Translate the boundary of the property into geographical coordinates based on the boundary approved in the nomination file and record in the national land registry (cadastre).*

The recommendation is fulfilled.

[25] UNESCO, Operational Guidelines for the Implementation of the World Heritage Convention, WHC.17/01 12 July 2017, Para. 103-106

Recommendations 2019

Rec. 5: Buffer zones can be an essential tool to support the proper protection of the property. To date, a specific buffer zone is proposed for Kronotsky Zapovednik only. With the need for a better protection of species and with growing pressure on the property caused by tourism, the designation of buffer zones for the remaining five components of the property should be considered and officially proposed for the World Heritage property, following the defined procedures.

6.2 Human and Financial Resources

Both, the financial and human resources for the various components differ remarkably depending on the responsible governmental authority. Protected areas under the regime of the Federal Government are much better equipped. Whereas the staff of the nature parks has been stable over the last five years, the staff number in the components under federal authority was raised by about 170 percent /see Tab. 1).

Table 1: Staff in the management institutions of the World Heritage site

Groups of staff	**Staff per year**																	
	1 – FSI Kronotsky Reserve; 2 – RBI Volcanoes of Kamchatka; 3 – total for the WHS																	
	2014			**2015**			**2016**			**2017**			**2018**			**2019 (1 Aug.)**		
	1	*2*	*3*	*1*	*2*	***3***	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*
Administration	3	14	**17**	3	12	**15**	4	12	16	5	13	18	6	13	19	6	12	18
Accounting and Law Departments	4		**4**	8		**8**	11		11	14		14	16		16	17		17
Logistics and Construction Department	11		**11**	17		**17**	21		21	31		31	43		43	48		48
Scientific Department	11		**11**	11		**11**	11		11	12		12	13		13	13		13
Inspectors	21	23	**44**	26	25	**51**	37	25	62	45	26	71	53	26	79	63	26	89
Educational and Touristic Department	11	9	**20**	12	9	**21**	12	9	21	16	8	24	17	8	25	19	9	28
Total	**61**	**46**	**107**	**77**	**46**	**123**	**96**	**46**	**142**	**123**	**47**	**170**	**148**	**47**	**195**	**166**	**47**	**213**

Source: Ministry of Natural Resources and Environment

The 2007 Mission report also criticises the low number of inspectors, with 10 positions vacant. Although the number of inspectors is still low in relation to the size of the property, their number in the federal reserves has tripled within five years, but remained consistently at a low level in the regional nature parks. The imbalance between the state and regional components is a substantial argument to integrate the nature parks under federal authority.

Table 2 shows fluctuating budgets for the components over the last five years. Again, federal reserves are much better supported than regional nature parks. Although the budget for the regional parks was notably increased, it is only about a quarter of the state reserve budgets. The state budget for the federal reserves had its peak in 2014 and 2016. Apparently, the governmental authorities seek to substitute governmental revenues by other funds. It should

be considered that the regional nature parks constitute about 60 percent of the property and adequate proportional funding should be allocated to ensure their protection.

Statement on the relevant 2007 recommendations:

> *5.7. Take the necessary measures to further increase staffing of the property and to close the funding gap. In this respect, the State Party should evaluate if it can revive the initiative for a conservation trust fund for the property.*

Although the authorities confirmed a continuous exchange of personal and mutual support between the various components, the imbalance of human and financial resources remains an issue and impedes an equal development and supervision of the individual components.

Recommendations 2019:

Rec. 6: The mission team noted with satisfaction that the decrease of the budget of the Federal protected areas underlined by the previous mission has stopped. Financial support for the Federal protected areas has been raised significantly since then, whereas the budget for the regional nature parks has also increased but less. However, staffing and financing still differs widely according to the responsible authority (Federal Reserves & regional Nature Parks) although duties and requirements in all six components are comparable and equally demanding. As shortages in staff and funds do not guarantee a sufficient management and supervision of the regional Nature Parks, an alignment of human and financial resources should be secured.

Table 2: Budget for Conservation in the Management Institutions of the World Heritage Site

Source of income	**Budget per year in thousand Rubels**														
	1 – FSI Kronotsky Reserve; 2 – RBI Volcanoes of Kamchatka; 3 – total for the WHS														
	2014			**2015**			**2016**			**2017**			**2018**		
	1	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*
State or regional budget	**452,442**	**35,655**	**488,097**	**257,946**	**38,454**	**296,400**	**383,107**	**39,742**	**422,849**	**208,818**	**43,174**	**251,992**	**227,324**	**73,042**	**300,366**
ext. funds, including:	**24,354**	**2,599**	**26,953**	**53,399**	**9,334**	**62,733**	**87,304**	**12,054**	**99,358**	**92,713**	**10,764**	**103,477**	**128,081**	**22,924**	**151,005**
Funds for scientific and conservation projects	1,695	0,000	1,695	2,550	0,000	2,550	0,000	0,000	0,000	0,855	0,000	0,855	2,745	0,000	2,745
Income from touristic payment for activities	21,973	2,595	24,568	50,292	3,588	53,880	87,304	6,423	93,727	90,308	6,277	96,585	124,356	7,015	131,371
Income from souvenirs sellings	0,138	0,000	0,138	0,014	0,000	0,014	0,000	0,000	0,000	0,368	0,000	0,368	0,378	0,000	0,378
Donations	0,548	0,004	0,552	0,543	5,746	6,289	0,000	5,631	5,631	1,182	4,487	5,669	0,602	15,909	16,511
Total	**476,796**	**38,254**	**515,050**	**311,345**	**47,788**	**359,133**	**470,411**	**51,796**	**522,207**	**301,531**	**53,938**	**355,469**	**355,405**	**95,966**	**451,371**

Source: Ministry of Natural Resources and Environment

6.3 Tourism and Tourist Infrastructure

Any person arriving in Kamchatka is registered as a tourist. This is why the number of tourists in Kamchatka and the number of registered visitors in any of the six components of the World

Heritage property differ remarkably. The Mission visited the South Kamchatka Nature Park, which is also accessible by car without a checkpoint. Due to this unregulated accessibility, the Mission assumes that the number of visitors in this component is higher than reported. This coincides with the statements in some Nature Park management plans that the number of tourists arriving by car is uncontrolled and the official data not reliable.

Table 3: Number of tourists to Kamchatka region for the last 5 years

Number of tourists	**2014**	**2015**	**2016**	**2017**	**2018**
Foreign visitors	14,620	14,114	16,635	13,920	25,418
Russian visitors	160,561	169,736	181,970	185,432	190,067
Total number	**175,181**	**183,850**	**198,605**	**199,352**	**215,485**

Source: Ministry of Tourism Development of Kamchatka

Table 4 shows a more or less stable number of visitors over the years. Nalychevo Nature Park is not too far from Petropavlovsk and attracts about 40% of the registered tourists of the World Heritage property. The most northern components, Kluchevskoy and Bystrinsky Nature Park, have the lowest number of visitors. The only 3,700 tourists of South Kamchatka Nature Park are difficult to comprehend, as the area is easily accessible by unpaved roads.

Table 4: Number of tourists to "Volcanoes of Kamchatka" WHS for the last 5 years

Component of the WHS	**2014**	**2015**	**2016**	**2017**	**2018**
Kronotsky Reserve	4,150	4,975	6,533	5,930	6,045
South Kamchatka Sanctuary	1,793	2,867	3,959	3,920	5,143
Nalychevo Nature Park	16,191	16,395	17,738	13,654	14,648
South Kamchatka Nature park	6,150	7,650	3,993	4,260	3,688
Bystrinsky Nature Park	1,732	1,603	1,326	2,402	2,101
Klyuchevskoy Nature Park	1,870	1,395	5,263	4,482	3,796
Total number	**31,886**	**34,885**	**38,812**	**34,648**	**35,421**

Source: FSI Kronotsky Reserve and RBI Volcanoes of Kamchatka

The most attractive tourist locations accessible by helicopter are the Valley of Geysers and the Volcano Caldera in Kronotsky Zapovednik, and Kurile Lake in South Kamchatka Sanctuary. Nalychevo Nature Park and South Kamchatka Nature Park are closer to Petropavlovsk Kamchatsky and partly accessible by car.

Visits to the components of the property, as well as the operation of helicopters and aircrafts within the components are regulated by various legal acts and resolutions of the Governor of the Kamchatka. According to the authorities, visits to the territory of the nature parks, reserve and sanctuary, as well as touristic, recreational, cultural, sport and other activities related to outdoor recreation, are carried out under permits issued by the institutions managing these

protected areas. Officially, limitations of the recreational use of protected natural complexes and the capacity of their recreational infrastructure facilities are defined, but could not be verified by the Mission.

According to the information provided to the mission, the landing of aircrafts and helicopters outside designated areas is prohibited throughout the property, except in case of emergency. In special protection zones of the nature parks, it is forbidden for helicopters and other aircrafts to fly below 500 meters from the ground without special permission of the park administration. The FSI Kronotsky Reserve has an additional right to introduce temporary and seasonal restrictions for the landing of aircrafts. These regulations are detailed in the management plans.

The movement of vehicles, including cross-country vehicles, through the territory of the nature parks is regulated by various legal acts of the Kamchatka Region. Thus, according to the regime of protection and nature management, the movement of mechanical vehicles outside public roads and established routes, as well as parking of all types of mechanical vehicles outside specially equipped places, is prohibited in nature parks. In addition, the regulations are stricter in the special protection zones, including for boats and minimum flying heights for aircrafts.

According to a representative of the Kronotsky Biosphere Reserve, the helicopters do not have defined routes between the airport and the landing places.

Visiting the territory of nature parks, as well as touristic, recreational, and cultural, sports and other activities are carried out under permits issued by the RBI Volcanoes of Kamchatka, within the defined quotas for visitors to protected areas and according to the carrying capacity of recreational infrastructure.

However, on ground observations of the Mission do not align with these regulations. Access to some areas becomes easier through off-road and all-terrain vehicles cutting deep tracks into the ground. The Mission was told that in winter snowmobiles are becoming more common and cause disturbances through their noise and the accessibility to remote areas. In Nalychevo Nature Park, hot springs, bathhouses, bathing areas and overnight facilities attract more and more tourists.

It is obvious that the authorities do not have the human and resource capacity to ensure a sufficient control of the people accessing any of the components, and the published number of visitors is probably not correct. Losing control over the number of tourists reduces the possibilities to inform visitors about the protective measures and rules they have to observe to avoid impacts on the areas. At the same time, uncontrolled access reduces the revenues of the property, which are paid to the parks by tour operators.

