On the State of Conservation of the UNESCO World Heritage Property
Volcanoes of Kamchatka (Russian Federation, No. 765)

1. The Response of the Russian Federation with regard to Resolution No. 37 COM 7B.21 adopted by the World Heritage Committee

Concerning the state of conservation of the aforesaid Nalychevo, Bystrinskiy, South Kamchatka and Klyuchevskoy Nature Parks included in the World Heritage property Volcanoes of Kamchatka.

The construction of a hydropower plant on the Zhupanovo River which is planned in the long-term does not affect the territory of Kronotskiy Reserve and Nalychevo Nature Park; it is located beyond the passes of the aforementioned territories, being part of the World Heritage property Volcanoes of Kamchatka. At present, there are no specific plans related to the hydropower plant construction.

At present, there is no united plan of managing the World Heritage property Volcanoes of Kamchatka (a joint one with the Kray State Budget Institution Volcanoes of Kamchatka Nature Park and the Federal State Budget Institution Kronotskiy State Nature Biosphere Reserve) and its development is not planned.

Concerning the state of animal species populations

Within the boundaries of the federal SPAs (Kronotskiy Reserve; South Kamchatka Sanctuary), the number of main background animal species is at the natural land capacity level (brown bear — over 850 and 950 individuals, respectively; sable — from 2,200 to 2,300 individuals in the reserve, sea otter — about 500 and 1,400 individuals; insular seal — more than 300 individuals, sea lions — about 800 individuals). Populations of many species are stable and steady. During the last three years, the number of grey whales is increasing in the water area of Kronotskiy Reserve that requires arrangement of the works to ensure protecting the seasonal concentration places, accounting their number and monitoring the group within the protected water area (Kronotskiy Bay and Vestnik Cove).

The wild reindeer population in Kamchatka has been retained only on the territory of Kronotskiy Reserve; at present, the number of deer species does not exceed 750 individuals. The state of these species is critical due to the negative human impact outside of the Reserve's boundaries where winter pastures of hoofed mammals are located. To save these species from extermination, it is required to create a protective zone along the southern boundary of the Reserve where the hoofed mammals' winter habitats are located.

The number of snow sheep species is also facing reduction which is explained by growing concerns and poaching outside of the Reserve near its boundary in the mountains — no more than 350 snow sheep species have remained in the Reserve.

Each year, potential dangers from adjacent sections increase:

In case of any reductions in the total number of animals intended for hunting on the adjacent sites of hunting providers and the ones near the boundaries, hunting can also be conducted on the protected territory which will require more conservation efforts of security officers working in the SPA.

The reserve and sanctuary are only a temporary habitat for species with extensive geographic ranges or those migrating far away from the protected territory (wild reindeer, bear, snow sheep) and so they do not guarantee well-being of species populations. It was proposed to optimize federal SPA boundaries by allocating buffer and protective zones at the places where the animals (reindeer, snow sheep) concentrate during the season.

A negative impact on the protected water area is growing (an illegal marine product extraction, concerns, contamination), which endangers the populations of sea mammals and bird rookeries. It is necessary to enhance protecting littoral waters of the SPA.

Increasing recreational loads on certain sections and sites of the protected territory (Valley of Geysers, Uzon Volcano caldera, surroundings of the cordons and thermal springs) amplifies the negative impact on geothermal communities and habitats of thermophile species (a lot of these species are rare and endemic). It is necessary to introduce limitations (quotas) related to the number of tourists visiting these sections in groups and make arrangements for monitoring the recreational loads. The most vulnerable sections need to be equipped with laid trails and viewing platforms which will help reduce the negative impact on the natural complexes.

The rising number of unauthorized visits by pedestrian tourist groups requires more active activities in the field of environmental education, as well as equipping the SPA boundaries with plates and warning signs. At the same time, it is necessary to enhance control measures within the SPAs by the security service.

Illegal exploitation of natural resourses registered by state inspectors within the federal SPAs includes unauthorized hunting or catching protected fur-bearing animal species, fishing in the rivers, entry of sea vessels and extracting sea products from the protected waters, visiting the SPAs by individual tourists.

Information about nature parks' boundaries and areas which have been defined more exactly according to the performed inventory

The boundaries of the aforesaid Kamchatka Kray nature parks, being part of the World Heritage property Volcanoes of Kamchatka, have remained unchanged since 1996. In 2009–2010, an inventory of the natural parks' boundaries and areas was performed. Approval of its results in due manner by a corresponding regional regulatory legal act was delayed until the Law of Kamchatka Kray "On Specially Protected Natural Areas in Kamchatka Kray was adopted (the Law was adopted on December 29, 2014, No. 564).

Bystrinskiy, South Kamchatka and Nalychevo Nature Parks were established in August, 1995, according to respective Resolutions Nos. 192, 193 and 194 issued by the Head of Kamchatka Region Government on August 18, 1995. In 1996, the areas of Bystrinskiy and South Kamchatka Nature Parks were reduced to 1,325.0 and 489.0 thous. ha, respectively (Resolutions Nos. 186 and 187 issued by the Head of Kamchatka Region Government on July 5, 1996).

As a compensation for the losses in the World Heritage property's area, one more site was included in the Volcanoes of Kamchatka nomination in 2001, i.e. Klyuchevskoy Nature Park that was established in December, 1999, according to Resolution No. 284 issued by the Governor of Kamchatka Region on December 14, 1999. At present, the total area of 4 nature parks amounts to 2,475.036 thous. ha and the total area of the World Heritage property Volcanoes of Kamchatka, which includes 6 SPAs, amounts to 3,707.2 thous. ha.

The inventory of nature parks' boundaries and areas performed in 2009 was explained by the necessity to eliminate discrepancies and uncertainties as to the size of the areas mentioned in regional regulatory legal acts.

When amending Resolutions Nos. 192, 193 and 194 issued by the Head of Kamchatka Region Government on August 18, 1995, new descriptions and layouts of the parks' boundaries were approved, the boundaries of Bystrinsky and South Kamchatka Nature Parks were changed, and regulations for each of three Nature Parks were adopted as amended. At the same time, the sizes of natural parks' areas were not specified in Resolutions Nos. 186, 187 and 188 issued by the Head of Kamchatka Region Government on July 05, 1996.

The fact that no data on real area sizes for each of Kamchatka Nature Parks was available in the resolutions adopted in 1996 caused a problem of discrepancies as to the areas of nature parks included in the World Heritage property Volcanoes of Kamchatka. For example, according to regional regulatory documents, the nature parks' total area is 2,475.1 thous. ha, but according to UNESCO, nature parks' area amounts to 2,900.9 thous. ha.

