Nomination

MAGADANSKY RESERVE

(RUSSIAN FEDERATION)

Proposal for inscription on
the World Heritage List of UNESCO

Prepared by:

- Natural Heritage Protection Fund
- Institute of Geography of Russian Academy of Sciences
- Magadansky State Nature Reserve
- Dresden University of Technology
- Russian Institute for Cultural and Natural Heritage
- Institute of Biology Problems of the North of Russian Academy of Sciences

With the support of:

- Federal Agency for Nature Conservation (BfN), Germany
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CONTENTS

State Party	Russian Federation
State, Province or Region	Magadan Region, Olsky and Srednekansky districts
Name of Property	Magadansky Reserve
Geographical coordinates to the nearest second	The Reserve is located in the south-eastern part of the Magadan Region, close to the northern coast of the Okhotsk Sea. The Reserve consists of 4 clusters: Kava-Chelomdjinsky, Olsky, Yamsky and Seimchansky. All clusters are separated and remoted from the Office of the Reserve (located in Magadan) at 100–600 km. • **Kava-Chelomdjinsky cluster:** the northernmost point 60°44′26″N 146°08′17″E the southernmost point 59°37′59″N 147°13′08″E the westernmost point 60°29′24″N 145°31′23″E the easternmost point 59°47′00″N 148°12′52″E • **Olsky cluster (Koni peninsula):** the northernmost point 59°09′45″N 151°28′00″E the southernmost point 58°50′12″N 151°21′24″E the westernmost point 59°06′44″N 151°06′09″E the easternmost point 58°52′43″N 152°00′31″E • **Yamsky cluster:** • Continental part the northernmost point 59°54′58″N 153°18′00″E the southernmost point 59°37′00″N 153°45′00″E the westernmost point 59°54′00″N 153°10′43″E the easternmost point 59°42′27″N 154°08′00″E • Pyagina peninsula the northernmost point 59°29′16″N 154°57′34″E the southernmost point 59°10′22″N 155°01′19″E the westernmost point 59°29′16″N 154°57′34″E the easternmost point 59°10′01″N 155°10′17″E • Yamsky Archipelago the northernmost point 59°20′49″N 155°34′29″E the southernmost point 59°12′07″N 155°31′34″E the westernmost point 59°12′23″N 155°14′52″E the easternmost point 59°20′49″N 155°34′29″E • **Seimchansky cluster:** the northernmost point 63°58′44″N 153°20′39″E the southernmost point 63°37′27″N 152°55′30″E the westernmost point 63°42′09″N 152°42′09″E the easternmost point 63°51′32″N 153°36′04″E

Textual description of the boundary(ies) of the nominated property

Clusters boundaries description follows the updated land surveying conducted in 2008

1. Kava-Chelomdjinsky cluster

The southern boundary starts at the Kava and Chelomdja rivers confluence and extends till the frontier of Khabarovsky Krai following the right bank of the Kava river. It goes along the Chelomdja river from its confluence with the Kama river upward along the left bank till the Burgagylkan river inflow, then upward along the left bank of the Burgagylkan river till the Arba stream inflow, then it goes along the Arba stream to its source and then along the interstream area of the Khivegchan river and its nameless tributary till the inflow of the Pravy Khivegchan river. Then it goes 5 km along the Pravy Khivegchan river till the inflow of the Bokovoj stream and then 8 km along the Bokovoj stream to its source. Then the boundary goes along the watersheds to the frontier of Khabarovsky Krai and then along this frontier until it meets the Kava river again.

2. Olsky cluster

The boundary starts at the Plosky cape and follows the right bank of the Khindja river deep into the peninsula till the Pravaya Khindja river inflow, then along the interstream area of the Khindja and Pravaya Khindja rivers it enters the interstream area of the Burgauli and Antara rivers from one side and the Umara, Orokholindja and Bogurchan rivers from other side, then it goes through the Kleshnya stream watershed and reaches the Okhotsk Sea 9 km to the east from the Antara river delta. The rest part of the boundary goes along the coastal line of peninsula until it meets the Plosky cape.

3. Yamsky cluster

a) The continental part boundary starts at the junction of the Khalanchiga and Yama rivers, 25 km from the Yama delta. The boundary goes 9 km upward along the right bank of the Khalanchiga till it meets the Serdtse Kamennoe river inflow, then 3 km up the Serdtse Kamennoe river till the bend, then 7.5 km straight to the west, then 3 km to the west-north-west, 3 km to the north-north-west crossing the Khalanchiga river in 22 km from its delta, then 8 km straight to the north-east and 1 km to the north-north-west crossing the Bildkan stream in 6 km from its outfall. Then the boundary goes 30 km straight to the west-north-west crossing the Stoudenaya river in 6 km from its outfall and then meets the Flokhoschan stream in 3 km from its inflow. Then the boundary goes 9 km straight to the north-north-west, then 6 km to the east-north-east crossing the Yama river in 75 km from its delta. Then it goes 1 km to the south-east, then 6 km to the east-south-east, 3 km to the south-south-west and then 32 km again to the east-south-east, then 5 km to the south-west till the boundary meets its start point at the Yama river.

b) The Pyagina peninsula coastal line 1 km wide starts at the Chyorny cape and continues for 13 km. Then in 3 km it reaches the Udacha bay 14 km long. Then in 13 km it goes along the 6-km-coastal line, and the last 18 km long coast starts in 1 km (includes the Kip-Kich bay and the Yapon cape).
c) The reserve includes the Yamsky archipelago — the Matykil, Atykan, Baran, Khatemalyu and Kokontse islands.

4. Seimchansky cluster
The boundary starts at the navigating channel of the Kolyma river 9 km below the Suksukan river inflow, then reaches the left bank of the Kolyma river and goes to the north-west along the interstream area of the Tolokonchan stream and Popovka river. After 21 km it turns to the north-east and passes the interstream area of the nameless streams and the Belaya Noch river. Then it gradually turns the east and the south-east passing the interstream area of the Tyomny and Olupcha streams and then meets the Kolyma river near the Olupcha river inflow. Then the boundary goes up the stream navigation channel of Kolyma till its starting point.

A4 (or "letter") size map of the nominated property, showing boundaries and buffer zone (if present)

Annex A includes the following maps:
1. Site location within Russian North-East
2. Physical and geographical map showing exact boundaries of the Magadansky Reserve clusters. Scale 1:1 000 000
3. Sketch map of Magadansky Reserve within the Magadan region. Scale 1:2 500 000
4. Map showing exact boundaries of the Kava-Chelomdjinsky cluster and its buffer zone. Scale 1:500 000
5. Map showing exact boundaries of the Olsky cluster and its buffer zone. Scale 1:300 000
6. Map showing exact boundaries of the Yamsky cluster and its buffer zone. Scale 1:500 000
7. Map showing exact boundaries of the Seimchansky cluster and its buffer zone. Scale 1:300 000

Justification Statement of Outstanding Universal Value

The Site consists of 5 separate clusters, up to 600 km distant from each other. Due to such remoteness the clusters are characterized by pristine key natural complexes of the Okhotsko-Kolymsky region – wast territory of Far East region. Territory is unique for its representativeness and level of conservation, there are typical as well as specific and extremely different natural complexes: insular, marine, coastal, valley, mountainous, including extremely continental.

The Magadansky Reserve should be estimated as outstanding geology-geomorphic site demonstrating the diversity of geological actions and phenomena typical not only for the North-East Eurasia, but also for other northern regions throughout the world.

	The number of nominated property features allows to say about its universal outstanding value in terms of biodiversity: - flora and vegetation singularity (relict source areas of fir, aspen, fir-Erman's birch forests, areas of flouristic diversity and endemism), formed by transfusion of the Asia-Bering and East-Siberian flouristic regions; - diversity and abundance of birds fauna (nesting places of globally endangered species, halting places of arctic migrants, region largest sea birds colonies). The Northern Pacific largest birds colony is formed on the Yamsky marine cluster. Moreover, due to high birds population and centuries-old development without any extraneous influence, there was formed the unique birds origin geosystem , which had transformed all natural constituents and which includes all the islands and adjacent water area. This is the global natural phenomenon; - the largest spawning areas of Far East salmons; - exceptionally high productiveness of coastal marine ecosystems. In the Kolyma river basin and in the Northern Priokhotie there are fully represented the unique ecosystems, which were developed here and which have no analogues neither in the Western Paleoarctic, nor in North America. Among them are continental larch spare forests, Bering cedar tundra, alpine and sub alpine meadows of the Kolyma Range, mixed Erman's birch forests of the Okhotsk Coastline, deciduous forests of pluvial valleys. These ecosystems have mosaic distribution on the territory, and the Reserve cluster structure allows to reach the high level of their representativeness.
Criteria under which property is nominated (itemize criteria)	(viii), (ix), (x)
Name and contact information of official local institution/ agency	Federal State Institution "Magadansky State natural reserve" FSI "Magadansky Reserve" Address: Magadan, 17 Koltsevaya Str. Tel: (4132) 657651 (front office), 657477 (accounts dep.), 606113 (science div.) Fax: (4132) 657871 E-mail: gpz_magadan@maglan.ru Web address: http://www.magterra.ru Web site is under construction

1 IDENTIFICATION OF PROPERTY

Primary landscapes of the Okhotsk Sea coast. Southern coast of the Koni peninsula. Olsky cluster. Butorin A.

1.a Country (and State Party if different)	Russian Federation
1.b State, Province or Region	Magadan Region, Olsky and Srednekansky districts
1.c Name of Property	Magadansky Reserve
1.d Geographical coordinates to the nearest second	The Reserve is located in the south-eastern part of the Magadan Region, close to the northern coast of the Okhotsk Sea. The Reserve consists of 4 clusters: Kava-Chelomdjinsky, Olsky, Yamsky and Seimchansky. All clusters are separated and remoted from the Office of the Reserve (located in Magadan) at 100–600 km.

- **Kava-Chelomdjinsky cluster:**
  the northernmost point 60°44′26″N 146°08′17″E
  the southernmost point 59°37′59″N 147°13′08″E
  the westernmost point 60°29′24″N 145°31′23″E
  the easternmost point 59°47′00″N 148°12′52″E
- **Olsky cluster (Koni peninsula):**
  the northernmost point 59°09′45″N 151°28′00″E
  the southernmost point 58°50′12″N 151°21′24″E
  the westernmost point 59°06′44″N 151°06′09″E
  the easternmost point 58°52′43″N 152°00′31″E
- **Yamsky cluster:**
  - Continental part
  the northernmost point 59°54′58″N 153°18′00″E
  the southernmost point 59°37′00″N 153°45′00″E
  the westernmost point 59°54′00″N 153°10′43″E
  the easternmost point 59°42′27″N 154°08′00″E
  - Pyagina peninsula
  the northernmost point 59°29′16″N 154°57′34″E
  the southernmost point 59°10′22″N 155°01′19″E
  the westernmost point 59°29′16″N 154°57′34″E
  the easternmost point 59°10′01″N 155°10′17″E
  - Yamsky Archipelago
  the northernmost point 59°20′49″N 155°34′29″E
  the southernmost point 59°12′07″N 155°31′34″E
  the westernmost point 59°12′23″N 155°14′52″E
  the easternmost point 59°20′49″N 155°34′29″E
- **Seimchansky cluster:**
  the northernmost point 63°58′44″N 153°20′39″E
  the southernmost point 63°37′27″N 152°55′30″E
  the westernmost point 63°42′09″N 152°42′09″E
  the easternmost point 63°51′32″N 153°36′04″E

1.e Maps and/ or plans showing boundary of area proposed for inscription and of any buffer zone

Annex A includes the following maps:
1. Site location within Russian North-East
2. Physical and geographical map showing exact boundaries of the Magadansky Reserve clusters. Scale 1:1 000 000
3. Sketch map of Magadansky Reserve within the Magadan region. Scale 1:2 500 000
4. Map showing exact boundaries of the Kava-Chelomdjinsky cluster and its buffer zone. Scale 1:500 000
5. Map showing exact boundaries of the Olsky cluster and its buffer zone. Scale 1:300 000
6. Map showing exact boundaries of the Yamsky cluster and its buffer zone. Scale 1:500 000
7. Map showing exact boundaries of the Seimchansky cluster and its buffer zone. Scale 1:300 000

1.f Area of nominated property (ha) and proposed buffer zone (ha)

Area of the Magadansky Reserve makes 884 538 ha according to updated land survey conducted in 2008, the buffer zone has the area of 93 700 ha. Each cluster has the following area: Kava-Chelomdjinsky — 624 465 ha, Seimchansky — 117 839 ha, Olsky — 103 434 ha, Yamsky — 38 809 ha.

Magadansky Reserve site location within Russian North-East

borders of Magadansky State Nature Reserve

Physical and geographical map showing exact boundaries of the Magadansky Reserve clusters

Legend

- Exact boundaries of the Magadansky Reserve clusters
- Administrative borders of the Russia constituents
- Administrative borders of the Magadan Region municipality
- Magadan / Tauysk — Main cities and settlements

Hydrological items:

- Rivers
- Lakes

Seymchansky
Omsukchan
Suksumansky ridge
Polyarny ridge
Seymchan
Seymchano-Buyundinskaya deep
Yagodnoe
Susuman
Magadan Region
Shelikhova gulf
Takhtoyamsk
Maymandjinsky ridge
Malkachan
Yamsky Islands
Yamsky
Yamsk
Pyagina peninsula
Ust-Omchug
Srednіy
Seymanskie mountains
Babushkina bay
Novaya Arman
Splavnaya
Snezhnaya Dolina
Atargan
Odyan bay
Bogurchan
Siglan
Magadan
Oyra
Kolni peninsula
Olsky
Amahtonsky bay
Tauysk
Talon
Tauyskaya gulf
Zavyalova island
Kava-Chelomdjinsky
Motykley
Hmitevskogo peninsula
Spafarieva island
Kava-Tauyskaya plain
Khabarovsk Territory
Sheltinga
Sheltinga bay

Elevation, m

0 200 500 1000 1500 2000 2500 2 500 and higher

0 10 20 30 40 80 km

Scale 1:1 000 000

Coordinate system Conic Conformal Lambert

2 DESCRIPTION

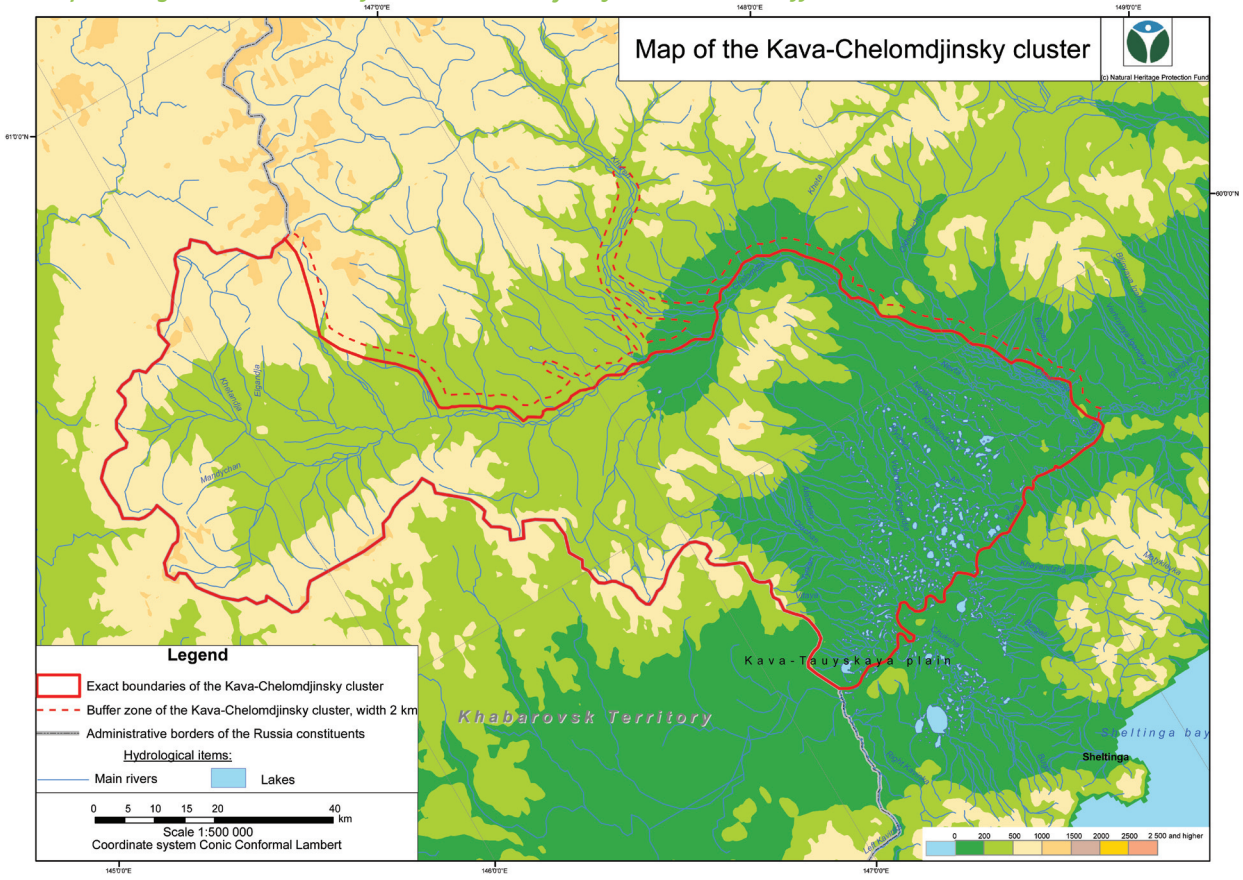
The Koni peninsula view from the Taran cape. Karpukhin S.

2a. Description of Property

The Reserve is located in the south-eastern part of the Magadan Region, within Olsky and Srednekansky districts. Total area of the Reserve is **884 538** ha. The Reserve has 4 clusters: Kava-Chelomdjinsky, Olsky, Yamsky and Seimchansky. All clusters are separated from each other, rather hard-to-reach and have no settlements or constant transport roads. Each cluster represents the standard of the key natural complexes of the Far East northern taiga and has its own distinctive features in locality appearance, climate conditions, composition of flora and fauna. The central office of the Reserve is situated in the regional center, the Magadan city, from 100 to 650 km away from the clusters.

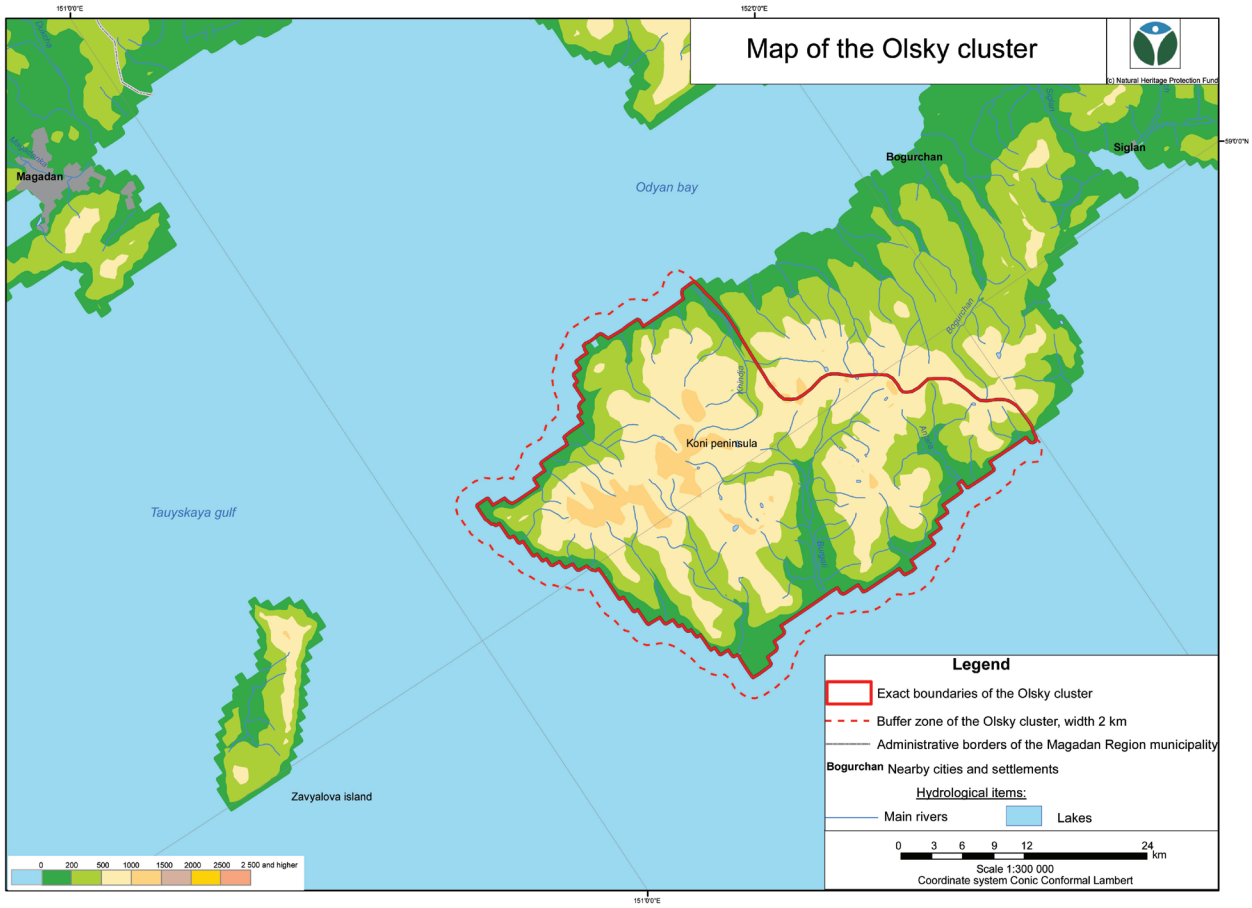
KAVA-CHELOMDJINSKY, which is the largest cluster of the Reserve (**624 456** ha), is located in the south-western part of the region 180 km away from Magadan. Is occupies part of Yansko-Tauyskaya plain in the rivers Kava and Chelomdja interfluve. On the west, along the river Chelomdja watershed, the cluster borders with Khabarovsky Krai. The 2-km buffer zone stretches only along Chelomdja, as along Kava the cluster has mutual boundary with the "Kava valley" regional hunting reservation.

Map showing exact boundaries of the Kava-Chelomdjinsky cluster and its buffer zone



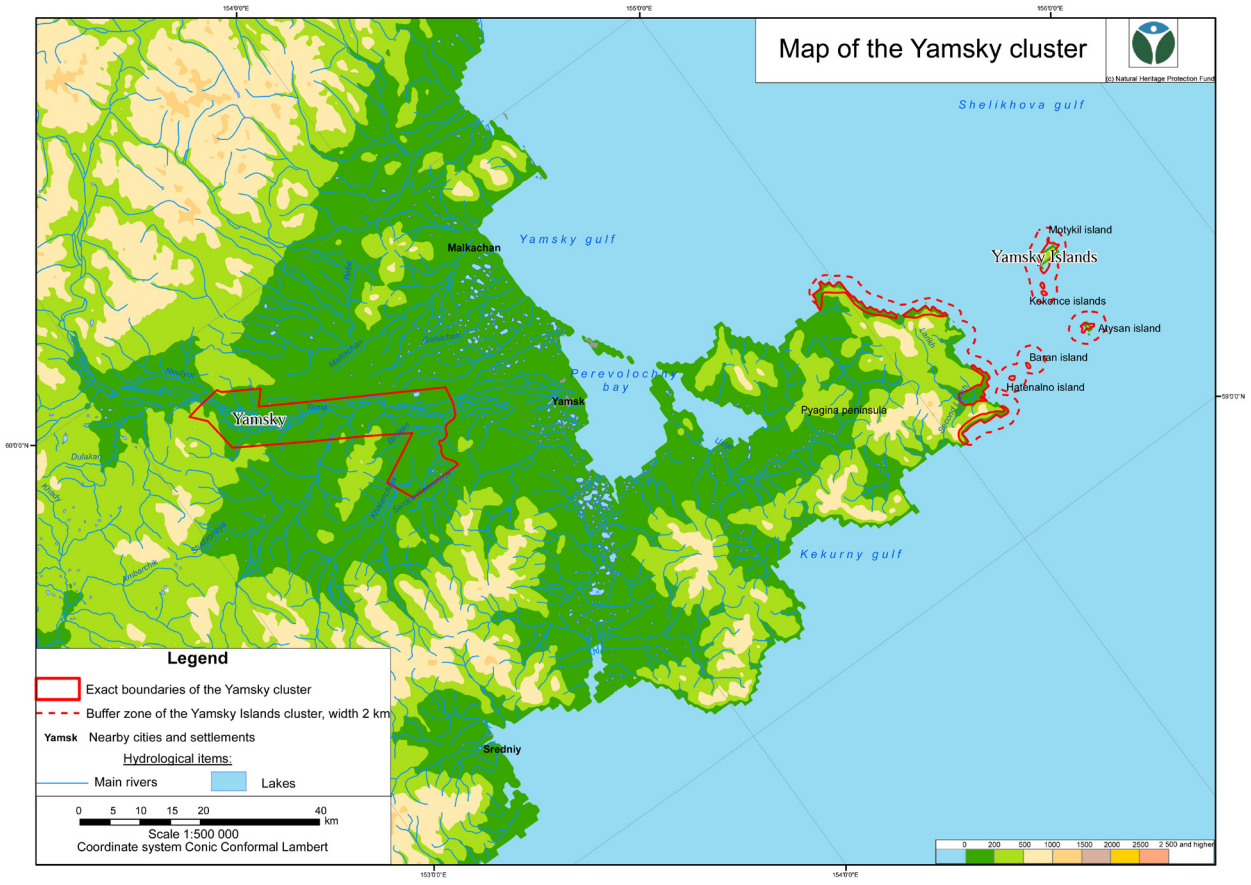
OLSKY CLUSTER (**103 434** ha) occupies the western part of Koni peninsula and is located at the very south of the Magadan Region 100 km away from the Magadan city. The northern, western and southern boundary of the cluster lays along the coast of the Okhotsk Sea, the eastern boundary crosses the peninsula in the north-south direction from cape Plosky till river Angara delta. The buffer zone includes the 2-km aquatory line of the Okhotsk Sea from cape Plosky till two unnamed creeks falling into the Okhotsk Sea 8 km to the east of river Angara. Along the continental boundary the Reserve adjoins the area of the regional hunting reservation.

Map showing exact boundaries of the Olsky cluster and its buffer zone



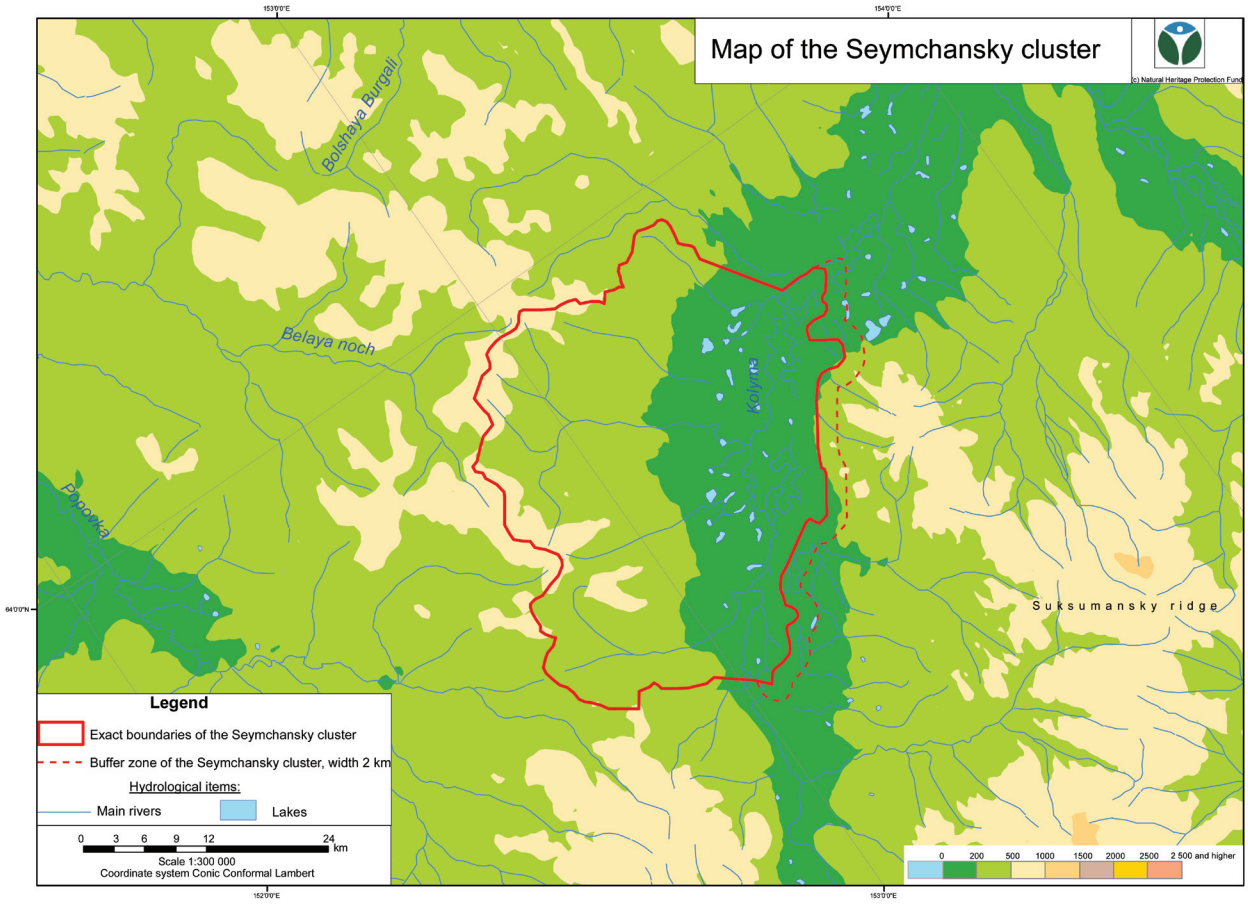
YAMSKY CLUSTER (**38 809** ha) is located in the south-west of the Region and includes 3 lesser clusters: inland (river Yama flood plain), coastal (1 km wide and 51 km long coast of the Pjagina peninsula breaking from cape Cherny till cape Yapon), and insular (Yamsky archipelago consisting of 2 large and several lesser islands). The inland cluster is 250 km away from Magadan, coastal and insular clusters are 450 km away. The buffer zone includes the 2-km aquatory line of the Okhotsk Sea along Pjagina peninsula and Yamsky islands. The mainland cluster has no buffer zone, but its boundary adjoins the regional hunting reservation for about 45 km.