In the Mission's view, it becomes increasingly important to establish a permanent control of the access to the components, either through an efficient surveillance of the visitors' flow or the establishment of checkpoints along the access routes.

Statement on the relevant 2007 recommendations:

> *5.8. As part of the management planning exercise, develop a comprehensive tourism management plan for the property, balancing its OUV with the great potential for ecologically sound tourism, taking into account the recommendations of the 2004 mission.*

This point addresses not only a tourism master plan for the property, but also the joint management plan in general. Although ecologically sound tourism is showing first results, potential for further implementation remains high.

> *5.9. Before taking decisions on increasing visitation in KSNR, carefully study the potential impacts and in particular the resulting needs in increased infrastructure. Before opening*

up further parts of the strictly protected zone of NNP for recreation, carefully study the potential impacts, particularly on the populations of snow sheep.

The authorities reported an ongoing study, which unfortunately does not include monitoring of the impacts on the snow sheep population, as requested. Data collected are used *for " …. managing recreational impacts upon the ecosystems of protected areas as well as for tourism management and planning, and its harmonization with conservation purposes.*[26]

5.16. As part of the proposed overall management framework, establish an access policy for the entire Property, based on a generalization of access control and limiting accessibility by limiting and regulating ATV road access as well as limiting helicopter access to clearly established landing areas.

Whereas helicopter flights are regulated and bound to certain landing places, at least in the Kronotsky Zapovednik and in the South Kamchatka Sanctuary, land traffic is still more or less uncontrolled, especially in the nature parks and no clear policy is in place.

Recommendations 2019

Rec. 7: Develop, in parallel to management plans, a Tourism Development Master plan based on actual figures and projections, setting clear thresholds of the carrying capacity of the property in its entirety and of its individual components. Such master plan should include, besides the number of tourists/visitors, the number and directions of helicopter flights and other transportation means (four-wheel drive vehicles (ATV)), capacity of tourist infrastructure and the sensitivity of habitats and species. Although developed for the World Heritage property, the Tourism Development Master Plan should consider and search for attractive alternative areas outside the property to better channel tourist flows. In other words, the property should not be considered as a ready-made tourism package for the region and all efforts should be made to consider the wider region.

Rec. 8: Noting the increasing worldwide interest for Nature Tourism in the Kamchatka Peninsula as well as the variety of actors involved (national, regional, local and foreign actors), the mission strongly recommends that a governance mechanism for Tourism development be established further to the Master Plan, which will also ensure that tourism empowers local communities and tourism revenues primarily benefit local communities.

Rec. 9: Take immediate measures to counteract uncontrolled tourism, and any forms of tourism negatively impacting the environment, and avoid further damage by off-road transport vehicles, establish efficient control mechanisms for traffic and limit access through suitable measures like checkpoints, entrance fees etc.

Rec. 10: Define binding rules for helicopter flights including an accurate specification of flight routes and flight times.

Rec. 11: Reduce disruption of wildlife from tourism by appropriate measures, particularly in areas with a high frequency of tourists, including limitation in numbers, access restrictions and defined roaming areas.

6.3.1 The Three Volcano Park

Upon invitation of the State Party a representative of an investor (Rosa Khutor) participated in the Mission. He presented a tourist project to be built partially within the northern cluster of the South Kamchatka Nature Park component and apparently supported by the Government of

[26] Written information distributed to the Mission members

Kamchatka. The project foresees a tourist resort with 1,000 hotel rooms and technical infrastructure, consisting of two ropeways with 17km ski slopes outside the component. Additional tourist infrastructure to be constructed within the component's boundaries consists of a marine terminal for cruise ships in Viluchinskaya Bay, two ropeways with 14.8 km ski slopes, a tourist camp with a hydrothermal lagoon, and the Geopark Volcano Mutnovskiy plus a highway connecting the harbor in Viluchinskaya Bay to the tourist resort. Geopark Volcano Mutnovskiy will be the main touristic object of "Volcano's world", situated within the boundaries of the property.

Later, an official letter from the Governor of Kamchatka was made available to the Mission, saying that the implementation of the project "*may serve as the basis for the inscription of the UNESCO Site into the List of World Heritage in danger and entail the reputational losses of the country party to the Convention."* Therefore the letter suggests "*to exclude the land (forest) plot proposed for economic development from the territory of the UNESCO Object, taking into account the implementation of compensation measures."* [27]

The proposed project is more or less a sketch and the map handed out to the Mission is only in a scale of approx. 1:300.000 (see map 9, Annex II). A detailed comprehensive evaluation could not be made at this stage and was not task of the mission. Kamchatka is a land of natural beauty and with a high number of attractive volcanoes. No explanation was given to the Mission why exactly this area had been chosen as a tourism development site, besides the fact that access would be possible for cruise ship passengers. The shipping lane would be outside of the property, but the landing facilities and a highway linking the terminal with the tourist village resort would be located within the property. The planned ropeways inside the component and the Geopark Volcano Mutnovskiy would attract not only the guests of the tourist resort, but also day tourists from the capital, both in summer and in winter, which would require an enlargement and improvement of the road connections.

While only limited information is available, the mission considers that any changes of the boundaries for such development could impact the OUV of the property. The Mission therefore expresses strong reservations about this project and its compatibility with World Heritage status.

Recommendation 2019:

Rec. 12: Inform the World Heritage Centre, as soon as possible, in conformity with paragraph 172 of the *Operational Guidelines*, of any potential projects which might have an impact on the OUV of the property, such as the "Three Volcano Park" which has been *de facto* presented to the Mission team.

Rec. 13: On the basis of the documentation received during the mission, the mission team confirms that the "Three Volcano Park" is incompatible with the preservation of the integrity of the property and if allowed to proceed, the project would result in a severe deterioration of the natural beauty and scientific value of the component South Kamchatka Nature Park, to an extent that might warrant the inscription of the property on the List of World Heritage in Danger. If the State Party intends to submit a boundary modification request for the property (as indicated by the Governor), and given the potential impacts on the OUV, the mission notes that such a boundary modification will have to be considered as a significant boundary modification in line with paragraph 165 of the *Operational Guidelines*.

[27] Letter from the Governor of Kamchatka, dated 31.08.2019

Rec. 14: An Environmental Impact Assessment for such a project must be conducted prior to any decision, including possible changes of the South Kamchatka Nature Park's boundaries.

6.4 Conservation Issues

6.4.1 Mining and Exploitation of Natural Resources

Mining, even if outside of protected areas, can negatively impact the natural values of the World Heritage site through waste water, harmful deposits or emissions. The distance to the protected area is less relevant than the direction of groundwater flow and rivers, and the main wind directions.

Concerning Bystrinsky Nature Park, the State Party reported that *"Large enterprises of the mining complex of Kamchatka are located outside the borders of Bystrinskiy natural park (near its south-south-western border), their influence on the specially protected natural area is absent and there are no threats connected with these enterprises for protected area nowadays*." [28]

The 2007 mission report notes that, with regards to the Bystrinsky Nature Park, "*the mine areas were excluded from the park at the time of its creation and are therefore outside the Property, but near their boundaries (respectively 22 km and 7 km). To allow access to the Shanooch mine, a rural road was upgraded for use by large ore trucks. This road is within park boundaries for 22 km." [29]*

However, the Bystrinsky Nature Park management plan contains two remarkable paragraphs. On page 9, it says: "*When the park was organized its boundaries were corrected in such a way so that to exclude the areas for which gold ore mining licenses were given. However, it does not guarantee that this unique area will never suffer from penetrating to its entrails later. Besides gold, there are deposits of mercury, sulphur, brown coal, decorative and construction materials."*

And on page 18, it mentions*: "Immediately near the boundaries of the park, gold ore and copper and nickel deposits are located, which have been prepared for mining for a long time; this fact requires that the territorial administration should provide additional specific efforts aimed at protecting the territory of the nature park from negative impact of technology-related processes occurring in the adjacent areas."*

The 2007 mission report mentions a boundary modification for Bystrinsky Nature Park, intending to exclude two areas for mining purposes.[30] The authorities confirmed that no new delineation is on the agenda. However, the current management plan shows one of these former proposed mining sites now as zone of unique nature complexes and objects protection, the other one is in the economically intended zone.

As the management plans of the components were delivered only after the mission, the reasons for the different opinions of authorities and authors of the management plans could not be retraced. In general, developing mineral deposits, surveying and other work related to the use of mineral resources within the boundaries of nature parks are forbidden by law. However, nothing comparable is determined in the Kronotsky Biosphere Reserve management plan.

A similar proposal was made for the Nalychevo Nature Park, where in 2007 the Federal Geological Agency intended to exclude an area of important hydrothermal deposits, which is

[28] Written information distributed to the Mission members
[29] Mission Report 2007, p. 17
[30] Mission Report 2007, Annex 4, map 4.7

now partly in the zone of special protection and partly in the zone of unique nature complexes and objects protection.

The Mission was further informed that "*near the western border of the Northern cluster of the South Kamchatka Nature Park, the Mutnovskoye gold deposit is located. Currently, economic activity is not carried out on it, and if it starts, in case of utilizing modern technologies for mining and mineral processing, it will not cause a negative impact on the protected area. Also in this area, there is the largest in Russia Mutnovskaya geothermal power plant with direct steam use, the operation of which is environmentally safe*. *Near the north-north-eastern border of the Southern cluster of the South Kamchatka nature park, the production complex of the Asachinsky mining plant, processing gold and silver ore, as well as projections on the surface of the boundaries of several subsurface areas, the right to use of which belong to Trevozhnoe Zarevo closed joint-stock company, are located. Carrying out activities for the extraction of precious metals at the enterprise, in case of following the laws in the field of environmental protection, does not have negative impacts for ecosystems of the South Kamchatka park*."[31]

Extractions of groundwater to supply local settlements with drinking water should be located outside the protected sites, but could be acceptable if no other sources are available.

Statement on the relevant 2007 recommendations:

> *5.11. Submit to the World Heritage Committee, in accordance with article 172 of the Operational Guidelines the environmental impact assessments that have been (or may be in the future) prepared for the existing mining and exploration projects situated near the boundaries of the Property, including any new, planned or proposed mining areas.*

The Mission was not aware of such environmental impact assessments having been completed or submitted to the World Heritage Centre.

> *5.12. Monitor on-going mining, gas pipeline, and mineral or geothermal exploration activities close to the boundaries of the Property closely to ensure that the highest environmental standards are used and avoid impacts on the Property.*

The Mission was informed that mining does not cause threats to any of the components, although the management plans demonstrate otherwise (see p. 31).