Moreover, when Nalychevo, Bystrinskiy and South Kamchatka Nature Parks were created in 1995, their areas were defined approximately because no accurate data related to the land management was available and there were no computer technologies to calculate the areas of the

land plots. In the next years, the area of the aforementioned nature parks was accounted only on the basis of Technical Inspection Acts for the Forest Resources Sections located within the boundaries of the nature parks.

In conformity to the modern cartographic requirements and UNESCO recommendations, the inventory with regard to boundaries and areas of natural parks in Kamchatka Kray was performed in 2009, which resulted in preparation of new descriptions of the parks' boundaries in geographic coordinates and calculation of their areas using computer technologies. The work was performed by Kamchatka Kray Branch of the Federal State Institution "The Territorial Fund of Information about the Far Eastern Federal District". During this process, the nature parks' boundaries were drawn on a digital topographic map of Kamchatka Kray on a scale of 1:100,000 according to the park boundary descriptions and layouts approved Resolutions Nos. 186, 187 and 188 issued by the Head of Kamchatka Region Government on July 05, 1996, and Resulution No. 284 as of December 14, 1999.

Nature Park	Park's area (specified in the Resolution as of 1995/ specified in the Resolution as of 1996), thous. ha	Area as to the Technical Inspection Act for the Forest Resources Sections, thous. ha	Calculated area (using computer technologies), ha	Discrepancy (+ area increase; — area decrease), ha
Nalychevo	265.0 / not specified	287.155	286,025	- 1,130
Bystrinskiy	1,400.0 / not specified	1,325.0	1,368,592	+ 43,592
Klyuchevskoy	375.981	375.981	371,022	- 4,959
South Kamchatka - northern section - southern section	860.0 / not specified	488.676	500,511, including: 91,831 — northern section 408,680 — southern section	+ 11,834
Total: The total area of Volcanoes of Kamchatka Nature Park	2,900.981	2,476.812	2,526,150	+ 49,338

Insignificant discrepancies between the currently recognized and calculated total area values for the lands of the nature parks (the calculated area exceeds the currently recognized one by 2 %, or by 49,338 ha) can be explained by the use of more precise modern computer technologies for calculating the sizes of land plots.

Given calculated data on Volcanoes of Kamchatka Nature Park's area will not result in decreasing the area of Volcanoes of Kamchatka World Heritage property (3,707.2 thous. ha); on the contrary, the Nature Parks' area will increase by 49.338 thous. ha.

According to the descriptions related to the boundaries of Volcanoes of Kamchatka Nature Park's cluster sectors (Appendix 5), more accurate total nature parks' total area obtained as a result of the inventory amounts to 2,526,150 ha (the existing area is 2,475,036 ha).

Detailed information about the nature parks' boundaries, areas and corresponding cartographic materials are given in **the Appendix to this Report**. These Appendices contain a cartographic layout of the boundaries, description of cluster sections boundaries within a

prospective united Volcanoes of Kamchatka Nature Park, and a description of cluster sections boundaries in the geographical coordinates of the turning points (the Appendices are sent as separate files).

Based on the performed inventory of nature parks' boundaries and areas, a Draft Resolution of Kamchatka Kray Government "On Establishing Volcanoes of Kamchatka Nature Park based on Nalychevo, Bystrinskiy, Klyuchevskoy and South Kamchatka Nature Parks" was developed in 2010. The territories of existing nature parks with their respective names were included as cluster sections in the created united Volcanoes of Kamchatka Nature Park.

Approval of the Draft Resolution was delayed until the adoption of the corresponding regional law, namely: the Law of Kamchatka Kray "On Specially Protected Natural Areas in Kamchatka Kray" that was adopted on December 29, 2014, No. 564.

This year, the activities related to preparation and approval of the Draft Resolution of Kamchatka Kray Government "On Establishing Volcanoes of Kamchatka Nature Park Based on Nalychevo, Bystrinskiy, Klyuchevskoy and South Kamchatka Nature Parks will be continued.

2. Information about other current issues related to the World Heritage property conservation

The unified nomination Volcanoes of Kamchatka inscribed in UNESCO World Heritage List includes 6 specially protected natural areas of Kamchatka Peninsula, such as: Kronotsky Reserve, South Kamchatka Sanctuary of federal significance and 4 Nature Parks. The specially protected natural areas (hereinafter referred to as SPAs) of regional significance are represented in the nomination by Nalychevo, South Kamchatka, Bystrinskiy and Klyuchevskoy Nature Parks.

Till 2010, each of the aforesaid natural parks was an independent state institution. On December 31, 2009, the Kray State Institutions Nalychevo Nature Park, South Kamchatka Nature Park, Bystrinskiy Nature Park and Klyuchevskoy Nature Park were reorganized by merging them into the Kray State Institution Volcanoes of Kamchatka Nature Park according to Resolution No. 191 "On Reorganizing Certain Kray State Institutions" adopted by the Governor of Kamchatka Krai on August 14, 2009 and with Order No. 78-P "On Reorganizing Kray State Institutions" adopted by Kamchatka Kray Natural Resources Ministry on August 17, 2009.

At present, the Kray State Budget Institution (KSBI) Volcanoes of Kamchatka Nature Park manages the mentioned nature parks and ensures conservation of nature complexes and sites located within their boundaries. In future, it is planned to form a unified Nature Park Volcanoes of Kamchatka, which will include the territories of the existing Nalychevo, Bystrinskiy, Klyuchevskoy and South Kamchatka Nature Parks as its cluster sections.

In 2010, works related to inventory and more accurate definition of the boundaries of the said nature parks were performed. Their total area calculated using computer technologies amounts to 2,526,150 ha, which exceeds the presently recognized area by 49,338 ha. Detailed information about the area sizes and boundaries of the nature parks as cluster sections, with the additional cartographic layout, is presented in separate files (appendices).

To organize and develop regulated tourism and leisure activities on the territory of KSBI Volcanoes of Kamchatka Nature Park, a network of passportized routes has been elaborated. The routes are equipped with an infrastructure. This allowed optimizing recreational loads within the territory and reducing human impact on unique natural complexes.

In 2014, 24 tourist and excursion routes functioned on the territories included in KSBI Volcanoes of Kamchatka Nature Park: Nalychevo Nature Park, Bystrinskiy Nature Park, Klyuchevskoy Nature Park and South Kamchatka Nature Park and there were also 4 operating visit centers — at offices in the town of Yelizovo and Esso settlement, on Avachinskiy pass and in V. V. Semenov Environmental Education in the central part of Nalychevo Nature Park.

Within the boundaries of regional SPAs (Nalychevo, South Kamchatka, Bystrinsky and Klyuchevskoy Nature Parks), there are no public roads; there is a settlement named Esso within

the boundaries of Bystrinsky Nature Park; main territory of nture parks complies with sanitary safety requirements; natural complexes of SPAs are practically in their natural state. Therefore, conservation of natural complexes in these territories is of no concern.