Map showing exact boundaries of the Yamsky cluster and its buffer zone



SEIMCHANSKY CLUSTER (**117 839** ha) is situated in the continental part of the Region, along the left side of the Kolyma river, 100 km downstream of Seimchan village. The boundary lays along Kolyma fairway, goes out on the left side of the river, includes flood plain and second terrace, slopes of mountains outlining the Kolyma valley, and returns to Kolyma. The buffer zone includes the right side of the Kolyma till the edge branch.

Map showing exact boundaries of the Seimchansky cluster and its buffer zone



Geology

1. Chelomdjinsky cluster occupies several mountain ranges, their piedmonts and partly the Kava valley. The latter is a neotectonic basin filled with sandy-pebbled sedimentation up to 1000 m thick. Surface of the basin is composed with Quaternary and Holocene slightly filtrating sedimentation, and as the result is marshed and hard-to-cross. The right side of river Chelomdja (Kava-Chelomdja interfluve) is presented by hillocky area composed with volcanic rocks of Cretaceous period from basalt to liparite and also by granodiorite and other intrusions. Numerous gold and silver shows have been revealed here, however, they are of no practical significance. Permafrost is developed unevenly, mainly at the northern mountain slopes and piedmonts. Thermokarst manifestations are confined to peat bogs and lenses of slightly filtrating soils.

2. Koni peninsula (Olsky cluster) is composed mainly with Triassic, Jurassic and Cretaceous sandstone, aleurolite and shale, and also with volcanic rocks — basalt, tuff, etc. Intrusive formations — granodiorite, diorite, granite, etc. — are also widely developed. One of the cluster's sights is Mesozoic metamorphic rocks (crystalline schist) found near the delta of Angara river. The relief is contrast, the landscape is outlined with rocky ridges, glacier corries, alpine lakes and waterfalls. Permafrost is slightly developed, also are noted soil heaving, creep and frost sorting at gentle coastal slopes.

The Burgauli river valley. The Koni peninsula. Olsky cluster.
Ivanov V.

3. Yamsky cluster occupies Yamsky islands, Pjagina peninsula coast and part of Yama river near the inflow of Studenaja river. Yamsky islands and Pjagina peninsula are composed with Jurassic sandstone and shale, and also with Cretaceous gray granodiorite. The latter are being intensively disintegrated creating rocky walls, caves and sharp ridges. Continental part of Yamsky cluster is located in the river Yama valley on sandy-pebbled terraces of mixed genesis, adjoining Malkachanskaya tundra on the east. The latter is composed with sand and clay and is very bogged up. Here are developed insular permafrost and thermokarst. Along the right side of Yama river its valley is adjoined with basalt hillocky area with absolute heights 300–500 m.

4. Seimchansky cluster occupies flood plain and terraces of Kolyma river and includes hillocky areas of the Upper-Balygychanskoye low-mountain topography. The latter is composed with Triassic and Jurassic metamorphic clay slate, sandstone and aleurite. At the Kolyma shoals chalcedony and other decorative stones are found. Powerful permafrost is developed on terraces and especially in the mountains. Of cryogenic processes are especially noted thermokarst on second terraces of lakes and oxbow-lakes and icing genesis in small river valleys.

Panorama view of Kolyma river within the Seimchansky cluster.
Butorin A.

The Yamsky archipelago.
Zelenskaya L.

Relief

Clusters of the Magadansky Reserve are located within the Northern Far East mainland mountain and upland physical-geographical province. Among them emerges the Okhotsko-Kolymskoye highland standing on the watershed between Kolyma basin (Arctic basin) and rivers falling into the Okhotsk Sea. From the west the area is adjoined by the south-eastern edge of Cherskogo mountain system and a line of intermountain areas the most noteworthy of which is Seimchano-Buyundinskaya.

Lowlands and plains occupy relatively small areas and in general are confined to marginal seaside regions. Plains and small lowlands are located in the coastal area of the Okhotsk Sea. The most notable of those are Yano-Tauyskaya plain and Yamskaya lowland. Relief of these plains is a rolling terrain composed with lacustrine-alluvial sedimentation, with entrenched river valleys.

At the Kava-Chelomdjinsky cluster roughly disjointed mountain massifs 1200–1500 m high in the north and north-west combine with marshed plains with numerous lakes which occupy the major part of the cluster. Depressions are filled with glacial sedimentation of different age. In the mountains at the height of over 800 m are also noted traces of glacier activity: trough valleys, surfaces smoothed by ice. Along river beds are developed flood plains of plain and mountain type with two terraces.

Major inland part of the Yamsky cluster is located in Yamskaya lowland. Spurry lowland occupies the whole area of the river Yama left side, the right side is a hillocky area of up to 250 m high. At the reserved area flood plain has many branches, the numerous flows unite only at squeezed by mountain benches parts of the valley.

Yamsky islands and coasts of Pjagina peninsula are presented by stony hillsides, steep rocks with small pebbled beaches at their feet which are submerged during high tides.

Olsky cluster has mountain relief. Mountain tops raise up to 1300–1500 m. Rivers are small with fast current. Small lakes of glacier origin are situated in the central part of the cluster.

Seimchansky cluster in general is plain, only along western and northern boundary lays hillocky area 400–700 m high. Thick permafrost is developed at terraces and especially at the elevated areas of the cluster.

Mountain tundra (Eguya peak, 1604 m) not far from the eastern border of the Olsky cluster.
Butorin A.

Hydrography

Rivers of Okhotsk and Kolyma basins have extremely seasonal unevenness of runoff. For example, in the Kolyma basin (Seimchansky cluster) the spring-summer runoff makes 89%, autumn — 9% and winter — only 3% of annual runoff (Data taken from the State water resources inventory, 1985). Larger part of runoff of the Okhotsk basin rivers is formed of monsoon precipitation: spring-summer runoff makes 84%, autumn — 13%, winter — 3% of annual runoff. Such amplitudes are revealed in visible fluctuations of water level and abundance of solid particles in runoff. In the Okhotsk basin rivers during flood periods sedimentation process goes fast, and river beds, as the result, are branching (Basisty, 1995; Mikhailov, 1995). This type of river bed process is brightly revealed at the Seimchansky, Yamsky and Kava-Chelomdjinsky clusters. Other typical feature of river bed regime is instability of river bed, fast changing flood plain profile. River shoals and rifts are moving, here and there appear drift-wood screes, branch islands rapidly disappear and spits are quickly washed in.

During the whole year loose strata of alluvial fans is washed by the sub-riverbed runoff. At the same time the intensive groundwater recharge by surface waters during late summer floods accumulate a significant amount of heat in flood plains. As the result, great number of unfrozen branches and open taliks appear in river valleys.

In winter small streams get almost no groundwater recharge and, as the result, most of them freeze down to the bottom and at many spots appear thick ice bodies, which is especially typical for Koni peninsula.

Complete freezing of rivers of the Kava-Chelomdjinsky cluster and Koni and Pjagina pen-

Polygonal fissure ice — a typical scenery at the head stream of rivers Yama and Studenaya. Yamsky cluster.
Butorin A.

insulas happens after 15th of October, of Yama river — after 10th of October, at the Seimchansky cluster — in early October (Data taken from the State water resources inventory, 1985). Ice drift at Chelomdja river starts in middle May, at Kava, Yama and Kolyma rivers — at 20–25th of May. Spring flood starts about middle June and is formed generally of melting snow. In summer and autumn also happen rain floods (up to 6–8 per season). At the Okhotsk basin rivers such rain floods are most probable in middle August. During disastrous rain flood water level can raise 5 m and higher.

River runoff modules during floods can reach 300–600 l/sec*km^2, and river discharge reached 200–400 m^3/sec. All rivers except Kolyma (Seimchansky cluster) are not navigable.

Plain areas of the Magadansky Reserve are characterized by the abundance of lakes mostly of thermokarst genesis. As a rule, these are not deep (2–4 m) thermokarst lakes of intermountain basins and plains. Interlake areas of the Kavinskaya plain are occupied with marsh complexes and are dissected by small very meandering springs. Water of thermokarst lakes is saturated with humic acids and, as a rule, has dark colour. By the chemical composition water of thermokarst lakes relate to hydrocarbonate-sodium class of waters.

Besides, flood plain oxbow-lakes are spread at Kava, Yama and Kolyma river valleys, and glacier-moraine lakes are spread in the mountains.

Lebedinoye lake.Yamsky cluster.
Butorin A.

Climate

The Reserve's area is situated in the zone of moderate and sub-polar climate characterized by cold long winter and cool short summer. The vegetation period is not enough provided by heat, typical are summer frosts and uneven humidification. In summer in intermountain depressions form hearths of favourable microclimate.

In winter climate of continental clusters of the Reserve is defined by influence of Asian anticyclone, and at the coastal line prevails the influence of cyclones developed the North-west Pacific. At the Okhotsk Sea coast in winter prevail north-eastern winds which are sometimes called "winter monsoon". In summer period above the relatively heated surface forms the area of low pressure, prevail cold and humid winds of southern bearings (summer monsoon). Fogs, strong daily breezes and low cloudiness are typical for the Okhotsk Sea coast from May till September. Periods of calm weather are constantly interrupted by storms.

In continental areas of the Reserve the length of single precipitation fall reaches 20–35 hours, in coastal areas — up to 60–100 hours. In winter strong winds called "khius" and temperature inversion with the gradient up to –3 °C /100 m is noted everywhere in the mountains.

1. Climate of the Kava-Chelomdjinsky cluster and the mainland part of the Yamsky cluster is generally continental moderated by the sea influence. Snow cover stays from November till April. The coldest month is January (average temperature is -28°C, minimal temperature reaches -50°C). July average temperature is +11°C, maximal is up to +38°C. Annual precipitation level is 500–600 mm.

2. Coastal areas of the Reserve (Olsky cluster and partly Yamsky cluster) experience the sea influence. January average temperature is -12°C, absolute minimum is -28°C. Summer is cool and damp. August average temperature is +9°C, maximal is +27°C. Annual number of stormy days reaches 60–70. Storms are accompanied by strong winds (up to 40 m/s). Near Yamsky islands are noted strong sea currents (up to 10 km/h) and even the slight wind causes rip tides and whirlpools. During storms waves reach 5–6 m. Tide amplitude at the Koni peninsula is 4–5 m, near Yamsky islands is up to 6–8 m. Annual precipitation level at Koni peninsula is 450 mm. The snow cover stays from early October till early June. Winters are especially snowy at the northern side of the peninsula.

3. Seimchansky cluster is situated in the zone of especially cold winters and sharply continental climate. Annual average temperature is -12°C, January average temperature is -39°C, absolute minimum is -62°C. Spring is short, clear weather is tied with high day-night temperature fluctuations (up to 25°C). Summer is short but warm. The warmest month is July (average temperature is +15°C, maximal is +37°C). Average frostless period length is 51 day. Annual precipitation level is up to 290 mm, and snow makes half of it.

Soils

Prevalence of mountain relief forms, great variety of soil-forming rocks and types of vegetation defined the significant differences in the soil-forming process at coastal and inland clusters of the Magadansky Reserve. Special features of the soil profiles at different clusters are the following:

1. Seimchansky cluster. Slope trains and high river terraces composed with loamy materials are usually occupied with larch sparse forests. At finely drained surfaces form non-gleyed and slightly gleyed cryosoils. At the hill tops they form complexes with cryosoils of residual spots, at gentle slopes — with jointed peaty soils.

Profiles of runoff, depressions, gentle slopes and terraces are occupied by bogged larch forests and bogs. Homogenous peaty-gleyed soils form under the first, boggy cryogenic soils — under the second landscape type.

Middle and low terraces are occupied with high-bonitet larch forests, under which form homogenous sllightly gleyed and gray soils with no cryogenic deformation of soil horizons.

Sphagnum and polygonal-drum bogs are widely spread at the flat areas and river terrace depressions. Boggy cryogenic soils are spread at bogs with no developed microrelief under bushy sedge and sedge-sphagnum communities, and a complex of bogged cryogenic soils and peaty-gley cryosoils is developed at areas with developed microrelief.

Higher areas of flood plain are usually occupied with highly-productive larch forests, bushy meadows and bushy sedge-sphagnum and sedge bogs. Under the first form homogenous non-gleyed and slightly gleyed soils, under the second — alluvial sod soils, under the third — alluvial bogged soils.

At lower areas of flood plain under poplar, chosenia and mixed poplar-chosenia forests form alluvial laminated slightly sod soils.

2. Altitude zonality of soil-vegetation cover is finely marked at Yama and Chelomdja river basins, and also at Koni peninsula. Low mountains with smoothed peaks prevail here. At heights over 450 m above the sea level are spread underbrush-lichen and cedar elfin wood mountain tundra. Soil cover is homogenous in general and is presented by spots of brown podsolized and brown peaty soils. Mountain slopes are occupied by cedar elfin wood belt with underbrush, underbrush-lichen or lichen-underbruch soil cover. In no-permafrost conditions here are developed different sub-types of podsolized AI-Fe-humus soil type: humus, humous and dry peaty soils. They are characterized by distinct profile differentiation into alluvial and illuvial strata, by high in humus content higher mineral soil horizon, fulvic acids composition of organic matter, low in basis content and almost full unsaturation.

At intermountain valleys and river terraces are spread larch forests of different bonitet. In conditions of sufficient surface and intrasoil drainage here form peaty humous and sub-cryogenic-gley subtypes of podsolized AI-Fe-humus soils.

In conditions of hindered drainage form bogged cryogenic soils. At the higher flood plain areas under the high-bonitet larch forests form alluvial fine sod and peaty humous soils. Similar soils are developed under bushy riverside meadows.

Under chosenia forests at the lower areas of river flood plains form very rocky primitive soils.

At all near-Okhotsk areas soils contain significant admixture of volcanic ash.

Flora and vegetation

By the geobotanical zonation (Kolesnikov, 1963) the whole area of the Reserve belongs to East-Siberian taiga subzone of light coniferous forests. At the same time Kava-Chelomdjinsky, Olsky and Yamsky clusters relate to Magadansky district of Okhotian province of forests and sparse forests, and Seimchansky cluster relates to Yukagirsky district of Kolyma-Verkhoyan province of larch sparse forests.

All landscape-vegetation groups of the south of the Magadan Region are presented at the Reserve. According to the latest data, at the area of three near-Okhotsk clusters were noted 699 species of higher vascular plants. At floristically poor Seimchansky cluster 297 plant species grow, but the share of continental species absent at other clusters is high here (46, the FSI "Magadansky Reserve" inventory database).

58 vascular species rare in the Magadan Region grow at the Reserve's area in total (Magadan Region Red Book, 2008). One of them — *Magadania olgensis* is inscribed in the Red Book of the Russia (2008). 6 species of Magadansky Reserve flora are found only here (*Carex nesophila, Oreopteris quelpaertensis, Oxytropis revoluta* — on the *Pyagina peninsula; Ceratophyllum demersum* — on the Kava-Chelomjinsky cluster; *Carex iljinii* — on the Seimchansky cluster; *Carex microtricha* — on the Olsky cluster). The well-known finding is one fungi specie from the Red Book of Russia (2008) on the Kava-Chelomjinsky cluster: alpine fungus (Hericium alpestris).

Briefly described vegetation cover features of each cluster of the Reserve are the following:

1a. Yamsky coastal cluster

Spruce forests are the most complicated by their floristic composition and structure at the north Okhotsk coast. In valleys spruce is met at all levels of flood plain, excluding the lower flood plain, and at large islands, where, however, the share of spruce in the forest canopy does not exceed 10–20%. Larch-spruce forests are all-aged and multitier. Spruce (Picea obovata) forests occupy largest areas at high flood plain and at unbogged old flood plain terraces where spruce often reaches first layer and co-dominates together with larch. Most spread are spruce-larch and poplar-spruce-larch forests. In the 1st layer in different combinations are met common larch, spruce and rarely poplar *Populus suaveolens*, in the 2nd layer — *Larix cajanderi, Picea obovata, Alnus hirsuta*, not rare are *Padus avium, Sorbus sibirica*. The numerous all-aged undergrowth of larch and spruce is well developed. Undergrowth spruce is less abundant than larch and grows in groups. In the high-density (30–50%) bush layer are common *Rosa amblyotis, Lonicera caerula, Spirea salicifolia, S. beauverdiana*, spots of *Juniperus sibirica, Betula middendorffii, Pinus pumila* are found. Under the forest canopy prevail tall-grass and bushy small-reed-herbage areas, rarely are met horsetail-herbage and bush-sphagnum areas. At few small higher terraces exist rare density (0.2–0.3) spruce forests with domination of spruce. They are characterized by rare bush layer of *Juniperus sibirica, Rosa amblyotis, Lonicera caerula* and cereal-herbage cover of *Festuca altaica, Helictotrichon dahuricum, Calamagrostis langsdorffii, Clematis fusca, Cacalia hastata, Carex falcata, etc.* (Andriyanova, Mochalova, 2002). In the river Yama basin spruce forests are also met beyond river valley.

Yamsky cluster is of special interest as one of the most important refugiums of dark coniferous taiga flora. In spruce forests and other communities grow many relics of different age: *Monesses uniflora, Allium ochotense*, which are not met nowhere else in the Region; often are met very rare species noted only in 1–3 spots of the Region like *Matteuccia struthiopteris, Isoëtes asiatica, Danthonia riabuschinskii, Angelica genuflecsa*. In the Yama valley flood plain communities (between rivers Studena-

ya and Khalanchiga) regionally rare species like *Equisetum hyemale, Potamogeton natans, P.tenuifolius, Melica nutans, Glyceria lithuanica, Dactylorhiza aristata, Clematis fusca, Platanthera tipuloides Drosera anglica* are common. It is important to note that in the "Malkachanskaya tundra" reservation which is neighboring the Reserve, are also noted numerous regionally rare species like *Pinguicula villosa, Potamogeton gramineus, Drosera anglica, Oxycoccus palustre, Naumburgia thyrsifolia* and other water and near-water rare species.

1b. Yamsky marine cluster

The uniqueness of vegetation cover of Yamsky islands is revealed in its direct connection with sea birds nesting. As the result of birds influence the floristic diversity level decreases (Khoreva, 2003).

According to the recent research in 2006, the largest island of the archipelago — Matykil — is estimated to have 140 species of vascular plants, 57 of which are found for the first time ever, including *Chrysosplenium rimosum, Puccinellia vaginata* and *Polystichum lonchitis*, which are very rare in the Northern Okhotia and are new for the Reserve flora (Mochalova, Khoreva, 2009).

Vegetation of the largest island — Matykil — is clearly differentiated by habitat types depending of slope exposure, altitude above the sea level and birds influence. The distribution of vegetative associations is determined by the direction of flowing of biogene enriched rainfall and snow-melt waters. As the result, the ortnitho-transformed vegetation cover was formed on the island — it girds the island on its circumfery along lower and middle parts of slopes and partly higher slopes, apical crest and plateau. The island's floristic diversity is poor due to wide spread of homotypical association of pine purple grass (*Calamagrostis langsdorffii*). Also the lower slopes and coastal cliffs are covered by *Rhodiola rosea*, which forms the unique vegetation type — rocky cushion plant of birds influence origin ("Rhodiola belt"). The upper part of the island has smoothed slope and vegetation associations are the most diverse including scrubs, bush and bush-lichen tundra, motley grass-grasses and ferny-tallgrass meadows, snow fronting glades, formations of mesoxerophytes on dry cliffs and others (Mochalova, Khoreva, 2009).

On the Yama river middle stream there is the isolated area of Siberian spruce grow, 900 km from its continuous areal periphery.
Ivanov V.

Data on vegetation of Pjagina peninsula is scanty and given by N.S. Pavlova, V.V. Yakubov (1998). Such species like *Carex nesophila, Oreopteris quelpaertensis, Oxytropis revoluta, Filipendula camtschatica* are noted only within the Reserve, i.e. this cluster is the only habitat of these species in the Magadan Region.

Exactly the Pyagina peninsula requires urgent study, as, to our opinion, only a half of its plant species have been determined there.

2. Kava-Chelomdjinsky cluster

This western cluster of the Reserve with its great area occupied with wetlands is characterized by the Okhotian richest water and near-water flora and the highest diversity of bog community types.

At the Kava-Chelomdja interfluve are spread thermokarst lakes which are usually located between cottongrass-sedge hummocky marshes and sparse larch forests. At lakes are often met *Hippuris vulgaris, Sparganium hyperboreum, Callitriche hermaphroditica, Utricularia vulgaris*. At lake sides, usually of floating type, and also at sedge-moss bogs, are common *Carex rariflora, C.rotundata, C.rhynchophysa, Comarum palustre, Chamaedaphne calyculata, Andromeda polypholia, Oxyccocus microcarpus, Menyanthes trifoliata, Ranunculus pallasii, Cicuta virosa, Naumburgia thyrsifolia, Calamagrostis neglecta, Equisetum fluviatile, etc*. Larger thermokarst lakes, oligotrophic lakes of mixed genesis and rarely met lakes of mesotrophic type are characterized by more diverse species content. Together with species noted above, here grow rare species like *Potamogeton natans, P.compressus, Calla palustris, Nymphaea tetragona, Nuphar pumila, Myriophyllum verticillatum, Sagittaria natans*. At lake sides are met rare Okhotian communities of *Calamagrostis langsdorffii, C.neglecta, Rorippa barbareifolia, Scutellaria regeliana s.l., Iris laevigata, Lobelia sessilifolia, Chamaedaphne calyculata, Naumburgia thyrsifolia, etc*.

Vegetation cover of river Chelomdja valley is typical for large river valleys of the Kolyma highland. However, Chelomdja differs from other rivers of the Okhotsk Sea basin by the significant number of species typical for inland Kolyma regions but very rare in Okhotia. Such are *Swida alba, Aquilegia parviflora, Hieracium umbellatum, etc*. At valley forests of rivers Chelomdja, Kava, Tauy is met a line of boreal relics which are found only in 1–3 spots of Okhotia: *Corispermum ochotense, Iris laevigata, Circaea alpina, etc*.

The “Kava valley” reservation bordering the Reserve also has rich and diverse water and near-water flora and unique bog complexes.

3. Olsky cluster

Koni peninsula is one of the unique plots of the northern coasts of the Okhotsk Sea. It is characterized by composite complex of natural and climatic conditions and landscape diversity. Borders of zonation by different biota components pass through its area. Olsky cluster occupies the major part of the peninsula and is characterized by vast brushwood of elfin woods (cedar, alder); significant areas of rocky hillsides and bald peaks; different types of dry underbrush, underbrush-lichen and herbage-underbrush mountain tundra; alpine and nival meadows along mountain creeks and corries;

hummocky underbrush-lichen and sedge-underbrush tundra at coastal terraces. Arboreal vegetation is presented by flood plain willow-chosenia, willow and poplar-chosenia forests and Erman's birch slope forests. The latter play significant role in landscapes of 50–400 m above the sea level. Among peculiarities of this cluster are absence of larch and great share of Erman's birch in different landscape types.

Floristic diversity of the peninsula is contained in higher richness and diversity of species as active flora elements. Many relic flora elements are concentrated at Koni peninsula. Its area has been a crossroad of arctic, arctic alpine migration routes during their movement to the south, of the Far East flora species moving to the north edge of their distribution and of significant number of endemic species. There is significant number of endemic plants on the peninsula: 10 endemic and sub-endemic of the Okhotsk-Kamchatka floristic province (*Poa almasovii, Cardamine pedata, Draba ussuriensis, Lychnis ajanensis, Ranunculus subcorymbosum, Rhodiola stephanii, Magadania victoris, Astragalus marinus, Oxytropis evenorum, Pedicularis ochotensis*), 4 species of the North-Eastern Asia province (*Ermania parryoides, Salix khokhrjakovii, Dracocephalum palmatum, Thymus diversifolium*) and 6 narrow endemic species of the Okhotsk coastal floristic district (*Salix magadanensis, Corydalis magadanica, Potentilla rupifraga, Saxifraga derbekii, Taraxacum magadanicum, Draba magadanensis*).

4. Seimchansky continental cluster

This is the only cluster of the Reserve situated in the central part of the Region, at the Kolyma river. By flora and vegetation it significantly differs from the clusters described above.

Seimchansky cluster, with its composite flood plain structure and asymmetric valley up to 10 km wide, is characterized by the most rich and diverse flood plain vegetation.

Low flood plain cobble spits at Kolyma are overgrown with separate specimen of *Chosenia arbutifolia, Salix shwerinii, S. udensis, Deschampsia glauca, Aster sibiricus, Artemisia leucophylla, Tanacetum boreale, Lactuca sibirica, etc.* At sandy-pebble spits form thickets of chosenia with addition of *Salix shwerinii, S. udensis, S. boganidensis*, which usually have no sward beneath. At slit-pebble and sandy-slit alluvium prevail willow forests with sparse horsetail-grass cover of *Equsetum arvense, Carex rhynchophysa, C.lachenalii, Calamagrostis langsdorffii, Agrostis sp., Moeringia laterifolia, Rubus arcicus, Stellaria calycantha*. In microrelief depressions are often met *Equsetum fluviatile* thickets with addition of *Carex rhynchophysa*. Slit spits in rear part of backwaters are overgrown with *Eleocharis acicularis, Alopecurus aequalis, Ranunculus gmelinii, R. reptans, Juncus filiformis, Equsetum arvense, Rorippa palustre*.

In the middle part of the flood plain are common willow-poplar (with *Populus suaveolens*), chosenia-willow-poplar forests with herbage and herbage-horsetail-small-reed soil cover (*Equisetum arvense, Calamagrostis langsdorffii, Moehringia lateriflora, Carex pallida, Galium boreale, Thalictrum sparsiflorum, Pyrola rotundifolia, Poa botryoides, Cacalia hastata, etc*) with underwood of *Rosa acicularis, Spirea salicifolia, Ribes triste*. At high areas with slightly turf-covered shingles grow sparse poplar-chosenia forests with the same sward as on young pebble spits with addition of *Pyrola rotundifolia, Sanguisorba officinalis, Hedysarum hedysaroides, Astragalus alpinus* and lichens.

At the high and old flood plains prevail shrub-herbage, herbage-shrub willow-poplar forests and also shrub-herbage-cereal, shrub-herbage mixed larch-birch (with *Betula platyphylla*) and larch forest. Typical is *Sorbus sibirica, Salix pseudopentandra* thick underbrush where dominates *Rosa acicularis*, often are met *Spirea salicifolia, Ribes triste, R. dikuscha, Swida alba. Equisetum arvense, Calamagrostis langsdorffii Poa*

nemoralis, Thalictrum sparsiflorum, Carex pallida, C.falcata, Cacalia hastata, Moehringia lateriflora, Galium boreale, Lathyrus pilosus, Lactuca sibirica, Linnaea borealis, Pyrola rotundifolia are most often met in the underbrush in different combinations.

Kolyma valley within the Reserve area is one of the most important refugees for valley-forest flora species of continental areas of the Region. In flood plain forests within the Reserve is met a line of Pacific species which are relic in continental areas, like *Atragene ochotensis, Carex schmidtii, Trientalis europaea, Heracium umbellatum, Trisetum sibiricum, Impatiens noli-tangere, etc.* Kolyma valley flora of reservoirs of different genesis is especially diverse. At flood plain and upper terraces grow very rare protected species which are met only in 1–3 spots of the Region, like *Potamogeton compressus, Sagittaria natans, Calla palustris, Lemna turionifera, Drosera rotundifolia Oxycoccus palustris, etc.* For a line of species the Seimchansky cluster and the adjacent area on the right side of Kolyma is the northern reliable habitat in the Region (*Drosera rotundifolia, D.anglica, Oxycoccus palustris etc.*).