> *5.13. Consider adding the corridor separating the two blocks of SKNP to the Property, in case no mining will take place in the corridor.*

No extension of the property is intended.

> *5.14. Not to propose a boundary change to the Property purely to accommodate mining operations, as already recommended by the 2004 mission.*

The Mission fully supports this recommendation and reiterates it.

5.20. Not to go forward with the proposal of the Geological Agency to exploit hydrothermal and underground mineral waters in NNP as this proposal is contrary to the World Heritage status of this park and would affect its OUV and integrity.

Currently no such proposal is under discussion.

Recommendation 2019:

Rec. 15: Regarding the statements in several management plans, it can be concluded that the authorities must be aware of potential serious impacts of existing mining primarily in the vicinity of Bystrinsky Nature Park and South Kamchatka Nature Park. These repercussions have to be taken seriously, and as a consequence precautionary

[31] Written information distributed to the Mission members

measures and serious regulations must be imposed. It is requested that the State Party submits an Environmental Impact Assessment (EIA) and accompanying Environmental Management Plans, with details on the measures taken to prevent impacts on the OUV of the property, to the World Heritage Centre for review prior to a decision on these activities being taken, in line with para 172 of the *Operational Guidelines.* This should also apply to mining or extraction activities in the vicinity of all components, either active or temporarily closed.

Rec. 16: The State party is requested to affirm its commitment not to allow mining activities inside the property. A boundary change to the property should not be proposed to accommodate mining operations, as already recommended by the 2004 and 2007 missions. Any newly proposed mining activities in the vicinity of the property, for example to develop the Mutnovskoye gold deposit, should be subject to rigorous Environmental Impact Assessment (EIA).

6.4.2 Salmon Poaching

The problem of salmon poaching was addressed in the various meetings as well as during the field trip, but data were only made available after the mission in written form, based on research studies provided by the Kamchatka branch of the Federal State Budgetary Scientific Institution "Russian Federal Research Institute of Fisheries and Oceanography" (Kamchat-NIRO). A meeting with representatives of the fishing industry was not foreseen. .

It should be noted that Kamchatka rivers are one of the most important spawning grounds for salmon worldwide, with South Kamchatka Sanctuary and herein Kurile Lake as a hot spot. The salmon is not only a flagship species for the property, but also an important food source for several partly endangered species, such as the brown bear, Steller's sea eagle and Steller's sea lion. Any remarkable decline of the salmon population in the property and its rivers, even outside the property, could seriously threaten the property's OUV. The State Party provided following information to the mission:

South Kamchatka Federal Sanctuary [32].

During the last five years (2014-2018) averagely 1.87 (1.65-2.35) million Sockeye salmon spawners came to Kurile Lake (the Ozernaya River) for spawning. Coastal catches of the Ozernaya River school Sockeye salmon in this period averagely amounted to 24.9 thousand tons (from 20.0 to 29.4) per year. It provided, on the average, 84.1% of the total catch along the Western coast of Kamchatka annually or 64.4 % around the whole Kamchatka peninsula.

Since 2006 the Sockeye salmon population has reached the high, historically maximum (since 1941) in quantity. The population of the mature part of the school exceeding 10.0 million individuals was recorded only twice before 2006 and 10 times over the last 13 years. The average quantity of the Ozernaya River school Sockeye salmon return runs in 2006-2018 amounted to 11.8 million individuals, and for the last 5 years (in 2014-2018) —12,2 million individual fish.

The research performed by Kamchat-NIRO specialists shows that at the existing in the current period high level of reproduction the filling-up of the spawning grounds in the Ozernaya River[33] (including Kurile Lake) should be kept, on average, within the limits of 1.50-1.80 million of Sockeye salmon spawners. According to the calculations, this number of spawners is sufficient to provide maximum return runs. For reaching the abovementioned optimum, the collection of

[32] Written information distributed to mission members, shortened.
[33] The Ozernaya River connects the Kurile Lake with the Sea of Okhotsk

operational information on the spawners passing to Kurile Lake spawning grounds is implemented annually during the spawning run

According to the preliminary data, about 1.8 million spawners (the upper limit of the optimum) came to spawn to Kurile Lake (the Ozernaya River) in 2019, and the coastal catch of the salmon of this school exceeded 24.6 thousand tons. Thus, in 2019 the optimal (from the point of view of salmon conservation) pass of the Sockeye salmon spawners to the basin of the Ozernaya River, first of all to Kurile Lake, was provided; also the commercial development of the valuable water bioresources stocks of Ozernaya sockeye salmon was implemented at a high level.

Though according to the results of scientific research, the situation in the South Kamchatka Sanctuary could be described as fairly good, the report did not include information on poaching in this area. A representative of an NGO reported that poaching in some rivers constitutes up to 20 % of the legal catch, but only 2 % for the whole of Kamchatka.

However, the Mission was informed by the State Party that regulations to stop salmon catching in some areas for certain periods to allow undisturbed salmon migration have been cancelled.

Nalychevo Nature Park.

There are two rivers flowing in the territory of the Nalychevo nature park – the Nalycheva River and the Ostrovnaya River. In the basin of the Nalycheva River Sockeye salmon mainly spawn in Nalychevo Lake and its tributaries, in the basin of the Ostrovnaya River this species mainly spawns in Bolshoye and Maloye lake, and in the middle reaches of the river. As a result of illegal catch, the quantity of Sockeye salmon in the basins of these rivers reduced considerably. For example, the legal catch of Sockeye salmon in the Nalycheva River decreased from 17.4 tons to 0.006 tons. A control catch implemented during the mass run of Sockeye salmon in July 2017 could catch only 5 individuals of this species in the estuary of the river. The summarized catch of Sockeye salmon in 2017 (1.5 tons) is 15 times less than in 2000 (21.6 tons). Also the quantity of Nalycheva Sockeye salmon is gradually restored to achieve a normalization of this process it is necessary to put an end to poaching not only in the middle reaches of the river, but also in the sea area of its estuary.

Bystrinsky Nature Park

The quantity of the Sockeye salmon reproducing in the Bystraya River basin is relatively low. The maximum pass of spawners before 2006 was registered at the level of not more than 20,000 fish, with the average pass of 4,000 fish. In the period from 2007 to now the quantity of the spawners at the spawning grounds has decreased to mean values of 2,000 fish.

Kronotsky Reserve.

The salmon populations in Kronotsky reserve are not monitored by KamchatNIRO. The below information is based on annual research results of staff scientists of the Reserve.

Several genera of the Salmonid family (Salmonidae) are observed in the territory of Kronotsky Reserve: Pacific salmon (Oncorhyncus), Pacific trout (Parasalmo) and Chars (Salvelinus). Pacific salmon (Oncorhyncus nerka (Sockey salmon), O. gorbusa (Pink salmon), O. kisutch (Coho salmon), O. tshawytscha (Chinook salmon), O. keta (Chum salmon), O. masou (Cherry salmon) are numerous, their quantity is stable and subject to natural fluctuation. The existence of these species is not threatened, therefore no special research on the study of pacific salmon is conducted. Pacific trout (Parasalmo mykiss (Raibow trout)) are small in numbers and choose specific conditions for habitation, therefore they occur only in several rivers of the Reserve.

The existence of this species is not threatened either. Special attention should be paid to the populations of the Char genus (Salvelinus malma (Dolly Varden), S. leucomaenis (White spotted charr)). Representatives of this genus are characterized by high ecological plasticity

and live everywhere, practically in all the water-bodies of Kamchatka. It can be said that Kamchatka in general and Kronotsky Reserve in particular are one of the biggest centers of new Char forms evolution. Several unique groups of Char forms were found and described in the Reserve, they were found in Kronotskoye Lake and in the lakes of the Uzon Volcano Caldera.

Concerning the regional nature parks within the property, poaching is only reported officially for Nalychevo Nature Park, resulting in a remarkable decrease of the population as the State Party reported.

However, poaching is continuing and remains a threat that can undermine the OUV of the property. Staff training and legal measures are not sufficient to stop or at least remarkably reduce the impacts of illegal fishing. The authorities are not able or willing to implement sufficient measures to stop poaching, which is mostly because of the salmon itself, but also the red caviar. There is still a market for these products, not only on Kamchatka peninsula but also in other Russian regions or abroad. Stopping poaching should not only be achieved through the strict control and punishment of poachers, but also through a strict control of trade and trading routes of salmon and caviar.

According to various third party sources, a channel was proposed to be built, connecting Kronotsky Lake to the Pacific Ocean, to support salmon fishing. This project is not only against the regulations of the Zapovednik, it would also undermine activities to protect the local species. Currently, two salmon species and seven types of char can be found in the lake, which could be seriously endangered if other species were able to migrate to the lake.

As the mission was informed, the project of a channel will not be further discussed and is not on the agenda. Nevertheless, it has not been officially cancelled.

Statement on the relevant 2007 recommendations:

> *5.15. Report on the state of conservation of the salmon populations in Kamchatka as a whole and in particular as they relate to the Property and make this report timely available to the World Heritage Committee to be considered along with the report of this mission.*

The Federal State Budgetary Institution of Science “Kamchatka Branch of Russian Federal Research Institute of Fisheries and Oceanography” (Kamchat NIRO) is engaged in research studies and data were provided. Nevertheless, the Mission did not receive more detailed data on the amount of legally and illegally caught salmon, also in relation to the total salmon population.

> *5.18. Because of the important ecological interaction between salmon and brown bear populations and their impact on the OUV of the Property, continue to develop baseline ecological information within and near the various sites in the Property to better conserve these values throughout Kamchatka.*

No information was made available regarding this recommendation.

Recommendations 2019

Rec. 17: The State Party could not provide accurate and up-to-date figures of the volume of salmon poaching in Kamchatka and particularly in the World Heritage property. It is emphatically recommended to step up efforts to enforce measures to prevent salmon poaching and illegal trading of salmon and by-products and to monitor poaching pressure and impacts.

Rec. 18: Although, the project of a channel connecting Kronotsky Lake with the ocean will not be pursued, an official document on the reassurance of the abandonment of the project should be provided.

Rec. 19: Because of the important ecological interaction between salmon and brown bear populations and their impact on the OUV of the property, continue to develop baseline ecological information within and near the various sites in the property to better conserve these values throughout Kamchatka.

