

Nomination

# **Bikin River Valley**

## **(Extension of the Central Sikhote- Alin World Heritage Property (766))**

Russian Federation

Proposals for Inscription on  
the UNESCO Cultural  
and Natural World Heritage List

**Prepared by:**

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**Supported by:**

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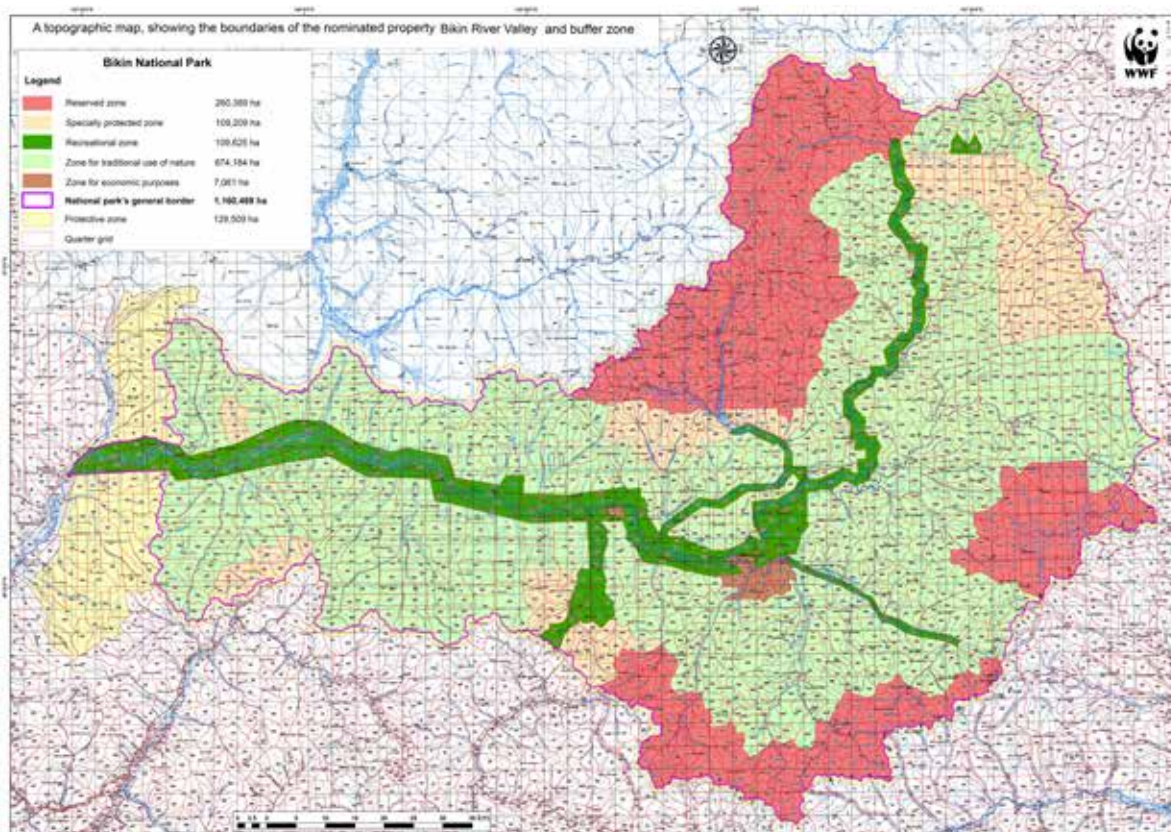
# Executive Summary