Erman's birch and white tailed eagle — two endemics.

Andreev A.

Let's underline the most significant features of each cluster from the conservational point of view:

Yamsky coastal cluster — features the disjunctively located part of Siberian spruce areal on the north-eastern edge of its distribution. The cluster is distinguished by the high biodiversity and the abundance of relic dark-coniferous plant species.

Yamsky marine cluster — features the peculiar vegetation of the bird bazaars of the Yamsky islands — biomorphologic adaptations of plants to the breeding colonies conditions: development of mound-shaped configuration of *Calamagrostis langsdorffii* and pillow-like configuration of *Rhodiola rosea*, i.e. two dominant island plants.

Kava-Chelomdjinsky cluster — except its vast area and great diversity of vegetation types, is unique by its species composition and wetland complex typology. A line of species on their eastern edge of areal grows here.

Olsky cluster — has one of the richest specific flora of the northern Far East with great number of endemics of the different floristic regions and relics of different age and genesis. The peninsula is an intersection spot of arctic and arctic-alpine species' southern migration routes and routes of Far East species moving to the north.

Seimchansky cluster — is the only continental cluster with the composite flood plain structure and rich and diverse wetland and flood plain vegetation. It is peculiar by many species common in the Pacific found in its inland flood plain forests as relics.

Nymphaea tetragona Georgi.

Mochalova O.

Lobelia sessilifolia.

Mochalova O.

Endemism

There are 11 endemic and subendemic species of Okhotsko-Kamchatskaya floristic province growing in the Reserve (*Poa almasovii, P.platyantha, Cardamine pedata, Draba ussuriensis, Lychnis ajanensis, Ranunculus subcorymbosum, Rhodiola stephanii, Magadania victoris, Astragalus marinus, Oxytropis evenorum, Pedicularis ochotensis*), as well as 5 species of North-East-Asian province (*Ermania parryoides, Larix dahurica, Salix khokhrjakovii, Dracocephalum palmatum, Thymus diversifolium*), as well as 6 restricted endemics of Pribrezhno-Okhotsky floristic areal (*Salix magadanensis, Corydalis magadanica, Potentilla rupifraga, Saxifraga derbekii, Taraxacum magadanicum, Draba magadanensis*). 12 of these species are exposed exclusively on the Olsky cluster (*Poa almasovii, Salix magadanensis, Corydalis magadanica, Draba magadanensis, Ermania parryoides, Potentilla rupifraga, Saxifraga derbekii, Taraxacum magadanicum, Astragalus boreomarinus, Pedicularis ochotensis, Dracocephalum palmatum, Thymus diversifolium*). There are 4 species else on the Koni peninsula and Pyagina peninsula within the Reserve: *Cardamine pedata, Draba ussuriensis, Oxytropis evenorum, Salix khokhrjakovii*.

Saxifraga derbekii Sipl.
Ivanov V.

Fauna

The Reserve fauna includes water and surface elements. Fauna research has been generally aimed at study of terrestrial vertebrates and, to lesser extent, of invertebrates. But, marine invertebrates study results have revealed more information than terrestrial invertebrates examination.

FRESH WATER ICHTHYOFAUNA. In the rivers and lakes of the Reserve 30 fish species and 1 round-mouthed fish species (Pacific lamprey (*Arctic lamprey*)) are found. The most numerous are migrating salmons — chum salmon (*Oncorhynchus keta*), silver salmon (*O. kisutch*), humpback salmon (*O. gorbuscha*); separate specimen of blue-back salmon (*O. nerka*). Humpback salmon enters the Reserve's rivers in late June, this specie dominates at Koni peninsula. The Rivers Yama and Chelomdja are the Okhotian largest spawning grounds of migrating salmons. Spawn of chum salmon starts in July, of silver salmon — in middle August. There are many other salmon species in the rivers of the Reserve: bull-trout (*Salvelinus malma*), East Siberian char (*S. leucomaenis*) and grayling (*Thymallus arcticus*). There are salmon species also in the Kava-Chelomjinsky basin (Kamchatsky grayling (*Th. arcticus mertensi*)), in the Yama and Colyma rivers (Arctic grayling (*Th. arcticus pallasi*). The northern Okhotsk Sea endemic Levanidov's loach (*Salvelinus levanidovi*) spawns in the Yama river.

In rivers and lakes of the Seimchansky cluster are common: Arctic grayling, Siberian whitefish (*Coregonus lavaretus*), lenok (*Brachymystax lenok*), round whitefish (*Prosopium cylindraceum*), Siberian sucker (*Catostomus catostomus rostra-*

Each year tens of thousands of salmons (chum and silver salmons) enter the crystal clear branches of Yama for spawning .
Butorin A.

62 white-tailed eagles are nesting at the Reserve's area.
Kantor V.

tus), pike (*Esox lucius*), perch (*Perca fluviatilis*) and burbot (*Lota lota leptura*).

AMPHIBIA are presented by only two species — Siberian newt (*Salamandrella keyserlingii*) and Siberian frog (*Rana amurensis*). Siberian newt is widely distributed on the north-east of Russia and is met in each cluster of the Reserve. It winters and dwells mostly on land. It multiplies in water, usually in oxbow lakes. Siberian frog is met only in "warm valleys" — valleys of Kolyma mid-stream, Yama, Chelomdja and Kava down-streams. The frog leads terrestrial way of life preferring hummocky areas of flood plain forest edges and riverside meadows. It winters in the thick slit at the bottom of non-freezing oxbows, multiplies generally in temporary reservoirs created by flood waters. Such reservoirs appear before the full melting of snow cover, and in May one can often see frogs passing over the snow from wintering reservoirs into the spawning ones.

AVIFAUNA of the Reserve is representative for the Okhotsk-Kolyma area. Avifauna list includes **180** species, **142** of which are nesting, the others are noted on passage.

Lake and bog plains of the Kava-Chelomdjinsky cluster are the most important nesting reservate of waterfowl of the Northern Okhotia. Here are nesting and making migration stops species like whooper swan, taiga been goose, teal, garganey, widgeon, pintail, shoveller, mallard, goosander and *Mergus serrator*. East Siberian species like *Anas formosa*, swallow, harlequin duck, American scoter and white-fronted goose — Arctic specie on the southern edge of its distribution, which nesting area is found in the Reserve's cross-border territory (the "Kavinskaya dolina" preserve) — bring fauna the northern and Far Eastern color. In winter in forested flood plain are common willow grouse, Siberian capercailzie, hazel hen, nuthatch, long-tailed tit, willow tit, bullfinch and Bohemian waxwing, are met solitary snipe, Pallas's dipper (*Cinclus pallasi*), gray shrike. In summer here nest *Haliaeetus pelagicus*, golden-eye, black, three-toed, great spotted and lesser spotted woodpeckers. Background passerine species are *Tarsiger cyanurus*, brambling and yellow-browed warbler.

In the coastal mountains of Olsky and Yamsky clusters are met such alpine species as alpine ptarmigan, Mongolian plover and water pipit, and also forest and shrubs species. Along the mountain streams nest harlequin duck, gray wagtail and Pallas's dipper (*Cinclus pallasi*). At bald peak slopes are common Eversmann's warbler, lanceolated warbler, sooty flycatcher, scarlet grosbeak, pine grosbeak. Here also dwell rough-legged buzzard, hobby, nutckracker and raven. Colonies of Alpine or white-bellied swift (*Apus melba*), nests of peregrine and *Haliaeetus pelagicus* are situated at coastal rocks. Small bays and inlets of the Pjagina and Koni peninsulas are a moulting place for harlequin ducks and goosanders. Marbled murrelet (*Brachyramphus marmoratum*) and kittlitz murrelet (*Brachyramphus breviroste*) nest in the mountain stows of the Pjagina and Koni peninsulas. In August-September at the Koni peninsula coasts appear migrating flocks of red-necked phalarope and slender-billed shearwater.

At the coast of Olsky cluster are situated 48 mixed or single specie seabird colonies. Their major part is made of kittiwake and slaty-backed gull; pelagic cormorant, sooty guillemot (*Cepphus carbo*), puffin and horned puffin (*Fratercula corniculata*) are nesting. Bird bazaars of Yamsky islands are the largest in the Okhotsk Sea and in the whole Asian Pacific. Here pros-

per birds of *Alciformes order* — Atlantic murre, Bruennich's guillemot, crested, least, parroquet and whiskered auks, sooty guillemot, puffin and horned puffin; numerous are kittiwake and slaty-backed gull, fulmar (light-colored morphus). Its population size reaches 1 million species. By estimated data, at Yamsky islands are nesting about 10 million species of sea birds. The most numerous here is least auk.

Species inscribed into the IUCN Red Data Book — Steller's sea eagle (*Haliaeetus pelagicus*) and fish owl — are constantly nesting at the Reserve's area. The Reserve's area has a nesting cadastre of *Haliaeetus pelagicus* (62 pairs) and monitoring of its population is being carried out at Kava-Chelomdjinsky and Olsky clusters. The habitat of 41 pairs of the Steller's sea eagle was noted on these clusters in 2008. In autumn at salmon spawning grounds of Yama and Chelomdja gather significant number of *Haliaeetus pelagicus*.

Of rare birds are also noted golden eagle, white-tailed eagle, Far-Eastern curlew, Kittlitz's murrelet and marbled murrelet. During seasonal migrations are met white-billed northern diver, *Cygnus bewickii, Anser erythropus*, brent goose, Anas formosa.

MAMMALS. **37** species of terrestrial and 8 species of marine mammals have been registered within the Reserve. Most common are *Sores caecutiens* and *Sores daphaenodon*, northern red-backed vole, chipmunk, pika, blue hare, brown bear, fox, sable, ermine, mink, locally — elk and bighorn sheep. At all clusters are met, but less typical are: red and Russian flying squirrels, root vole, weasel, glutton. Lynx is rarely met.

Bear family on the Koni island.
Andreev A.

Brown bear.
Andreev A.

The highest density and diversity of species are noted in river valleys and flood plain biotopes which are the most favorable in conditions of feeding and protection.

A line of species is met only at special areas of the Reserve. For instance, Kamchatka marmot dwells only at riverside slopes of Olsky and Yamsky (Pyagina peninsula) clusters. At Kava-Chelomdjinsky and Seimchansky are met wood lemming, wolf, muskrat and reindeer. Only at Kava-Chelomdjinsky cluster were noted Far East shrew, water miller (Myotis daubentoni Kuhl) and large Japanese field mouse.

At coastal waters of Koni peninsula — near Pjaginsky shore cusp, and near Yamsky islands dwell 3 *Phocidae,* 1 *Otariidae* and 4 *Cetacea species*.

The most typical species of sea mammals is largha (*Phoca vitulina largha*). During low tides it creates massive lairs of up to 200 specimen at stony banks. In summer largha concentrates at outfalls of spawn rivers where it feeds with salmon. It follows spawning shoals into the rivers up to 150–180 km away from the sea. It starts in June and returns to the sea in late October-early November when spawning ends.

Ringed seal, or akiba is noted generally at the coast of the Koni peninsula. It doesn't enter rivers at spawning. During low tides it often creates lairs together with largha.

Sea hare, or lakhtak is rather common at the Reserve's waters. Single specimen or small groups are met not far from the shore. It feeds with benthal invertebrates. The only large lair of lahktak (about 60 specimen) is situated at Matykil island (Yamsky islands).

Ringed seal at the outlet of Omylen river, Kava's right tributary.
Kantor V.

The only sea lion rookeries of the Reserve are also situated at the Matykil island. The average number of animals on the rookeries (according to the past 9 years of censuring) is 1270 including 400 juveniles.

Swallow is the most common whale in the Reserve's waters. It usually stays in family groups of 3–5 specimen, often near estuaries of spawn rivers where is hunts seals.

Little piked whale dwells at the whole northern part of the Okhotsk Sea. It willingly visits shallow coastal waters. In summer period it is often met at the Koni peninsula aquatory.

At Shelikhova bay dwell small shoals of gray whale (*Eschrichtius gibbosus*) and bowhead. Their migration routes lay along Yamsky islands and Koni-Pjagina coast. However, only a few cases of meeting the gray whale have been noted during the whole time of the Reserve's existence. Besides, some dolphins (white whale, *Phocoena phocoena*) and *Histriphoca fasciata* may possibly enter the coastal waters of the Reserve.

Sea lion rookery on the Matykil island.
Shon R. Jason

Endemics

Fish:

East Siberian char (*Salvelinus leucomaenis*) — endemic of the wide Asian boreal region
Levanidov's loach (*Salvelinus levanidovi*) — the northern Okhotsk Sea endemic
East-Siberian whitefish (*Coregonus lavaretus pidschian natio brachymystax*) — the East-Siberian endemic subspecies
Kamchatsky grayling (*Thymallus arcticus mertensi*) — the North-Eastern Asia endemic
Siberian sucker (*Catostomus catostomus rostratus*) — the North-Eastern Asia endemic subspecies

Birds:

Steller's sea eagle (*Haliaeetus pelagicus*) — the Far East endemic
Okhotsk cricket (*Locustella ochotensis*) — the North-Eastern Asia endemic
Sooty guillemot (*Cepphus carbo*) — endemic of the North-Western Pacific part
Blakiston's fish-owl (*Ketupa blakistoni*) — the Eastern Asia endemic

Mammals:

Far East common shrew (*Sorex gracillimus*) — the Eastern Asia endemic
Sea lion (*Eumetopias jubatum*) — the Northern Pacific endemic

Blakiston's fish-owl.
Andreev A.

Species listed in the IUCN Red Data Book:

Lesser white-fronted goose (*Anser erythropus*)
White-tailed sea eagle (*Haliaeetus albicilla*)
Steller's sea eagle (*Haliaeetus pelagicus*)
Eastern curlew (*Numenius madagascariensis*)
Marbled murrelet (*Brachyramphus marmoratus*)
Blakiston's fish-owl (*Ketupa blakistoni*)
Sea lion (*Eumetopias jubatum*)
True otter (*Lutra lutra lutra*)
Musk deer (*Moschus moschiferus turovi*)

2b. History and Development

History of geological development

Area of the Site belongs to the Pacific segment of the Earth's crust and embraces the transition from the continent to the ocean basin, which defines features of its geological structure and history.

Tectonic pattern of the Site is distinguished by great complexity. Areas of pre-Riphean foldings of Siberian platform and massifs of the same age, Paleozoic massifs, Mesozoic geosyncline massifs and the Okhotsko-Chukotsky volcanic belt are singled out.

The oldest sedimentation form the pre-Riphean massifs: Okhotsky, Kolymsky, etc. Their basement is composed by Archean and Proterozoic rocks which are separated from the multilayer volcanic-sedimentary cover by surface of regional unconformity. Carbonate rocks of Jurassic and Cretaceous age and volcanic formations play a great role in geological structure of sedimentary cover.

Mesozoic folding systems occupy the largest areas. Sedimentation of Verkhoyansky complex up to 10–12 km thick are most wide-spread. They are presented by psammitic-shaly stratas of Permian, Triassic and Jurassic age, intensively dislocated and broken by intrusions at many spots. At some areas Mesozoic terrigene rocks are alternated by effusions.

From the south and east the area of Mesozoic folding is alternated by the Okhotsko-Chukotsky volcanic belt of Meso-Kainozoic age. This belt, composed at the basement by volcanic-sedimentary rocks of Upper Triassic, Jurassic and Lower Cretaceous age, spreads along the northern coast of the Okhotsk Sea. The rocks mentioned above are overlapped by Upper and Lower Cretaceous formations strata of volcanic genesis up to few kilometres thick.

Formation of the Okhotsko-Chukotsky volcanic belt is conjugated in time with the development of Kainozoic geosyncline adjacent to the belt from the Pacific basin. This is proved by the synchronicity of volcanic processes in the belt and of tectonic movements in the Kainozoic folding area. This belt is tightly connected with junction zone of the Earth's crust of continental and intermediate types, which is characterised by significantly higher thickness of the basalt and lower thickness of granite layer.

All folding structures are broken by numerous faults which control intrusions of granitoids. Superimposed basins of different size composed by marine and continental sedimentation, including coal-bearing and effusive formations, are widely spread.

The modern look of the Site's landscapes is to significant extent predetermined by the history of landscape development at Cenozoic Era.

The area has entered the continental stage of development before the Anthropogene. By that time the significant differences between inland and coastal regions, which caused the primary differentiation of exogene relief development processes and the soil and vegetation cover, had already been formed. At the early Quaternary period the vegetation latitude zonation was similar to the modern one, but zones boundary laid farther to the north. Land was larger at that period, climate was moderately warmer, coniferous forests related to the Hudson-Siberian flora, prevailed.

Further elevation of mountain relief, changing of land outlines and climate cooling caused extinction of coniferous taiga, appearance of cedar elfin forest and mountain-valley glaciation. This cardinal reconstruction of natural condi-

tions is dated by Middle Quaternary period. Permafrost appears at lowlands and thick masses of subsurface ice are formed. Solifluction and frost weathering processes, similar to modern, intensively run in the mountains. Forms the bald peak belt.

At the Upper Quarternary period happened another mountain-valley glaciation over the area of no less size. During the interglacial period the land harshly decreased almost to modern size, then the sea receded again and freed the major area of modern shelf.

In connection with numerous uplifts and subsidences of significant land areas went the breaking of connection with North America continent, increasing of absolute height and ruggedness of relief in the mountain areas and accumulation of thick sedimentation strata at lowlands and intermountain basins.

During numerous climate fluctuations, as it became more and less continental, nature zones boundary and permafrost spreading line had rapidly moved to the south, and mountain altitude zones had subsided.

As climate cooling went gradually, the modern flora has been formed during the whole Quaternary period, when ecologically undemanding species replaced the thermophilic formations.

History of land-use

Due to inaccessibility and remoteness of the Reserve's clusters from settlements and constants transportation routes, the territory of the Reserve was essentially unused by the time of its foundation. The forestry activity resolved into forest conservation and limited timber exploitation (cut of separate trees to clear area for building lodges and helipods). Trapping occurred in the territory of future reserve however did not materially affected the fauna number and species content. Minimal human impact to the territory allows to refer all clusters as benchmark.

History of establishment and works of the Reserve

The first attempt of creation of the reserve on the Northern Far East of Russia was made in the 40s of XX century. It was initiated by Alexandr P. Khmelin, director of the Okhotsk-Kolymsky museum of regional studies. In 1941 and 1947 he launched expeditions to the Koni peninsula expected to be included to the future reserve. The exploration of the Yama river was also supposed "for clarification the necessity of creation the Yamsky reserve for conservation the Siberian fir".

In 1947 A.P. Khmelin prepared the documents for foundation of the first reserve. On 18 of June, 1947, the executive committee of the Khabarovsk regional deputy Council made a decision № 430: to approve the Olsky district executive committee decision of creation the state republican reserve on the Koni peninsula and to appeal to Main Reserves Management Department of Council of Ministers of the RSFSR to sanction the foundation of the Reserve. After long correspondence, on 9 of August, 1949, telegram from Moscow to the museum for A.P.Khmelev has come: "Three days ago we received the agreement of the Ministry {Of Internal Affairs} of conveyance the property {to the Reserve} with no other delays. Wait for confirmation of Council of Ministers in late August. Regards — Lekhem". But the confirmation did not come. 1949 was the first year of total offensive to the system of reserves, which was defeated in 1951.

On 29 of August, 1951, I.V. Stalin, the Chairman of the Council of Ministers of the USSR, signed the ordinance № 3192 "Concerning reserves" which ordered to close 88 reserves from 128 existing, and to materially reduce the area of the rest 20 reserves. During all these years A.P.Khmelinin continued writing requests for the Reserve's foundation, but the Main Reserves Management Department did not answer him. At this conjuncture the creation of new reserve on the Northern Far East became impossible. Immense work done under the guidance of A.P. Khmelin, was stopped for a long time.

Just 25 years later the Reserve foundation work was proceeded in the Magadansky region. It was initiated by the acknowledged geologist, geographer and naturalist A.N. Vaskovsky, Head of Laboratory of nature protection of the Institute of Biological problems of the North (IBPN) of the Russian Science Academy of the USSR. The idea had been supported by the Presidium of the Magadan Soviet of the All-Russian Nature Protection Society and at its session of March, 24, 1974 has been adopted a Resolution "On organization of the Magadansky Reserve". Leading specialists of IBPN, North-Eastern complex Scientific Research Institute, Magadan branch of Institute of Pacific Ocean Resources Study and other organizations have been attracted to this work. Administration of the Magadan Region positively apprehended this initiative and in 1977 the Magadan Regional Executive Committee have adopted and sent for agreement to the Soviet of Ministers of the USSR the decision № 378 of 25th of August "On preliminary co-ordination of location of clusters of the Magadansky Reserve". When choosing the clusters' location, the designers of the Reserve had the aim of full reflection of all nature complexes of the Region, especially areas less influenced by the human activity and habitats and multiplying sites of typical and rare flora and fauna species. In 1982 by the Decree of the Soviet of Ministers of RSFSR № 5 of January, 5, by the Order of Head Hunting Administration of RSFSR № 25 of January, 22 and by the Decision of the Magadan Regional Executive Committee № 313 of July, 22 the Magadansky Reserve has been created, and its area and the 2-km buffer zone have been defined. Since the day of establishment till present time the area and boundary of the Reserve haven't experienced any changes.

3 JUSTIFICATION FOR INSCRIPTION

Pyagina mountains. Andreev A.

3a. Criteria under which inscription is proposed (and justification for inscription under these criteria)

The nature complex of Magadansky Reserve is nominated under the following criteria:

(viii) The property is outstanding example representing major stages of the earth's history, including significant geomorphic or physiographic features.

Four clusters of the nominated territory, due to their geographically scattered positions, represent several geological elements, such as mountain systems, ancient volcanoes, coastal relief, shallow waters and islands, mountain glaciation, hydrogeology, neotectonics. There is also noted such interesting act of nature as thermokarst on the Reserve's territory. Some parts of territory are covered by permafrost with different levels of intensity. There is a high diversity of geological materials and rocks — volcanic, sedimentary, metamorphic — of very different ages from Archean.

On the Koni peninsula (the Olsky cluster) one can find pronounced and highly concentrated mountainous glacier lakes and waterfalls, kars and cirques, cliffy jagged ranges and other traces of ancient glaciation.

Alluvial river valleys of the Reserve are characterized by high sedimentation and powerful talik zone development. Located within the area of the ultra-continental climate of the North-Eastern Siberia, the Seimchansky cluster presents all formation stages of the Far North-East flood plain stows of mountain valleys, where prevail branching flood plains and open taliks on the thick strata of alluvial sedimentation. Here is found the most fully developed and thick alluvial flood plain complex, which is not protected for itself nowhere else.

Insular or continuous permafrost with the connected hydrological, relief and soil genesis is developed at the plain areas. Watching the course of these processes on the periphery of continuous permafrost spreading play an important role in scientific estimation of the climate change consequences.

(ix) The property is outstanding example representing signifi¬cant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communi¬ties of plants and animals.

Due to location on the border of tundra and taiga, at the junction of sea and land, due to combination of mountainous and flat reliefs and also considering the cluster nature of the Reserve (some clusters are separated from each by hundreds of kilometers), the Reserve represents exceptional diversity of ecosystems — continental, coastal, marine and insular. It is important to note, that all these ecosystems obtain the particularly high level of preservation, this is wild northern nature, almost unaffected by civilization.

The continental ecosystems are the most diverse — from very specific alluvial plains and cedar elfinwood tundra, waterlogged lowlands and taiga rivers' valleys under poplar-chosenia forests, to flat-lowland larch forests and woodlands, hummocks, mountainous tundra with alpine meadows and stone birch (*Betula ermanii Cham.*) and, at least, alpine tundra belt and glacial nival belt.

Moreover, these ecosystems are typical for the relatively vast territory, much more larger than the Reserve's area — for the entire Okhotsk-Kolyma region including the Kolyma river basin and the significant part of Okhotsk Sea coast columbine.

(x) The property contain the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

- The major part of standard Northern Far East taiga biodiversity is conserved within the Magadansky Reserve. Here is presented the whole transition gradient from ultracontinental to oceanic conditions, and also the whole spectrum of altitude zonality typical for North-East of Russia and the appropriate primary natural complexes.
- Highly productive flood plain communities are protected at Kava-Chelomdjinsky, Yamsky and Seimchansky clusters. Outlined by mountain taiga, lakes and bogs, deciduous flood plains of Okhotsko-Kolymsky area, exist indigenous oasis of diversity and abundance of flora and fauna. Along salmon river valleys lay migration routes of fish and bird species. In beds of river network form reproduction hearths of the Far East salmons, loaches and diverse aquatic species.

- In the vegetal cover of the insular flood plains of Seimchansky cluster prevail deciduous species, in particular *Chosenia arbutifolia*, inscribed onto the IUCN Red List of Threatened Species. Biotic potential and stabilizing function of the insular flood plains are extremely high in conditions of continental climate with very cold winters. However, in time of the Russian Far North-East industrial development major part of rivers of the Upper Kolyma basin have become transformed or completely destroyed because of gold mining. For this reason, the conservation of the primary typical areas of flood plains located within the Reserve is seen to be a very important task.
- SALMON SPAWNING GROUNDS OF THE NORTH-OKHOTSK MACRO-SLOPE ALLUVIAL VALLEYS. In North Okhotia river basins the alluvial-talik valleys form a major reservate of the Far East salmon reproduction. Such are, in particular, rivers Yama and Chelomdja located within the Magadansky Reserve. Here are found the largest on the North Okhotsk coast genetically and ecologically undisturbed spawning grounds of chum and silver salmon (*Oncorhynchus keta, O. kisutch*). Silver salmon spawning grounds at Chelomdja and Yama rivers are the largest and genetically sound of all the remained in Asia and North America.
- WETLAND COMPLEXES OF VALLEY AREAS OF THE SEA OF OKHOTSK BASIN RIVERS. In down-stream of rivers Yama and Kava are located vast terrigene or seaside plains with the developed wetland complex and areas of Japanese stone pine (Bering) tundra. By many parameters this area corresponds to criteria of international value. Here are located the biodiversity spots of waterfowl during nesting period and on migration routes. The hydrophilic flora of these areas is distinguished by high diversity level.
- RELIC AND ENDEMIC FLORA SPOTS. At the Reserve's area exist several relic flora spots. The most notable of those is an isolated spot of Siberian spruce (*Picea obovata*) growth in the river Yama valley which is remoted from its unbroken areal outline at about 900 km (river Aldan basin). In total the Reserve counts 745 vascular plant species, one of which is inscribed into the Red Book of Russia (*Magadania olaensis*). The well-known finding is one fungi specie from the Red Book of Russia on the Kava-Chelomjinsky cluster: alpine fungus (*Hericium alpestris*).

The richest narrow-endemic (Magadan) flora is noted at the areas located at the Okhotsk Sea coast:

1. Salix magadanensis Nedoluzhko — found rarely at the Koni peninsula;
2. *Taraxacum magadanicum Tzvel.* — found very rarely at the Koni peninsula;
3. *Corydalis magadanica A. Khokhr.* — found rarely at the Koni peninsula;

4. *Draba magadanensis Berkutenko et A. Khokhr.* — found rarely at the Koni peninsula;
5. *Saxifraga derbekii Sipl.* — dweller of coastal debris and rocks but may be found up to the bald peak zone. Common at the Koni peninsula, rare at Yamsky marine cluster;
6. *Potentilla rupifraga A.Khokhr.* — typical vegetation component of warm coastal slopes and rocks. Spread from Lisyansky peninsula till Pjagina peninsula. Few growth spots are noted at the Koni peninsula and Yamsky marine cluster.

- BIODIVERSITY AND HIGH POPULATION SIZE OF AVIFAUNA. Processes of interpenetration and spreading of different avifauna complexes — the East Siberian, Okhotsko-Kamchatsky, arctic alpine, hypoarctic and Amur-Ussuryisky — are in progress at the Okhotsko-Kolymsky area. All of these faunas are more or less fully presented at the Reserve. 180 bird species, 142 of which are nesting, are noted here. Asian Pacific biggest colonial nestings of sea birds are located at Yamsky islands. A line of the Reserve's species (17) have been inscribed into the Red Book of Russia, including such North Asia endemics like *Haliaeetus pelagicus*, fish owl, *Anser erythropus, Anas formosa* and probably the *Tringa guttifer* inscribed to the List of Globally Threatened Species. During the nesting period are met: osprey, golden eagle, white-tailed eagle, peregrine falcon, oystercatcher, Far East curlew, marbled murrelet (*Brachyramphus marmoratum*), kittlitz murrelet (*Brachyramphus breviroste*), eagle owl; during migrations — white-billed northern diver, American goose, Bewick's swan; during wintering — jer-falcon and gray shrike. In the river Kava middle-stream lays the relic nesting spot of the whitefronted goose — the arctic circumpolar specie on the southern edge of its areal. Besides, the ecosystems of the Reserve feature the complex of widespread and indigenous species which form the core of North taiga and East Siberian avifaunas (i.e. goshawk, hen-harrier, hobby, Siberian capercally, hazel hen, *Strix nebulosa*, three-toed woodpecker, Siberian tit and Siberian jay).
- RICHNESS OF MARINE COASTAL SOCIETIES, ABUNDANCE OF MARINE MAMMALS. In the area of cold Pjaginskoye current between Yamsky islands and Koni peninsula is located one of the most important phyto- and zooplankton productivity spots. The northern in the Okhotsk Sea and the most reproductive otary rookery (the Red Book of Russia) is located at the Yamsky islands. In coastal waters of Koni and Pjagina peninsulas are noted significant seal accumulations largha (*Phoca vitulina largha*), ringed seal, or akiba and sea hare, or lakhtak). In the buffer zone of the Reserve near Pjaginsky peninsula lay feeding fields and migration routs of gray whale (*Eschrichtius gibbosus*) and bowhead, which are rare in the Okhotsk Sea.