6.5 Summary of Conservation and Management Issues

Due to the limited time, the long distances and large areas, only small sections of the 39,600 sqkm wide property could be visited. Overall, the Mission has no doubt that the OUV, for which the Volcanoes of Kamchatka were inscribed on the World Heritage List, is still preserved. However, no significant progress has been achieved by the responsible authorities to implement the recommendations of the 2007 mission and to set clear standards for the management quality, and stop - or at least reduce - damage to the property caused by inappropriate use of natural resources and illegal activities. These threats are visible and not denied, but in a way trivialized by the authorities. Unequal support for the components, inefficient inspection and uncontrolled tourism, as well as presumably tolerance of violations like poaching, have reached a threshold.

Assessment of progress achieved with the relevant 2007 recommendations:

> *5.2. Institute a management structure and institutional strategy for the Property, which can ensure that all resources in the Property are managed with the objective of conserving the OUV of the Property and its integrity. This could be achieved in different ways, either by upgrading the regional nature parks to national parks, by ensuring that the management of the nature parks lies entirely with their protected area authorities through a transfer of the federal lands in the nature parks to the regional authorities, or by establishing a specific legal framework for the management of the property, as was done in the case of Lake Baikal.*

The Mission is not confident that the responsible authorities have taken all possible initiatives to manage the Property efficiently, and measures to address the threats from illegal activities and growing tourism appear insufficient. Furthermore, it became clear that an upgrading of nature parks to national parks or other high quality protected areas is no longer being considered by the State Party.

> *5.5. Consider addressing the issue of joint management plans, management frameworks and management standards for all natural World Heritage properties in Russia composed of federal and regional protected areas through a national law for the management of natural World Heritage properties that meets the State Party's obligations to the Convention. This would set the legal framework for federal authorities to oversee the management of protected areas included in World Heritage properties, whether under federal or regional jurisdiction, and set standards for their management and protection that meet the Operational Guidelines and conserve the various sites' OUV.*

Although expressed by the authorities, the Mission cannot confirm a consistent management guided by common principles, defined management standards and clear management objectives. The individual management plans and the absence of overall goals for a harmonized management of the property are obstacles to achieving better management quality. No criteria for performance reviews are defined.

7. Summary of Recommendations

Since the 2007 mission, limited progress was made on some issues (staffing, budget, land survey, etc.), however on other issues the situation has not substantially changed or has degraded further as result of increasing pressures (poaching, tourism). At the same time, some of the 2017 recommendations have not been implemented or measures were taken against the recommendations (weakening of the zoning). Some of the 2007 recommendations still apply, and some threats, such as pressure from tourism are rising. Altogether, the Mission concludes that the responsible authorities need to significantly consolidate their management responses in order to better preserve the OUV and reduce impacts and threats from various sides. Therefore, the Mission proposes the following recommendations:

- ⇒ Rec. 1: Review the protected area system within the property and ensure a holistic integrated management approach is implemented to appropriately protect and manage all components of the property, currently being managed under varying authorities and jurisdictions.
- ⇒ Rec. 2: Develop a management plan for the entire property to guarantee that the six components are fully protected along the same standards, objectives and criteria in line with the World Heritage Convention's *Operational Guidelines*. Individual management plans for each component would be acceptable only if using the same objectives and criteria and providing clear references on the overall objective of conserving the OUV of the property. Additionally, a common vision and goals for further development of the entire property are required to guarantee a harmonization of the management and ensure mutual consideration of development goals. All existing management plans should be revised along these principles and at the same time should address specific situations and threats of the various components.
- ⇒ Rec. 3: As no World Heritage property Management Plan was approved and may not be elaborated in the near future, the Kronotsky Biosphere Reserve Management Plan is the only instrument or guideline for the development of the two federal components. In the Mission's opinion, this management plan does not meet the requirements of the protection of nature and natural processes with respect to World Heritage, particularly in the Biosphere Transition Zone. Therefore, the proposed management objectives, primarily within the transition zone of the Biosphere Reserve, need to be reviewed with the primary objective of protecting the OUV of the property. Further, the State Party is requested to submit to the WHC a list of all activities permitted in the so-called transition zone.
- ⇒ Rec. 4: The mission notes that since the previous mission, the zoning of all components of the property has been altered significantly, diminishing the area of the more strictly protected zones, and this in spite of the fact that the 2007 mission recommended to strengthen the zoning of the nature parks, to bring them in line with the OUV of the property. The mission therefore considers that the current zoning does not meet the requirements of the conservation of the OUV and needs to be strengthened significantly.
- ⇒ Rec. 5: Buffer zones can be an essential tool to support the proper protection of the property. To date, a specific buffer zone is proposed for Kronotsky Zapovednik only. With the need for a better protection of species and with growing pressure on the property caused by tourism, the designation of buffer zones for the remaining five components of the property should be considered and officially proposed for the World Heritage property, following the defined procedures.
- ⇒ Rec. 6: The mission team noted with satisfaction that the decrease of the budget of the Federal protected areas underlined by the previous mission has stopped. Financial support for the Federal protected areas has been raised significantly since then,

whereas the budget for the regional nature parks has also increased but less. However, staffing and financing still differs widely according to the responsible authority (Federal Reserves & regional Nature Parks) although duties and requirements in all six components are comparable and equally demanding. As shortages in staff and funds do not guarantee a sufficient management and supervision of the regional Nature Parks, an alignment of human and financial resources should be secured.

⇒ Rec. 7: Develop, in parallel to management plans, a Tourism Development Master plan based on actual figures and projections, setting clear thresholds of the carrying capacity of the property in its entirety and of its individual components. Such master plan should include, besides the number of tourists/visitors, the number and directions of helicopter flights and other transportation means (four-wheel drive vehicles (ATV)), capacity of tourist infrastructure and the sensitivity of habitats and species. Although developed for the World Heritage property, the Tourism Development Master Plan should consider and search for attractive alternative areas outside the property to better channel tourist flows. In other words, the property should not be considered as a ready-made tourism package for the region and all efforts should be made to consider the wider region.

⇒ Rec. 8: Noting the increasing worldwide interest for Nature Tourism in the Kamchatka Peninsula as well as the variety of actors involved (national, regional, local and foreign actors), the mission strongly recommends that a governance mechanism for Tourism development be established further to the Master Plan, which will also ensure that tourism empowers local communities and tourism revenues primarily benefit local communities.

⇒ Rec. 9: Take immediate measures to counteract uncontrolled tourism, and any forms of tourism negatively impacting the environment, and avoid further damage by off-road transport vehicles, establish efficient control mechanisms for traffic and limit access through suitable measures like checkpoints, entrance fees etc.

⇒ Rec. 10: Define binding rules for helicopter flights including an accurate specification of flight routes and flight times.

⇒ Rec. 11: Reduce disruption of wildlife from tourism by appropriate measures, particularly in areas with a high frequency of tourists, including limitation in numbers, access restrictions and defined roaming areas.

⇒ Rec. 12: Inform the World Heritage Centre, as soon as possible, in conformity with paragraph 172 of the *Operational Guidelines*, of any potential projects which might have an impact on the OUV of the property, such as the “Three Volcano Park” which has been *de facto* presented to the Mission team.

⇒ Rec. 13: On the basis of the documentation received during the mission, the mission team confirms that the “Three Volcano Park” is incompatible with the preservation of the integrity of the property and if allowed to proceed, the project would result in a severe deterioration of the natural beauty and scientific value of the component South Kamchatka Nature Park, to an extent that might warrant the inscription of the property on the List of World Heritage in Danger. If the State Party intends to submit a boundary modification request for the property (as indicated by the Governor), and given the potential impacts on the OUV, the mission notes that such a boundary modification will have to be considered as a significant boundary modification in line with paragraph 165 of the *Operational Guidelines*.

⇒ Rec. 14: An Environmental Impact Assessment for such a project must be conducted prior to any decision, including possible changes of the South Kamchatka Nature Park’s boundaries.

⇒ Rec. 15: Regarding the statements in several management plans, it can be concluded that the authorities must be aware of potential serious impacts of existing mining

primarily in the vicinity of Bystrinsky Nature Park and South Kamchatka Nature Park. These repercussions have to be taken seriously, and as a consequence precautionary measures and serious regulations must be imposed. It is requested that the State Party submits an Environmental Impact Assessment (EIA) and accompanying Environmental Management Plans, with details on the measures taken to prevent impacts on the OUV of the property, to the World Heritage Centre for review prior to a decision on these activities being taken, in line with para 172 of the *Operational Guidelines.* This should also apply to mining or extraction activities in the vicinity of all components, either active or temporarily closed.

⇒ Rec. 16: The State party is requested to affirm its commitment not to allow mining activities inside the property. A boundary change to the property should not be proposed to accommodate mining operations, as already recommended by the 2004 and 2007 missions. Any newly proposed mining activities in the vicinity of the property, for example to develop the Mutnovskoye gold deposit, should be subject to rigorous Environmental Impact Assessment (EIA).

⇒ Rec. 17: The State Party could not provide accurate and up-to-date figures of the volume of salmon poaching in Kamchatka and particularly in the World Heritage property. It is emphatically recommended to step up efforts to enforce measures to prevent salmon poaching and illegal trading of salmon and by-products and to monitor poaching pressure and impacts.

⇒ Rec. 18: Although, the project of a channel connecting Kronotsky Lake with the ocean will not be pursued, an official document on the reassurance of the abandonment of the project should be provided.

⇒ Rec. 19: Because of the important ecological interaction between salmon and brown bear populations and their impact on the OUV of the property, continue to develop baseline ecological information within and near the various sites in the property to better conserve these values throughout Kamchatka.

8. Annexes

Annex I: Terms of Reference

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Annex IV: List of participants

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Annex I
Terms of Reference

Joint World Heritage Centre/IUCN Reactive Monitoring mission
Volcanoes of Kamchatka (Russian Federation)
9-14 August 2019

At its 42nd session, the World Heritage Committee requested the State Party of the Russian Federation to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to the World Heritage property 'Volcanoes of Kamchatka' (**Decision 42 COM 7B.79**, Annex I). The main objective of the Reactive Monitoring mission is to evaluate the status of implementation of the 2007 Reactive Monitoring mission recommendations and to assess the current conservation status of the property.
In particular, the mission should undertake the following:

1. Assess the current situation with any ongoing or planned resource extraction and infrastructure projects, including any hydropower projects and proposals for the construction of a channel to connect lake Kronotskoe with the ocean, that might have an impact on the OUV of the property;
2. In light of the reported increasing poaching pressure, identify any impact and damage caused by hunting and salmon poaching and assess the effectiveness of management responses to address this issues;

Furthermore, the mission should review

3. the current boundary delineation of the property and discuss possible options to formally clarify the boundaries of all components with the previously reported figures using high-resolution maps and shapefiles of the property's components;
4. the current zoning and protection status and management regime of each component of the property and the activities permitted in each zone, as well as potential impacts of both permitted and illegal activities on the Outstanding Universal Value (OUV) of the property;
5. the progress achieved by the State Party in improving the management effectiveness, and in particular in developing and implementing an integrated site management plan for the entire property;
6. any other relevant issues that may negatively impact the OUV of the property, including its conditions of integrity and protection and management.