State Party	Russian Federation
State, Province or Region	Primorsky Kray, Pozharsky District
Name of Property	Bikin River Valley (extension of the Central Sikhote-Alin World Heritage property (766))
Geographical coordinates to the nearest second	<p>Nominated as an extension of the Central Sikhote-Alin property, the territory occupies the basin of the Bikin River's upper and middle reaches and is limited by the following geographical coordinates:</p> <p>The northernmost point is 47° 17' 30" N, 137° 05' 45" E The southernmost point is 46° 05' 35" N, 137° 03' 13" E The westernmost point is 46° 40' 35" N, 135° 27' 35" E The easternmost point is 46° 41' 10" N, 137° 51' 10" E Coordinates of the Central Point: 46° 41' 00" N, 136° 39' 40" E</p>
Textual description of the boundary(ies) of the nominated property	<p>The nominated territory's boundaries coincide with the boundaries of the Bikin National Park. They mainly pass along the natural divides: along the watershed between the Bikin and Khor Rivers, between the Bikin and Bolshaya Ussurka Rivers, and along the main watershed of the Sikhote-Alin range. The territory occupies practically the whole eastern part of Pozharsky Municipal District of Primorsky Kray (51% of the district's territory), is contiguous with Terneysky and Krasnoarmeysky Districts of Primorye and the District named after Lazo of Khabarovsk Kray.</p> <p><u>The northern boundary.</u> It goes from the intersection point of the left eastern watershed between the Takhalo River basin with watershed between the Bikin and Khor Rivers to the point of convergence of the Khor-Bikin-Edinka river watersheds. The entire northern boundary coincides with the administrative boundary between Primorsky and Khabarovsk Krays.</p> <p><u>The eastern boundary.</u> It goes from the point of convergence of the Khor-Bikin-Edinka river watersheds, southward in general, then goes along the main watershed of the Sikhote-Alin range. The eastern boundary coincides with the administrative border between Pozharsky and Terneysky Districts of Primorsky Kray.</p> <p><u>The southern boundary.</u> It goes along the main watershed of the Sikhote-Alin range to the point of convergence of the main watershed of the Sikhote-Alin with watershed between the basins of the Bikin and Bolshaya Ussurka (Iman) Rivers, then along the same watershed to height 847 (Mount Vodorazdel). The southern boundary coincides with the administrative border between Pozharsky and Krasnoarmeysky Districts of Primorsky Kray.</p>

The western boundary. The southern part of the western boundary goes from height 847 (Mount Vodorzdel) northward along the watershed between the Sputnitsa and Klenovka Rivers to height 786 (Mount Buntar). Then it goes westwards along the boundary of quarters 117, 116 and 108 of the Verkhne-Perevalnenskoye forestry – Sobolinoye plot forestry, including them, to the Bikin riverbed. Then it goes northward and eastward along the boundary of quarters 107, 110, 109, 112, 168, 186 of the Verkhne-Perevalnenskoye forestry – Sobolinoye plot forestry, including them, to the watershed of the Amba, Bikin, and Malaya Govorunya Rivers. Then it goes northward along the watershed between the basins of the Takhalo and Amba Rivers, via heights 937 (Mount Amba), 543 (Mount Godovshchina), 1038 (Mount Snezhnaya) to the Khor-Bikin watershed (to the border with Khabarovskiy Kray), including quarters 184, 182, 180, 178, 176, 173, 170, 168, 166, 165 of Verkhne-Perevalnenskoye forestry – Sobolinoye plot forestry.

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

A topographic map, showing the boundaries of the nominated property Bikin River Valley and buffer zone. The scale is 1:250 000 (*rolled and to be found separately from the text*).



Criteria under which property is nominated (itemize criteria)

(x)

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Draft Statement of Outstanding Universal Value

**a) Brief synthesis**

The proposed nominee, Bikin National Park, about 1.2 million ha in area, occupies the middle and upper parts of the drainage basin of the Bikin River (the basin of the Sea of Okhotsk). The National Park is located in the south of the Russian Far East, in Primorsky Krai, in the central part of the Sikhote-Alin mountain range, on its western macroslope.

The territory covers the heights from 200 to 1900 m above sea level, with including the full spectrum of the valley, mountain taiga, and bald mountain complexes of the region. More than 95 % of it is covered with forest, which has never been industrially felled here, the resident population numbers only 1 th. people (mainly in the property's buffer zone), who have always engaged in hunting, fishing, picking wild plants, pine nuts, and other forest gifts.