The excursion and recreational activities are held within local sections. At present, recreational loads do not exceed the maximum permissible values and depend greatly on weather conditions during the tourist season. The monitoring has not detected any negative irreversible changes of the natural landscapes and their components in the recreational activities zone.

The habitats of rare and endangered plants are in their natural state and under no anthropogenic load.

The biota species diversity in SPAs is stable. The numbers of the main background animal species are at the level of the natural background parameters and of no significant concern. (The appendix to the monitoring report is presented in a separate file.)

By now, within the boundaries of regional SPAs (Nalychevo, South Kamchatka, Bystrinskiy and Klyuchevskoy Nature Parks), the numbers of the main background animal species (brown bear, snow sheep, black-capped marmot), along with the species diversity of the Pacific salmon, have been successfully conserved at the natural land capacity level. The populations of many species are stable and steady, despite their economic use (hunting and industrial fishing).

Due to measures taken according to the program of restoring and conserving the coastal group of the snow sheep at Nalychevo Cape (Nalychevo Nature Park), the natural increase of the group's size is observed on an annual basis, which is explained due to the reduction in human impact.

Potential dangers from the adjacent sections are as follows:

Large agglomerations in the vicinity of Nalychevo Park territory, good transport access to the Park's territory in autumn, increase in the numbers of cross-country vehicles owned by local people that may have adverse impacts on the natural complexes within the SPAs.

Increasing recreational loads on certain sections and sites within the SPAs intensify the negative impact on natural complexes and sites. An organized monitoring of recreational loads, equipping the most vulnerable sections with nature-protecting infrastructure, enhancing legal regimes for the protection and use of SPAs can reduce negative impacts on these natural complexes.

The main types of violations revealed on the territories of regional SPAs include illegal extraction of water biological resources (valuable Pacific salmon species), hunting resources, also violations related to forests (illegal wood cutting, failure to comply with fire safety rules in forests) and the ones related to breaching legal regimes existing for water protective zones of water entities.

In 2013–2014, no forest and tundra fires were registered within the Park's boundaries.

An illegal extraction of salmon fish species is of particular concern. In the last decade, salmon poaching has become wide-scale on the whole territory of the Kamchatka Region. Water and biological resources of rivers and other waterbodies of the southern part of the peninsula experience poaching pressure the most. The work of the operations team and regularly patrolling these sectors are intended for a timely detection, suppression and prevention of poaching. During wide-scale spawning of salmon fish species (from July to October), main spawning sections and territories near the boundaries are regularly raided and patrolled.

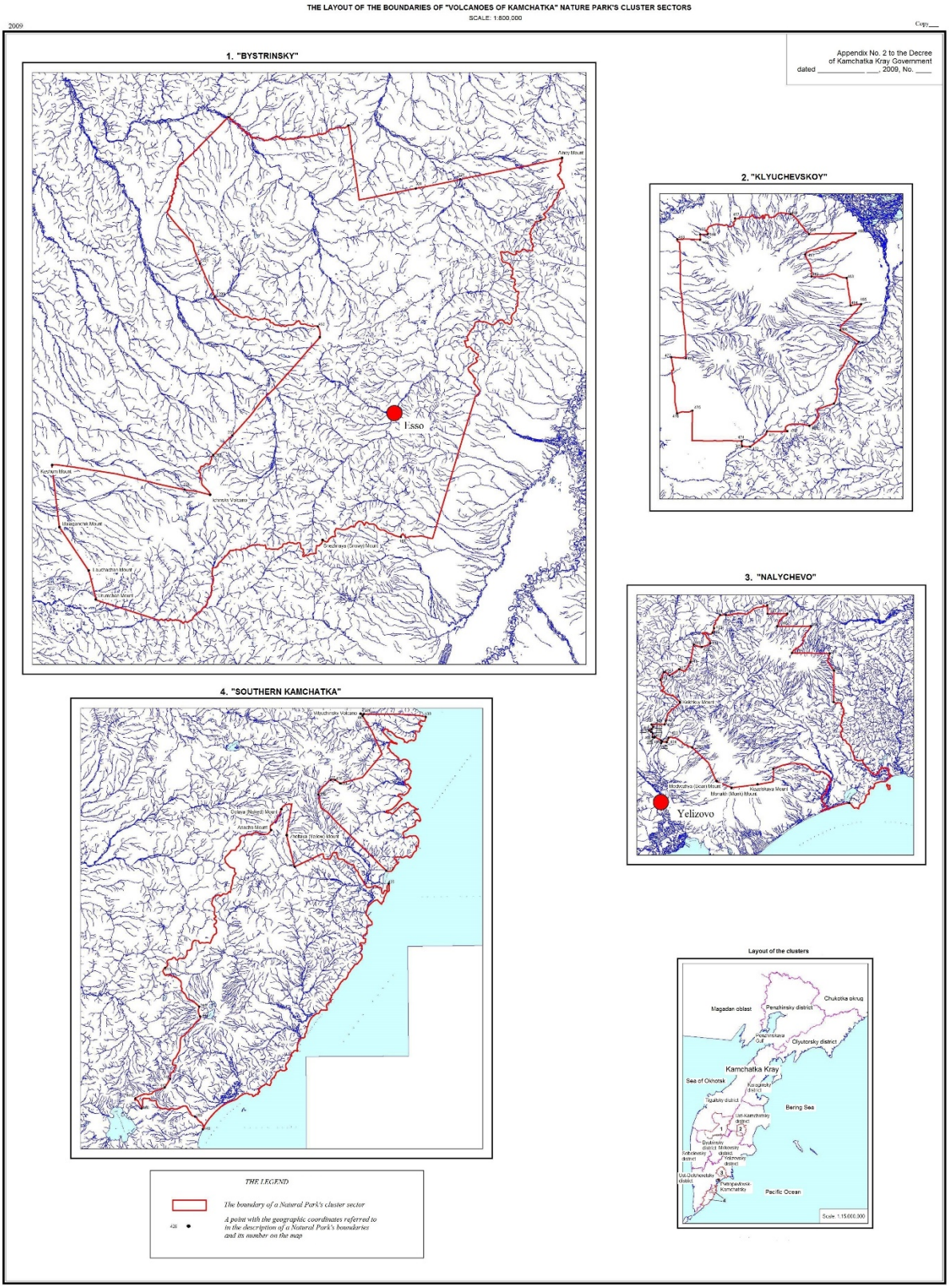
Also, the attention must be paid to an illegal extraction of animals (hunting resources) by people within the boundaries of regional SPAs (Nalychevo, South Kamchatka, Bystrinskiy and Klyuchevskoy Nature Parks). To prevent poaching, Protection Service inspectors regularly patrol the hunting lands located within the boundaries of the nature parks. The strategy of protecting animals within the boundaries of regional SPAs is based on long-term observations and it is associated with the corresponding key places and seasons.