- REPRESENTATIVE LANDSCAPES OF NORTH-EASTERN SIBERIA. Designers of the Reserve, except drawing out the unique nature sites, had the aim of conserving the most representative spots of all the Okhotsk-Kolymsky area which had experienced minimal human unfluence or were practically untouched by man. These include landscapes of sub-Okhotsk mountain taiga, Japanese stone pine tundra, Erman's birch forests, sub-alpine *Ericaceae* and mountain tundra. The preservation regime allows to fulfill these aims: the Reserve features the whole spectrum of zonal landscapes of the vast territory. At the same time, diverse forms of pressure and threats to the Reserve's ecosystems do not give such guarantee in the long-time perspective. Thus, the search of ways to increase the Reserve's status and to effectively realize its functions remains an actual task.

3b. Proposed Statement of Outstanding Universal Value

The Site consists of 5 separate clusters, up to 600 km distant from each other. Due to such remoteness the clusters are characterized by pristine key natural complexes of the Okhotsko-Kolymsky region – wast territory of Far East region. Territory is unique for its representativeness and level of conservation, there are typical as well as specific and extremely different natural complexes: insular, marine, coastal, valley, mountainous, including extremely continental.

The Magadansky Reserve should be estimated as outstanding geology-geomorphic site demonstrating the diversity of geological actions and phenomena typical not only for the North-East Eurasia, but also for other northern regions throughout the world.

The number of nominated property features allows to say about its universal outstanding value in terms of biodiversity:
- flora and vegetation singularity (relict source areas of fir, aspen, fir-Erman's birch forests, areas of flouristic diversity and endemism), formed by transfusion of the Asia-Bering and East-Siberian flouristic regions;
- diversity and abundance of birds fauna (nesting places of globally endangered species, halting places of arctic migrants, region largest sea birds colonies). The Northern Pacific largest birds colony is formed on the Yamsky marine cluster. Moreover, due to high birds population and centuries-old development without any extraneous influence, there was formed the unique birds origin geosystem , which had transformed all natural constituents and

which includes all the islands and adjacent water area. This is the global natural phenomenon;
- the largest spawning areas of Far East salmons;
- exceptionally high productiveness of coastal marine ecosystems.

In the Kolyma river basin and in the Northern Priokhotie there are fully represented the unique ecosystems, which were developed here and which have no analogues neither in the Western Paleoarctic, nor in North America. Among them are continental larch spare forests, Bering cedar tundra, alpine and sub alpine meadows of the Kolyma Range, mixed Erman's birch forests of the Okhotsk Coastline, deciduous forests of pluvial valleys. These ecosystems have mosaic distribution on the territory, and the Reserve cluster structure allows to reach the high level of their representativeness.

3c. Comparative analysis (including state of conservation of similar properties)

GLOBAL BIOGEOGRAPHIC ANALYSIS

There were 176 UNESCO World Heritage List properties as of 1.01.2010, from which less than 20 belong to the Eastern Palaearctic (the largest biogeographic kingdom of those 9 allocated in the M. Udvardy schem, 1982). Here, as estimated by J. Thorsell (2003), the density of World Natural Heritage Sites is 0.47 per million square km., and this is the lowest index. The same index for the Western Palaearctic makes 1.6, which is 3 times higher. Indo-Malay area bears maximal value — 2.26 (disproportions remain valid in course of time).

Thus, in the context of adequacy of the World Natural Heritage properties global coverage, the inscription on the WH List of the Magadansky Reserve, which is located within the Eastern Palaearctic, the least presented region in the WH List, seems to be very reasonable.

REGIONAL CONTEXT

The Magadansky Reserve is located on the North-East of Eurasia, i.e in the region which is traditionally the significant gap in the global map of World Natural Heritage properties distribution, along with the Central Asia, Sahara Desert and Northern Canada. This vast area includes the entire northern part of the Eastern Siberia and Far East of Russia, and is comparable on a scale with some large countries — Mexico, Argentina, India. Currently 3 World Natural

Heritage sites are found here — "Wrangel Island Reserve", "Volcanoes of Kamchatka" and "Central Sikhote-Alin", which are situated around the periphery of this huge area not covering its central continental part. 4 potential natural sites also are situated within this territory: "The Putorana Plateau" (Taimyr), "Lena Pillars" (Yakutia), "The Commander Islands" and "The Kurile Islands" (the first three are inscribed in the Tentative List of Russian State party).

However we can see that stated WH inscribed and potential properties represent distinctly different landscapes and natural phenomena: northern (subarctic) tundra ("Wrangel Island Reserve"), extended mountain range («Central Sikhote-Alin") pronounced trappean landscapes and fjord lakes ("The Putorana Plateau"), rock pillars and fossil reefs («Lena Pillars"), volcanic and continental islands ("The Commander Islands" and "The Kurile Islands"). These sites are far not similar to the Magadansky Reserve.

The nearest property — "Volcanoes of Kamchatka" (1000 km away) appears to differ greatly in genesis (volcanic origin), in relief (cone-type volcanoes up to 4–4,5 km high), and in development dynamic ("living", constantly changing natural landscape: fumaroles, geysers, active volcanoes).

Thus the vast territory of the North-East Eurasia extending from east to west for almost 4000 km and from north to south for 2000–3000 km, remains relatively poorly represented in the current UNESCO WH List. The inscription of the Magadansky Reserve, which belongs to this gap, seems to be very reasonable.

THEMATIC STUDIES — GEOLOGICAL CONTEXT

According to IUCN data (Geological world heritage: a global framework, 2005) there are more than 70 natural and mixed (cultural-natural) Heritage sites in the UNESCO List bearing the geological value to a greater or lesser extent (criterion viii). Further analysis showed that most common types of geological heritage are the following: mountain systems, fossil sites, fluvial complexes (more than 20 WNH sites in each of these groups). Just slightly less but still fully represented such natural sites as volcanoes, coasts and karst, glaciers, reefs and atolls and others. Stratigraphy, mineralogy and meteorite traces are worst represented.

Four clusters of the nominated territory, due to their geographically scattered positions, represent several geological elements, such as mountain systems, ancient volcanoes, coastal relief, shallow waters and islands, mountain glaciation, hydrogeology, neotectonics. There is also noted such interesting act of nature as

thermokarst on the Reserve's territory. Some parts of territory are covered by permafrost with different levels of intensity. We should consider also the significant diversity of geological materials and rocks — volcanic, sedimentary, metamorphic — of very different ages from Archean.

Thus the Magadansky Reserve should be estimated as unique geology-geomorphic site demonstrating the diversity of geological actions and phenomena typical not only for the North-East Eurasia, but also for other northern regions throughout the world.

COMPARISON WITH OTHER PROPERTIES

CRITERION VIII

As mentioned above, the Magadansky Reserve is characterized by significant geologic diversity, but the most geologically important is the area of pronounced mountain glaciation relief, which is situated on the Koni peninsula. In this respect the comparison analysis should by done in relation to this cluster of Magadansky Reserve — here one can find mountainous glacier lakes and waterfalls, kars and cirques, cliffy jagged ranges and other traces of ancient glaciation — not only strongly pronounced but also in very high density. For comparison some potential analogues from already WNH List inscribed sites were chosen. Here are the following principles of selection: a) coastal mountain ranges and plateaus (situated either on the coasts or on the peninsulas, thus under the active influence of ocean waters climate); b) sites situated in temperate or subpolar latitudes): and c) sites with pronounced and different traces of quaternary glaciation.

Generally the Alpine relief in WNH sites is represented well enough (properties in the Himalayas, the Alps, the Rocky Mountains, the Caucasus, the Altai Mountains and others). However if we narrow the search to mountainous areas along the coasts of the northern seas, the number of sites becomes just a few.

Table 1. Characteristics of potentially similar properties.

Name of property; Geographic position	UNESCO WH List inscription criteria	Territory square	Short description	NOTE:
The Magadansky Reserve — Koni peninsula (Russia); Okhotskoe Sea coast	viii, ix, x	883 800 ha	Mid-mountain massifs, glacial relief forms	Submitted for inscription
West Norwegian Fjords (Norway); Norwegian Sea coast	vii, viii	118 000 ha	Classical fjords surrounded by low-mountain ranges	Inscribed in 2005
High Coast (Sweden); Gulf of Bothnia, Baltic Sea Coast	viii	142 000 ha	Coastal mountainous area, lifted up after glacial recession	Inscribed in 2000
Parks and protected areas of Alaska (USA/ Canada); Pacific Ocean Coast	vii, viii, ix, x	9.8 million ha	High mountains, glacial relief forms, thick glaciers, fjords	Inscribed in 1979, extended in 1992, 1994
Gros Morne National Park (Canada); Atlantic Ocean Coast	vii, viii	180 тыс. га	Low mountains, glacial relief forms, fiords	Inscribed in 1987

As we can see, there is no complete analogs of the Olsky cluster of the Magadansky Reserve among WNH properties listed above. Though they have some common features, each of them has obvious distinguishing characteristics and that makes them the unique natural phenomena. Thus, “West Norwegian Fjords” represents two areas of classical Norwegian fjords which are not found at the Koni peninsula. The Swedish “High Coast” demonstrates the globally

unique phenomenon: the glacio-isostatic uplift after melting of the quaternary glacier, which is continuing up to date (there are no such processes in the Magadansky Reserve). Property of Alaska has severe glacial highlands up to 5000–6000 meters, with giant ridge-and-valley glaciers and with deep and vast fjords of the Alaska Bay (i.e. level of the mountain glaciation is much more significant than the same of the Magadansky Reserve). Alternatively, in the Canadian Gros Morne National Park on the north-west coast of the Newfoundland island the low dissected upland up to 800 meters prevails (this site has common glacial history with the Magadansky Reserve, however relief of the Canadian property has distinctly another relief forms and genesis).

CRITERION IX

Due to location on the border of tundra and taiga, at the junction of sea and land, due to combination of mountainous and flat reliefs and also considering the cluster nature of the Reserve (some clusters are separated from each by hundreds of kilometers), the Reserve represents exceptional diversity of ecosystems — continental, coastal, marine and insular. It is important to note, that all these ecosystems obtain the particularly high level of preservation, this is wild northern nature, almost unaffected by civilization.

The continental ecosystems are the most diverse — from very specific alluvial plains and cedar elfinwood tundra, waterlogged lowlands and taiga rivers' valleys under poplar-chosenia forests, to flat-lowland larch forests and woodlands, hummocks, mountainous tundra with alpine meadows and stone birch (*Betula ermanii Cham.*) and, at least, alpine tundra belt and glacial nival belt.

Moreover, these ecosystems are typical for the relatively vast territory, much more larger than the Reserve's area — for the entire Okhotsk-Kolyma region including the Kolyma river basin and the significant part of Okhotsk Sea coast columbine and the large mountain ranges such as the Cherskogo range and the Kolyma range giving rises to hundreds of smaller stream flows.

To analyze the potential similar properties, the WNH inscribed and promising sites within the other parts of the North-East Eurasia (territory of Russia) and (for the perfection of comparative analysis) within some neighboring states (Japan — The Northern Hokkaido Island, USA and Canada — also the northern territories) were chosen. So we analyze not only the nearest, but also more remote “neighbors” on the world geographic map.

Table 2. Characteristics of potentially similar properties.

Name of property; Geographic position / Ecosystem types	Continental ecosystems	Coast	Islands and groups of islands	Aquatic area	NOTE:
Magadansky Reserve (Russia)	+ Waterlogged lowlands, flat and low mountainous taiga, middle mountainous tundra with typical alpine relief, alpine tundra belt	+	+	+	Submitted for inscription
Volcanoes of Kamchatka (Russia)	+ Very high volcanoes and volcanic plateaus covered by taiga and tundra, with geysers, thermal springs, fumaroles and others	+	+ - (minimal)	+ - (minimal)	Inscribed in 1996
The Putorana Plateau (Russia)	+ Rugged basaltic tableland covered by taiga, wooded tundra and tundra, with fjord lakes, trap areas and waterfalls	-	-	-	Submitted for inscription
Lena Pillars (Russia)	+ Extended part of the river valley with many rock pillars, fluttering sands (tukulans), fossil reefs, larch taiga	-	-	-	Submitted for inscription
Wrangel Island Reserve	+ Large mountainous island covered by arctic tundra, stone fields and tundra steppe	+	+	+	Inscribed in 2003

Name of property; Geographic position / Ecosystem types	Continental ecosystems	Coast	Islands and groups of islands	Aquatic area	NOTE:
Central Sikhote-Alin (Russia)	+ Rugged mountain ranges covered by cedar-broadleaf taiga and mountainous tundra with traces of ancient volcanism	+	-	+ - (minimal)	Inscribed in 2001
Kuril Islands (Russia)	_ (relatively small volcanogenic islands)	+	+	+	Submitted for inscription
Kommander Islands	+ Large mountainous islands (the Beringa island and the Medny island) covered by tundra and oceanic wastelands)	+	+	+	Submitted for inscription
Shiretoko Cape (Japan)	+ The peninsula: the area from the sea coast to the adjoining mountain range	+	-	+	Inscribed in 2005
Alaska	+ Coniferous sparse woods, mountainous tundra, alpine tundra belt, large high-mountain glaciers	+	+	+	Inscribed 1979, 1992

Thus, clusters of the Magadansky Reserve, if put together, demonstrate very high diversity of intact ecosystems, consequently providing diversity and integrity of natural processes. Comparison with other WNH territories (inscribed or promising) in this region shows not only the ecosystem diversity of the Reserve but also singularity of their combination (for example, no other potential analogue has the combination of alpine relief with aquatic area, sea coast, the group of islands and the wast waterlogged areas).

CRITERION X

Territory contains the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

The outstanding diversity of natural conditions and cluster type of the Magadansky Reserve territory determines its outstanding biological diversity. The major part of the biodiversity of Northern Far East taiga is preserved in the Reserve. There are no other national SPNAs within this wast region to compare with the Magadansky Reserve in terms of this criterion. In the Reserve's flora and fauna lists there are species of the most diverse continental ecosystems and coastal and insular species as well as marine species.

The most obvious instance of the richest biodiversity of described region is silver salmon (specie of Far East salmon of high economic importance) and sea lion — rare marine animal listed in the IUCN Red Data Book.

Silver salmon. Spawning areas of silver salmon in the Chelomdja and Yama rivers are probably the largest and genetically full-scaled of all remaining spawning regions. There is no similar sites within other WH properties, situated on the north-east of Eurasia and north-west of the New World, in other words within the Pacific salmon habitat. It is familiar that salmon is represented by the number of species (silver salmon is one of them), which occur in the north of the Pacific Ocean — along shores of Russia, Korea and Japan (including the Okhotsk, Bering sea and Sea of Japan), near Kamchatka, Chukotka, on the Kurile islands and Sakhalin island, as well as near the North America coast line — from Alaska to Oregon. There are about ten World Natural Heritage properties within this wast territory: Wrangel Island, Kamchatka and Sikhote-Alin in Russia; Shirakami and Shiretoko in Japan; Parks and protected areas of Alaska and Yukon, Nahanni, Yosemite and Redwood National Parks on the west of USA and Canada. Moreover, each of these properties has its own specific in this context.

For example, Russian Kamchatka boasts its large spawning red salmon population in the Kurilskoe lake, while there are also silver salmon, chum salmon, chinook salmon, pink salmon. In the “Central Sikhote-Alin” property the most widespread are chum salmon, pink salmon and chinook salmon, but silver salmon is rare here. Near the Japanese property Shiretoko there are several species of salmon — white-spotted charr, masu salmon, pink salmon, chum salmon, Japanese huchen. In Alaska, more exactly in the Glacier

Bay National park, the main salmon specie is chinook salmon. Chum salmon, pink salmon and red salmon occur in the mountainous rivers of Olympic National Park (USA).

The Magadansky Reserve profile is determined by the presence of silver salmon spawning areas. The Reserve (more exactly its Yama-Chelomdjinsky cluster) plays a key role in conservation of particularly this specie of Pacific salmon.

Sea lion. The Okhotsk Sea northernmost reproductive sea lion (eared seal) rookery is situated on the largest Yamsky island — the Motykil island. It shows the exclusive role of the Magadansky Reserve in conservation if this large sea lion, the total number of which is obviously less than 50–60 thousands units over the world. This number is constantly decreasing and current habitat of this animal is comparatively limited and is situated within the Pacific coast of the North-east Eurasia and North America and ocean space between them including the Okhotsk Sea (the largest rookeries are on the Aleutian Islands, i.e. outside Russia).

However, far not every WH property (potential and already inscribed) within the sea lion distribution area plays the significant role for this specie. The most sizable concentration of this marine animal is on the following properties — "Volcanoes of Kamchatka", "The Kurile Islands", "The Commander Islands", "Parks and protected areas of Alaska". Minor sea lion concentration is on "Shiretoko" and "The Central Sikhote-Alin" (these sites are situated on the southern border of sea lion distribution area).

Small Yamsky islands within the Magadansky Reserve do not pretend to be the global focus area of sea lion distribution. However the particular value of these islands is in the fact, that they contain one of the northernmost rookeries of sea lion of the North Pacific, which has positive influence on the population stability of this endangered specie.

SUMMARY:

Comparison with other valued territories of East-Northern Eurasia and adjoining territories already recognized as the World Natural Heritage or recommended to inscription make it possible to conclude that the Magadansky Reserve is unique and has no obvious global analogues. It is primarily evidenced by two aspects — ecosystems (criterion ix) and biotic (criterion x).

The Magadansky Reserve should be recognized as the unique geology-geomorphic site with the various spectrum of geologic phenomena and processes: mountain ranges, ancient volcanism, coastal relief, shallow waters and islands, mountainous glaciation, hydrogeology, neotectonics, permafrost, thermo karst and others. Moreover, the Koni peninsula (the Olsky cluster) with its highly concentrated and pronounced typical glacier relief (kars, cirques, trough valleys, mountain lakes, waterfalls, cliffy jagged ranges) has the particular scientific value.

The cluster nature of the Reserve, the composition of flat and mountainous reliefs and its boundary location (between taiga and tundra and between land and sea) are responsible for development of different types of intact ecosystems — continental and coastal, marine and insular. Moreover, these ecosystems are representative for the vast territory — the whole Okhotsko-Kolymsky region, which is hundred times larger than the Reserve's area and is the significant part of the higher level region — the North-Eastern Eurasia.

Further, the Reserve boasts the exceptional biodiversity, which includes the number of species of great economic and scientific significance. For instance, there are noted the world largest silver salmon (one of the Pacific salmon species) spawning areas and also the northernmost reproductive sea lion (eared seal) rookery of the Okhotsk Sea (listed in the IUCN Red Data Book). It makes the Magadansky Reserve an outstanding SPA among the other ones in the same region. The great contribution of the Magadansky Reserve in conservation of these species is obvious.

The Magadansky Reserve is the promising site regarding the global distribution of the WNH properties.

Firstly, it is located within the Eastern Palaearctic — the giant biogeographic region with the lowest density of WNH sites comparing with other world regions.

Secondly, the Reserve is situated in the most uninvolved be the UNESCO Convention part of this biogeographic region — the North-East Eurasia which includes the major parts of the Eastern Siberia and Far East of Russia. On the global WNH properties distribution map this region appears to be the extensive gap. Only on its periphery there are 3 already inscribed WNH sites — “Volcanoes of Kamchatka”, “Wrangel Island Reserve” and “Central Sikhote-Alin” and it is obviously insufficiently. This is reasonable to recognize here one or two or more WHN properties else.

Consequently, the inscription of the Magadansky Reserve on the UNESCO WH List would be in full accordance with policies of the World Heritage Center and the Global Strategy realizing since 1994 for a more balanced, representative and credible UNESCO WH List — to completely cover the World natural and cultural diversity and all the main geographical regions of the Earth.

3d. Integrity and/or Authenticity

Integrity

One should take into consideration that already upon establishment of the Magadansky Reserve the integrity principles have been observed.

Integrity substantiation has been in accordance with the "Operational Guidelines for the implementation of the Convention":

Paragraph 88:

Despite the remoteness of its clusters, the Magadansky Reserve presents the united natural complex with its components indissolubly tied with each other by the common origin and the dynamics of natural development. Each cluster is an integrated preserved area which has never experienced influence of human management activity.

Size of clusters (from 38 096 ha till 624 456 ha) is quite enough for supporting the existence and functions of typical natural complexes of North-East Asia. The Reserve's area serves not only as a refuge for rare, endemic and relic species, but also as a hearth of reproduction of species having an ecosystem or management value. With the status of the State Nature Reserve — the highest conservation status in Russia, — the area of the Magadansky Reserve provides conservation and natural reproduction of separate biological species and the whole ecosystems.

Paragraph 90:
The biophysical processes and landform features of the nominated area are intact. The Reserve conserves the standard wast territory ecosystems not affected by human activity.

Paragraph 93:
The four Magadansky Reserve clusters represent the whole grade of conditions from ultra continental to oceanic and also the whole range of altitude belts typical for the North-East of Russia and contain all major interrelated and interdependent elements in their natural conditions. All major elements of pronounced mountainous glacial relief are presented ath the Koni peninsula.

Paragraph 94:
Actually each of the Reserve parts is a substantive integral natural complex and includes all necessary elements for long-term conservation of key marine, insular, coastal and continental ecosystems of the taiga area of the Northern Far East and its biodiversity.

Paragraph 95:
The Reserve is an important site of biodiversity conservation. Four of its clusters include the habitats of very different marine, insular, stream and taiga fauna and flora, typical for this biogeographic region.

4 STATE OF CONSERVATION AND FACTORS AFFECTING THE PROPERTY

Kava river bank. Kantor V.

4a. Present state of conservation

The modern state of the Reserve's fauna is characterised by the following:

1. For many years avifauna remains rich and diverse. About **180** bird species are noted within the Reserve, **142** of which are nesting at its area. Population size of Haliaeetus pelagicus (IUCN Red Data Book) is constant for many years and makes about 50 pairs. Osprey which is nesting at the Kava-Chelomdjinsky cluster (average number is 18 pairs) is inscribed into the Red Book of the RF. Osprey possibly dwells at the Olsky and Seimchansky clusters, however, no nests have been found there yet. Nestings of peregrin falcon, golden eagle and very rare blakiston's fish-owl were noted. Peregrine and not numerous fish owl, golden eagle, white-tailed eagle, Cygnus bewickii and white-billed northern diver are frequent dwellers of the Magadansky Reserve, nests of which haven't been noted. Colonial sea birds (auks, puffin, horned puffin, murres, black guillemot, gulls, cormorants) each year form the largest Pacific bird bazaars (over 7 million specimen) at the rocky shores of the Olsky and Yamsky clusters.

2. Terrestrial mammals of the Reserve are presented by 37 species and their populations size remains relatively stable. Some of regionally rare species (Kamchatka marmot, bats, European water-shrew, lynx, and large Japanese field mouse) are constantly noted within the Reserve. Such species like common red backed voles, chipmunk, blue hare, fox, sable, ermine, mink, elk, and brown bear are typical at the Reserve. Their population is maintained at the ecologically substantiated level. At the largest of Yamsky islands — the Matykil island is located the Okhotsk Sea northern reproductive otary rookery. Otary population size has increased for the last years: formerly their number was about 800 specimens, and now their total size exceeds 1200.

The Reserve's natural complexes are keeping in stable conditions. The Reserve's territory is the reproductive center of common and rare species of plants and animals. All natural zones and landscapes of Magadan Region are presented in the Reserve and are in their state of nature: from alpine tundra belt and alpine tundra to floodplane high forests. Generally the Reserve's natural complex conditions are defined by the natural processes.

4b. Factors Affecting the Property

(i) Development Pressures

The Reserve's area is not influenced by any industrial or management human activity, including private agricultural land use. No populated areas (except state inspectors' compounds which are located within the buffer zone in accordance with the legislation) are situated at the Reserve's area. Clusters of the Reserve are located at hard-to-reach areas, significantly remoted from large localities, which could have exercised negative influence over the Reserve's area. Trespassing over the Reserve's area is prohibited and is fulfilled only on official duty along its boundary.

(ii) Environmental Pressures

Industrial objects exercise only indirect influence of the state of nature complexes.

1. Kava-Chelomdjinsky cluster. "Butyvkan" gold-mining co-operative leads placer gold development at river Kava upper-stream within Khabarovsky Krai. As the result of gold mining its effluents can pollute the river and the Reserve's area located downstream.

2. Olsky and Yamsky clusters. Both clusters have marine boundary laying along Koni and Pjagina peninsulas and Yamsky islands. If the planned oil development of the Okhotsk Sea shelf starts, the shore would possibly be polluted by blowouts of oil and other products of drilling.

3. Seimchansky cluster. Kolymskaya hydroelectric generating station (HGS) is located at Kolyma river upstream of the Reserve (Sinegorye village). River control caused by its work neutralizes natural river floods which had been maintained thermal conditions of flood plain and constrained ingression of permafrost. Consequently the areas of unique inundable poplar-chosenia associations decrease and are gradually replaced by more frost friendly larch forests.

Nowadays construction of Srednekanskaya HGS is in the closing stages. It is situated just 200 km upstream the Kolyma river from the Seimchansky cluster. After putting it into operation the negative affect on the Reserve will increase.

Hunting and fishing at the adjoined territory execute definite influence over the state of the protected area. It is especially notable at small areas. For instance, the unlimited hunting caused elk popu-

lation decrease at Yamsky cluster. Formerly sufficient number of elks wintered at insular complexes of the river within the Reserve's area, and in summer spread over the adjoining territory. Same relates to the Kava-Chelomdjinsky cluster. Under the pressure of unlimited fishing in Yama down-stream number of spawning salmons decreased by almost 50 %.

Other means of management activity do not influence the conservation state of the Site. 20 years of monitoring haven't registered any significant changes caused by climate fluctuations and floods.

(iii) Natural disasters and preparedness (earthquakes, floods, fires, etc.)

Natural disasters threatening the integrity of the reserved ecosystems are rather rare. Mostly these are floods and forest fires. Floods happen annually but they do not bring significant harm to valley complexes as water level raising is usually short in time. Besides, the flood plain ecosystems are well adapted to floods and their many positive features wouldn't have showed without floods.

Forest fires may bring significant harm to the Reserve's ecosystems as their area can be compared with the area of the clusters. Fires appear spontaneously, as a rule, at hard-to-reach areas and are hard for fighting. The main reason for appearing of fires are "dry thunderstorms" typical for dry spells of the year. However, the Reserve's area has a wide spectrum of pyrogenous landscapes and a line of after-fire successions of different age and trajectories.

(iv) Visitor/tourism pressures

The number of annual visits of the Reserve is insignificant and is strictly regulated by the Administration of the Reserve. The tourism puts practically no pressure over the natural complexes of the Reserve. "DVS-Tour" LLC realizes the possibility of tourist visits of the Reserve. The season starts in July and ends in September. Number of tourists was 89 in 2006, 62 in 2007, 83 in 2008, 10 in 2009. The tourists are from Russia and abroad.

(v) Number of inhabitants within property, buffer zone

There are no constant inhabitants within the Reserve and its buffer zone. The scientific stationary base of the Magadan branch of Institute of Pacific Ocean Resources Study occupies 0.2 ha of the Reserve's area. Total area occupied by localities and separate living and production buildings makes 0.5 ha. Employees of the Reserve have no official land plots, personal subsidiary plots or land plots attached to the house. There are no arboretums and brooders within the Reserve.

(vi) Scientific researches

Scientific researches in the Reserve are carried out by its employees on the following subjects: "Study of natural processes course and finding out relations between separate parts of natural complex (Nature records)" and "Monitoring of Steller's sea eagle nesting". Moreover, some scientific organizations carries out scientific researches in the Reserve (Institute of the Biological Problems of the North (IBPN) of FEB of RSA, MagadanNIRO FSI, Kamchatka Branch of Pacific institute of Geography FEB RSA). During recent years they worked on the following subjects: "Monitoring in the Yamsky fir island", "Earled seal population conditions on the Matykil island", "Census of small mammals on constant lines in the Chelomdja river middle stream and population dependance from feeding and weather conditions", "Monitoring of seabird colonies in the Koni peninsula and its condition changes analysis during 1996–2005 period", "Study of marine rookery birds influence on the Yamsky islands flora", "Ecology and monitoring of birds in the Kava river middle stream", "Bio monitoring of Pacofoc salmon populations" and others.