The State Party should facilitate necessary field visits to key locations, including the active and strict conservation zones and, if feasible, the component "Kluchevskoy" Regional Nature Park, which has not been visited before by an IUCN or WHC mission.
To enable the mission's preparation, the State Party should, as soon as possible and preferably no later than one month prior to the mission, provide the World Heritage Centre and IUCN with

a. Detailed information on the current status of any ongoing and planned resource extraction and infrastructure projects inside and in the vicinity of the property, such as potential mining, gas pipeline, and mineral or geothermal exploration activities, including Environmental Impact Assessments (EIAs), if available;
b. Results of monitoring and surveys of wildlife populations;

c. Detailed information on the current zoning regime of each nature park and on the activities permitted in each zone, including good quality maps;
d. Good quality shape files for the property should be obtained if available;
e. The most recent versions of relevant management plans for the property.

The mission should hold consultations with the relevant authorities of the Russian Federation, including the Ministry of Natural Resources and the relevant regional authorities, and other relevant stakeholders, including non-governmental organizations (NGOs), scientists, and experts.

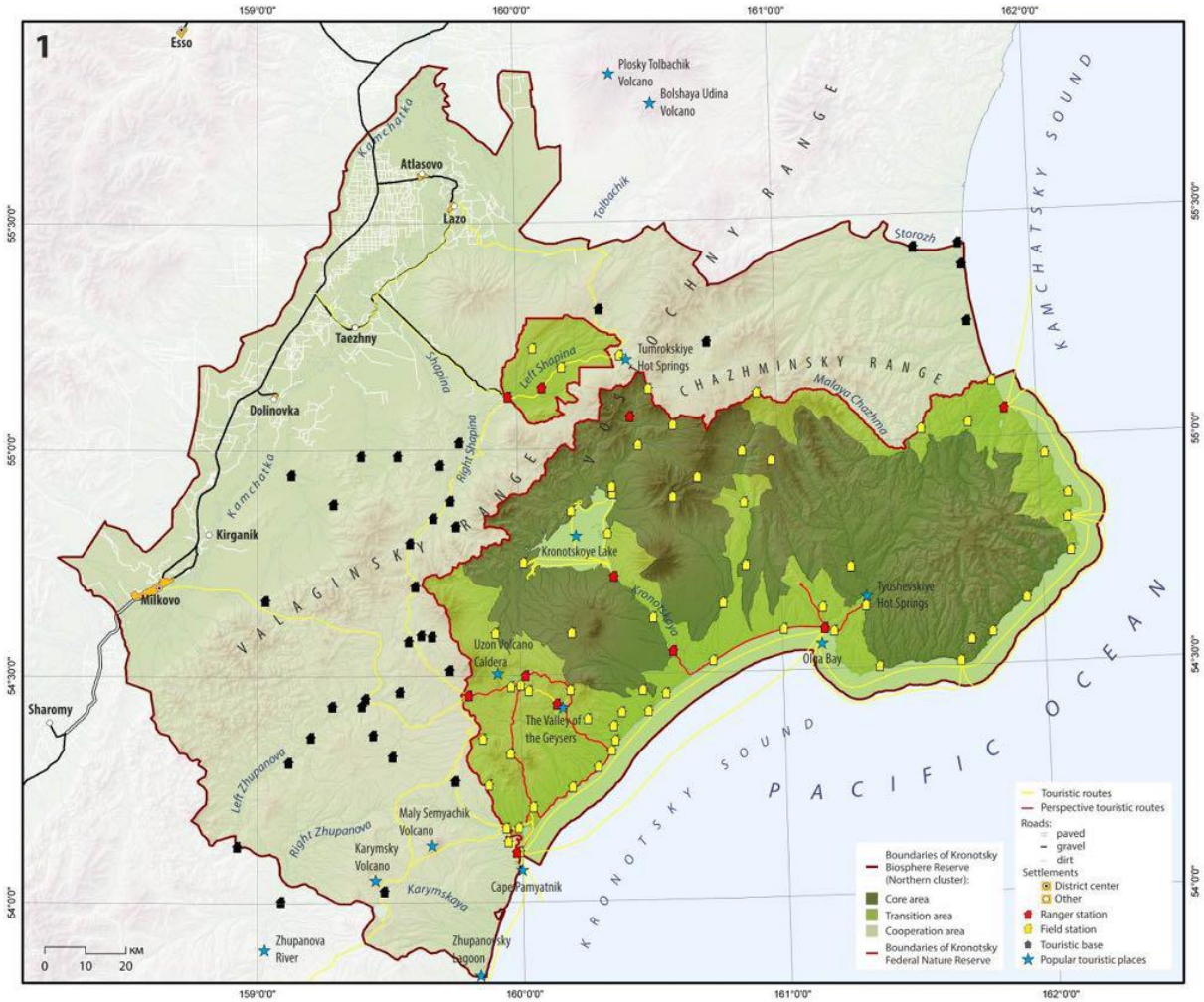
Based on the results of the above-mentioned reviews, assessments and discussions with the State Party representatives, authorities and stakeholders, the mission should prepare a concise report on the findings and recommendations following the site visit. The mission's recommendations to the Government of the Russian Federation and the World Heritage Committee should have the objective of providing guidance to the State Party that should ensure the ongoing conservation of the property's OUV. It should be noted that recommendations should be provided within the mission report and not during the mission implementation.

Annex II: Maps

Map 1: Situation of the components Kronotsky Zapovednik and South Kamchatka Sanctuary

© Kronotsky Biosphere Reserve Management Plan 2017-2021

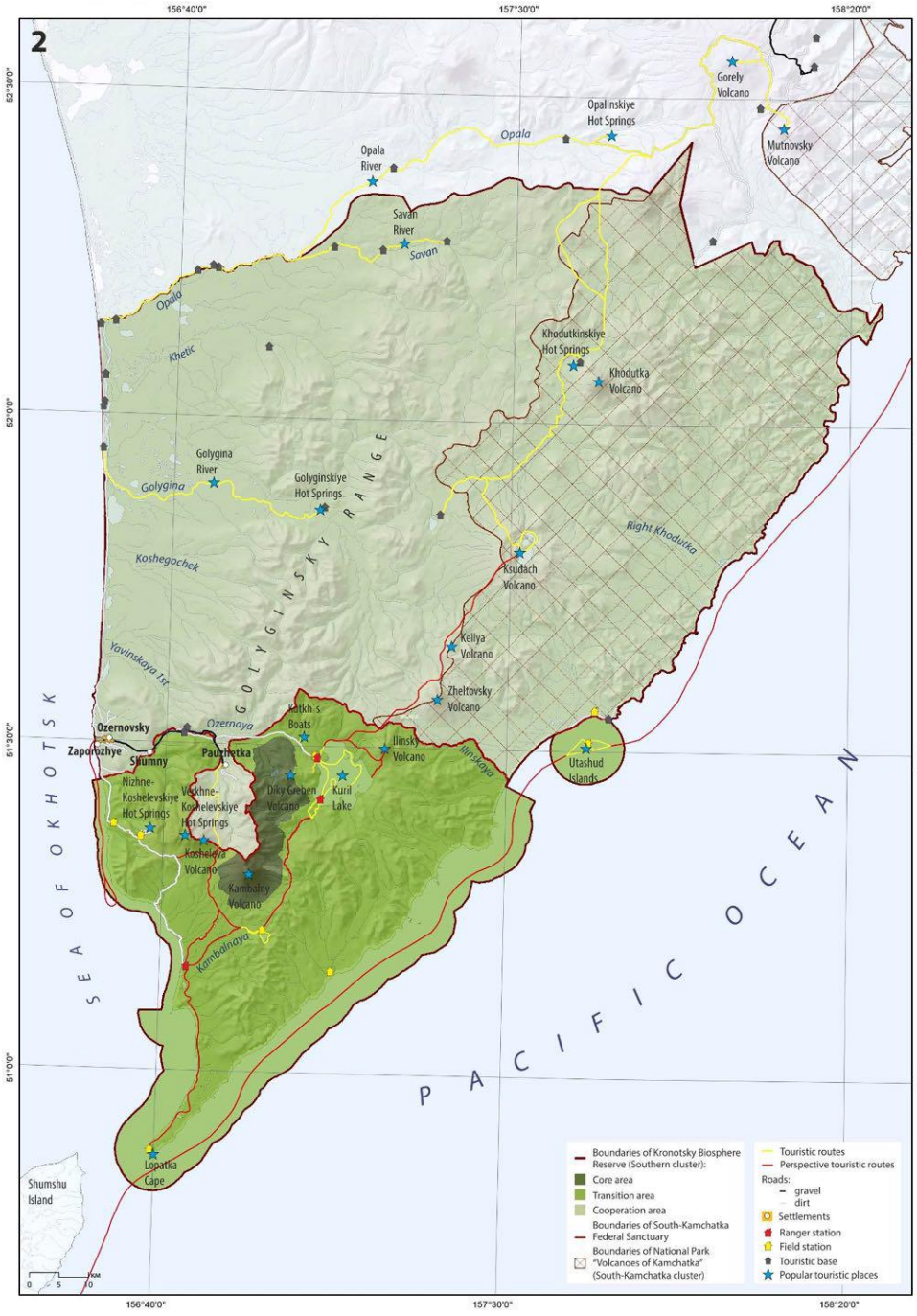
Map 2: World Heritage component Kronotsky Zapovednik, zoning of the biosphere reserve



© Kronotsky Biosphere Reserve Management Plan 2017-2021

Legend:
Dark green: Core zone
Light green: Transition zone
Grey: Cooperation zone (which is neither part of the component nor of the Biosphere reserve)