Within the framework of environment protection and operation activities, the Directorate of the KSBI Volcanoes of Kamchatka Nature Park cooperates with Kamchatka Kray Division of

the Federal Service for Supervision of Natural Resources, Internal Affairs bodies, North-Eastern Territorial Office of the Federal Agency for Fishery, Agency for Forestry and Animal World Protection of Kamchatka Kray, Kray State Public Institution "The Service for Fauna and SPA Protection of Kamchatka Kray" and State Environmental Supervision Inspection of Kamchatka Kray.

3. **Significant changes within the World Heritage property** are not expected.

APPENDICES TO THE INFORMATION ABOUT THE VOLCANOES OF KAMCHATKA PROPERTY



Description of the Boundaries of Volcanoes of Kamchatka Nature Park's Cluster Sections

Volcanoes of Kamchatka Nature Park includes the cluster sections of such nature parks as Bystrinskiy, Klyuchevskoy, Nalychevo and South Kamchatka (northern and southern clusters).

1. Description of Bystrinskiy Cluster Boundaries

The cluster's northern boundary goes along Bystrinsky district administrative border: from point 451 with the geographic coordinates as follows: 56°49′28″ north latitude and 157°48′11″ east longitude (on the Tikhaya River, where the Maly Teklovayam River flows into it) in the south-eastern direction upstream in the middle of the Tikhaya River, to the place where the Bolshoy Teklovayam River flows into it, then upstream in the middle of the Bolshoy Teklovayam River to the place where a nameless left tributary flows into it at point 222 with the geographic coordinates as follows: 56°47′59″ north latitude and 158°27′50″ east longitude (water line mark 297). Then, the boundary line goes 25.5 km straightly southward to the hight marked 1052 (Mound Eggella's summit), then 70 km straightly eastward to the height marked 2598 (Mount Alney).

The cluster's eastern boundary goes from the summit marked 2598 with the following geographic coordinates: 56°38′01″ north latitude and 159°04′44″ east longitude (Mount Alney), southward along the district administrative border via the summits marked: 2069, 2338 and 2527 (Mount Chashakondzha), to the west (0.2 km) of the summit marked 1320, and then through the watershed between the Pinapil River and the Khrebtovy Brook (a left tributary of the Bolshoy Tiguil River) via the summits marked: 1346, 1437 and 1293 to point 295 with the following geographic coordinates: 56°30′21″ north latitude and 159°30′59″ east longitude. Then, the boundary goes along the Sredinny Ridge through the watershed of the sources of the Levy Stokavken and Maly Tiguil rivers (left tributaries of the Bolshoy Tiguil River) and right tributaries of the Kryuki River, and then in the south-western direction, to the west of the summit marked 1432, up to the height marked 1346. Further, it goes southward via the height marked 1198 and to the west (0.2 km) of the height marked 1379; then the boundary turns westward and goes through the watershed of the Maly Tiguil and Kreruk Rivers via the summits marked 1404 and 1491, and then through the watershed between the Vynvypil and Kreruk rivers' sources. Then, it goes round the River Kreruk's sources southward via the summits marked: 1407, 1668, 1708, 1505, 1572, 1540, 1617, 1596, 1763, 1650, then through the watershed of the Brook Anyutin Klyuch's and the River Sekhlun's sources to the summit marked 1694, then westward through the watershed of the Levaya Kovavlya River, Leningradsky Brook, Pravaya Kovavlya River, Ilyinka River and Aglikich River, via the summits marked: 1634, 1585 and 1339. Then, the boundary goes round the Pravaya Kovavlya River's sources in the south-western direction through the watershed of the rivers Pravaya Kovavlya, Ilarman and Levy Ilarman past the Verkhneye Lake (0.2 km to the east of the lake), Pravaya Kovavlya River's sources, then southward via the summit marked 1297, then to the south-east through the watershed of the brooks Nypkin and Chetlovari, via the summits marked 1420 and 1233, through the watershed of the Brook Kabalanchik and the River Kovavlya to the summit marked 687, then to the south-east through the watershed of the rivers Bystraya and Kovavlya via the summit marked 689 to the Kovavlya River's estuary (the place where it flows into the Bystraya River). Then, in the south-southwestern direction straightly crossing the Gorny Brook, via the summits marked 732 and 1112, crossing the rivers: Krutenkaya (to the west of water line mark 562), Levaya Topolovaya, Pervaya Topolovaya, Vtoraya Topolovaya, Tyomny Klyuch, Sukhoi, Malaya Romanovka, Bolshaya Romanovka, Kozyrevka up to the height marked 705.

The cluster's southern boundary goes from the height marked 705 with the following geographic coordinates: 55°32′44″ north latitude and 158°54′31″ east longitude, westward crossing the upper reaches of the Smevo River's sources (0.44 km to the south of the height marked 711) via the height marked 1098, crossing the spur of height 1167 and the Levoye Smevo River's sources in the north-western direction up to height 1109 (0.36 km to the south). Further, the boundary goes to the south-east through the watershed to point 167 with the geographic coordinates: 55°33′04″ north latitude and 158°44′20″ east longitude (the height marked 1188); then through the watershed between the rivers Kozyrevka and Levyye Sukhariki in the north-western direction, via the heights marked 1627, 1526, 1686 and 2016, then in the south-eastern direction via the heights marked 1890, 1805, 1951, 1735, further southward to height mark 1668; then westward between the Bystraya and Sukhariki rivers' sources via the summits marked 1269 until the summit marked 1793. Further — northward via the height marked 1730 to the height marked 1837, then westward through the watershed of the rivers Bystraya and Kopylye via the summits marked 1830, 1617,

1689 to the source of the Second Ketachan River, then downstream the Second Ketachan River until it merges with the Ketachan River (water line mark 565), then downstream the Ketachan River until it merges with the Kopylye River, then downstream the Icha River to the estuary of a left tributary — the Mezhevoy Brook (water line mark 359). Further, the boundary goes to the north-west straightly crossing the outfall of the Samki River, Granitny Brook, Alistar River, past the Sokolinoye Lake up to the summit marked 826.