5 PROTECTION AND MANAGEMENT OF THE PROPERTY

Njasha lake. Kava-Chelomdjinsky cluster. Butorin A.

5a. Ownership

The area of the Magadansky Reserve is in the ownership of Russian Federation.

Russian Federation
Moscow, Krasnopresnenskaya nab.
Government House
Premier-Minister

The specially protected natural areas of the federal level (including the Magadansky Reserve) are the federal property under the jurisdiction of federal public authorities. The Magadansky Reserve is administered by the "Magadansky State Nature Reserve" Federal State Institution.

5b. Protective designation

State Nature Reserve.

Juridical status is defined by the state legislative acts:

- Law of Russian Federation "On specially protected nature areas" of 14.03.1995. N33-F3 (Annex B1);
- Decision of the State of Ministers of RSFSR "On organization of the Magadansky State Reserve of Head Hunting and Reserves Administration of RSFSR in Magadan Region" of 5.01.1982 № 5 (Annex B3).

5c. Means of implementing protective measures

Guard Service of the Reserve has 27 employees, including 23 State inspectors of the Reserve (the others are Administrative staff). There is no departmental weapon at the moment except special means like handcuffs and clubs. Guard service is based at 11 compounds. Guarding regime of the Reserve is described in the "Regulations of the Magadansky State Nature Reserve" (Annex B6).

5d. Existing plans related to municipality and region in which the proposed property is located (e.g., regional or local plan, conservation plan, tourism development plan)

1. Regulations of the State establishment "Magadansky State Nature Reserve" has been confirmed at 27.03.2001 by the Ministry of Nature Resources of Russian Federation.
2. Decision of the Executive Committee of the Magadan regional Soviet of People's Deputies of 22.07.1982 № 313 "On organization of the Magadansky State Nature Reserve, its area, boundary and buffer zone".
3. Regulations of the "Kava valley" complex reservation.

5e. Property management plan or other management system

The management of the Reserve is executed according to the "Regulations of the state institution "The Magadansky State Nature Reserve" confirmed at 27.03.2001 by the Ministry of Nature Resources of Russian Federation. (Annex B6).

The general direction of the Reserve's activity is maintenance of natural reproduction of typical and unique nature complexes with the whole aggregate of their components (gene fund), monitoring over the way of natural processes, working out and executing principles and methods of control over the wild nature conservation state, propagation of ecological and environmental information among the regional population.

In 2009, in accordance with the Order № 491 of the Federal Service for Supervision of Natural Resource Usage, the Reserve management plan 2010–2014 was developed. Annex B7 holds the draft management plan.

Development plan foresees the following measures:
- increasing of the Reserve's area at the expense of the adjoining sea aquatory;
- increasing of the Guard Service staff and reorganization of the protection system of the Reserve's territory and aquatory;
- working out the strategy of forest fires control based on the GIS-system, working out and adoption of a system of measures of fire control based on this strategy;
- mutual measures for conservation of forest resources and forest fires control with the State Department for Aircraft Forest Protection and the Forest Guard;

- creation of GIS of the Reserve and the adjoining areas;
- creation of Center of ecological education and enlightenment of regional population.

For support of this activity, providing it with the latest methodic and developments, considerable attention would be paid to scientific research at the following directions:

- study of structural organization of territory protection and creation of the most optimal guard systems adapted to local conditions;
- study of typical and rare flora and fauna species;
- development of methodic and systems control and monitoring over the natural ecosystems' state;
- creating databases of the Reserve's nature complexes, enriching the existing data for GIS development;
- personnel training.

5f. Sources and levels of finance

The main financing source of the Magadansky Reserve is the Federal budget. During last years the amount of budget funds has been slowly increasing. The total sum of the federal budget funds in 2009 made 18 552 600 RuR. The additional funds have been raised from:

- non-budget sources — 12 000 RuR.

In total in 2009 the Reserve has received 18 564 600 RuR (approx. USA Dollars 600 000).

5g. Sources of expertise and training in conservation and management techniques

Major specialists of the Guard Service, Scientific research department, Department of ecological education and the Administration of the Reserve have higher and secondary specialized education, and most employees have the experience of working in the Specially Protected Nature Areas Network of about 10 years. Guard Service Inspectors are trained by the Reserve's specialists. In 2009 specialists of the Scientific research division have published 1 article. 1 employee participated in international symposium devoted to predatory birds in Scotland — Raptor Research Foundation 2009 Annual Conference. Pitlochry, Scotland, 29 September — 4 October 2009.

5h. Visitor facilities and statistics

Ways to reach the Reserve's clusters are the following:

- Kava-Chelomdjinsky cluster is located 190 km away from Magadan. The road is partly macadamized, with one ferrycraft over Yana river. The ferrycraft is working 2 times a day by 4 hours each.
- Olsky cluster is remoted from the nearest point of the Reserve by 40 nautical miles. It can be reached by a ship or a helicopter.
- Yamsky cluster is remoted by 300 nautical miles, can be reached by a ship or a helicopter.
- Seimchansky cluster. 520 km by road, then 110 km along Kolyma river on the motorboat.

The Reserve has confirmed 5 ecological trails which are being built now. At Yamsky cluster there is a scientific tourism complex equipped for accommodation of 15 persons at a time. The complex responds to all measures of protection of nature complexes and does not exercise significant influence over the Site. It is annually visited by about 20 tourists.

In 2008 the Reserve was visited by 83 of tourists, in 2009 — by 10 tourists.

There are few qualified tourist companies in Magadan able to organize tourism at the Nature areas.

5.i. Policies and programmes related to the presentation and promotion of the property

1. The informational propagation activity is executed by publication and spreading of brochures, booklets, guide-books, and also by measures carried out within the frames of "The March of Parks" campaign.

In 2009 the Reserve's employees appeared in mass media 33 times: 28 articles were published in regional press (popular science and informational editions); 3 regional TV and 2 regional radio appearances were made.

25 lectures, workshops, discussions, video film exhibitions and others were delivered for 730 participants (children of school ages) in total.

The photo shows "In the world of wilderness", "Wild land of birds", "Glamorous world of plants", "Wild nature land", "Region where I

live", "Mushroom glade" tool place in schools and kindergartens 6 times (total attendance 1490).

Within the "Marsh of parks" campaign the Reserve's employees delivered lectures, lessons, games and discussions about the Reserve, showed video films in the schools, Children's Ecological Centre. The Reserve's employees carried on literary competition "World of wilderness", crossword competition "World of wilderness", photo show "Wild nature land". Finally the celebratory musical performance with winner's awards took place. Different events devoted to the Earth's Day took place. The fund-raising campaign in support of the Reserve among the commercial organizations of the city took place.

Reserve's compounds and the touristic complex (four 4-bed houses, bath-house, diner) at the outfall of Studenaya river, Yama's right tributary.
Butorin A.

2. 2 ecological education specialists are working at the Reserve. 5 ecological trails have been designed. In 2000 within the frames of eco-tourism development the Reserve has received first foreign tourists. In 2003 6 foreign tourist groups (55 people in total) and 3 Russian tourist groups (30 people in total) have visited the Reserve.

3. The Reserve maintains active connections with public environmental organizations like "The living Arctic", Magadan Center for environmental protection, the All-Russian Nature Protection Society.

5j. Staffing levels (professional, technical, maintenance)

Before the end of the 2009 the Reserve has 40 employees, among them:
Front office — 3
Accounts and human resources department — 4
Security — 27
Scientific research division including Environmental education department — 4
Driver — 2

6 MONITORING

View of Kava river valley. Kava-Chelomdjinsky cluster. Butorin A.

6a. Key indicators for measuring state of conservation

Indicator	Period	Data storage place
Winter itinerary animal census	Late March — early April, annually	Relevant volume of Nature records
Number and success of Steller's sea eagle reproduction	Annually during the summer season	Relevant volume of Nature records
Berry shrubs record of productivity	Annually in the early August	Nature records, Volumes since 2004
Phenological observations (Calendar of nature)	During the whole year	Relevant volume of Nature records

6b. Administrative arrangements for monitoring property

Long-term phenological watch and constant monitoring of species composition and population size of a line of species is carried out at the Reserve. All data gathered during the 20-year period of the Reserve's existence is reflected in annual volumes of "The Nature Chronicles", which allows to define the state of conservation of the reserved complexes and to reveal changes for the watching period.

Besides, are fulfilled special works for rare bird and mammal species watch (Haliaeetus pelagicus, fish owl, otary, Kamchatka marmot). "The Nature Chronicles" volumes, inventory cards, archive data are kept in the Department of scientific research of the Reserve.

Winter trail inventory are most informative for estimation of mammal populations state. Aircraft visual inventory of huffed animals which had been annually carried out at the Reserve until 1993, has been ceased because of the lack of funds.

Weather stations and hydrological posts of the Kolymskaya hydro-weather-service lead their watch in the direct proximity of the Reserve. Active weather stations and hydro-posts are situated at all clusters of the Reserve: at Tauy river (Tolon village), upstream of the central compound of the Kava-Chelomdjinsky cluster; at the Yama river outflow ("Brokhovo" weather station); at Koni peninsula; at the upper- and lower-stream of Kolyma near Seimchansky cluster exist two hydro-posts — "Balygchan village" (with weather station) and "Nizhny Seimchan".

6c. Results of previous reporting exercises

According to the winter trail inventory results, the population size of animals at the Reserve fluctuate within the following limits: sable — 230–910 specimen; ermine — 100–740; mink — 40–310; fox — 30–600; blue hare — 200–1090; squirrel — 130–900; elk — 60–360.

At 1988–2008 the number of sable, mink and ermine has insignificantly fluctuated but as a whole stayed at the same level. Sable and mink have more or less vivid 4–5 year population size circles, and ermine doesn't. Maximums and minimums of the total population size at different clusters do not tally.

7 DOCUMENTATION

Sea lion rookery on the Matykil island.Yamsky insular cluster. Shon R. Jason

7a. Photographs, slides, image inventory and authorization table and other audiovisual materials

IMAGE INVENTORY AND PHOTOGRAPH AND AUDIOVISUAL AUTHORIZATION FORM							
Id. No	Format (slide/ print/ video)	Caption	Date of Photo (mo/yr)	Photographer/ Director of the video	Copyright owner (if different than photographer/ director of video	Contact details of copyright owner (Name, address, tel/ fax, and e-mail)	Non exclusive cession of rights
Kava-Chelomdjinsky cluster							
1	Slide	View of Kava valley	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
2	Slide	Kava's sandy shore at the outlet of Elgendja river — Kava's left tributary	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
3	Slide	Sunset at Kava	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
4	Slide	Autumn coloured riverside hills at Tauy river. Border of the Kava-Chelomdjinsky cluster	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
5	Slide	Bogged area at the Elgendja river valley (Kava's tributary)	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
6	Slide	62 white-tailed eagles are nesting at the Reserve's area	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
7	Slide	Ringed seal gets 150 km upstream of Kava. At the outlet of Omylen river, Kava's right tributary	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
Yamsky cluster							
8	Slide	One of the Reserve's compounds and the touristic complex (four 4-bed houses, bath-house, diner) at the outfall of Studenaya river, Yama's right tributary	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
9	Slide	River Yama valley, photo survey from the helicopter	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes

10	Slide	Each year tens of thousands of salmons (chum and silver salmons) enter the crystal clear branches of Yama for spawning	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
11	Slide	Lebedinoye lake	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
12	Slide	Mountain tundra in the head stream of Studenaya river	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
13	Slide	Left side of Yama middle stream. Here grows spruce remoted from the main areal for over 1000 km	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
14	Slide	Polygonal fissure ice — a typical scenery at the head stream of rivers Yama and Studenaya	09.2001	Kantor V.	Kantor V.	vadimkantor@mail.ru	Yes
Olsky cluster (Koni peninsula)							
15-17	Slide	Primary landscapes of the Okhotsk Sea coast. Burgauli river. Southern coast of the Koni peninsula.	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
18	Slide	Mountain tundra (Eguya peak, 1604 m) not far from the eastern border of the Olsky cluster	09.2001	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes
Seimchansky cluster							
19-20	Slide	Panorama view of Kolyma river within the Seimchansky cluster	08.2002	Butorin A.	Butorin A.	butorin@nhpfund.ru	Yes

7b. Texts relating to protective designation, copies of property management plans or documented management systems and extracts of other plans relevant to the property

Copies of Orders, Decrees and Management plans related to the Site, are given in Annex B:

- B1. Abstract from the Federal law of Russian Federation "On Specially Protected Nature Areas", 1995;
- B2. Decision of the State of Ministers of RSFSR "On organization of the Magadansky State Reserve of Head Hunting and Reserves Administration of RSFSR in Magadan Region" of 5.01.1982 № 5;
- B3. Order of the Head Hunting and Reserves Administration by the Soviet of Ministers of RSFSR "On organization of the Magadansky State Reserve in the Magadan Region" of 22.01.1982 № 25;
- B4. Decision of the Executive Committee of the Magadan regional Soviet of People's Deputies of 22.07.1982 № 313 "On organization of the Magadansky State Nature Reserve, its area, boundary and buffer zone";
- B5. Letters of the Governor of the Magadan Region on nomination of the Magadansky Reserve for inscription on the UNESCO World Heritage List of 2001 and 2009;
- B6. Regulations of the state institution "The Magadansky State Nature Reserve" confirmed at 27.03.2001 by the Ministry of Natural Resources of Russian Federation;
- B7. The Reserve draft management plan 2010–2014.

7c. Form and date of most recent records or inventory of property

1. Nature records, Vol. 26, 2008, Magadan
2. Nature records, Vol. 25, 2007, Magadan
3. Nature records, Vol. 24, 2006, Magadan
4. Nature records, Volumes of 1983–2004
5. Information reports of Magadansky State Natural Reserve chief, 1997–2008. Are kept at the Department of environmental protection and ecological safety of the Ministry of Nature Resources of Russia.
6. Zapovedniks and National Parks of Russia. Moscow, 1998, 136 p.

Recent forest management of the whole area of the Reserve has been carried out in 1985–1986.

1st category works have been fulfilled at the area of 81 728 ha, 2nd category works — at the area of 120 627 ha, 3rd category works — at the area of 120 746 ha, cameral interpretation of aerial photo survey has covered the area of 560 704 ha.

Topographical maps of 1 : 25 000 and partly 1 : 10 000 were used as geodesic plot basis.

Data on changes in the state of forests are annually inscribed into the documentation record.

Inventory of flora and fauna has been carried out soon after the establishment of the Reserve and is continued till the present day. The latest data is given in vol.21 of "The Nature Chronicles" for year 2003.

7d. Address where inventory, records and archives are held

The Ministry of the Natural Resources and Ecology of the Russian Federation
Address:
123995, Moscow, GSP-5, Bolshaya Gruzinskaya st. 4/6, D-242.

Magadansky State Nature Reserve
Address:
685000, Magadan, Koltsevaya st. 17.

7e. Bibliography

Annex D contains over 50 names of significant science works devoted to the Magadansky Reserve.

8 CONTACT INFORMATION OF RESPONSIBLE AUTHORITIES

8a. Preparer Name:

1. Alexey Butorin
Position: President of Natural Heritage Protection Fund
Address: 1 Khvostov per., 13/1
109017 Moscow, Russia
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Fax: 7 (499) 150 92 93
E-mail: info@nhpfund.ru

2. Prof. Peter A. Schmidt
Position: Dresden University of Technology
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D-01737 Tharandt, Germany
Telephone: +49 35203 383 1288
Fax: +49 35203 383 1399
E-Mail: schmidt@forst.tu-dresden.de

3.Vladimir Ivanov
Position: Senior research assistant, FSI "Magadansky Reserve"
Address: 25/21, 109 Portovaya Str, 685000 Magadan, Russia
Tel: of. (4132) 606113, cell: +7924 8501263
E-mail: ivanov@magterra.ru

4. Dr. Nikolay Maksakovsky
Position: Leading Researcher of the Russian Institute
for Cultural and Natural Heritage
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129366 Moscow Russia
Telephone: +7 495 686 13 19
Fax: +7 495 686 13 24
E-mail: maxakovsky@mtu-net.ru

5. Dr. Mariya Kladovschikova
Position: Executive Director of Natural Heritage Protection Fund
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Факс: +7 499 150 92 93
E-mail: kladovschikova@nhpfund.ru

6. Ekaterina Petrovskaya
Position: Designer of the "Natural Heritage Protection Fund"
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109017 Moscow, Russia
Tel: +7 495 444 00 12
Fax: +7 499 150 92 93
E-mail: petrovskayaekaterina@yandex.ru

8b. Official Local Institution/Agency

The Reserve is the Federal State Institution within the jurisdiction of Department of National Policy and Regulations of Environment Protection and Safety the Ministry of the Natural Resources and Ecology of the Russian Federation:
123995, Moscow, GSP-5
4/6, D-242, B.Gruzinskaya Str.
Tel: +7 (495) 2547938
Fax: +7 (495) 2544310
Department Director — Rinat Rinatovich Gizatulin

Magadansky State Natural Reserve manages the site at the local level, address:
17, Koltsevaya str, Magadan.
Tel: (4132) 657651
e-mail: office@magterra.ru
Director — Yurij Ivanovich Berezhnoy

8c. Other Local Institutions

1. Magadan museum of regional studies
685000, 55 Karla Marksa prospekt, Magadan
Tel/Fax: (4132)6055-57
e-mail: rekomm@online.magadan.su

2. A.S. Poushkin Regional universal research library
685000, 53/13 Karla Marksa prospekt, Magadan
Tel/Fax: (413-2)65-55-87
e-mail: lib_magadan@mail.ru

3. DVS-TOUR Siberian Tour Company
685000, 368 Office, 3 Lenina Str., Magadan
Tel/Fax: (413-2)62-32-96
e-mail: travel@dvs_tour.ru

8d. Official Web address

http://www.magterra.ru
Web site is under construction

9 SIGNATURE ON BEHALF OF THE STATE PARTY

Deputy Minister of
Natural Resources and Ecology
of the Russian Federation

Maidanov I.I.

ANNEX

ANNEX A
MAPS AND PLANS

A1. Magadansky Reserve site location within Russian North-East

A2. Physical and geographical map showing exact boundaries of the Magadansky Reserve clusters. Scale 1:1 000 000

A3. Sketch map of Magadansky Reserve within the Magadan region. Scale 1:2 500 000

A4. Map showing exact boundaries of the Kava-Chelomdjinsky cluster and its buffer zone. Scale 1:500 000

A5. Map showing exact boundaries of the Olsky cluster and its buffer zone. Scale 1:300 000

A6. Map showing exact boundaries of the Yamsky cluster and its buffer zone. Scale 1:500 000

A7. Map showing exact boundaries of the Seimchansky cluster and its buffer zone. Scale 1:300 000

A1. Magadansky Reserve site location within Russian North-East

borders of Magadansky State Nature Reserve

A2. Physical and geographical map showing exact boundaries of the Magadansky Reserve clusters

Legend

- Exact boundaries of the Magadansky Reserve clusters
- Administrative borders of the Russia constituents
- Administrative borders of the Magadan Region municipality
- Magadan / Tauysk — Main cities and settlements

Hydrological items:

- Rivers
- Lakes

Seymchansky
Omsukchan
Suksumansky ridge
Polyarny ridge
Seymchan
Seymchano-Buyundinskaya deep
Yagodnoe
Susuman
Magadan Region
Shelikhova gulf
Takhtoyamsk
Maymandjinsky ridge
Malkachan
Yamsky Islands
Yamsky
Yamsk
Pyagina peninsula
Ust-Omchug
Srednіy
Seymanskie mountains
Babushkina bay
Novaya Arman
Splavnaya
Snezhnaya Dolina
Atargan
Odyan bay
Bogurchan
Siglan
Magadan
Oyra
Kolni peninsula
Olsky
Amahtonsky bay
Tauysk
Talon
Tauyskaya gulf
Zavyalova island
Kava-Chelomdjinsky
Motykley
Hmitovskogo peninsula
Spafarieva island
Kava-Tauyskaya plain
Khabarovsk Territory
Sheltinga
Sheltinga bay

Elevation, m

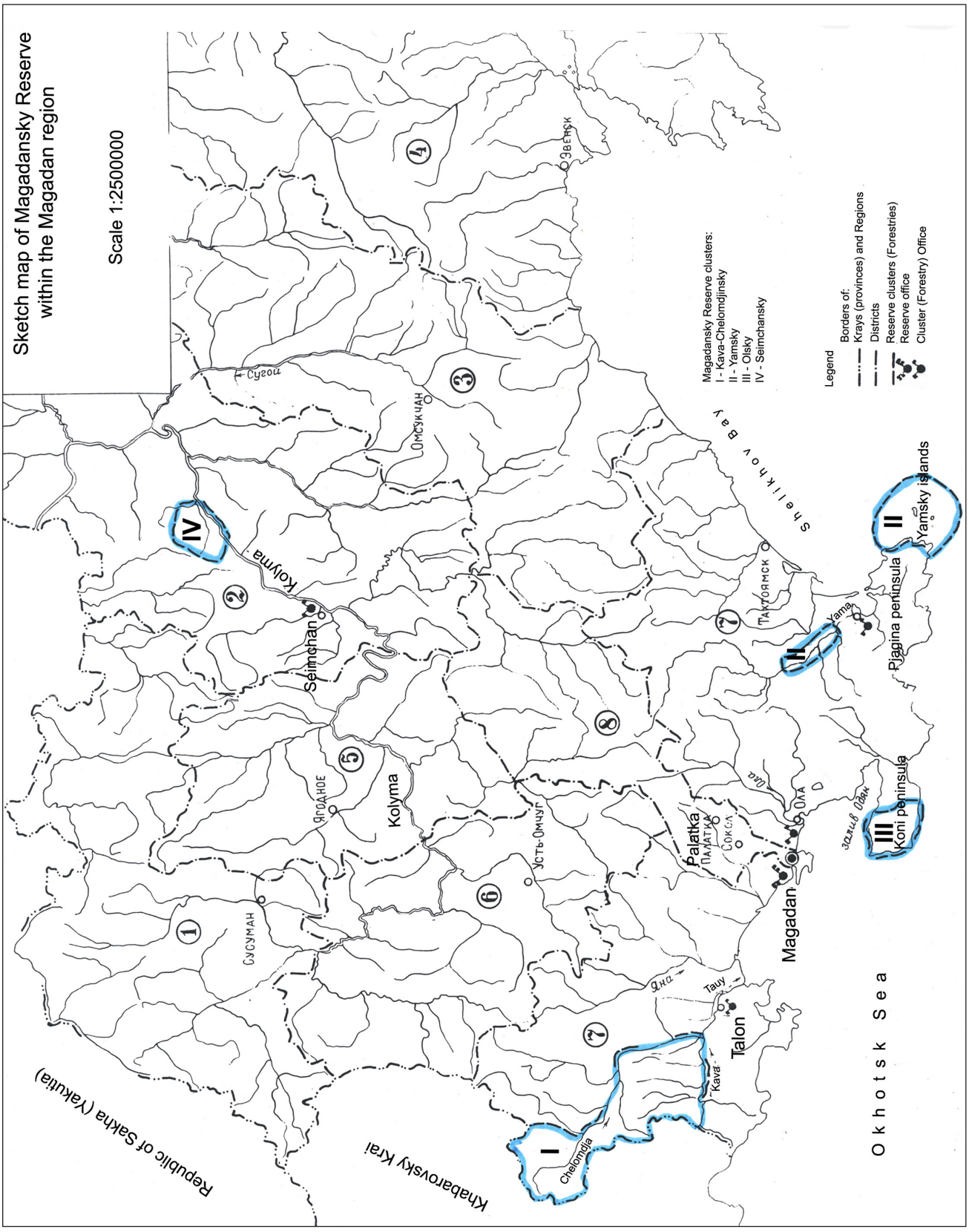
0 200 500 1000 1500 2000 2500 2 500 and higher

0 10 20 30 40 80 km

Scale 1:1 000 000

Coordinate system Conic Conformal Lambert

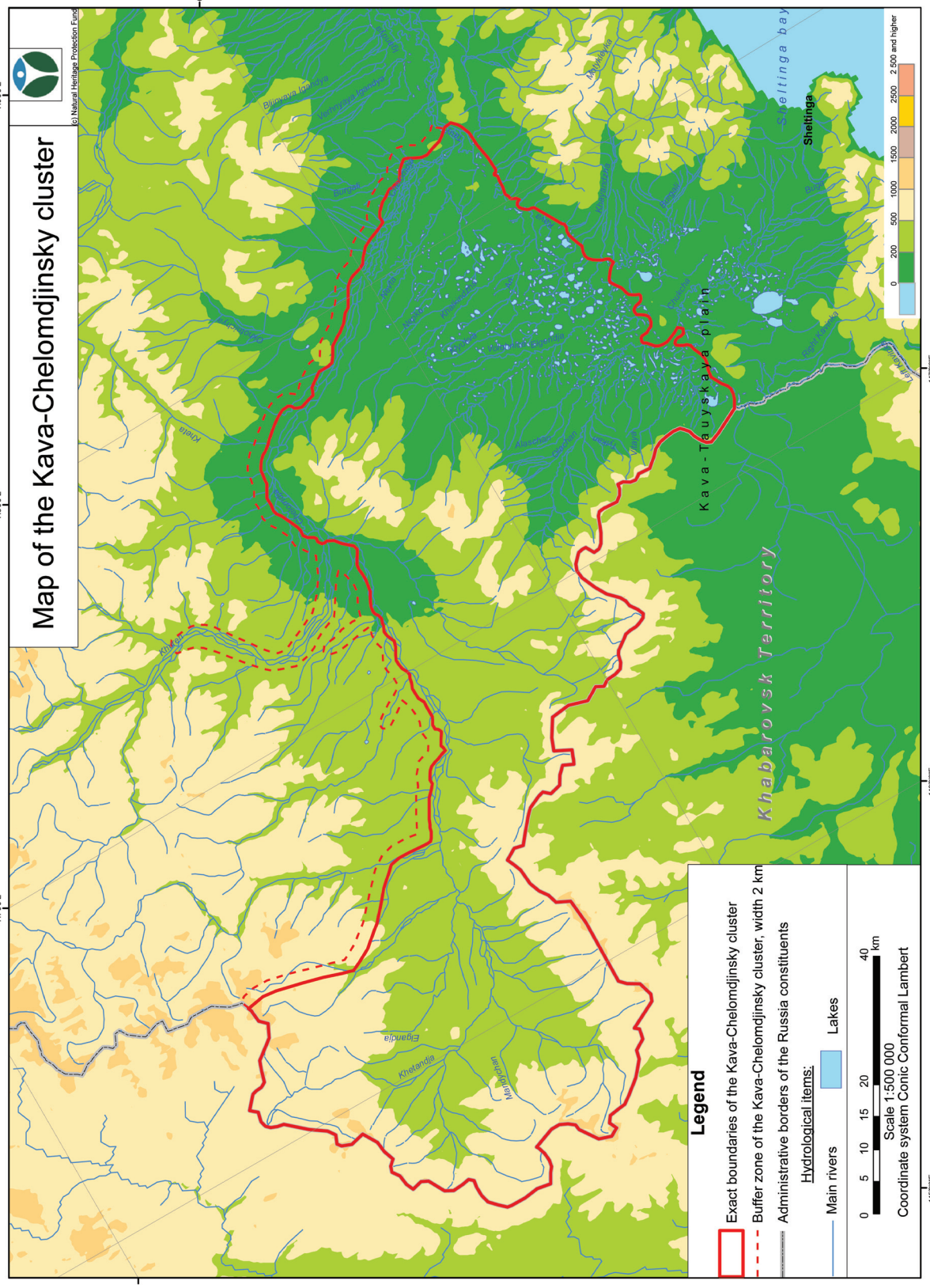
ANNEX A
MAPS AND PLANS



A3. Sketch map of Magadansky Reserve within the Magadan region

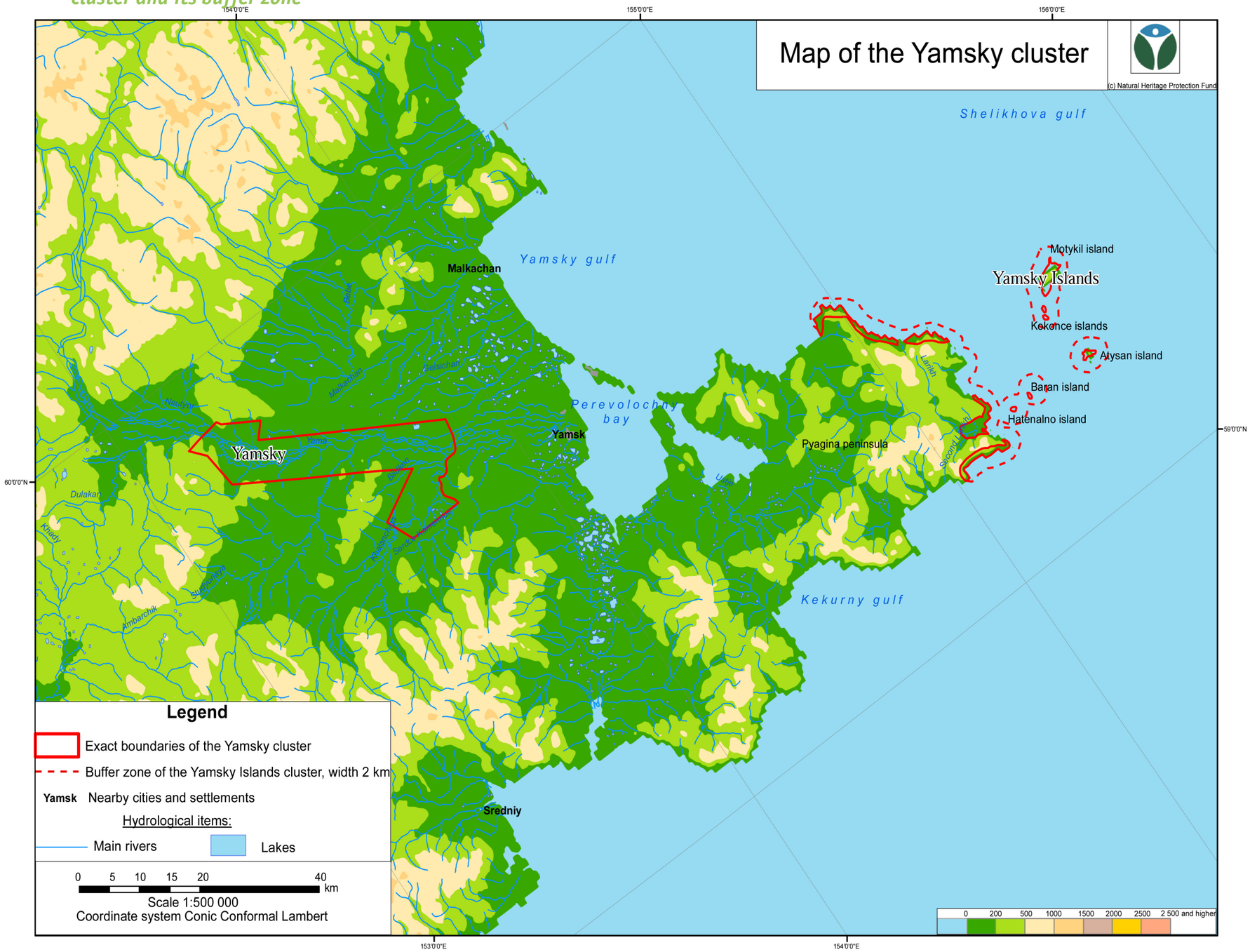
ANNEX A
MAPS AND PLANS

A4. Map showing exact boundaries of the Kava-Chelomdjinsky cluster and its buffer zone