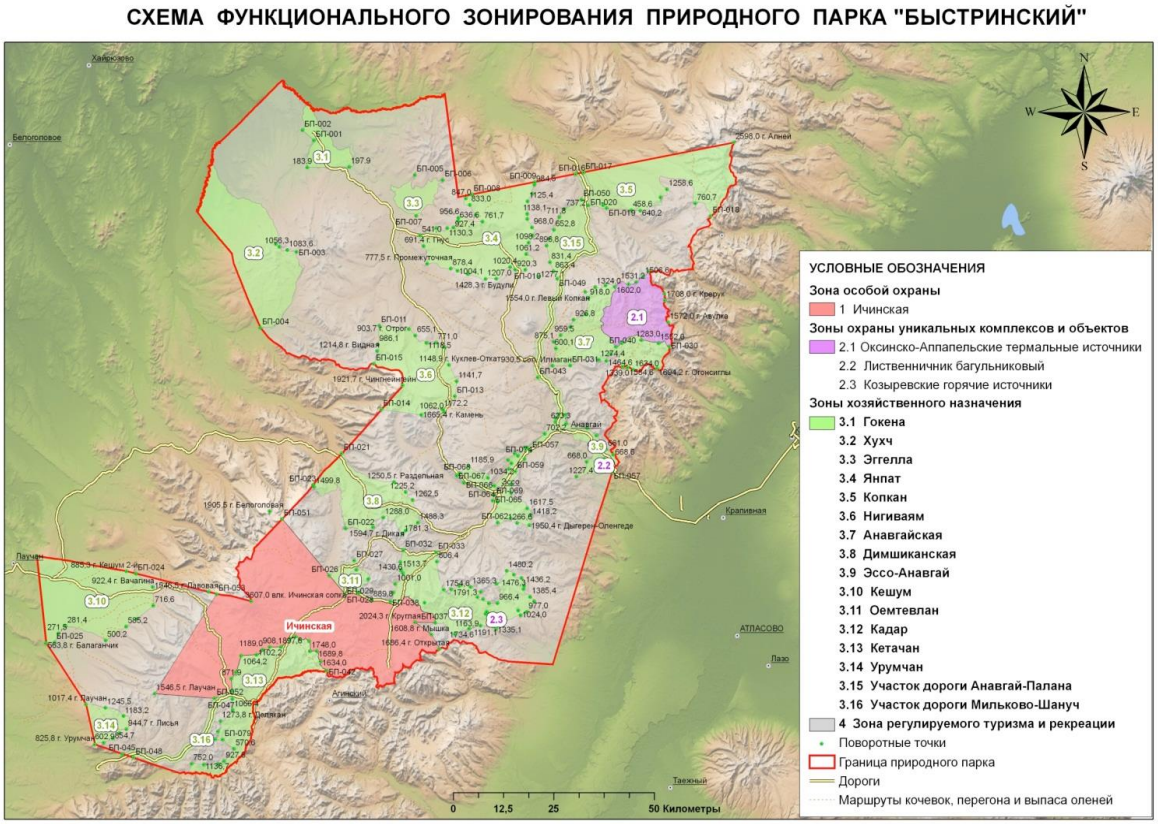
Map 3: World Heritage component South Kamchatka Sanctuary, zonation of the biosphere reserve



© Kronotsky Biosphere Reserve Management Plan 2017-2021

Legend:
Dark green: Core zone
Light green: Transition zone
Grey: Cooperation zone (which is neither part of the component nor of the Biosphere reserve, but part of the component South Kamchatka Nature Park)

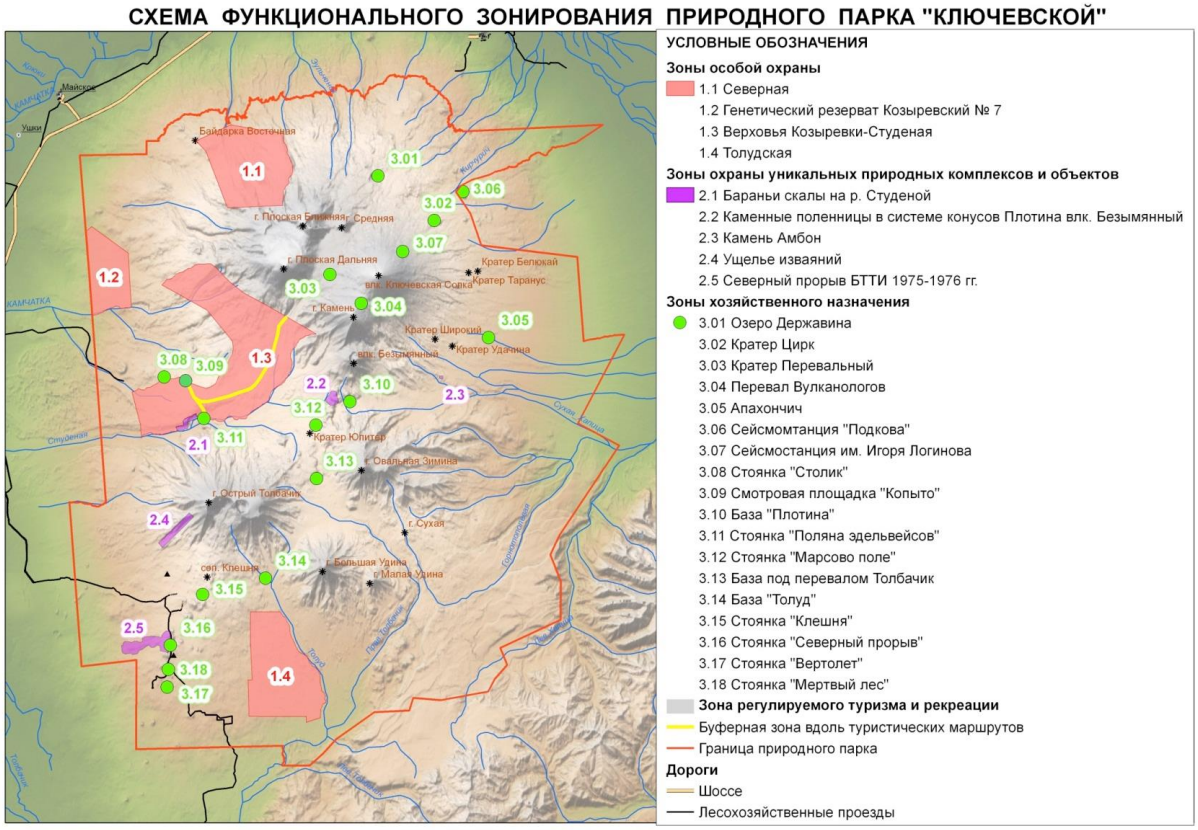
Map 4: Management Plan for Nature Park of Regional Significance “Bystrinsky”: Zoning



© Krai State Budgetary Institution «Nature Park «Volcanoes of Kamchatka»

Legend:
Red: Zones of special protection
Violet: Zones of unique nature complexes and objects protection
Green: Economically intended zones
Grey: Zone of regulated tourism and recreation

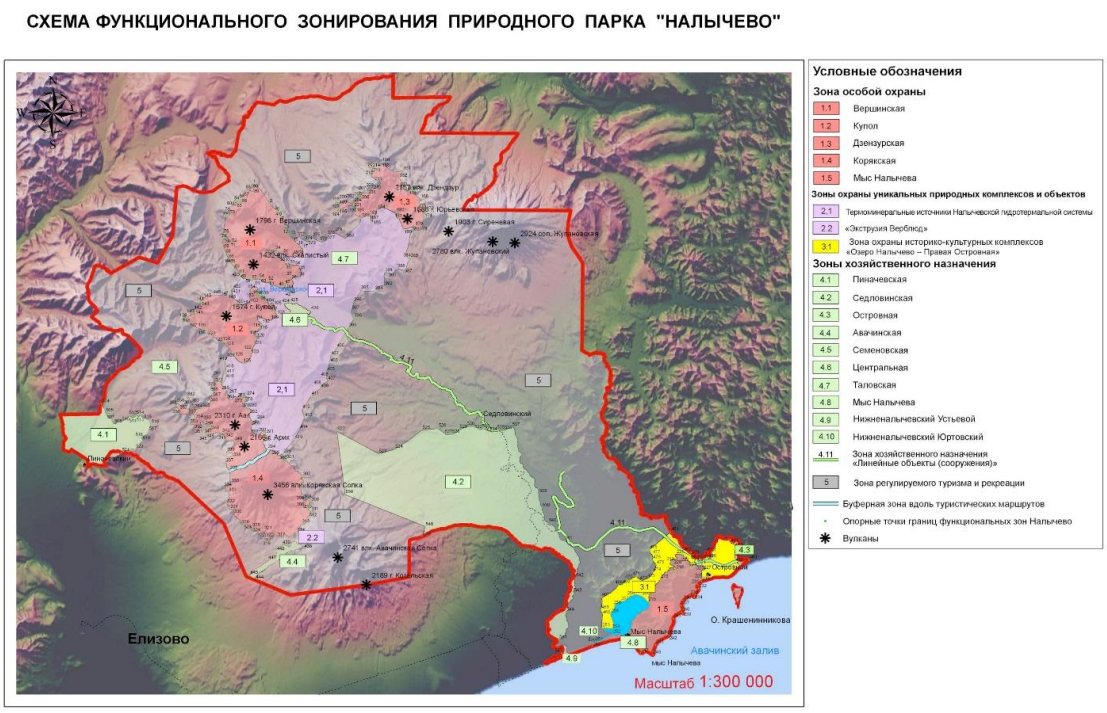
Map 5: Management Plan for Nature Park of Regional Significance “Kluchevskoy”: Zoning



© Krai State Budgetary Institution «Nature Park «Volcanoes of Kamchatka»

Legend:
Red: Zones of special protection
Violet: Zones of unique nature complexes and objects protection
Green: Economically intended zones
Grey: Zone of regulated tourism and recreation