The cluster's western boundary goes from the summit marked 826 straightly in the north-northwestern direction to the summit marked 1018, then in the north-western direction straightly to the summit marked 537, then northward straightly up to the summit marked 665. Further — along the district administrative border eastward straightly to the summit marked 886, then to the east-southeast straightly via the height marked 1338 to point 228 with the following geographic coordinates: 55°41′38″ north latitude and 157°34′49″ east longitude, then in the same direction straightly via the summit marked 1385 and 1723 up to the summit marked 3607. Further — in the north-western direction through the watershed of the rivers Pravaya Rossoshina, Nyulkandya and Galdavit over the summit marked 1728 and northward (0.8 km to the east of the Prikrytoye Lake) to the summit marked 1791, then through the watershed of the rivers Moroshka and Galdavit via the summit marked 1811 eastward to the summit marked 1574 (geographic coordinates: 55°46′15″ north latitude and 157°42′49′ east longitude). Further, the cluster's boundary goes northward crossing the sources of the First Belogolovaya River to point 387 with the following geographic coordinates: 55°47′57″ north latitude and 157°43′55″ east longitude, then in the north-eastern direction straightly crossing the sources of the Bely Brook, via point 225 with the following geographic coordinates: 55°51′35″ north latitude and 157°50′04″ east longitude, the heights marked 1729 and 1264, crossing: the rivers Bystraya (Khairyuzovka), Dimshikan, the upper reaches of the right tributaries of the rivers Bystraya — Avotya, Orakach, up to the summit marked 1922 (Ichinsky Volcano).

Further, 3.9 km northward to point 452 with the following geographic coordinates: 56°11′25″ north latitude and 158°17′43″ east longitude; then the boundary goes westward through the watershed of the rivers Yanga-Yagay and Enmykenvayam (Yemekenvayam), then through the watershed of the rivers Chabo and Enmykenvayam, via the summits marked: 820, 708, 878, 1103, 978, up to the summit marked 856. Further, the boundary goes in the north-eastern direction through the watershed of the Enmykenvayam River and Tayny Brook, then crossing the Tayny Brook to point 299 with the following geographic coordinates: 56°16′44″ north latitude and 157°44′06″ east longitude (1.5 km to the north-east of the place where the Enmykenvayam River flows into the Chabo River, at the place where a nameless right tributary flows into the Chabo River). Further, it goes straightly in the north-western direction via point 221 with the following geographic coordinates: 56°22′45″ north latitude and 157°39′06″ east longitude to the summit marked 865, then straightly in the north-northwestern direction to the summit marked 599, then straightly in the north-western direction to the place where the Brook Shumny flows into the Chananka River (water line mark 125) and then downstream in the middle of the Chananka River past the place where the Topolovaya River flows into the Chananka River (water line mark 86), the place where the Second Butylka Brook flows into the Chananka River (water line mark 73), then straightly in the north-eastern direction crossing the Brook (a right tributary of the Butylka River), Navga River, via the summit marked 141 till the Tikhaya River to point 451 with the following geographic coordinates: 56°49′28′ north latitude and 157°48′11″ east longitude, where the Maly Teklovayam River flows into it.

The total area of Bystrinky cluster amounts to 1,368,592 ha. The description of the boundaries is given according to maps with a scale of 1:100,000 published in 1979, 1983 and 1990 (the state of places as of 1965–1966, 1986 and 1987).

2. Description of Klyuchevskoy Cluster Boundaries

The cluster's northern boundary begins at the sources of the Ushkovskaya Rechka River at point 453 with the following geographic coordinates: 56°11′22″ north latitude and 160°05′44″ east longitude, then goes eastward straightly to point 454 with the following geographic coordinates: 56°11′18″ north latitude and 160°13′09″ east longitude, then northward straightly to point 455 with the geographic coordinates: 56°12′16″ north latitude and 160°13′12″ east longitude, then eastward straightly to point 456 with the geographic coordinates: 56°12′19″ north latitude and 160°15′35″ east longitude. From point 456, the boundary turns northward, goes to the bed of the Lesnyye Polyany River, then it goes along the right edge of the Lesnyye Polyany River at the distance of 0.9 km downstream; then in the north-eastern direction crossing the Ugryumy Brook's bed and goes round height mark 591 from the northern side, then the boundary goes eastward crossing the spit of the Sukhonky Brook, the Bilchenok

River and its right tributary Ovrazhny. From the place where it crosses the Ovrazhny Brook's bed, which is 1.8 km away from water line mark 397, the cluster's boundary goes in the north-eastern direction at the distance of 0.4 km, then, at the distance of 0.5 km, to the north-northwest, then 0.3 km northward, 0.7 km to the north-east and 0.7 km northward to point 457 with the following geographic coordinates: 56°15′13″ north latitude and 160°24′30″ east longitude. Further — eastward crossing the brooks Kholodny and Protochny, past the height marked 534 from the southern side, the boundary turns smoothly to the north-east crossing the River Levy Eulchenok and the sources of its right tributary to the place located in 0.56 km to the west from water line point 377.

Further, the boundary turns sharply to the south-east and, at the distance of 1.27 km, it goes straightly to the crest, which is between the Sredny Eulchenok River and its left tributary. Then the boundary goes eastward crossing the Sredny Eulchenok River, a left tributary of the Pravy Eulchenok River till the bed of the Pravy Eulchenok River. Further, the boundary goes at the distance of 0.75 km in the north-eastern direction, then 0.35 km eastward, 0.96 km southward, 0.49 km in the south-eastern and north-eastern directions to the place that is 0.6 km away from mark 641 to the west. Then the boundary goes at the distance of 1.04 km northward, 0.38 km to the north-east and then eastward to the bed of the Klyuchevskoy Brook's left tributary. Further, the cluster's boundary goes southward at the distance of 0.83 km, then eastward crossing the Klyuchevskoy Brook, to the crest, 0.66 km to the south of water line mark 450. Then the boundary goes in the north-eastern direction to water line mark 455, the Udobny Brook. Further, the boundary goes eastward to point 458 with the following geographic coordinates: 56°16′00″ north latitude and 160°42′41″ east longitude, then in the south-eastern direction crossing the Shumny Brook, passing in 0.26 km to the north-east of water line mark 669 of the Stolbovoy Brook to the bed of the left tributary of the Sukhonkaya River, then the boundary goes 0.29 km southward, then crossing the sources of the Sukhonkaya River, 0.19 km to the south-west of mark 614, then 0.2 km southward and further in the south-eastern direction to point 459 with the geographic coordinates: 56°12′22″ north latitude and 160°48′40″ east longitude; then the boundary goes eastward straightly, to the north of mark 558, crossing the bed of the Kirchurich River in 0.3 km to the north of water line mark 211 to point 460 with the geographic coordinates: 56°12′30″ north latitude and 161°03′46″ east longitude.