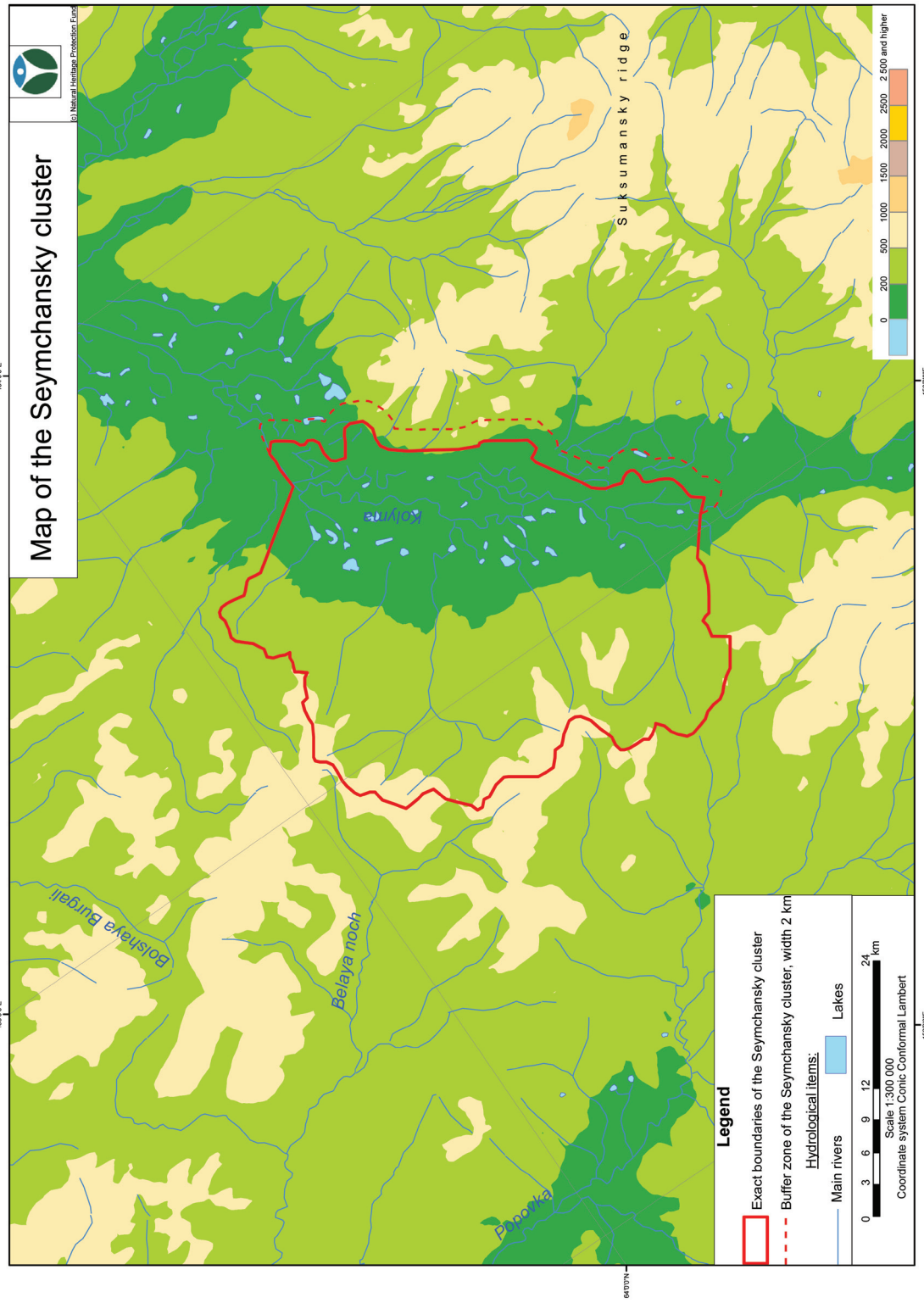


A5. Map showing exact boundaries of the Olsky cluster and its buffer zone

A6. Map showing exact boundaries of the Yamsky cluster and its buffer zone



ANNEX A
MAPS AND PLANS



A7. Map showing exact boundaries of the Seimchansky cluster and its buffer zone

ANNEX B
REGULATION DOCUMENTS

- B1. Abstract from the Federal law of Russian Federation “On Specially Protected Natural Areas”, 1995;
- B2. Decision of the State of Ministers of RSFSR “On organization of the Magadansky State Reserve of Head Hunting and Reserves Administration of RSFSR in Magadan Region” of 5.01.1982 № 5;
- B3. Order of the Head Hunting and Reserves Administration by the Soviet of Ministers of RSFSR “On organization of the Magadansky State Reserve in the Magadan Region” of 22.01.1982 № 25;
- B4. Decision of the Executive Committee of the Magadan regional Soviet of People’s Deputies of 22.07.1982 № 313 “On organization of the Magadansky State Nature Reserve, its area, boundary and buffer zone”;
- B5. Letters of the Governor of the Magadan Region on nomination of the Magadansky Reserve for inscription on the UNESCO World Heritage List of 2001 and 2009;
- B6. Regulations of the state institution “The Magadansky State Nature Reserve” confirmed at 27.03.2001 by the Ministry of Natural Resources of Russian Federation;
- B7. The Reserve draft management plan 2010–2014.

ANNEX B1

ON SPECIALLY PROTECTED NATURAL AREAS

The Federal Law of the Russian Federation dated March 14, 1995

Specially protected natural areas are defined as terrestrial and aquatic areas including atmospheric spaces above them, hosting natural complexes and objects presenting outstanding value for the environmental protection, science, culture, as well as for recreation and human health rehabilitation and thus are entirely or partially exempt for economic activity by virtue of the decision made by governmental bodies and are subject to regimen of special protection.
Specially protected natural areas are considered to be objects of national heritage.

1. State Nature Reserves (Magadansky State Nature Reserve):

Article 6.
1. Specially protected natural complexes and objects (natural sites, aquatories, subsurface, flora and fauna) possessing an outstanding environmental and educational, scientific and nature protection values being samples of natural environments, typical or rare landscapes, sites of genetic resource conservation for wildlife flora and fauna are to be completely withdrawn from economic activities within the areas of the State National Reserves.

The State Nature Reserves are institutions of nature protection, scientific research and environmental education, aimed at preservation and research of the natural mechanism of the processes and phenomena, genetic resource of the flora and fauna, individual wildlife species and plant and animal communities, as well as typical and unique environmental systems.

Article 9.
1. An activity, contradictory to the objectives of the State Nature Reserve, the regime of special protection set forth by the provision on the above mentioned Reserve is prohibited within it's grounds.
Introduction of any alive species into the grounds of the State Nature Reserve aimed at the acclimatization of the aforementioned species is prohibited.
2. The grounds of the State Nature Reserves allow for the following undertakings and activities intended to:

a) reserve the natural condition of the wildlife complexes, including rehabilitation and prevention of changes to occur in the natural complexes and their components resulting from human impacts;
b) maintain the conditions securing sanitary and fire safety;
c) prevent the conditions capable of causing natural disasters dangerous for human life and settlements;
d) implement environmental monitoring;
e) carry out research and investigation tasks;
f) promote environmental education and awareness;
g) implement overseeing and controlling functions.

ANNEX B1

Article 10. State Nature Biosphere Reserves

1. The State Nature Reserves, which are included in an international system of biosphere reserves, realising global ecological monitoring have status of the State Nature Biosphere Reserves.

2. Biosphere polygon territories, including those with differentiated condition of the special guards and functioning can be joined to territories of state natural biosphere reserves with the purposes of realisation of scientific researches, ecological monitoring, and also for approbation and introduction of rational nature management methods, not destroying environment and not exhausting biological resources.

Article 11.

2. State Nature Reserves use the following financial assets at their discretion and according to the existing procedure:

- income of scientific and nature protection activities, advertising and publishing, as well as other activities non-contradictory to the purposes of the State Nature Reserves;
- payments in compensation of damage caused to natural complexes and objects, located within the grounds of the State Nature Reserves;
- revenue from the sale of legitimately expropriated poaching implements and the products resulting from illegal use if the natural resources;
- free donations and charity contributions.

ANNEX B2

Soviet of Ministers of RSFSR
DECISION
№ 5 of January, 5, 1982
Moscow

ON ORGANIZATION OF THE MAGADANSKY STATE NATURE RESERVE OF HEAD HUNTING AND RESERVES ADMINISTRATION OF RSFSR IN THE MAGADAN REGION

The Soviet of Ministers of RSFSR decides:
1. To accept the proposal of the Magadan Regional Executive Committee concerted with the Ministry of State Planning of the USSR:
on organization of the Magadansky State Nature Reserve of Head Hunting and Reserves Administration of RSFSR in the Magadan Region of the total area of 883 805 ha;

on withdrawal of land plots of the total area of 883 805 ha from the State forest fund, including 117 839 ha from Seimchansky leskhhoz (State timber enterprise), 624 456 ha from Tauysky leskhoz and 141 510 ha from Magadansky leskhoz and on presenting those to the Magadansky State Reserve.

Magadan Regional Executive Committee together with the Head Hunting and Reserves Administration are to approximate the Reserve's boundary.

2. The Ministry of Forestry of RSFSR is to ensure the transfer of buildings and constructions situated within the above lands of the State forest fund to the Reserve in the stated order.

Signed and sealed

Chairman
of the Soviet of Ministers of RSFSR — M. Solomentsev
Vice-Business-manager
of the Soviet of Ministers of RSFSR — I. Zarubin

ANNEX B3

HEAD HUNTING AND RESERVES ADMINISTRATION OF THE SOVIET OF MINISTERS OF RSFSR

ORDER of 22.01.1982 № 25

Moscow

The Soviet of Ministers of RSFSR by the Decision of January, 5, 1982 № 5 has accepted the proposal of the Magadan Regional Executive Committee concerted with the Ministry of State Planning of the USSR on organization of the Magadansky State Nature Reserve of the total area of 883 805 ha.

Magadan Regional Executive Committee together with the Head Hunting and Reserves Administration are to approximate the Reserve's boundary.

The Soviet of Ministers of RSFSR has obliged the Ministry of Forestry to ensure the transfer of buildings and constructions situated within the above lands of the State forest fund to the Reserve in the stated order.

In execution of the Order of the Soviet of Ministers of RSFSR by the Decision of January, 5, 1982 № 5

I ORDER:

1. To organize the Magadansky State Reserve on the area of 883805 ha, including:
   - on lands of Seimchansky leskhoz (State timber enterprise) – 117 839 ha;
   - on lands of Tauysky leskhoz – 624 456 ha;
   - on lands of Magadansky leskhoz – 141 510 ha.

To approximate the Reserve's boundary in conformity with its organization project together with the Magadan Regional Executive Committee.

2. For the Staff Department (Comrade D.S. Shebanov) together with the Department of State Reserves (Comrade A.M. Shalybkov) to provide the selection of the necessary personnel for the organized State Nature Reserve.

3. For the Department of State Reserves (Comrade A.M. Shalybkov) to provide before 1.07:
   - acceptance of land plots mentioned in point 1 of the present Order, and also of buildings and constructions situated within the above lands by balance of 01.01.1982, in stated order;
   - to accept maps and diagrams with marked boundary of forests transferred to the Reserve and the forest fund account in forms № 1 and № 2 from the Magadan Forestry Administration in three months.

4. For Department of planning and finances (Comrade V.N. Perov) together with the Department of State Reserves (Comrade A.M. Shalybkov):

- to work out and to present for consideration the personnel list, estimate of expenditure and labor plan of the Magadansky State Reserve, and also to provide the Reserve with financing starting from 01.02.1982;
- to foresee the assignation of necessary funds for construction purposes and equipment purchase in 1982 upon the written request of the Reserve.

5. For Hunting Administration of the Magadan Regional Executive Committee (Comrade A.S. Alekhin) to render assistance in development of the Reserve's activity and in choosing its personnel.

6. To charge with the Department of State Reserves with control over the fulfillment of the present Order.

Signed
Vice Head
of the Head Administration A.V. Nechaev
Confirmed K.V. Storchevoy

ANNEX B4

MAGADAN REGIONAL SOVIET OF PEOPLE'S DEPUTIES
THE EXECUTIVE COMMITTEE

DECISION

of 22.07.1982 № 313

**On organization of the
Magadansky State Reserve,
its area, boundary and buffer zone**

The Soviet of Ministers of RSFSR by the Order № 5 of 05.01.1982 has accepted the proposal of the Magadan Regional Executive Committee concerted with the Ministry of State Planning of the USSR on organization of the Magadansky State Nature Reserve of Reserve of Head Hunting and Reserves Administration of RSFSR of the total area of 883 805 ha.

The Soviet of Ministers of RSFSR has obliged the Ministry of Forestry to ensure the transfer of buildings and constructions situated within the above lands of the State forest fund to the Reserve in the stated order.

In execution of the Order of the Soviet of Ministers of RSFSR by the Decision of January, 5, 1982 № 5 "On organization of the Magadansky State Nature Reserve of Head Hunting and Reserves Administration of RSFSR in the Magadan Region" the Regional Executive Committee of the Soviet of People's Deputies has decided:

1. To organize the Magadansky State Reserve at the area of 883 805 ha, including:
- on lands of Seimchansky leskhoz (State timber enterprise) – 117 839 ha;
- on lands of Tauysky leskhoz – 624 456 ha;
- on lands of Magadansky leskhoz – 141 510 ha.

2. To organize 4 forestries at the Reserve's area (areas and boundary given in Annex 1).
3. For Director of the Magadansky State Reserve, Comtade K.N. Minko to accept the above land plots and the buildings and constructions situated within the above area by the balance of 01.01.1982, in stated order.
4. For the Forestry Administration of the Regional Executive Comittee to hand over maps and diagrams with marked boundary of forests transferred to the Reserve and the forest fund account in forms № 1 and № 2 to the Magadansky Reserve.
5. For the Administration of the State Reserve (Comrades Minko, Novikov) to provide strict observation over the Reserve's regime according to the standard Regulations of the State Reserves confirmed by the Decision of the Ministry of State Planning of the USSR and of State Committee of the USSR for Science and Techniques of 27.04.1981 № 77/106.
6. With the aim of protection of the nature complexes of the Magadansky Reserve from the influence of management activity and in conformity with the Decision of the Ministry of State P lanning of the USSR and of State Committee of the USSR for Science and Techniques of 27.04.1981 № 77/106 to establish 2-km wide buffer zones along the Reserve's boundary according to Annex 2.

ANNEX B4

To prohibit hunting, fishing, shooting or catching animals, forest felling, equipping areas for massive recreation, building roads, pipes and communications, and also other means of management activity, which can exercise negative influence over the natural objects of the Reserve, except those foreseen in point 15 of the confirmed Regulations of State Reserves.

7. In order to render help in organization of the Magadansky Reserve:
7.1. To solve an issue of allocation a UAZ-469 motor-car to the Magadansky Reserve from cars sold by organizations into the people's economy;
7.2. For the Trade Department of the Regional Executive Committee (Comrade Dvornikova) to foresee the allocation of small wholesale limits in the 3rd quarter for the sum of 4–5 thousand roubles for the Magadansky Reserve;
7.3. For the Magadan Regional Executive Committee (Comrade Korolev) to allocate until 01.01.1983 the administrative building of necessary area for 5–7 years from buildings to be pulled down, to the Magadansky Reserve, proceeding from the number of its employees (up to 7 rooms of area no larger than 100 m2).
8. For the Forestry Department of the Regional Executive Committee (Comrade Averjanov) in connection with ceasing of management activity within the Reserve's boundary and its buffer zone to allocate to "Severo-vostok-zoloto" gold-mining company land plots for compensation of timber purveyance.
9. To cancel the Order of the Regional Executive Committee of 19.12.1980 № 835-p "On riverside protecting forest belts" from 01.01.1983.
10. To charge the Hunting Department of the Magadan Regional Executive Committee (Comrade Alekhin) and "Okhotsk-ryb-vod" department (Comrade Pyn'ko) with the control over fulfillment of the present Decision.

Signed Chairman of the Executive Committee V.A. Djatel
Secretary
P.S. Spiryagin

ANNEX B4

Annex 2

to the Decision
of the Regional Executive Committee
of 22.07.1982 № 313

THE BUFFER ZONE OF THE MAGADANSKY STATE RESERVE

I. The buffer zone of the Chelomdjinsky cluster starts at the mouth of Levaya Kavinka river and goes along the right side of Kava river till the mouth of Chelomdja river, includes 2 km of Tauy river and goes upstream Chelomdja river till the mouth of Burgagylkan river, then 10 km along the left side of Burgagylkan river till the boundary with Khabarovsky Krai.

The buffer zone includes:
1. 2-km belts upstream along the both sides of the river from ultimate branches of river Khuren till mouth of Igandja river.
2. 2-km belts upstream along the both sides of the river from ultimate branches of Kheta river till 10 km from the mouth.
3. 2-km belts upstream along the both sides of the river from ultimate branches of Bezymyannaya and Khetandja rivers till 10 km from the mouth.

II. Koni peninsula cluster
The buffer zone includes the 2-km belt of aquatory along the coast of cape Plosky till two unnamed creeks falling into the Okhotsk Sea 8 km to the east of Antara river mouth.

III. The buffer zone of the Seimchansky cluster includes 2-km belt along the right side of Kolyma river along the Reserve's boundary.

Signed Secretary of the Magadan
Regional Executive Committee P.S. Spiryagin

ANNEX B5

Russian Federation
Magadan Region
GOVERNOR

of 20.06.2001 № 1936

To the Minister of Nature Resources
of Russian Federation
V.G. Artukhov

Dear Vitaly Grigorjevich!

I would like to express my gratitude for your assistance in choosing the specially protected area of Magadan Region as a claimant for the inscription on the UNESCO World Natural Heritage List.

The only fact that in August-September of 2001 the International scientific expedition for the UNESCO WHL nominated site investigation has been working at the Magadan Region is, undoubtedly, a recognition of the successful work of the Region in the sphere of wild (undisturbed) nature protection.

I ask you to render assistance in preparation and presentation of the necessary documents to the Committee of Russian Federation for the UNESCO affairs for inscription of the Magadansky State Nature Reserve on the World Natural Heritage List.

I hope for the future fruitful co-operation in broadening the specially protected nature areas network and in fulfillment of the federal and international programs for improvement of the environment, including the one of the Magadan Region.

Signed and sealed V.I. Tsvetkov

ANNEX B5

Magadan Region

GOVERNOR

6, Gorkogo Str., 685000, Magadan
Tel: 8 (4132) 60-76-86, 62-31-34, Fax: 60-71-61
E-mail: Postmast@regadm.magadan.ru
RNNBO 00022013, PSRN 1024900954880, TIN/Tax Code 4909053430/490901001

28.12.2009 № 6673

To Minister of Natural Resources and
Ecology of Russian Federation
Y.P.TRUTNEV

Dear Yuriy Petrovich!

Following the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, in 2001 the preparation of nomination files for natural property "Magadansky Reserve" started for inscription the Reserve on the World Heritage List. Thanks to joint efforts of Russian and German specialists on a submission from the Ministry of Natural Resources of Russian Federation, in 2005 the Reserve was included onto Russian State Party Tentative List.

Federal State Institution "State Nature Reserve Magadansky" is the only SPA of that level in the Region and is one of the largest reserves in Russia. Recognition the Reserve as the global outstanding natural property enhances prestige of the Region in natural resources conservation and will promote the nature conservation projects realization, development of international cooperation and tourism.

Administration of Magadan Region is implicitly committed in positive decision and supports the nomination process of inscription the Magadansky Reserve on the World Heritage List.
I warmly appreciate You for Your attention to the nature protection problems of the Region and rely on the further assistance in providing the UNESCO World Heritage Center with the necessary documentation.

Yours sincerely
N.Dudov

ANNEX B6

REGULATIONS OF THE STATE INSTITUTION "THE MAGADANSKY STATE NATURE RESERVE"

GENERAL PROVISIONS

1. State institution "The Magadansky State Nature Reserve" (hereinafter — the Reserve) is state, environment-oriented, scientific-research and eco-educational institution of federal importance that purposes to conserve and to study natural course of environmental processes and phenomena, genetic pool of plant and animal kingdoms, individual species and communities of plants and animals, typical and unique ecological systems.
2. The Reserve is located in Ten'kinsky, Omsuchansky and Srednekansky districts of Magadan Region (Annex 1). Area of the Reserve is 883,817 ha. Geographical coordinates are presented in the Annex 2.
3. Legal address of the Reserve: 685000, Magadan, Portovaya Street, 8.

THE RESERVE'S OBJECTIVES

4. The following objectives are assigned to the Reserve:

- Protection of natural territories with a view to conserve biological diversity and to maintain natural status of protected natural complexes and features;
- Organization and performance of scientific researches including keeping a Nature Chronicle;
- Environmental monitoring;
- Environmental education;
- Participation in state environmental expertise of projects and layout charts of economic and other units;
- Assistance in training brainpower and specialists in environmental protection.

PROCEDURE ON THE RESERVE'S ESTABLISHMENT

5. The Reserve was established by the decree of the Russian Government of January 5, 1982 № 5 (Annex 3) in accordance with the decision made by Magadan Regional Soviet of People's Deputies of 22.07.82 № 313 (Annex 4).
6. Boundaries of the Reserve's clusters and its buffer zone were revised by the decision of the Magadan Regional Soviet of People's Deputies of 22.07.83 № 326 (Annex 5).

THE RESERVE'S ADMINISTRATION

7. The State Nature Reserve is under the jurisdiction of the Ministry on Natural Resources of Russian Federation.
8. The Reserve is headed by a director appointed by the state body the Reserve is under the jurisdiction of which.

Director administers the Reserve's activity, provides the execution of the imposed tasks and has personal responsibility for results of own activity. The Director's terms of reference includes answering the all problems, which are beyond the scopes of other authorities determined by Russian Legislation. Reserve's Director has the authorities:

- to act on behalf of the Reserve and to represent it in all governmental authorities, organizations and also abroad;
- to approve management structure and list of members of the Reserve's staff in consultation with the Department of Environmental Protection and Environmental Safety;
- to approve job descriptions of the employees;
- to take on and to discharge from the employees, to make contracts for some kinds of works;
- to discipline and to inflict a penalty on the Reserve's employees in case of violation of internal regulations and job descriptions and in other cases specified by the legislation;
- to issue orders, instructions and arrangements, which are mandatory for execution by all employees, to establish the Reserve's internal regulations;
- to command property and finance of the Reserve in accordance with the Russian Legislation and the present Provision;
- to settle questions on financial activity of the Reserve, to open settlement and other (including dollar account) accounts at banks;
- to determine wage rates and official salaries, additional payments, bonuses and other financial stimuli in accordance with the current terms of payment and within the available finances intended for wages and salaries;
- to delegate a part of his authorities to deputies and other executives of the Reserve;
- to invest persons or organizations with power of attorney to act on behalf of the Reserve.

STATUS OF THE RESERVE

9. Land, subsoil and waters situated within the Reserve's area and plants and animals inhabiting this territory are put at the Reserve's use (possession) as by appropriate laws enacted. Their withdrawal or other terminations of rights are prohibited.
10. Natural resources and real property of the Reserve are completely withdrawn from the use (they are prohibited to be withdrawn and transferred from one artificial person to another).
11. Territory of the Reserve should be taken into account, when working out plans and prospects of economic and social development, land management and also of territorial combine schemes of environmental protection.
12. The reserve is nonprofit organization financed from the Federal budget and possessing own financial statement, accounts (including the dollar one) at Russian banks and also seal, where state emblem of Russian Federation and its name are pictured.
13. The Reserve may have its own symbols (flags, pennants, emblems and other) approved by a state body under the jurisdiction of which it is.
14. Production of printed matter, souvenirs and other consumer's goods, where natural and historical and cultural complexes and features situated within the Reserve or/and their names and also name and symbols of the Reserve are pictured may be performed only with consent of a director of the Reserve and in accordance with the established procedure.

REGIME OF THE RESERVE

15. Any activities contradicting the Reserve's objectives and conditions of strict protection of its territory is prohibited, including:

- activities changing hydrological regime of the territory;
- exploration and mining, disturbance of soil cover and rock outcrops;

- final felling, the turpentining, harvesting of wood syrup, medicinal herbs and non-edible row materials and also other kinds of forest exploitation, except as provided for in the present Provision;
- haymaking, pasturing, placing apiaries, harvesting the wild fruits and berries, mushrooms and nuts, seeds and flowers and other kinds of plant use except as provided for in the present Provision;
- construction and placing of industrial and agricultural enterprises and their individual units, building, construction of roads and viaducts, electric lines and other communications, except as required for the Reserve; as for the construction projects provided by the master plan, building permits are processed in accordance with the current legislation on local self-administration and the Town-building Code of Russian Federation;
- commercial, sport and amateur hunting and fishing, other kinds of animal life use, except as provided for in the present Provision;
- introduction of living organisms purposely to naturalize them;
- application of mineral fertilizers and pesticides and herbicides;
- timber-rafting;
- transit routes of cattle;
- staying and transit of unauthorized persons and vehicles beyond the roads and water routes provided for general use;
- sampling for zoological, botanical and mineralogical collections, except as provided for in plans of scientific researches in the Reserve;
- flight of airplanes and helicopters bellow 2000 meters over the Reserve except for cases coordinated with the administration or Ministry of Natural Resources of Russian Federation; cracking the sound barrier over the Reserve's territory;
- other activities disturbing the course of nature, threatening natural complexes and features and also activities that are not related with the execution of the tasks placed on the Reserve.

16. The following measures and activities are admissible on the Reserve's territory:
- conservation and rehabilitation of natural status of natural complexes, prevention of changes of natural complexes and their components in result of man-induced impact;
- keeping the conditions providing sanitary and fire safety of natural complexes and features;
- prevention of hazardous natural phenomena threatening people and settlements;
- performance of scientific researches including environmental monitoring;
- performance of environmental educational;
- performance of review services.

17. The following activities providing the Reserve's functions and life of population inhabiting its territory and, which are performed in accordance with the current Provision, are admissible within the sites specially allocated for limited economic use:
- chopping and cutting providing needs of the Reserve are performed in accordance with the current legislation (Annex 6). Decision on the use of the harvested wood is made by the Reserve's administration;
- gathering of berries, mushrooms and nuts not for sail, but only for personal consumption, in accordance with the order established by the Reserve's director on the recommendation of the Academic Council (Annex 7);
- amateur fishing performed by the Reserve's employees not for sail, but for personal consumption on specially allocated parts of water bodies in accordance with the current Rules of amateur and sport fishing in Magadan Region (Annex 8);

- development of the educational and excursion environmental routes (Annexes 9 and 9.1);
- opening of the museums of the Reserve's nature including the expositions in the air.