The territory of the Middle and Upper Bikin has unique landscape and biogeographical characteristics. Being a genuine model of Russian Far East nature, it is one of the largest, the most integral and well-preserved mixed forest tracts in the whole Northern Hemisphere. A variation of East-Asian mixed forests, the local Ussuriyskaya taiga includes practically undisturbed broadleaf and pine-broadleaf plantings that are notable for the wealth of their floristic composition, holocoenotic variety, abundance of relict and endemic, rare and vanishing species, arboreous and shrubby stocks.

In the Bikin Valley, the Ussuriyskaya taiga shelters a number of vanishing and rare plant and animal species, the Amur tiger being the main one (endangered in the IUCN Red List), the local population of which consists of about 40 animals.

This corner of nature has been conserved by not only natural reasons (the mountainous relief, difficult access, compactness) as well as the remoteness of this tract from the civilization, but also by virtue of the federal protected natural territory status (national park), which will help to preserve the unique forests and their living inhabitants.

**b) Justification for Criteria**

The unique natural characteristics of the Middle and Upper Bikin evidence its full compliance with criterion (x), and this manifests itself in the following two aspects:

- Conservation of the large, compact and undisturbed broadleaf and pine-broadleaf Far-Eastern forest tract ("Ussuriyskaya taiga")

The pine-broadleaf complex in the upstream and especially middle stretch of the River Bikin is in fact the sole East-Asian (consequently, the world's one) such a large, well-conserved, and integral tract of Ussuriyskaya taiga, which was very widespread in this geographical region with monsoon climate and mountainous relief, between the River Ussuri and the coast of the Sea of Japan, in the old days.

Compactly represented in the Bikin's basin, the broadleaf and pine-broadleaf forests (with a total area exceeding 800 th. ha) are actually full analogs of Eurasia's preglacial broadleaf forests, but such ecosystems have almost completely transformed or disappeared entirely on the rest of the territory. It is the sole large basin where trees have never been felled, and that is why it is only this site that can give the idea about how Ussuriyskaya taiga had looked like till the mid 19th century.

As a variety of East-Asian broadleaf and mixed forests, Ussuriyskaya taiga may be well recognized as a leader by the biodiversity degree; these tracts are among the richest and the most original forest types by the species composition in the whole Northern Hemisphere.

The synthetic character of the flora and fauna of the territory under research is of a great importance: taiga fauna along with Okhotsk-Kamchatka flora representatives, on the one hand, combine with southern, Manchurian species.

The forests in the Bikin basin are inhabited by the autochthons of the Bikin River basin – the Bikin group of the Udege and Nanai people. Life activities of these peoples are impossible without preserving the taiga.

- Conservancy of the population of the Amur tiger inscribed on the IUCN Red List as an endangered subspecies

Along with the Sikhote-Alinsky Reserve already inscribed on the UNESCO List, the Bikin River Valley is a key dwelling place of the Amur tiger (*Panthera tigris altaica*). It is here that by the mid last century one of the last breeding grounds of the Amur tiger had been conserved, thanks to which this unique cat managed to renew its habitation area in Russia. By now in the Bikin River Valley about 40 tigers have been recorded, which make up approximately 10 % of the total population.

The Amur tiger population can be characterized as quite problem-free at the Bikin. The tiger is especially attached to the broadleaf and pine-broadleaf tracts in the middle part of the Bikin River, but the animal is more and more often noted near its upstream stretch, too.

Along with other Russian reserves of this region, the Bikin National Park will become an essential element of the united 'tigers' econet' formed now in the south of Russia's Far East.

Moreover, the nominated territory is inhabited by some other rare and vanishing animal and plant species, which also meets criterion (x). For example, the IUCN Red List includes 2 species of vascular plants and 5 vertebrate animal species (*Panthera tigris altaica*, *Grus monachus*, *Mergus squamatus*, *Ketupa blakistoni*, and *Haliaeetus albicilla*).