The cluster's eastern boundary goes from point 460 with the geographic coordinates: 56°12′30″ north latitude and 161°03′46″ east longitude in the south-western direction via water line mark 135, along the bed of a nameless brook to point 461 with the geographic coordinates: 56°08′39″ north latitude and 160°47′21″ east longitude. Further, the boundary goes southward passing the height marked 1096 from the western side, crossing the Mezhkraterny Brook, past the height marked 960, crossing a Mezhkraterny Brook's right tributary, height marked 1016, Shirokaya River and Novy Brook to point 462 with the geographic coordinates: 56°04′40″ north latitude and 160°49′27″ east longitude. Further, the boundary goes eastward through the watershed part between the Kamenistaya River and Novy Brook, in 0.23 km to the north of the height marked 524, past the height marked 299 from the northern side to point 463 with the geographic coordinates: 56°04′22″ north latitude and 161°00′54″ east longitude; then the boundary turns almost orthogonally southward, goes straightly to point 464 with the geographic coordinates: a 55°59′22″ north latitude and 161°02′04″ east longitude, which is located in the Golubichnaya River's bed, then 3.64 km eastward down the Golubichnaya River's bed to point 465 with the geographic coordinates: 55°59′35″ north latitude and 161°05′33″ east longitude. Further — to the south-west straightly via the height marked 163, crossing the rivers: Klyuch Lavovy, Shavirikha, to the Golubelnaya River's bed, in 1.5 km to the east of mark 342, then southward straightly to point 466 with the geographic coordinates: 55°54′51″ north latitude and 160°58′43″ east longitude; then in the south-eastern direction straightly to point 467 with the geographic coordinates: 55°52′44″ north latitude and 161°04′38″ east longitude; the boundary further goes in the south-western direction straightly crossing the upper reach of the Gorno-Topolovaya River's left tributary, Bolshaya Khapitsa River's left tributary (2 km to the west of water line mark 236), along the Bolshaya Khapitsa River's left edge at the distance of 0.8 km from the riverbed, via the height marked 588, crossing the Korotky Log Brook to point 468 with the geographic coordinates: 55°41′31″ north latitude and 160°56′34″ east longitude; further to the south-west straightly along the north-western bank of the Lake Udachina via the height marked 619 to the sources of the Levaya Khapitsa River's left tributary, which originates from the Medvezhye Lake, its eastern part. Further, the boundary goes 2.03 km to the south-southeast crossing the Levaya Khapitsa River, then 0.33 km southward, then it goes along the Chudny (Wonderful) Brook's left bank in the south-western direction straightly past the height marked 846 (in 0.4 km to the south-east) via the height marked 997 to point 469 with the geographic coordinates: 55°37′31″ north latitude and 160°48′38″ east longitude.

The cluster's southern boundary goes from point 469 with the following geographic coordinates:

55°37′31″ north latitude and 160°48′38″ east longitude, westward crossing the Levaya Khapitsa River's sources, via the height marked 788 at the distance of 6.13 km, then in the south-western direction via mark 874, turning smoothly southward at the distance of 106 km, then to the south-east to point 470 with the geographic coordinates: 550°36′33″ north latitude and 160°41′36″ east longitude. Further, the cluster's boundary goes westward straightly to point 471 with the geographic coordinates: 55°36′30″ north latitude and 160°35′00″ east longitude, which is located at the left bank of the Listvinichny Brook. Then, at the distance of 1.06 km, the boundary goes southward, then to the south-west straightly, crossing the Shumny Brook's valley (to the north-west of the height marked 455) to point 472 with the geographic coordinates: 55°33′42″ north latitude and 160°29′38″ east longitude; the boundary further goes straightly westward to point 473 with the geographic coordinates: 55°33′46″ north latitude and 160°27′03″ east longitude; then along the bed of the Pravy Tolbachik River northward to point 474 with the geographic coordinates: 55°34′41″ north latitude and 160°26′55″ east longitude; then further westward straightly, to the south of the height marked 451, up to the height marked 335.

The cluster's western boundary goes from the height marked 335 northward straightly, to the west of the height marked 503 and to the east of the height marked 405 up to point 475 with the geographic coordinates: 55°40′11″ north latitude and 160°11′01″ east longitude, then westward until point 476 with the geographic coordinates: 55°39′40″ north latitude and 160°06′05″ east longitude. Further, northward past the height marked 254 (0.4 km to the west of the height), via the height marked 376, then past the height marked 374 (0.8 km to the west of the height), up to point 477 with the geographic coordinates: 55°49′55″ north latitude and 160°04′03″ east longitude. Then the boundary goes eastward up the Sukhoy Brook's valley straightly to point 478 with the geographic coordinates: 55°49′44″ north latitude and 160°08′49″ east longitude; then it goes northward straightly, crossing the Studyonaya River, to the east of the heights marked 561 and 500 and to the west (0.2 km) of the height marked 485, crossing the Shyroky Brook, Kopyto River, Dalny Brook, goes to the east of the heights marked 374, 364 and 310, crossing the Trushchobny Brook, past the height marked 326 from the eastern side, marked 340 (0.4 km to the east of the height), crossing the Rybrazvodskaya River, past mark 160 (0.3 km to the east of the height) up to the place located in 0.12 km to the north of mark 160. Further, the boundary goes to the north-west and turns smoothly northward to point 453 with the geographic coordinates: 56°11′22″ north latitude and 160°05′44″ east longitude.

The total area of Klyuchevskoy cluster amounts to 371,022 ha. The description of the boundaries is given according to maps with a scale of 1:100,000 published in 1979, 1983 and 1990 (the state of places as of 1965–1966, 1986 and 1987).

3. Description of Nalychevo Cluster Boundaries

The cluster's northern boundary goes from point 390 with the geographic coordinates: 53°44′19″ north latitude and 158°41′21″ east longitude (the estuary of the River Dzendzur's nameless left tributary), eastward straightly to point 391 with the geographic coordinates: 53°44′22" north latitude and 158°43′02" east longitude (at the point where it crosses the Chayavaya River), then the boundary goes eastward along the right edge of the Dzendzur River , in 1 km from its bed, via the height marked 575, crossing one of the right tributaries, to the crest, then in the north-eastern direction, keeping a distance up to 1 km to the river, crossing the right tributaries of the Dzendzur River — Kamenisty and a nameless one — to point 392 with the geographic coordinates: 53°46′10" north latitude and 158°55′49" east longitude. Then the boundary goes southward straightly to point 393 with the geographic coordinates: 53°44′35" north latitude and 158°55′53" east longitude, then eastward straightly to the south of the height marked 506 to point 394 with the geographic coordinates: 53°44′36" north latitude and 159°01′56" east longitude (the bed of the Zhupanova River's nameless tributary). Further, the cluster's boundary goes up along the left bank of the Zhupanova River's nameless tributary, via the height marked 365, to the west of mark 424 to point 395 with the geographic coordinates: 53°42′17" north latitude and 158°58′49" east longitude. Further, the boundary goes eastward straightly, crossing the Bystraya River and its right tributaries to point 396 with the geographic coordinates: 53°42′18" north latitude and 159°09′13" east longitude (the bed of the Neprokhodimaya River). Further — in the south-western direction up the Neprokhodimaya River, via water line marks 397 and 597 to point 397 with the geographic coordinates: 53°37′26" north latitude and 159°03′21" east longitude, then eastward straightly to point 398 with the geographic coordinates: 53°37′23" north latitude and 159°14′55" east longitude (height 1007).