18. Hunting and catching of animals within the reserve's area may be admitted only under permission of the Department of Environmental Protection and Environmental Safety, the Ministry of Natural Resources of RF.
19. Persons, which are not the Reserve's employees, or officials, which are not the collaborators of the body the Reserve is under the jurisdiction of which, may to stay within the Reserve's area only under permission of this body or the Reserve's administration.
20. Buffer zone, where limited land use is admitted, is established at the areas adjacent to the Reserve.
21. Economic or other activities negatively affecting the natural features and complexes are prohibited within the buffer zone. Regime of the buffer zone is established by the Administration of Magadan Region.

PROTECTION OF THE RESERVE

22. Natural complexes and features are protected within the Reserve's area by special state inspection on protection of the Reserve's area, the employees of which are in the Reserve's stuff.
23. Director of the Reserve is a chief state inspector on protection of its territory (hereinafter he is named as chief state inspector) and his deputies are deputies of chief state inspector.
24. Public inspections formed by territorial structures of the Ministry of Natural Resources and public environmental organizations may be involved in protecting the Reserve.
25. State inspector may:

- To examine documents entitling persons to stay within the Reserve's area;
- To examine documents entitling persons to perform environmental management or other activities within the Reserve's territory and its buffer zone;
- To arrest persons violated Legislation of Russian Federation on Specially Protected Nature Areas in the Reserve's territory and its buffer zone, to draw up reports on facts of violation of the laws and to convey the violators to law machinery;
- To send materials on bringing the persons violated the established regime in the Reserve to administrative responsibility;
- To withdraw production of illegal use of natural resources and equipment for that purpose, and also vehicles and documents from violators of the Legislation of Russian Federation on Specially Protected Nature Areas with appropriate registration;
- To examine personal belongings of arrested violators, their vehicles and equipment, to stop and to examine vehicles transporting natural resources from the Reserve etc;
- To visit any objects located within the Reserve's territory and its buffer zone in order to control compliance with the Legislation of Russian Federation on Specially Protected Nature Areas;
- To interrupt economic or other activities non-complied with the regime of strict protection in the Reserve and in its buffer zone.

State inspector enjoys also the all rights of authorities from the State Forest Protection Service and other specially authorized governmental environmental agencies of Russian Federation.

In the execution of official duty state inspector may use violence, handcuffs, rubber truncheon, tear gas, home-produced devices of electric shock, devices for forced stoppage of vehicles, attack dogs.

26. State inspector is permitted to carry arms in the execution of official duty.
Purchasing, storing and use of fire-arms is regulated by the current legislation.

27. Chief state inspectors and his deputies are granted all rights of state inspectors provided by the Provision. In addition the pointed persons may:
- prohibit economic and other activities non-complied with the established regime in the Reserve and in its buffer zone;
- send materials on cases of violations of Russian legislation on Specially Protected Nature Areas;
- punish by official reprimands for violation of Legislation of Russian Federation on Specially Protected Nature Areas;
- advance a recovery suit both to physical bodies and corporations for damage caused to natural complexes and features of the Reserve, its buffer zone and other territories under its control.

28. State inspector on protection of the Reserve's area is subjected to compulsory insurance in accordance to legislation of Russian Federation.
29. Damage caused to property of state inspectors in result of discharging his duties is covered at the expenses of the Reserve or the Ministry of Natural Resources of Russian Federation. The Reserve's administration may bring a recourse action to organization or physical body responsible for inflicted damage.
30. In case of death of state inspector when he was in duty status, allowance should be paid for his family during 5 years since the day of his death and after this period survivor's pension should be paid as established by the current legislation.

SCIENTIFIC-RESEARCH ACTIVITY IN THE RESERVE

31. Scientific-research activity in the Reserve and its buffer zone is directed on studying natural complexes and long-term observations over dynamics of natural processes in order to assess and to forecast environmental situation, to develop scientific program for nature conservation, biodiversity conservation, reproduction and management of natural resources.
32. Scientific-research activity in the Reserve and its buffer zone is performed by:
- Stuff members and scientific and technical personnel of the Reserve in accordance with plans of scientific-research works as established;
- Other stuff members of scientific department and other departments of the Reserve;
- Environmental scientific-research institutions and higher educational establishments and individuals (including the foreign ones) based on contracts and according to programs worked out in the Reserve and approved by the Ministry of Natural Resources of Russian Federation.

33. Organization and direct administration of scientific researches performed in the Reserve are executed by deputy director on science, who is appointed by the Reserve's director in coordination with the Department of Environmental Protection and Environmental Safety, Ministry of Natural Resources of Russia.
34. Scientific and technical council is formed in the Reserve. The Council members are appointed by the Department of Environmental Protection and Environmental Safety of Ministry of Natural Resources of Russia every second year. Its activity is regulated by the Provision on scientific-research activity of state reserves.

35. Scientific materials are accumulated and stored in the Reserve.
36. The Reserve is empowered to publish scientific works.

ENVIRONMENTAL EDUCATION IN THE RESERVE

37. Environmental education in the Reserve is directed on formation of environmental consciousness and development of environmental culture of population, propagation of the ideas of nature reservation.
38. Lines of environmental education are predetermined by natural conditions, historical and social-economic features of the Reserve's territory and adjacent regions.
39. Department of environmental education is involved in organization and execution of educational work. Environmental education is coordinated and controlled by the Department of Environmental Protection and Environmental Safety of Ministry of Natural Resources of Russia.
40. Methods of environmental education within the Reserve's area and its buffer zone should not be inconsistent with the established protection regime.
41. Major lines of environmental education in the Reserve are the following:
    - Contacts with mass media (speeches of the Reserve's representatives in mass media etc.);
    - Promotion and publishing activities;
    - Video-production;
    - Establishing of the visit-centers for visitors;
    - Holding of environmental excursions in the Reserve and its buffer zone;
    - Educational work with school children and contacts with teachers;
    - Organization of environmental festivals and actions;
    - Assistance in training environmental specialists.

42. Environmental education in the Reserve may be executed by:
    - Stuff members of the Department of environmental education;
    - Stuff members of other structures of the Reserve;
    - Other institutions (including public ones) and individuals based on contract system within the framework of the approved plan.

FINANCIAL AND ECONOMIC ACTIVITY OF THE RESERVE

43. The Reserve executes activity that is unrepugnant to its objectives and established protection regime.
44. The Reserve independently commands the internal financial resources raised:

- From scientific, environmental, advertising and publishing or other activities, which are not inconsistent with the Reserve's objectives;
- On account of recoveries of damages inflicted by artificial and real persons to natural complexes and features situated within the Reserve's territory;
- On account of saling the confiscated hunting and fishing equipment and production of illegal use of natural resources;
- From grants and charitable contributions.

Fines imposed administratively for violations of environmental regulations and penalties inflicted in accordance with the resolutions of the officials go into independent disposal of the Reserve.

45. Action plan focused on execution of the tasks put before the Reserve and volume of budgetary financing are ratified by the Ministry of Natural Resources of Russia.

WORKING CONDITIONS AND REMUNERATION OF LABOR IN THE RESERVE

46. Structure and stuff of the Reserve is determined by a director of the Reserve based on the wages fund and the tasks and specifics of the Reserve.
47. System of remuneration of labor and amount of payments are determined by the Reserve independently in accordance with the available wages fund.

Additional payments, bonuses and other stimulating payments for the employees are determined by administration of the Reserve in accordance with the current legislation.

48. Housing space of the Reserve may be included into a category of service housing.
49. When a specialist is engaged for temporary work in the Reserve, his apartment at permanent residence is reserved for time of contract.
50. The employees may be engaged for the contractual employment in the Reserve.
51. The Reserve's employees are provided with free of charge working clothes, shoes and personal protective equipment in accordance with the standards approved by state authority the Reserve is under the jurisdiction of which. In addition state inspectors are provided with free uniform with badge of rank and body armours and also breastplate of a standard pattern.

The Reserve's employees owing motor cars, motorcycles, cutters, outboard engines and using them for official matters may be provided with fuel and lubricants, permanent repair may be also performed on account of the Reserve.

52. The Reserve's employees are provided with fire-wood for heating the domestic premises at knockdown coasts ascertained for the employees engaged in forestry.
53. In the case of the Reserve's employees, exception from the rule on restriction of the team-work of relatives that is prescribed in the Article 20 of the Labor Code of Russian Federation is provided.

THE RESERVE'S PROPERTY

54. The Reserve's property is federal ownership and it is assigned to the Reserve with the option of administrating in accordance with the Civil Code of Russian Federation. The Reserve possesses, uses and commands the assigned property within the frameworks established by the civil legislation.
55. The Reserve's property includes:
    - Property assigned by specially authorized state body of Russian Federation;
    - Property purchased on account of budgetary funds allocated to the Reserve according to budgetary estimate;
    - Property purchased on account of the incomes drawn by the Reserve in result of its own permitted activities and counted in special balance.

56. The Reserve has no warrant for disposing of its own property including leasing, hypothecating, transferring for temporary use by other artificial and real persons without sanction of the owner and state body the Reserve is under the jurisdiction of which. The Reserve discharges liabilities within the available financial resources. When financial resources are insufficient, the possessor responds for secondary liability of the Reserve.
57. The Reserve's property assigned to it with the option of administrating may be extracted by the possessor in accordance with the current legislation.

58. Control over the use and safety of the Reserve's property is executed by the state authority the Reserve is under the jurisdiction of which.

STATE CONTROL OVER THE RESERVE'S STRUCTURE AND FUNCTIONING

59. State control over the Reserve's structure and functioning is performed by specially authorized state environmental bodies of Russian Federation.

Annex 9

PROVISION
ON ENVIRONMENTAL ROUTES
IN THE STATE NATURE RESERVE "MAGADANSKY"

1. Environmental routes are designed for propagation of the ideas of nature reservation, environmental education, formation of scientific skills in the field of environmental conservation and nature management, organization of environmental tourism.
2. Environmental routes are developed by the Reserve's employees and are considered by the Academic Council.
3. Environmental routes may be laid through the buffer zone as well as through the Reserve's territory.
4. When holding environmental excursion, presence of the Reserve's representative in a group of tourists is obligatory condition.
5. Before excursion, the Reserve's collaborator responsible for its holding is obliged to specify the order of the excursion and to take into account made modifications related with features of biological activity of animals, vegetation period of plants and climatic conditions.
6. In accordance with the Law on "Specially Protected Nature Areas" and "Provision on the Reserve Magadansky", protection regime compliance is obligatory along the length of environmental routes.
7. Angling and spin fishing (fishhook without hack) for all species of fishes based on the principle "to catch – to let" are permitted to the number of not more than 5 specimens of each species per person at the environmental routes.
8. Team leader is responsible for the observance of the protection regime, when holding environmental excursion.
9. Violators of the protection regime are liable to civil proceedings in accordance with the current legislation.
10. Control policy and permissible recreation loads are determined by the Academic Council of the Reserve.
11. The Reserve's director is responsible for organization of environmental route.
12. Environmental route may be liquidated by a decision of the Academic Council.

ANNEX B6

Annex 9.1

Sites allocated for organization and development of educational and excursion environmental routes in the State Nature Reserve "Magadansky"

1. Kava-Chelomdjinskiy cluster

Route 1: sailing in inflatable boats along the Chelomdja River, from cordon "Burgagylkan" to cordon "Central'ny".

Overnight stops at the cordon "Burgagylkan", in the squares 46, 63, 291, at the cordones "Kheta", "Moldot" and "Central'ny". Excursions in the squares № 278, 497, 573, 574. Length of the route is 146 km.

Route 2: sailing in inflatable boats along the Kava River from cordon "Ikrimun" to cordon "Central'ny".

Overnight stops at the cordon "Ikrimun", the Island Erka, squares 707, cordon "95 km", cordon "Central'ny". Excursions in squares 705, 707, 708, 652, 672. Length of the route is 92 km.

2. The Yamsky cluster

Route 1: sailing in inflatable boats along the Yama River from the Neuter River Estuary (upper boundary of the cluster) to cordon "Khalanchiga".

Overnight stops at the cordons "Studenaya" and "Khalanchiga". Excursion in squares 136, 137, 247. Length of the route is 48 km.

3. The Seimchansky cluster

Route 1: sailing in the inflatable boats along the Kolyma River from the Susksukan River Estuary (upper boundary of the cluster) to the Olupcha River (lower boundary of the cluster).
Overnight stops at the cordons "Verkhniy", "Sredniy" and "Nizhniy". Excursion in squares 82, 195, 256. Length of the route is 45 km.

4. The Olsky Cluster

Route 1: sea route along the coasts of the Koni Peninsula, including the visiting of birdy spots.
Overnight stops at the cordons "Cape Ploskiy" and "Burgauli". Excursions along the rivers Khindzha and Burgauli (squares 4, 6, 9, 14, 51, 52, 60, 61, 67, 68). Length of the route is 110 km.

ANNEX B7

Draft Management plan of the Magadansky State Nature Reserve for 2010–2014

1. General information
1.1. Description of the Reserve
1.2. History of the establishment
1.3. Goals of the Reserve
1.4. Main features

2. Values and remarkable features of the Reserve
2.1. Natural values
2.2. Analysis of the state of conservation

3. Man & Nature
3.1. History of development
3.2. Attendance of the site
3.3. Antropogenic effect, illegal nature use activities
3.4. Threats to natural values of the Reserve

4. Infrastructure and activities of the Reserve
4.1. Administrative arrangement
4.2. Protection of the territory
4.3. Scientific research projects
4.4. Environmental education
4.5. Tourism activities
4.6. Financial and economic activities
4.7. Integration into the regional social and economic structure

Analytic summary

5. Territorial management plan
6. Action plan

6. Action plan

6.1. Goals and priority tasks

In the upcoming period, the main development objective of the Reserve is to create objective prerequisites for implementing the Reserve's duties taking into account the specifics of social and economic development of the region and the existing federal concept of SPAs, i.e.:

- enhancement of the Reserve's natural complexes and natural sites protection;
- promotion of the Reserve's reputation and image at the regional, state and international levels;
- scientific and information support of management tasks of the Reserve;
- enhancement of the Reserve's infrastructure and improvement of its conservation zone, including development of ecotourism;
- provision for the sustainable functioning and development of the Reserve.

As the property submitted to the UNESCO World Natural Heritage List, the Reserve, which primary and fundamental purpose is biodiversity and landscape diversity conservation, has the following most important short-term development trend:

- enhancement of environmental activity including the development of Security Guard and Patrol Service activity;
- development of research and monitoring projects as a basis for nature conservation activities;
- establishing and development of the Reserve as the regional environmental education center, foundation of ecotourism including the educational and extreme domestic and international tourism;
- integration of the Reserve into the regional economic and social network.

Successful implementation of the above mentioned programs would allow the Reserve and the local and regional authorities to combine efforts in order to preserve natural complexes and biodiversity of the region, to improve the effectiveness of the Reserve and to achieve the leading position in the region in the field of nature conservation.

The full achievement of the objectives stated above will only be possible if the decisions are scientifically supported, the scientifically grounded approaches and methods are used and the complete database is produced as soon as possible.

The ultimate goal of the Reserve's development achievable by step-by-step fulfillment of individual tasks can be the harmonization of the "society-nature" interaction, providing that the sustainable biodiversity and natural complexes of the area being maintained.

6.2. Action plan

The 2010–2014 Action Plan is built on the principle of target programs in conformity with the main activity lines of the Reserve with definition of main goals and tasks. The goals and tasks are to be performed through the implementation of a series of specialized management tasks, which can be corrected as the work moves forward. In turn, the management tasks are followed by a series of appropriate actions.

ANNEX B7

The long-term Action Plan can serve as the basis for the development of annual action plans specifying objectives, responsible officers and necessary non-human resources. Financial changes can cause changes in the timing of events and in the list of planned activities.

Many of the Plan's objectives require good coordination between nature conservation and economic activities of the Reserve and between the Reserve and its superior bodies, governing bodies and local authorities.

6.2.1. PROGRAMME "Protection of natural Reserve's complexes and biological and landscape diversity conservation"

The main activity of the Reserve is the conservation of natural complexes and sites including the direct protection of its area.

Goal: The conservation of the maximum possible natural biological and landscape diversity, the integrity of natural complexes and processes.

Priority tasks:

- protection regime violation control (poaching, other illegal types of natural management, illegal visit of territory and any one sites, violation of fire regulation and other established rules of conduct on the conservation area, etc.);
- implementation of special protection control towards the particular valuable natural sites (endemic or endangered species), the animal habitat centers, nesting and breeding places;
- information support of established regime and special protection measures including fixing and maintaining of indicators, information panels, special signs, stickers and others, as well as environmental education for native population, including the mass media sources;
- control of acceptable natural management within the Reserve and its buffer zone: maximum exemption limits, timing of different events, approval documentation release, etc.;
- forest and other wilderness fires prevention, detection and extinguishing activity;
- anthropogenic pollution control within the Reserve and its cordons, and minimization of its negative consequences.

The programme includes:
Subprogrammes:

1.1. Forest surveying of the Reserve's area
1.2. Fire prevention measures
1.3. Improvement of the effectiveness and sustainability of nature conservation measures through the application and development of innovative technologies

ANNEX B7

1.1. Subprogramme "Forest surveying of the Reserve's area"
Goal: The receiving of the objective information about the Reserve's forest resources, the most valuable and vulnerable natural complexes and sites.
Management task: Management and realizing of forest surveying of the Reserve's area.
Activities:

- submission the request for budget funding;
- preparation of TOR, tendering process, preparation of required documents, conclusion a treaty with Executor;
- management of forest surveying, control of performance process, deadlines and quality of works;
- receiving of forest surveying results, admission and verification of documents from Executor.

Expected outcomes:
Exact information about forest resources and its conditions within the Reserve's area.
Recommendations for forest surveying including fire-prevention and precaution measures, management of Security Guard and Patrol Service and conservation of the most valuable and vulnerable natural complexes and sites.

1.2. Subprogramme "Fire-prevention measures"
Goal: Reduction of forest fire area and number within the Reserve.
Management task: Fire-prevention measures efficiency improvement.
Activities:

- searching for new sources of current information about forest fires within the Reserve, including space surveillance aid;
- realization of fire-prevention education and promotion in regional and local mass media, manufacturing and distribution of fire-prevention production;
- increasing the number of fire-prevention observation posts within the Reserve, using the relief uplands;
- conclusion of treaties for air forest fire protection.

Expected outcomes:

- forest fire prevention and protection performance increasing;
- forest fire detection rate increasing (within the Reserve);
- out-of-control forest fire area and number decreasing (within the Reserve).

1.3. Subprogramme "Improvement of Security Guard and Patrol Service".
Goal: Developing a sustainable mechanisms for the work of the state inspectorate of the Reserve concerning prevention and restraint environmental law violations in changing social and economic conditions and considering changing regulatory and legal framework.
Management task: Management of the effective work of state inspectorate of the Reserve concerning patrolling and keeping the established conservation regime.
Activities:

- skilled staff recruiting and deployment;
- improvement of the effectiveness and sustainability of nature conservation measures through the application and development of innovative technologies;

- creation of the central operative group and management of its work;
- regularly training of state inspectors of the Reserve;
- material and technical supply of the state inspectorate;
- material incentives of the state inspectorate staff;
- moral incentives of the state inspectorate staff;
- reconstruction, equipment and building new cordons of the Reserve;
- package of environmental low violence preventive measures;
- manufacturing and fixing of the information panels and warning signs along the boundaries of the Reserve;
- regular placing the information in regional mass media about preservation regime of the Reserve, its boundaries and activity;
- making and demonstrating on TV the series of reports about the state inspectorate work;
- joint arrangements with functional subdivisions of Police, inspectorate for fisheries and other specialized services concerning guard and patrolling of the Reserve's area and its buffer zone;
- improvement of proceedings of environmental law violation cases (database creation, delegation of duties, etc.).

Expected outcomes:

- optimization of the Security Guard and Patrol Service and increasing its performance results, including the maximum use of modern technologies, implementation of progressive methods of natural complexes conservation and the Reserve area preservation;
- strengthening of the material and technical supply of the state inspectorate of the Reserve as well as the appropriate infrastructure necessary for the patrolling, including:
  - purchasing and use of modern transport means and their supply-and-maintenance-support equipment (boats, engines, repair tools and equipment, consumables in assortment);
  - purchasing and use of modern communication means;
  - purchasing, delivery to the key cordons, installation and use of modern remote video surveillance systems (wireless cameras, batteries, signal reception systems);
  - ordering, delivery and installation of information panels along the Reserve's boundary;
  - purchasing and delivery of building materials (construction and expendable materials, tools and implements) for the reconstruction of the key cordons;
- strengthening and development of cooperation with public organizations and public authorities in the sphere of environmental education;
- rise in the effectiveness of preventive measures against the violation of environmental laws achieved through the distribution of environmental information via mass media and the Internet;
- maintenance of stable populations of rare and endangered species within the territory of the Reserve and in the adjacent areas.

6.2.1 Programme "Protection of natural Reserve's complexes and biological and landscape diversity conservation"

Management tasks	Activities	Results/Indicators	Timing	Sources of financing	Sources of financing	Cost, thousands RUB. Year/period
1.1. Subprogramme "Forest surveying of the Reserve's area"						
Management and realizing of forest surveying of the Reserve's area	Submission the request for budget funding. Preparation of TOR, tendering process, preparation of required documents, conclusion a treaty with Executor. Management of forest surveying, control of performance process, deadlines and quality of works. Receiving of forest surveying results, admission and verification of documents from Executor	Exact information about forest resources and its conditions within the Reserve's area. Recommendations for forest surveying including fire-prevention and precaution measures, management of Security Guard and Patrol Service and conservation of the most valuable and vulnerable natural complexes and sites	2010 — 2014	Reserve; forest survey organization	Federal budget	3000/6000

Management tasks	Activities	Results/Indicators	Timing	Sources of financing	Sources of financing	Cost, thousands RUB. Year/period
1.2. Subprogramme "Fire-prevention measures"						
Fire-prevention measures efficiency improvement	Searching for new sources of current information about forest fires within the Reserve, including space surveillance aid. Realization of fire-prevention education and promotion in regional and local mass media, manufacturing and distribution of fire-prevention production. Increasing the number of fire-prevention observation posts within the Reserve, using the relief uplands. Conclusion of treaties for air forest fire protection	Forest fire prevention and protection performance increasing. Forest fire detection rate increasing (within the Reserve). Out-of-control forest fire area and number decreasing (within the Reserve)	2010 — 2014	Reserve	Federal budget	2000/10000

Management tasks	Activities	Results/Indicators	Timing	Sources of financing	Sources of financing	Cost, thousands RUB. Year/period
1.3. Subprogramme "Improvement of Security Guard and Patrol Service"						
Management of the effective work of state inspectorate of the Reserve concerning patrolling and keeping the established conservation regime	Skilled staff recruiting and deployment. Improvement of the effectiveness and sustainability of nature conservation measures through the application and development of innovative technologies. Creation of the central operative group and management of its work. Regularly training of state inspectors of the Reserve. Material and technical supply of the state inspectorate. Material incentives of the state inspectorate staff. Moral incentives of the state inspectorate staff. Reconstruction, equipment and building new cordons of the Reserve. Package of environmental low violence preventive measures. Manufacturing and fixing of the information panels and warning signs along the boundaries of the Reserve. Regular placing the information in regional mass media about preservation regime of the Reserve, its boundaries and activity. Making and demonstrating on TV the series of reports about the state inspectorate work. Joint arrangements with functional subdivisions of Police, inspectorate for fisheries and other specialized services concerning guard and patrolling of the Reserve's area and its buffer zone. Improvement of proceedings of environmental law violation cases (database creation, delegation of duties, etc.)	Optimization of the Security Guard and Patrol Service and increasing its performance results. Strengthening of the material and technical supply of the state inspectorate of the Reserve as well as the appropriate infrastructure necessary for the patrolling, including: - purchasing and use of modern transport means and their supply-and-maintenance-support equipment (boats, engines, repair tools and equipment, consumables in assortment); - purchasing and use of modern communication means; - purchasing, delivery to the key cordons, installation and use of modern remote video surveillance systems (wireless cameras, batteries, signal reception systems); - ordering, delivery and installation of information panels along the Reserve's boundary; - purchasing and delivery of building materials (construction and expendable materials, tools and implements) for the reconstruction of the key cordons. Strengthening and development of cooperation with public organizations and public authorities in the sphere of environmental education. Rise in the effectiveness of preventive measures against the violation of environmental laws achieved through the distribution of environmental information via mass media and the Internet. Maintenance of stable populations of rare and endangered species within the territory of the Reserve and in the adjacent areas	2010 — 2014	Reserve; Security Guard and Patrol Service	Federal budget; attracted funds	5000/25000

ANNEX B7

6.2.2. PROGRAMME "Environmental education and tourism; the building of public support for the Reserve"

Goal: Development of environmental ideology in the region, creation of friendly public opinion and positive image of the Reserve.

Major tasks:

- target awareness of all groups of population about the Reserve, its activity, achievements and development programs;
- drawing of public attention to the Reserve's problems and current tasks;
- public involvement in the nature conservation activities, event management in support of the Reserve;
- contribution to the building of an integrated information space in order to support the environmental education and public relations information and experience exchange between all interested persons at the SPA-system, national and international levels;
- ongoing development of material and technical resources and methodological base for effective and up-to-date work in the field of environmental education, including the accumulation of appropriate domestic and international experience and the development of new methodological procedures.

The programme includes the following subprogrammes:

2.1. Informational support of the Reserve activity subprogramme
2.2. Promotion of friendly public opinion and positive image of the Reserve subprogramme
2.3. Development of museum affairs subprogramme: visit-centers, museums, fairs, exhibitions
2.4. Development of ecotourism subprogramme

2.1. Subprogramme "Informational support of the Reserve activity"

2.1.1. Media coverage.

Management tasks: Preparation and distribution of credible information about the Reserve and its activity in a way that makes it easy to understand for the general audience.

Activities:

- regular publications about the Reserve in the local and regional press, preparation and promotion of articles about the Reserve in the federal and foreign mass media;
- cooperation with local and regional TV and radio companies in the preparation of TV and radio programs on environmental issues;
- creation and support of the Reserve's web site.

2.1.2. Promotion and publishing activities

Management tasks: Preparation and dissemination of information about the Reserve's nature and its conservation, development of environmental friendliness.

Activities:

- publication and distribution of booklets, brochures, calendars, CDs, photo album and other issues about the Reserve;
- publication and distribution of illustrated materials to inform the population about the unique character of natural complexes and its conservation in the Magadansky Reserve;
- creation of the video film about the Reserve; preparation, copying and distribution of the film and other issues about the Reserve in electronic format.

2.2. Subprogramme "Promotion of friendly public opinion and positive image of the Reserve"

2.2.1. Work with children

Management tasks: Engagement of children to the environmental activity, broadening of environmental outlook, development of appropriate skills and occupational guidance.

Activities:

- work with school children: organization of thematic lessons; organization of competitions, quizzes, Olympiads, conferences; engagement of school children to participate in the ecologic festivals and campaigns;
- inclusion of environmental education into educational schedule of pre-school, secondary school, vocational and higher educational institutions;
- work with teachers and educational institutions, working out methodological textbooks for bio diversity and reserve studies lessons in schools and pre-schools; participation in carrying out qualification courses for teachers.

2.2.2. Environmental actions and events

Management tasks: Drawing of people's attention to the nature conservation problems and to the Reserve's contribution in region nature conservation.

Activities:

- carrying out special events coincided with nature conservation festivals and actions («Day of Parks", World Environment Day, Bird's Day and others);
- active interaction with community: public agencies, educational and cultural institutions, local authority and public authorities;
- involvement of local people to participation in public environmental events.

2.3. Subprogramme "Development of museum affairs: visit-centers, museums, fairs, exhibitions"

Management tasks: Introduction of the Reserve for the broad community, promotion of scientific and environmental knowledge among population.

Activities:

- developing of strategy, creation, equipment and management of Visit-center of the Reserve;
- refill of existing and creation of new mobile photo shows about the Reserve's nature, according to thematic schedule;
- creation of material and technical resources for environmental education.

2.4. Subprogramme "Development of ecotourism"

Management tasks: Creation of positive image of the Reserve due to positive information distribution and contribution into solving the region economic and social problems.

Activities:

- analysis of the Reserve's and its buffer zone potential for development of environmental tourism;
- development of tourist routes including those with reserve specific and with visiting specially equipped parts of the Reserve and its buffer zone;

- arrangement of special parts of the Reserve and its buffer zone, allocated for work with visitors including arrangement of ecological paths, observation points, etc;
- development of thematic programs for purpose of work with tourists;
- development of rules for visitors of the Reserve for control their behavior, to prevent damage of natural complexes and sites;
- arrangement of work with visitors of the Reserve and tourists, including distribution of information about existing routes and possibilities, rules of conduct, etc.