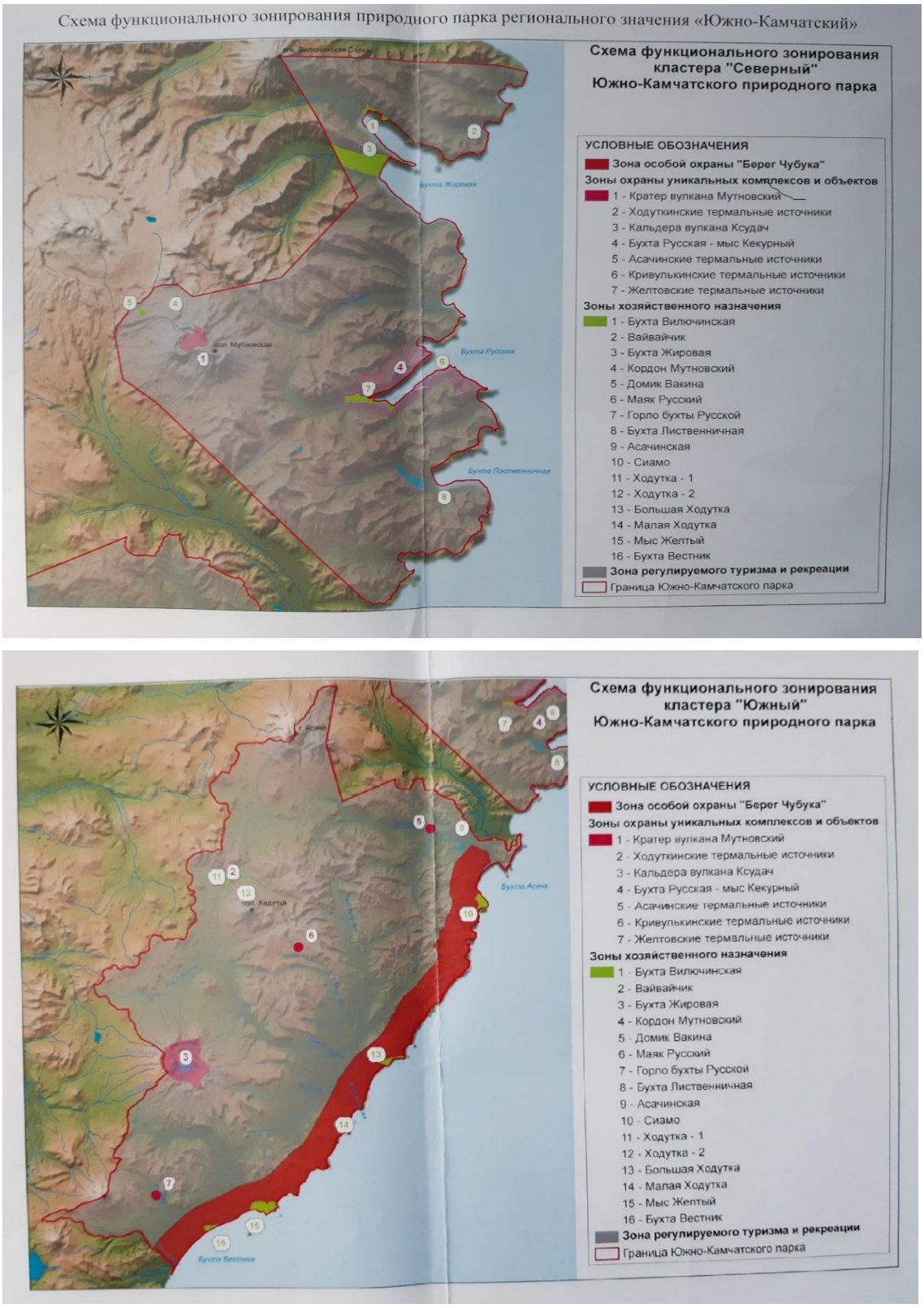
Map 6: Management Plan for Nature Park of Regional Significance “Nalychevo”: Zoning



Legend:

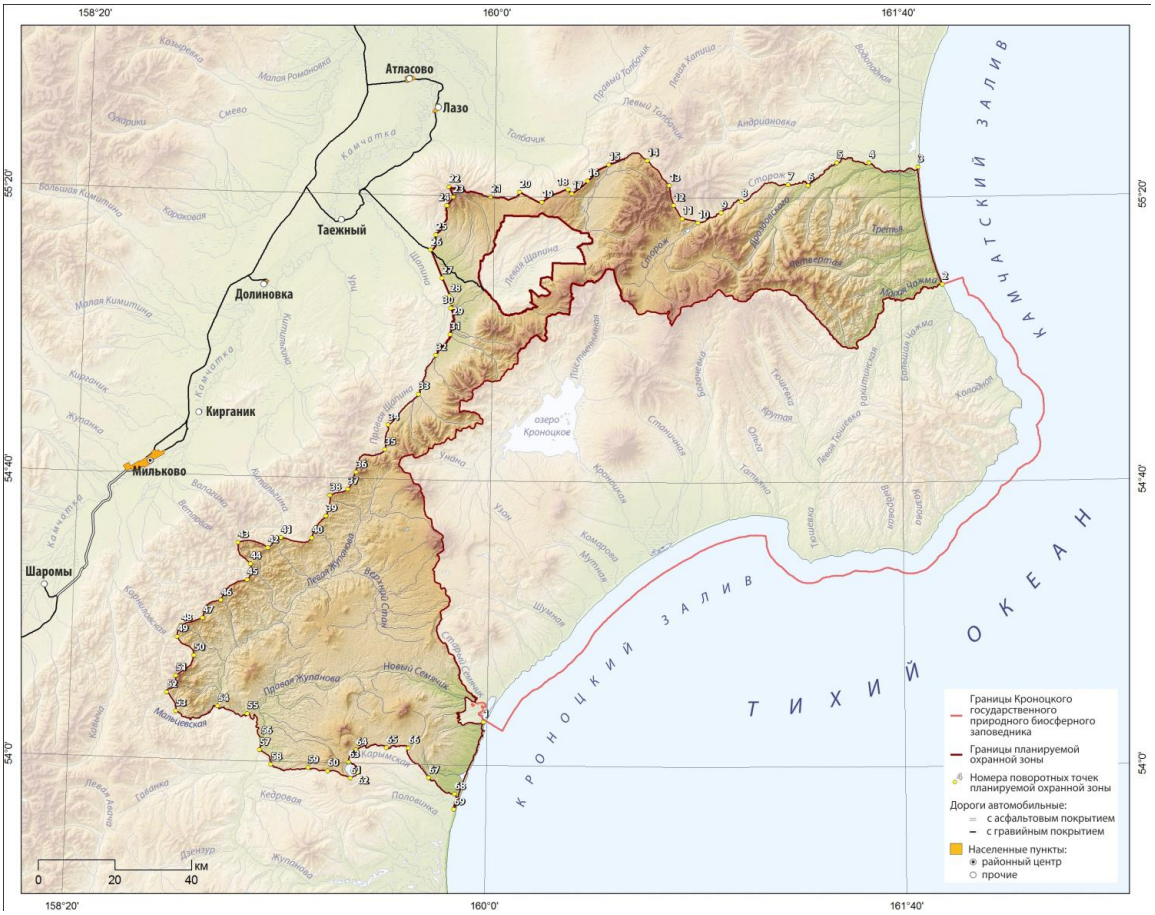
Red: Zones of special protection
Violet: Zones of unique nature complexes and objects protection
Yellow: Protection zones of historical and cultural complexes
Green: Economically intended zones
Grey: Zone of regulated tourism and recreation

Map 7: Management Plan for Nature Park of Regional Significance “South Kamchatka Nature Park”: Zoning



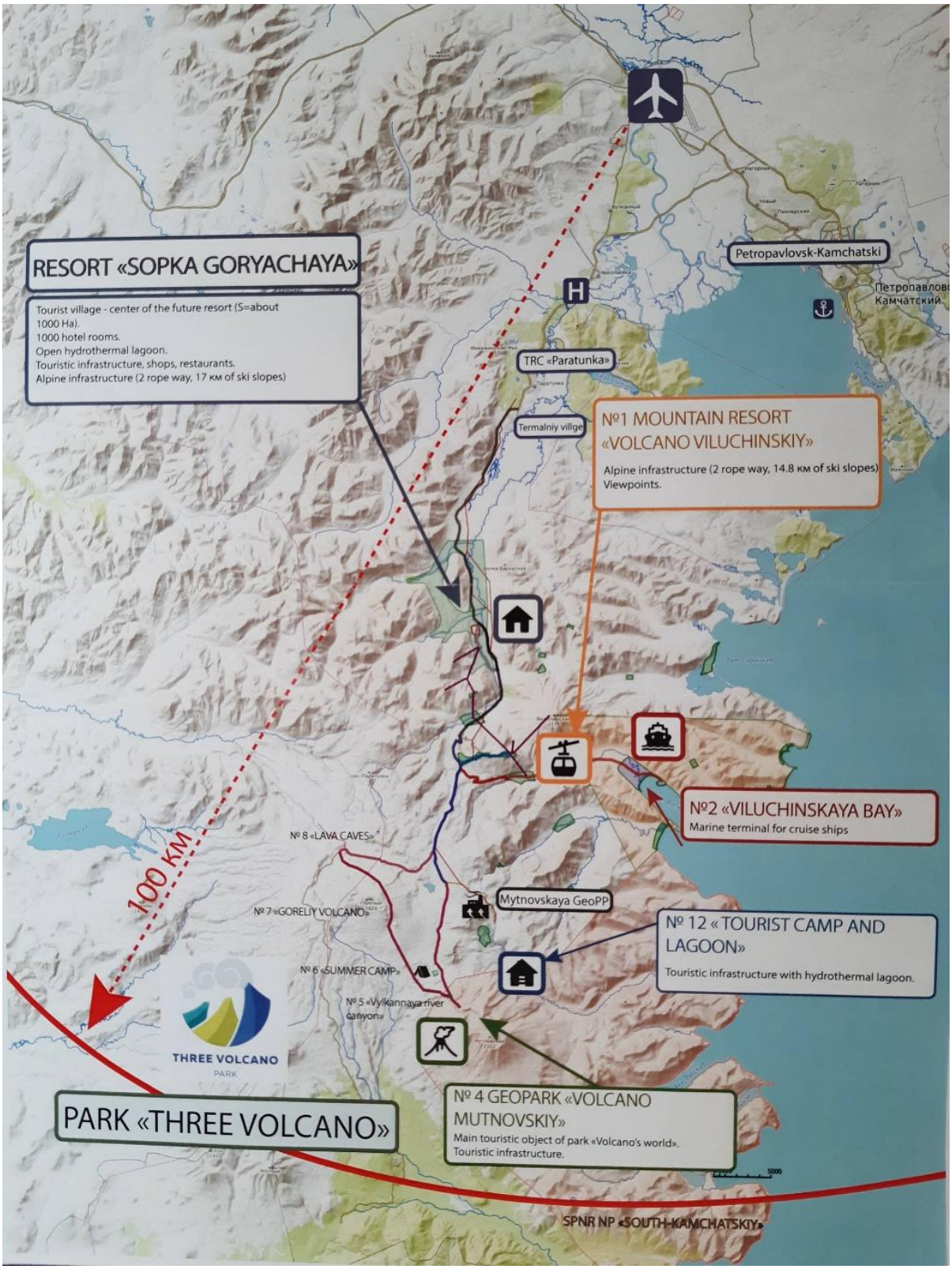
Legend
Red: Zones of special protection (southern part only)
Light red: Zones of unique nature complexes and objects protection
Green: Economically intended zones
Grey: Zone of regulated tourism and recreation

Map 8: Proposed buffer zone of Kronotsky Zapovednik),



© Kronotsky Biosphere Reserve Administration

Map 9: Three Volcano Park Project



© Three Volcano Park

Annex III: Definition of protected areas in the Russian Federation

Definitions of zapovednik, zakaznik and regional nature park according to state / regional legislation

According to the Federal Law "On Specially Protected Natural Areas" of the Russian Federation of March 14, 1995 №33-FL (as amended on July 26, 2019), the official definitions of the identified categories of specially protected areas are:

Zapovednik (in the presented text – Nature Reserve) – strict nature reserve, a specially protected natural area of federal significance, within the boundaries of which the natural environment is preserved in its natural state and economic and other activities are completely prohibited, except as otherwise provided by this Federal Law.