The cluster's eastern boundary goes southward from point 398 with the geographic coordinates: 53°37′23" north latitude and 159°14′55" east longitude, along the right edge of the Pravy Vakhil River's

valley at the distance of 1.2 to 1.5 km from the riverbed, until point 399 with the geographic coordinates: 53°34′15" north latitude and 159°16′12" east longitude. Further, the boundary goes southward straightly, crossing the rivers Krupeninskaya and Gavrilina to point 400 with the geographic coordinates: 53°28′29" north latitude and 159°16′02" east longitude, then downstream the Levaya Ostrovnaya River, via water line marks 169, 83, 24, to its estuary (the place where it flows into the Ostrovnaya River), then the cluster's boundary goes along the Ostrovnaya River's left bank to its estuary which is located at the coast of the Avachinskaya Bay.

The cluster's southern boundary goes from the Ostrovnaya River's estuary along the Avachinskaya Bay coastline in the south-western direction via point 377 with the geographic coordinates: 53°10′09″ north latitude and 159°20′37″ east longitude to the place where the Nalycheva River flows into the Avachinskaya Bay. Further, the boundary goes along the shore round the Nalychevsky Salt Lake, then along the right bank of the Nalycheva River upstream to the estuary of the Mutnaya River (the right tributary of the Nalycheva River), then the boundary goes up the Mutnaya River via water line marks 39, 201 to point 401 with the geographic coordinates: 53°16′26″ north latitude and 158°57′41″ east longitude, then southward straightly, crossing the Mutnushka River's valley, until the height marked 864. Further — westward straightly via the height marked 2189 to height mark 1080, then in the north-western direction straightly, crossing the Zheltukha River and Sukhaya Rechka River to the height marked 613. Further, the boundary goes straightly to the north-northwest up to the height marked 1002, then in the north-western direction straightly to point 402 with the geographic coordinates: 53°20′12″ north latitude and 158°32′59″ east longitude. Further — in the north-western direction down the DremuchayaRiver to point 403 with the geographic coordinates: 53°21′56″ north latitude and 158°25′48″ east longitude; then in the south-southwestern direction, along the Pinachevskaya River's left edge to point 404 with the geographic coordinates: 53°21′07″ north latitude and 158°25′13″ east longitude. Further — westward to the Pinachevskaya River's bed straightly, to point 424 with the geographic coordinates: 53°21′13″ north latitude and 158°23′49″ east longitude, then down the river along the left bank straightly to point 405 with the geographic coordinates: 53°20′11″ north latitude and 158°23′31″ east longitude; then northward straightly to point 406 with the geographic coordinates: 53°21′27″ north latitude and 158°23′30″ east longitude. Then the boundary goes to the north-west straightly to point 407 with the geographic coordinates: 53°22′05″ north latitude and 158°21′38″ east longitude; and further southward to point 408 with the geographic coordinates: 53°21′58″ north latitude and 158°21′30″ east longitude. Then the boundary goes westward straightly, crossing the Valobrnaya River to point 409 with the geographic coordinates: 53°22′03″ north latitude and 158°20′53″ east longitude; further northward straightly to point 410 with the geographic coordinates: 53°22′44″ north latitude and 158°20′57″ east longitude; further in the north-western direction straightly via point 411 with the geographic coordinates: 53°22′59″ north latitude and 158°20′24″ east longitude and the height marked 306 to point 412 with the geographic coordinates: 53°23′17″ north latitude and 158°19′47″ east longitude.

The cluster's western boundary goes from point 412 with the geographic coordinates: 53°23′17″ north latitude and 158°19′47″ east longitude in the east-northeastern direction straightly to point 425 with the geographic coordinates: 53°23′28″ north latitude and 158°20′36″ east longitude, then in the north-northeastern direction straightly to the watershed to point 426 with the geographic coordinates: 53°23′52″ north latitude and 158°21′04″ east longitude; then through the watershed between the Valobrnaya River and the right tributary of the Kolokolnikova River to the north-west straightly to point 427 with the geographic coordinates: 53°24′20″ north latitude and 158°20′34″ east longitude. Further, the boundary goes eastward straightly, crossing the Valobrnaya River's valley, to point 428 with the geographic coordinates: 53°24′20″ north latitude and 158°24′35″ east longitude; then in the north-northeastern direction through the watershed between the Pinachevskaya and Valobrnaya rivers, via point 413 with the geographic coordinates: 53°25′02″ north latitude and 158°24′54″ east longitude and the summits marked: 845, 1011, 1391 up to the height marked 1436. Further, the boundary goes in the north-western direction through the watershed of the rivers Saraynaya and Kekhkuy, via the height marked 1320 to the height marked 1273, then in the north-eastern direction until height mark 1259, then northward, through the watershed of the rivers Olkhovaya (Alder) and Kekhkuy, via the height marked 1141, to point 414 with the geographic coordinates: 53°32′29″ north latitude and 158°23′10″ east longitude, then to the north-northeast through the crest to the River Kekhkuy's bed up to point 415 with the geographic coordinates: 53°33′51″ north latitude and 158°24′16″ east longitude. Further, the cluster's border goes up the Kekhkuy River to point 416 with the geographic coordinates: 53°33′16″ north latitude and 158°25′56″ east longitude; then in the north-eastern direction straightly to the watershed to point 417 with the geographic coordinates: 53°34′24″ north latitude and 153°28′49″ east longitude (the height marked 1194), then

through the watershed to the east-southeast straightly to the height marked 1380, then in the north-eastern direction straightly, crossing the Poperechnaya River's valley, to point 418 with the geographic coordinates: 53°35′45″ north latitude and 158°32′19″ east longitude, and straightly to the north-northeast from it to point 419 with the geographic coordinates: 53°38′55″ north latitude and 158°33′17″ east longitude. Furher, the boundary turns to the east-southeast and goes through the watershed part of the Vershinskaya River's left tributaries to point 420 with the geographic coordinates: 53°38′30″ north latitude and 158°35′46″ east longitude; then in the east-northeastern direction to point 421 with the geographic coordinates: 53°39′11″ north latitude and 158°38′18″ east a longitude (on the Vershinskaya River), then downstream the Vershinskaya River, until it merges with the Tikhaya River. From the Tikhaya River's estuary, the boundary goes up the river to the right tributary's estuary, further up the tributary to point 422 with the geographic coordinates: 53°41′07″ north latitude and 158°39′11″ east longitude, then to the north-northeast straightly, to point 423 with the geographic coordinates: 53°41′55″ north latitude and 158°39′27″ east longitude (sources of the Dzendzur River); then downstream the Dzendzur River to point 390 with the geographic coordinates: 53°44′19″ north latitude and 158°41′21″ east longitude (the estuary of the Dzendzur River's nameless left tributary).