Expected outcomes:

During realization of the program, qualitative and quantitative improvement of environmental education activity of the Reserve is expected, including: number and quality of lections, excursions, thematic events for children, number of interviews in mass media, reports and publications in mass media, number of printed production units, etc. As the result, the following are expected:

- SPA has well-known and positive image in the region and beyond;
- public friendliness, positive attitude and appreciation from government bodies and authorities and other significant public groups are formed;
- demand for production of the main activity of the Reserve (including environmental education and scientific activity) is supplied;
- standard and quality of environmental education including cognitive tourism and recreation, answers the up-to-date standards and provides raising additional funds.

6.2.2. PROGRAMME "Environmental education and tourism; the building of public support for the Reserve"

List of activities		Results/Indicators	Timing	Executors	Source of financing	Cost, thousands RUB Year/ Period
2.1. Subprogramme "Informational support of the Reserve activity"						
Media coverage Preparation and distribution of credible information about the Reserve and its activity in a way that makes it easy to understand for the general audience	Regular publications about the Reserve in the local and regional press; Regular publications of articles about the Reserve in the federal and foreign mass media; Cooperation with local and regional TV and radio companies in the preparation of TV and radio programs on environmental issues; Creation and support of the Reserve's web site	qualitative and quantitative improvement of thematic events, interviews in mass media, reports and publications concerning environmental education, etc.	2010-2014	Reserve	Federal budget	200/1000
Promotion and publishing activities	Publication and distribution of booklets, brochures, calendars, CDs, photo album and other issues about the Reserve; Publication and distribution of illustrated materials to inform the population about the unique character of natural complexes and its conservation in the Magadansky Reserve; Creation of the video film about the Reserve; preparation, copying and distribution of the film and other issues about the Reserve in electronic format	qualitative and quantitative improvement of printed production units, made by the Reserve (or about the Reserve)	2010-2014 rr.	Reserve	Federal budget; attracted funds	300/1500

List of activities		Results/Indicators	Timing	Executors	Source of financing	Cost, thousands RUB Year/ Period
2.2. Subprogramme "Promotion of friendly public opinion and positive image of the Reserve"						
Work with children of different ages Engagement of children to the environmental activity, broadening of environmental outlook, development of appropriate skills and occupational guidance	Work with school children: organization of thematic lessons; organization of competitions, quizzes, Olympiads, conferences; engagement of school children to participate in the ecologic festivals and campaigns; Inclusion of environmental education into educational schedule of pre-school, secondary school, vocational and higher educational institutions; Work with teachers and educational institutions, working out methodological textbooks for bio diversity and reserve studies lessons in schools and pre-schools; participation in carrying out qualification courses for teachers	qualitative and quantitative improvement of thematic events, improvement of environmental education level	2010-2014	Reserve	Federal budget; attracted funds	200/1000
Environmental actions and events Drawing of people's attention to the nature conservation problems and to the Reserve's contribution in region nature conservation	Carrying out special events coincided with nature conservation festivals and actions («Day of Parks", World Environment Day, Bird's Day and others); Active interaction with community: public agencies, educational and cultural institutions, local authority and public authorities; Involvement of local people to participation in public environmental events	qualitative and quantitative improvement of thematic events; quantitative improvement of attracted organizations; quantitative improvement of event attendance; quantitative improvement of raising funds; quantitative improvement of positive responses	2010-2014 rr.	Reserve	Federal budget; attracted funds	300/1500

List of activities		Results/Indicators	Timing	Executors	Source of financing	Cost, thousands RUB Year/ Period
2.3. Subprogramme "Development of museum affairs: visit-centers, museums, fairs, exhibitions"						
Introduction of the Reserve for the broad community, promotion of scientific and environmental knowledge among population	Developing of strategy, creation, equipment and management of Visit-center of the Reserve; Refill of existing and creation of new mobile photo shows about the Reserve's nature, according to thematic schedule; Creation of material and technical resources for environmental education	creation and management of the Reserve Visit-centre; qualitative and quantitative improvement of exhibitions, fairs, etc; strengthening of material and technical resources, informational and scientific base of environmental education	2010-2014	Reserve	Federal budget; attracted funds	1800/2400
2.4. Subprogramme "Development of ecotourism"						
Creation of positive image of the Reserve due to positive information distribution and contribution into solving the region economic and social problems	Analysis of the Reserve's and its buffer zone potential for development of environmental tourism; Development of tourist routes including those with reserve specific and with visiting specially equipped parts of the Reserve and its buffer zone; Arrangement of special parts of the Reserve and its buffer zone, allocated for work with visitors including arrangement of ecological paths, observation points, etc; Development of thematic programs for purpose of work with tourists Development of rules for visitors of the Reserve for control their behavior, to prevent damage of natural complexes and sites; Arrangement of work with visitors of the Reserve and tourists, including distribution of information about existing routes and possibilities, rules of conduct, etc	Arrangement of necessary infrastructure for work with visitors of the Reserve and its buffer zone, arrangement of systematic work with tourists in the region, including development of informational system	2010-2014	Reserve	Federal budget; attracted funds	2200/10000

ANNEX B7

6.2.3. PROGRAMME "Scientific research and monitoring activities"

Goal: Information and scientific support of management and planning of the Magadansky Reserve activities; provision of federal authorities with data about condition and dynamics of natural complexes and SPAs.

Major tasks:

- development of information and analytical support for nature conservation and nature use management activities of the Reserve;
- integrated monitoring of natural ecosystems;
- research projects on the dynamics of the key components of natural territorial complexes.

Subprogrammes:

3.1. Inventory and thematic mapping
3.2. Development of environmental monitoring
3.3. Development of scientific research projects
3.4. Development of the Reserve informational system

Subprogramme 3.1. "Inventory and thematic mapping"

Management tasks:

- evaluation of nature conservation significance of the Reserve area and condition of preserved natural complexes and sites;
- definition of the key activities intended to conservation of the Reserve's natural complexes and sites;
- generation of the list of objects to be monitored and subjects to be studied in the key natural complexes.

Activities:

- inventory of the Reserve's flora and fauna;
- searching and mapping of the most valuable in terms of conservation natural complexes and sites;
- creation of main thematic maps (vegetation, landscapes) of the Reserve clusters.

Subprogramme 3.2. "Development of environmental monitoring"

Management tasks:

- provision of control of current condition and dynamics of preserved natural complexes and sites;
- organization of data collection process about natural complexes dynamics concerning global climate changes;
- organization of data collection process about the condition of rare species, listed in the Red Book of Russia and in the IUCN Red Data Book and other SPAs of federal and international levels.

Activities:

- development of monitoring programs of key natural complexes condition, of rare and key species populations, as well as other most valuable natural sites of the Reserve with determination of information supply, processing methods and results*;
- development of infrastructure and material and technical resources of monitoring;
- regular data collection according to Nature records with periodic data evaluation;
- input of the data collected in the Reserve into global information systems.

ANNEX B7

Objects	Registered characteristics	Observation methods
1. LANDSCAPE-ECOSYSTEM STRUCTURE OF TERRITORY		
Plant formation structure	Spaces and configurations of main diversities of plant formation	photo delineation space image
2. PROTOTYPE ECOSYSTEMS		
Mountainous larch sparse forests (Kava-Chelomdjinsky and Seimchasky clusters)	Basic index of following structures: soils, plant associations, populations of birds, small mammals and base invertebrate groups	Descriptions of soil profiles, geobotanic descriptions, birds routs census, small mammals census, base invertebrate groups census
Cedar elfin wood tundra		
Erman's birch forests (Olsky cluster)		
deciduous forests of alluvial valleys (the Kolyma, Yama, Chelomja rivers)		
Mountainous tundra (the Pyagina, Koni peninsulas)		
Waterlogged complexes (Kava-Chelomdjinsky interfluve area, Seimchansky cluster)		
Natural (non antropogenic) burnt places of different ages in all types of plant formations		
3. RARE AND UNIQUE ASSOCIATIONS AND ECOSYSTEMS		
Siberian spruce growing on the part of the Yama river valley	Space and configuration of associations, index of association structure	Mapping (also using remote data), geobotanic descriptions
Birds ecosystem of the Yamsky islands		
4. RARE AND ENDANGERED PLANT AND ANIMAL SPECIES POPULATIONS		
Rare plant species listed in the Red Book of the Magadansky region and found only on the Reserve territory: *Allium ochotense, Filipendula camtschatica, Moneses uniflora*	Dispersal, number, micro populations condition	Mapping of micro populations, inventory and condition description on the modular site
The Okhotsk Sea narrow endemic plants — *Salix magadanensis, Taraxacum magadanicum, Corydalis magadanica, Saxifraga derbekii, Potentilla rupifraga, Draba magadanensis, Astragalus boreomarinus*		
Steller's sea eagle	Number, breeding success	Mapping and monitoring of nesting places and nests
fish owl	Number	Voices census
marbled murrelet and Kittlitz's murrelet	Dispersal, number	Registration and mapping of gathering
black-capped marmot	Number	Mapping of settlements, settlement census

ANNEX B7

Objects	Registered characteristics	Observation methods
5. HUNTING SPECIES POPULATIONS		
Hunting animals of larch and valley broadleaf forests	Number	Winter itinerary animal census
big-horn	Number, sex-age structure of population	Aerial census and ground monitoring
taiga grouse	Number, breeding capacity	Brood census during late summer
6. REPRODUCTIVE AND MIGRATION ANIMAL GATHERINGS		
Slamon spawning area in the Chelomdja and Yama rivers	Number, morphometry	Aerial census with monitoring catches
Migration gathering of birds on the waterlogged areas of the Kava river	Number, species proportion	Periods of migration census
Seabird colonies on the Yamsky islands and Koni peninsula	Number, breeding capacity	Census and monitoring in representative areas
Costal rookeries of sea lions on the Yamsky islands	Number, sex-age structure	Coastal census

Subprogramme 3.3. "Development of scientific research projects"
Management tasks:

- organization and carrying out of scientific researches for scientific support of nature conservation activity of the Reserve;
- organization and carrying out of scientific researches focused on study of global environmental changes in places free of direct impact of antropogenic activity.

Activities:

- analysis of actuality and resolution of priority of research projects; development of a detailed long-term research plan, including particular activities;
- connection/information exchange and treaty conclusions with partners and potential project Executors;
- advanced training of research officers through participation in domestic and international conferences and symposiums, missions to the research centers for the work, experience exchange and the development of partnership.

Subprogramme 3.4. "Development of the Reserve informational system"
Management tasks:

- organization of monitoring and scientific researches results holding;
- organization of on-site processing and analysis of scientific information about the Reserve natural complexes and sites condition.

Activities:

- development of interdependent inventory and monitoring databases working jointly with GIS;
- development of the Reserve's GIS by creating and involving of new thematic layers;
- development of standard requests system in the database and GIS and self-generated reports about the Reserve's natural complexes and their separate parts condition.

Expected outcomes:

- database of the current state and dynamics of natural complexes, biodiversity and unique natural phenomena found in the Reserve, related to the Reserve's GIS;
- integrated ecologic monitoring program for the Reserve's area;
- scientific researches plan for the Reserve's area aimed on the optimization of main activity, in accordance with appropriate conlusions;
- operational system of regular analysis of scientific data and generation of reports (summaries) about the Reserve's natural complexes and their separate parts condition;
- regular advanced training of the scientific specialists and broad involvement of them in the participation in scientific conferences and in regional, federal and international environmental projects.

6.2.3. PROGRAMME "Scientific research and monitoring activities"

Activities		Result/Indicator	Timeline	Executors	Sources of financing	Costs Thousand RUB. Year/ period
3.1. Subprogramme "Inventory and thematic mapping"						
Inventory of the Reserve's flora and fauna	Continue of inventory of the Reserve's flora and fauna	Informational database of the Reserve's flora and fauna	2010-2014	Reserve	Federal budget	100/500
Searching and mapping of the most valuable in terms of conservation natural complexes and sites	Inventory of endemic plant species, rare plant associations, most valuable waterlogged areas, seabirds colonies, rookeries of sea mammals and other valuable natural sites	Informational database of the key specific nature territorial complexes and sites relied on the appropriate GIS layers	2010-2014	Reserve	Federal budget	100/500
Creation of main thematic maps (vegetation, landscapes) of the Reserve clusters	Making the landscapes and geobotanic maps of the Reserve clusters with space image photo delineation and with ground monitoring	GIS layers of vector landscape and geobotanic maps of the Reserve's clusters within GIS	2010-2014	Reserve, Institute of the Biological Problems of the North, Botanic Institute	Federal budget	200/1000
3.2. Subprogramme "Development of environmental monitoring"						
Development of monitoring programs of key natural complexes condition, of rare and key species populations, as well as other most valuable natural sites of the Reserve with determination of information supply, processing methods and results	Definition of foreground monitoring sites and developing of monitoring programs including the optimal methods, places and timing of works, required executor qualifications and forms of presentation and primary data processing	Integrated program of ecologic monitoring within the Reserve territory, which involves long-term monitoring of key natural complexes and the primary natural sites for conservation	2010-2011	Reserve, with the participation of Institute of the Biological Problems of the North and other research organizations	Federal budget	100/200

Activities		Result/Indicator	Timeline	Executors	Sources of financing	Costs Thousand RUB. Year/ period
Development of infrastructure and material and technical resources of monitoring	Filling of facility gaps in monitoring (indicator plots, permanent transects, observation points, etc.) and purchasing of equipment and facility, necessary for works according to monitoring program		2011-2012	Reserve	Federal budget, attracted funds	1000/2000
Regular data collection according to Nature records with periodic data evaluation	Arrangement of field and office works according to approved ecologic monitoring program	Annual books "Nature records" and completed sections of informational databases of the Reserve (see below)	2010-2014	Reserve	Federal budget	200/1000
Input of the data collected in the Reserve into global information systems	Analysis of existing international informational systems – searching for interactive databases, which could be enlarged by the Reserve data (boreal forests, sea birds, pinnipeds, etc.)	List of international databases interesting for filling by data received in the Reserve	2010-2011	Reserve	Federal budget	25/50
	Presentation of information to the international databases	Ecologic monitoring data presented to the international databases	2011-2014	Reserve	Attracted funds	25/100
3.3. Subprogramme "Development of scientific research projects"						
Analysis of actuality and resolution of priority of research projects; development of a detailed long-term research plan, including particular activities	Analysis of actuality and priorities in the scientific researches, development of long-term research plan including specific events	Long-term scientific research plan, approved by Ministry of natural resources and ecology	2010	Reserve	Federal budget	
Connection/ information exchange and treaty conclusions with partners and potential project Executors	Choosing of Executors and associate contractors concerning the relevant scientific researches	Concluded contracts in the field of scientific and technical cooperation in scientific researches according to the approved research plan	2010-2011	Reserve	Federal budget	

Activities		Result/Indicator	Timeline	Executors	Sources of financing	Costs Thousand RUB. Year/ period
Advanced training of research officers through participation in domestic and international conferences and symposiums, missions to the research centers for the work, experience exchange and the development of partnership	Missions of research officers for participation in domestic and international conferences and symposiums, missions to the leading research centers for work with typical collections, experience exchange and the development of partnership in monitoring field	Qualification and scientific improvement of research staff, carrying out of self consistent scientific researches. Increasing number of publications, thesis defenses	2010-2014	Reserve	Federal budget, attracted funds	150/750
3.4. Subprogramme "Development of the Reserve informational system"						
Development of interdependent inventory and monitoring databases working jointly with GIS	Development of interdependent inventory and ecologic monitoring databases. Binding of integrated databases and GIS	Integrated databases of inventory and monitoring, which are realized in standard environments, used for databases creation (Access) and are connected with the Reserve's GIS	2010-2011	Reserve	Federal budget	100/200
Development of the Reserve's GIS by creating and involving of new thematic layers	Extension of GIS content by adding thematic baseline maps (vegetation, landscapes) and additional point layers representing inventory and monitoring data (places of rare species findings, allocation of monitoring infrastructure, etc.)	GIS with baseline maps and thematic layers for displaying of inventory and monitoring results	2010-2014	Reserve	Federal budget, attracted funds	100/500
Development of standard requests system in the database and GIS and self-generated reports about the Reserve's natural complexes and their separate parts condition	Development of requests and database standard report forms	Set of self-generated standard requests and reports of databases and GIS	2012-2014	Reserve	Federal budget	50/100

ANNEX B7

6.2.4. PROGRAMME "International Activities"

As the result of long-term scientific researches within the Magadansky Reserve, the presentations and reports were carried out on different conferences and other events, which include international ones, and also scientific monographs and collected works were published.

Active and wide dissemination of information collected during fundamental research projects was resulted in the scientific recognition of the Reserve as an area worthy of being inscribed onto the World Heritage List. The nomination process is currently underway.
Fruitful cooperation with different organizations gives a chance to maintain a cooperative association with many experts and scientific research agencies in Europe, America and other countries.

Nowadays, there is an urgent need for the more wide-range cooperation with foreign partners and colleagues for the purpose of study and implementation the best practices of conservation of natural complexes and sites, scientific researches and ecologic monitoring, environmental education and cognitive tourism. One of the ways of realization of this activity would be the inscription of the site onto World Heritage List.

Goal: International cooperation development, study and implementation of international practices, implementation of Russian international commitments in the field of biologic diversity conservation and development of SPAs system.
Major tasks:

- inscription of the Reserve on the UNESCO WH List;
- participation in CAFF Biodiversity Monitoring project;
- development of cooperation in monitoring and preservation of migrant birds;
- development of cooperation with Fish and Wild Service (USA) in the context of seabirds colonies database creation;
- development of international cooperation in study and monitoring of Steller's sea eagle population condition;
- employee training through participation in international symposiums.

Activities:

- UNESCO World Heritage List nomination process;
- monitoring of the main elements of zoocenosis;
- participation in international conferences, publications preparation, joint research projects development in the framework of East Asia – Australasian Flyway Partnership, Australasian Wader Studies Group and others;
- improvement of seabirds census methods, informational exchange;
- monitoring of Steller's sea eagle population condition using modern technologies;
- participation if scientific conferences, educational workshops and qualification trainings.

Expected outcomes:

- officially approved nomination dossier for inscription on the UNESCO WH List;
- extension of preservation field of migrant birds; publications, joint works projects;
- global availability of representative data of number and condition of seabirds colonies;
- data of the Steller's sea eagle population condition; specie conservation reports and recommendations;
- application of acquired innovative methods to practice of all divisions of the Reserve.

6.2.4. PROGRAMME "International Activities"

Management tasks	Activities	Results/Indicators	Timeline	Executors	Source of financing	Costs Thousand RUB. Year/period
Inscription of the Reserve on the UNESCO WH List	UNESCO World Heritage List nomination process	Officially approved nomination dossier	2010	Reserve	Federal budget	700
Participation in CAFF Biodiversity Monitoring project	Monitoring of the main elements of zoocenosis	Populations, associations and ecosystems conditions indicators	2010-2014	Reserve	CAFF program	1000/5000
Development of cooperation in monitoring and preservation of migrant birds	Participation in international conferences, publications preparation, joint research projects development in the framework of East Asia – Australasian Flyway Partnership, Australasian Wader Studies Group and others	Extension of preservation field of migrant birds; publications, joint works projects	2010-2014	Reserve	Federal budget, Extrabudgetary funds	150/450
Development of cooperation with Fish and Wild Service (USA) in the context of seabirds colonies database creation	Improvement of seabirds census methods, informational exchange	Global availability of representative data of number and condition of seabirds colonies	2010-2014	Reserve	Fish and Wild Service (USA)	60/300
Development of international cooperation in study and monitoring of Steller's sea eagle population condition	Monitoring of Steller's sea eagle population condition using modern technologies	Data of the Steller's sea eagle population condition; specie conservation reports and recommendations	2010-2014	Reserve	Fellowships	1000/5000
Employee training through participation in international symposiums	Participation if scientific conferences, educational workshops and qualification trainings	Application of acquired innovative methods to practice of all divisions of the Reserve	2010-2014	Reserve	Fellowships, Extrabudgetary funds	200/1000

ANNEX C
LISTS OF PLANTS AND ANIMALS

The Magadansky Reserve List of rare plant species, included in the Red Books.

Scientific name	Russian name	The Magadan region Red Book. (08.06.2007)	The Russian Red Book
Matteuccia struthiopteris (L.) Tod.	Страусник обыкновенный	1	
Polystichum lonchitis (L.) Roth	Многорядник копьевидный	1	
Cryptogramma acrostichoides R. Br.	Скрытокучница верхорядниковая	1	
Cryptogramma stelleri (S. G. Gmel.) Prantl	Скрытокучница Стеллера	1	
Botrychium robustum (Rupr.) Underw.	Гроздовник мощный	1	
Equisetum hyemale L.	Хвощ зимующий	1	
Lycopodium juniperoideum Sw.	Плаун можжевельниковый	1	
Isoëtes asiatica (Makino) Makino	Полушник азиатский	1	
Picea obovata Ledeb.	Ель сибирская	1	
Sparganium emersum Rehm.	Ежеголовник всплывающий	1	
Sparganium natans L.	Ежеголовник плавающий	1	
Potamogeton alpinus Balb.	Рдест альпийский	1	
Potamogeton compressus L.	Рдест сплюснутый	1	
Potamogeton gramineus L.	Рдест злаковый	1	
Potamogeton natans L.	Рдест плавающий	1	
Scheuchzeria palustris L.	Шейхцерия болотная	1	
Sagittaria natans Pall.	Стрелолист плавающий	1	
Cinna latifolia (Trev.) Griseb.	Цинна широколистная	1	
Vahlodea flexuosa (Honda) Ohwi	Валодея извилистая	1	
Danthonia riabuschinskii (Kom.) Kom.	Дантония Рябушинского	1	
Melica nutans L.	Перловник поникший	1	
Glyceria lithuanica (Gorski) Gorski	Манник литовский	1	
Calla palustris L.	Белокрыльник болотный	1	
Lemna trisulca L.	Ряска тройчатая, трехдольница тройчатая	1	
Lemna turionifera Landolt = sub L.minor L.	Ряска туриононосная = малая	1	
Streptopus amplexifolius (L.)	Стрептопус стеблеобъемлющий	1	
Allium ochotense Prokh.	Лук охотский, черемша	1	
Iris laevigata Fisch. et C. A. Mey.	Касатик, или ирис гладкий	1	
Dactylorhiza aristata (Fisch. ex Lindl.) Soó	Пальчатокоренник остистый	1	

ANNEX C
LISTS OF PLANTS AND ANIMALS

Scientific name	Russian name	The Magadan region Red Book. (08.06.2007)	The Russian Red Book
Platanthera tipuloides (L. fil.) Lindl.	Любка комарниковая	1	
Listera cordata (L.) R. Br.	Тайник сердцевидный	1	
Salix magadanensis Nedoluzhko	Ива магаданская	1	
Salix pyrolifolia Ledeb.	Ива грушанколистная	1	
Rheum compactum L.	Ревень компактный	1	
Persicaria amphibia (L.) S. F. Gray	Горец земноводный	1	
Stellaria bungeana Fenzl	Звездчатка Бунге	1	
Nymphaea tetragona Georgi	Кувшинка четырехгранная	1	
Nuphar pumila (Timm) DC.	Кубышка малая	1	
Clematis fusca Turcz.	Ломонос бурый	1	
Trautvetteria japonica Siebold et Zucc.	Траутфеттерия японская	1	
Cardamine pedata Regel et Til.	Сердечник стоповидный	1	
Draba magadanensis Berkutenko et A. Khokhr.	Крупка магаданская	1	
Drosera anglica Huds.	Росянка английская	1	
Saxifraga derbekii Sipl.	Камнеломка Дербека	1	
Filipendula camtschatica (Pall.) Maxim.	Лабазник камчатский	1	
Astragalus boreomarinus A. Khokhr. = sub. A.marinus	Астрагал североприморский	1	
Circaea alpina L.	Двулепестник альпийский	1	
Magadania olaensis M. Pimen. et Lavrova	Магадания ольская	1	1
Magadania victoris (Schischk.) M. Pimen. et Lavrova	Магадания Виктора	1	
Moneses uniflora (L.) A. Gray	Одноцветка крупноцетковая	1	
Cassiope lycopodioides (Pall.) D. Don	Кассиопея плауновидная	1	
Oxycoccus palustris Pers.	Клюква болотная	1	
Naumburgia thyrsiflora (L.) Reichenb.	Кизляк кистецветковый	1	
Gentiana triflora Pall.	Горечавка трехцветковая	1	
Scutellaria ochotensis Probat. = sub S.regeliana	Шлемник охотский =Ш. Регеля	1	
Pennelianthus frutescens (Lamb.) Crosswhite	Пеннелиант кустарниковый	1	
Veronica humifusa Dicks.=sub V.tenella	Вероника распростертая = тоненькая	1	
Lobelia sessilifolia Lamb.	Лобелия сидячелистная	1	

ANNEX C
LISTS OF PLANTS AND ANIMALS

The Magadansky Reserve List of birds species, included in the Red Books

Specie	Russian name	The Russian Red Book	The Magadan region Red Book.(08.06.2007)
Gavia adamsi (Gray, 1859)	Белоклювая гагара	1	1
Botaurus stellaris orientalis But.	Выпь		1
Cygnus cygnus (L.)	Лебедь-кликун		1
Cygnus bewickii Yarrell, 1830	Тундровый (малый) лебедь	1	1
Anser erythropus (L., 1758)	Пискулька	1	1
Branta bernicla nigricans (Lawrence, 1846)=Branta nigricans (Lawrence, 1846)	Черная казарка тихоокеанская=Американская казарака	1	1
Anas formosa Georgi, 1775	Чирок-клоктун	1	1
Anas falcata Georgi	Касатка		1
Mergus albellus (L.)	Луток		1
Pandion haliaetus (L., 1758)	Скопа	1	1
Haliaeetus albicilla (L., 1758)	Орлан-белохвост	1	1
Haliaeetus pelagicus (Pall., 1811)	Белоплечий орлан	1	1
Accipiter gentilis (L.)	Тетеревятник		1
Aguila chrysaetos (L.,1758)	Беркут	1	1
Circus cyaneus (L.)	Полевой лунь		1
Cerchneis tinnunculus (L.)	Пустельга		1
Falco rusticolus L., 1758	Кречет	1	1
Falco peregrinus Tunst., 1771	Сапсан	1	1
Charadrius dubius Scop.	Малый зуек		1
Haematopus ostralegus osculans Swinhoe, 1871	Кулик-сорока	1	1
Gallinago solitaria Hodson	Горный дупель		1
Numenius madagascariensis (L., 1766)	Кроншнеп дальневосточный	1	1
Brachyramphus marmoratus (Gmelin, 1789) perdix	Длинноклювый пыжик	1	1
Brachyramphus brevirostris (Vigors, 1829)	Короткоклювый пыжик	1	1
Bubo bubo (L., 1758)	Филин	1	1
Ketupa blakistoni Seebohm, 1884	Рыбный филин	1	1
Strix nebulosa J. R. Forst.	Бородатая неясыть		1
Strix uralensis (Pall.)	Длиннохвостая неясыть		1
Aegolius funereus (L.)	Мохноногий сыч		1
Jynx torquilla (L.)	Вертишейка		1
Lanius excubitor L., 1758 — L.e.sibiricus Bogd/	Серый (большой) сорокопут		1
Cinclus pallasii (Temm.)	Бурая оляпка		1
Laiscopus collaris (Scop.)	Альпийская завирушка		1

ANNEX C
LISTS OF PLANTS AND ANIMALS

The Magadansky Reserve List of birds species, included in the IUCN Red Data Book

Anser erythropus (L., 1758) — Пискулька

Anas formosa Georgi, 1775 — Чирок-клоктун

Haliaeetus albicilla (L., 1758) — Орлан-белохвост

Haliaeetus pelagicus (Pall., 1811) — Белоплечий орлан

Numenius madagascariensis (L., 1766) — Кроншнеп дальневосточный

Brachyramphus marmoratus (Gmelin, 1789) perdix — Длинноклювый пыжик

Ketupa blakistoni Seebohm, 1884 — Рыбный филин

ANNEX C
LISTS OF PLANTS AND ANIMALS

The Magadansky Reserve List of rare mammal species, included in the Red Books

Specie	Russian name	The Russian Red Book	The Magadan region Red Book. (08.06.2007)	Notes
Sorex tundrensis Merriam	тундровая бурозубка		1	
Sorex gracillimus Thomas	дальневосточная бурозубка		1	
Sorex minutissimus Zimmermann	крошечная бурозубка		1	
Sorex roboratus Hollister	бурая бурозубка		1	
Sorex camtshatica Judin	камчатская бурозубка		1	
Myotis daubentoni Kuhl	водяная ночница		1	
Myotis brandtii Eversmann	ночница Брандта		1	
Plecotus auritus Linnaeus	бурый ушан		1	
Marmota camtschatica Pallas	черношапочный сурок		1	
Apodemus peninsulae Thomas	азиатская лесная мышь=восточноазиатская мышь		1	
Lutra lutra Linnaeus	Речная выдра		1	Annex.3 to RB; 1- КС IUCN-96
Lynx lynx Linnaeus	Рысь		1	
Moschus moschiferus Linnaeus	кабарга		1	Annex.3 to RB; 1- КС IUCN -96
Eumetopias jubatum Schreber,1776	сивуч	1	1	

ANNEX D
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