Zakaznik (in the presented text – Sanctuary) – state nature reserves, territories (or water areas), which are of particular importance for conservation or restoration of natural complexes or their components and the maintenance of ecological balance. May be of federal or regional significance.

The announcement of the territory as zakaznik is allowed both with or without withdrawal from users, owners and owners of land plots. They can have a different profile, including:

a) complex (landscape), designed to preserve and restore natural complexes (natural landscapes) with entire ecosystem;

b) biological (botanical and zoological), intended to preserve and restore rare and endangered species of plants and animals, including valuable species in economic, scientific and cultural relations;

c) paleontological, designed to preserve fossil objects;

d) hydrological (swamp, lake, river, marine), designed to preserve and restore valuable water bodies and ecological systems;

e) geological, designed to preserve valuable objects and complexes of inanimate nature.

Nature park – specially protected natural area of regional importance, within the boundaries of which zones of ecological, cultural or recreational purposes are identified, and accordingly, prohibitions and restrictions on economic and other activities are established.

According to the international classification of IUCN the regime of the components of “Volcanoes of Kamchatka WHS is close to the following categories of protected areas:

Kronotsky Reserve belongs to the category Ia – Strict Nature Reserve. Priority functions are scientific research, environmental monitoring and environmental education. In the last decade tourism, considered as one of the form of environmental education, has been developing rapidly in this category of Russian protected areas, so some experts are concerning zapovedniks to be closer by their management functions to category II (National Park). But taking into account that areas of tourist routes and their zones of impacts cover less than 5 % of the area of the reserves and there are no other economic activities allowed, zapovedniks can be still considered as Ia category.

South Kamchatka Federal Sanctuary is the most close to the category IV – Habitat / Species Management Area, a particularly significant for purposes of maintaining biological diversity and conservation of various species of flora and fauna (including migratory species as well as species of great economic importance), which manage natural processes for the effective conservation of the habitats of various plant and animal species and to multiply their numbers; for local communities are allowed controlled economic activity and limited consumption of

natural resources; scientific research, environmental monitoring, work on environmental education and educational tourism are carried out.

Nalychevo, South Kamchatka, Bystrinskiy and Klyuchevskoy regional nature parks are the most close to category II (National Parks), but being the areas of regional significance they have weaker protection regime. Their purpose is to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

Annex IV: List of participants

List of participants of the meeting in Kronotsky Reserve (12.08.2019)

1. Isabelle Anatole-Gabriel, Chief, Europe and North America Unit, UNESCO World Heritage Centre
2. Robert Brunner, IUCN expert
3. Vasily Prijdun, minister of ecology and natural resources of Kamchatka region
4. Petr Shpilenok, director of Kronotsky biosphere reserve
5. Sergey Mokrushenko, director of Volcanoes of Kamchatka Nature Park
6. Tatyana Gulbina, deputy director of Kronotsky biosphere reserve
7. Roman Korchigin, deputy director of Kronotsky biosphere reserve
8. Vladimir Khalmanov, deputy director of Kronotsky biosphere reserve
9. Anna Zavadskaya, senior research officer of Kronotsky biosphere reserve
10. Fedor Kazansky, ornithologist of Kronotsky biosphere reserve
11. Irina Fominyh, deputy director of the department of international cooperation, Ministry of Natural Resources, Russian Federation
12. YuliaChervyakova, chief specialist of the department of international cooperation, Ministry of Natural Resources, Russian Federation
13. Tatyana Kuznetsova, Head of the Department of State Supervision and Regulation in the Field of Waste Management and Biodiversity of Rosprirodnadzor;

List of participants of the meeting with NGO (13.08.19):

1. Roman Korchigin, director of the charitable environmental fund "Zapovednik"
2. Dmitry Maloletkin, executive director of the Association of PAs of Kamchatka
3. Vladimir Galitsyn, head of Salmon Fishery Association of Kamchatka
4. Sergey Vakhrin, head of non-governmental fund "Save Salmon Together"

List of participants of the meeting with travel agencies (13.08.19)

1. Natalya Parastyuk, director of autonomous non-commercial organization "Kamchatka tourist information center"
2. Irina Sedova, the head of Kamchatka Tourist Industry Association

Directors and representatives of travel agencies:
1. Elena Avramenko
2. Denis Bud`kov
3. Yana Pchelova
4. Nikolay Kruglyakov
5. Alexey Chuguev
6. Alexey Matveev

Annex V: Scientific research

In the period of 2010-2018 the following research and monitoring studies were carried out for Kronotsky Federal Nature Biosphere Reserve and South Kamchatka Federal Sanctuary:

1. Distant and stationary observations of the condition of glaciers and firn fields Relevance for the management: collected data contributes into the global climate change monitoring.

Executors: FSI Kronotsky Reserve in collaboration with FSI “Denezhkin kamen” Reserve
Status: ongoing

2. Monitoring of volcanic and seismic activity

Relevance for the management: Forecast of volcanic activity and dangerous natural processes.

Executors: the Institute of Volcanology and Seismology FEB RAS, The Kamchatka branch of the Geophysical Service of the Russian Academy of Sciences
Status: ongoing

3. Observations of the geysers regime

4. Phenology of plants

Relevance for the management: Plants are the most physiognomic component of the ecosystem and indicator of its health or changes. Phenological observations give information about general trends in ecosystems year life cycle.

Executors: FSI Kronotsky Reserve in collaboration with FSI “Denezhkin kamen” Reserve
Status: ongoing (since 1969)

5. Inventory count of terrestrial invertebrate

6. Monitoring of wild Northern reindeer population (Rangifer tarandus phylarchus)

Relevance for the management: data needed for planning conservation activities and understanding the condition of conserved species and ecosystems.

Executor: FSI Kronotsky Reserve, FSI Sayano-Shushenskiy Reserve, the Forestry and Wildlife Protection Agency of Kamchatka
Status: ongoing

7. Study of current evolution processes by the example of Chars (Salmonidae) of Kronotsky Reserve

Relevance for the management: data needed for planning conservation activities and

Executor: FSI understanding the condition of conserved species and ecosystems.Kronotsky Reserve
Status: ongoing

8. The census of anadromous Sockeye salmon in Kurile Lake

Summary: Sockeye salmon is one of the most valuable species of Pacific salmon. About 80-85% of this species living in Asia reproduce in the basins of the Ozernaya and Kamchatka rivers nowadays

Relevance for the management: data needed for management of sustainable fishing and conservation of Pacific salmon

Executor: Federal State Budgetary Institution of Science “Kamchatka Branch of Russian Federal Research Institute of Fisheries and Oceanography” (KamchatNIRO)
Status: ongoing

9. Monitoring of the quantity of sea mammals

Summary: Kronotsky Reserve and South-Kamchatka Sanctuary have a protected marine aquatic area in which 22 species of sea mammals occur the majority of which are included in the red Books and Protected Species Lists of different levels.

Relevance for the management: data needed for planning conservation activities and understanding the condition of conserved species and ecosystems.

Executor: FSI Kronotsky Reserve, Kamchatka Branch of Pacific Institute of Geography FED RAS
Status: ongoing

10. Monitoring of the quantity of main hunted and game animal species

Relevance for the management: data needed for planning conservation activities and understanding the condition of conserved species and ecosystems.

Executor: FSI Kronotsky Reserve
Status: ongoing

10.1. Kamchatka Brown bear (Ursus arctos piscator)

Relevance for the management: data needed for planning conservation activities and understanding the condition of conserved species and ecosystems.

Executor: FSI Kronotsky Reserve, the Forestry and Wildlife Protection Agency of Kamchatka
Status: ongoing

11. Ornithological studies

Executors: FSI Kronotsky Reserve in collaboration with Russian scientific institutions

Status: ongoing

12. Recreational impact on protected nature complexes

Summary: The territories of Kronotsky Reserve and South-Kamchatka Sanctuary are the most important objects not only of environmental significance but also remarkable and significant tourist objects. Annual control over the number of the SPNA visitors is implemented, the dynamics of the visitors number is observed.

Relevance for the management: collected data is used for managing recreational impacts upon the ecosystems of protected areas as well as for tourism management and planning, and its harmonization with conservation purposes.

Executors: FSI Kronotsky Reserve
Status: ongoing

13. Bear tourism in South Kamchatka Sanctuary and the Valley of Geysers (Kronotsky Reserve): visitors and wildlife monitoring project

On the results of the work recommendations were developed the implementation of which will make it possible to decrease considerably the impact of the disturbance factor on the animals and the probability of conflict situation occurrence.

Executors: FSI Kronotsky Reserve in collaboration with Russian scientific institutions
Status: ongoing (since 2017), Supported by the Russian Geographic Society

14. Bears and humans in the Southern Kamchatka – sharing one home

Executors: FSI Kronotsky Reserve in collaboration with Russian scientific institutions and International experts in relevant fields

Status: ongoing (since 2018), Supported by the Fund of President's Grants of the Russian Federation

15. Assessment of values and ecosystem services of Kronotsky Reserve and South-Kamchatka Sanctuary

Relevance for the management: Attempts to assess ecosystem services and natural processes are important steps to improve the competitiveness of nature, and create economic barriers for its over-exploitation.
Status: completed

In the period of 2010-2018 the following research and monitoring studies were carried out for 4 regional nature parks (Nalychevo, Bystrinsky, South Kamchatka and Klyuchevskoy) which are the components of the "Volcanoes of Kamchatka" WHS:

1. Meteorological (weather) monitoring

2. Visitor use monitoring

3. Botanical studies (phenological observations and conditions of red-listed orchid plants)

4. Monitoring of volcanic activity

5. Zoological monitoring of focal species

6. Monitoring of radon emissions into the atmosphere and studying of its effect on biota

7. Monitoring the state of objects of flora and fauna, environment and biodiversity