Nalychevo cluster comprises also the Isle of Krashennikov located in the Avachinskaya Bay opposite the Ostrovnaya River's estuary.

The total area of Nalychevo cluster, including the Isle of Krashennikov, amounts to 286,025 ha. The description of the boundaries is given according to maps with a scale of 1:100,000 published in 1979, 1983 and 1990 (the state places as of 1965–1966, 1986, and 1987).

4. Description of South Kamchatka Cluster Boundaries

The cluster's northern section:

The cluster's northern boundary goes from Vilyuchinsky Volcano's summit (2,173 m) eastward, straightly, via the summits with absolute marks 807 m and 522 m. Further, the boundary goes straightly to point 430 with the geographic coordinates: 52° 41′ 41″ north latitude and 158°36′03″ east longitude, which is located on the coastline of the Avachinskaya Bay.

The cluster's eastern boundary goes from point 430 with the geographic coordinates: 52° 41′ 41″ north latitude and 158°36′03″ east longitude, southward, along the Pacific Ocean coastline to point 431 with the geographic coordinates: 52°13′47″ north latitude and 158°23′54″ east longitude.

The cluster's south-western boundary goes from point 431 with the geographic coordinates: 52°13′47″ north latitude and 158°23′54″ east longitude, in the north-western direction straightly via points with the geographic coordinates: 52°24′08″ north latitude and 158°07′02″ east longitude (mark 551.1), 52°25′21″ north latitude and 158°04′32″ east longitude (Dolinnaya Mount 746.1) to the place where the Osvistannaya River flows into the Mutnaya River.

The cluster's north-western boundary goes from the place where the Osvistannaya River flows into the Mutnaya River in the north-eastern direction, for 6 km up along the Osvistannaya River's left bank line to the nameless left tributary's estuary, then along the left bank line of this tributary for 850 m, to point 437 with the geographic coordinates: 52°30′22″ north latitude and 158°07′40″ east longitude, then straightly, eastward, via point 438 with the geographic coordinates: 52°30′22″ north latitude and 158°08′48″ east longitude, and point 439 with the geographic coordinates: 52°29′45″ north latitude and 158°10′01″ east longitude (mark 1184.1), further straightly to the summit with an absolute mark 1,305 m, via the mark of 675 m, to the summit with an absolute mark of 817 m, and further straightly to Vilyuchinsky Volcano's summit (2,173 m).

The cluster's southern section:

The cluster's north-eastern boundary goes from Vysokaya Mount with an absolute mark of 1234 m straightly southward to Zheltaya Mount with an absolute mark 1885 m, then straightly to point 447 with the geographic coordinates: 52°14′35″ north latitude and 157°56′40″ east longitude, which is located in the Semeyny Brook's estuary, then in the north-eastern direction straightly to the summit with an absolute mark of 764 m, further eastward through the watershed between the rivers Mutnaya and Asacha via the nameless mountain summits with absolute marks of 653 m, 916 m, 664 m, 304 m, 620 m, 585 m, 630 m, to point 435 with the geographic coordinates: 52°11′25″ north latitude and 157°24′21″ east longitude, which is located on the Pacific Ocean coastline, in the southern part of Mutnaya Bay.

The cluster's south-eastern boundary goes from point 435 with the geographic coordinates: 52°11′25″ 52 north latitude and 157°24′21″ east longitude, in the south-eastern direction, along the

Pacific Ocean coastline to point 448 with the geographic coordinates: 51°26′44″ north latitude and 157°29′51″ east longitude, which is located in the Ilyinskaya River's estuary.

The cluster's south-western boundary goes from point 448 with the geographic coordinates: of 51°26′44″ north latitude and 157°29′51″ east longitude, upstream the Ilyinskaya River, along its right bank line, to the source — point 450 with the geographic coordinates: 51°30′28″ north latitude and 157°12′00″ east longitude, further to the north-west through the watershed of Lake Kurilskoye and the Ilyinskaya River, then through the watershed, in the north-western direction to point 445 with the geographic coordinates: 51°32′16″ north latitude and 157°10′09″ east longitude, which is located on the watershed of the rivers Ilyinskaya, Vychenkiya, and Pravy Unkanovich.

The cluster's north-western boundary goes from point 445 with the geographic coordinates: 51°32′16″ north latitude and 157°10′09″ east longitude, which is located on the watershed of the rivers Ilyinskaya, Vychenkiya, and Pravy Unkanovich, and further to the north-east through the watershed between the rivers Ilyinskaya and Pravy Unkanovich via the height of 731 m to point 443, with the coordinates: 51°34′19″ north latitude and 157°18′43″ east longitude, which is located on the western slope of Zheltovsky Volcano (1,957 m), then the boundary goes straightly to point 449 with the geographic coordinates: 51°35′54″ north latitude and 157°20′13″ east longitude. Further, the boundary goes in the north-eastern direction, through the watersheds of the Belenkaya — Zheltaya, Yuzhny Ksudach — Vestnik rivers via the heights with absolute marks of 940 m and 871 m to point 444 with the geographic coordinates: 51°47′18″ north latitude and 157°28′15″ east longitude. Further, through the watershed of the Ksudach, Severny Ksudach, Lukavy Rivers and the rivers which flow into Lakes Klyuchevoye and Shtubelya, via the summit with an absolute mark of 966 m, to point 245 with the geographic coordinates: 51°49′05″ north latitude and 157°28′37″ east longitude. Then in the north-western direction through the watershed of the rivers Lukavy, Kuzanyok — the Snezhny Brook, River Zapadnaya Khodutka, via Ozernaya Mount with an absolute mark of 560 m to point 311, with the geographic coordinates: 51°56′07″ north latitude and 157°18′36″ east longitude. Further, in the north-eastern direction through the watersheds of the rivers Zapadnaya and Pravaya Khodutka, Asacha, the Mezhkholmovy Brook, the Skudny Brook — the rivers Levy and Pravy Savan, Tundrovy and Vrezanny brooks, via the summits with absolute marks 646 m, Mound Kazantseva 828 m, then via the summits with absolute marks 585 m, 508 m, 889 m, 833 m, 723 m, 864 m, 722 m, Mount Asacha with an absolute mark of 1,909 m, the Golaya Mount with an absolute mark of 934 m up to Mount Vysokaya with an absolute mark of 1234 m.

The total area of South Kamchatka cluster amounts to 500,511 ha, including the cluster's northern section, which amounts to 91,831 ha, and the cluster's southern section with the area of 408,680 ha. The description of the boundaries is given according to maps with a scale of 1:100,000 published in 1979, 1983 and 1990 (the state of places as of 1965–1966, 1986 and 1987).