### **c) Statement of Integrity**

The Bikin River's basin, which is located in the central part of the Sikhote-Alin mountain chain, is a united, integral and composite natural macrocomplex, the main components of which are closely connected by their common origin, history and evolutionary dynamics, as well as the peculiarities of the modern ecologic processes that take place here.

The protected territory has a shape of a huge, oval, and almost fully closed natural 'cup' about 100 150 km across, slightly open only in the west, towards the lower reaches of the Bikin River. The boundaries of the national park have been drawn along the natural ones – the lofty watershed ranges up to 1500 2000 m high. This makes the protected mountain taiga landscape that covers the integral drainage basin highly resistant to external influences.

The National Park comprises the whole characteristic spectrum of mountain taiga landscapes of the Central Sikhote-Alin: floodplain spots and low mountains covered with broadleaf and pine-broadleaf forests (200–

600 m), medium mountain landscapes with their dark coniferous forests, larch forests, birch crooked forests and the dwarf Siberian pine (600–1600 m), as well as a zone of bald mountains with scattered stones and mountain tundras that occupy the lofty spots (more than 1600 m high).

The Bikin National Park is located on the western slopes of the Sikhote-Alin, which successfully supplements the main location of the Sikhote-Alinsky Reserve on the opposite, eastern slopes.

#### **d) Requirements for Protection and Management**

The Bikin National Park is a federal-level protected natural territory, its regime satisfies the set goals optimally. In conformity to the international classification (IUCN), Russian national parks belong to category II. It is this status enables a reliable conservation of both the separate sights and vast spots of the virgin or tame nature.

Conservation of the valuable forest planting is a priority of the adopted functional zonal system of this park; that is why 1/3 of its total territory has been defined as the 'reserved zone' and 'zone of special protection'.

A second mission consists in preserving the way of life of the small-numbered Northern peoples – Udege and Nanai – who live here. That is why benign economic activities to support the local people are permitted on 2/3 of the park's total territory.

Practically the whole territory is federally owned. It is managed by a specially created Directorate, and representatives of the aborigines are actively attracted to the management.

Preservation of the Bikin River's drainage basin is additionally guaranteed by the national park's protective zone created on its western outskirts and planned round the protected natural territory mountains.

At present, there are no strong and direct threats to the natural complexes of the Bikin River Valley; however, logging districts have extended from the west close to the boundaries of the protected natural territory. This circumstance should be taken into account first of all when planning the national park's activities in future.

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#### **Name and contact information of official local institution/agency**

Organization: Federal State Budgetary Establishment  
'Bikin National Park'

Address: Krasny Yar village, Pozharsky District,  
Primorsky Krai, Russiz 692017

Tel.: +7 42357-200008, 200006

E-mail: parkbikin@ya.ru

Web-site address: <http://www.parkbikin.ru>

Contact name: Kudriavtsev Alexey Victorovich, Director



# 1 Identification of the Property



**Ussurijsky taiga  
massif in Bikin  
River valley**  
Photo by V. Solkin

## 1a. Country (and State Party if different)

Russian Federation

## 1b. State, Province or Region

Primorsky Kray, Pozharsky District

## 1c. Name of Property

Bikin River Valley (extension of the Central Sikhote-Alin World Heritage property (766))

## 1d. Geographical coordinates to the nearest second

Nominated as extension of the Central Sikhote-Alin property, the territory occupies the basin of Bikin River's upper and middle reaches and is limited by following geographical coordinates:

The northernmost point is 47° 17' 30" N, 137° 05' 45" E

The southernmost point is 46° 05' 35" N, 137° 03' 13" E

The westernmost point is 46° 40' 35" N, 135° 27' 35" E

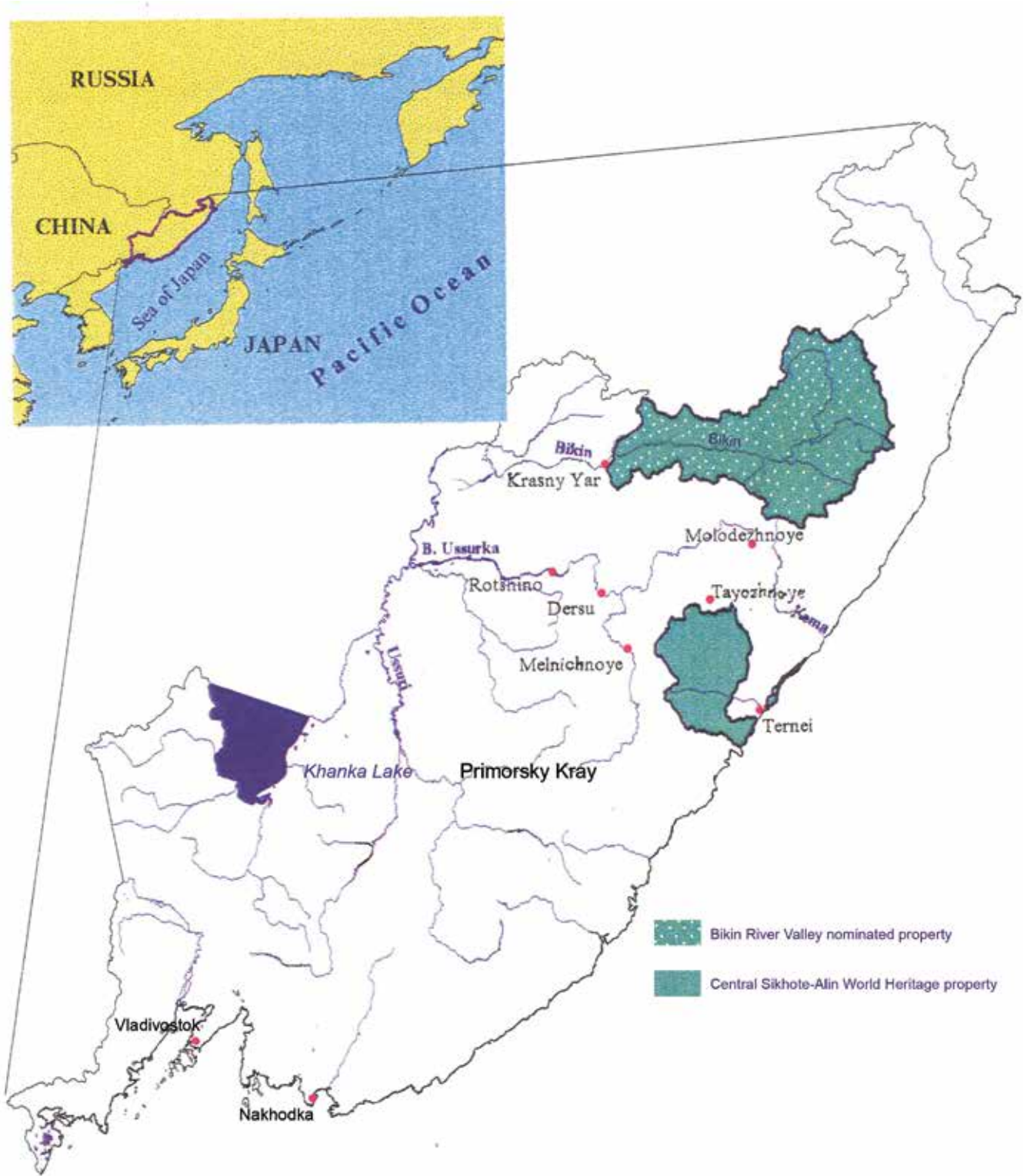
The easternmost point is 46° 41' 10" N, 137° 51' 10" E

Coordinates of the Central Point: 46° 41' 00" N, 136° 39' 40" E

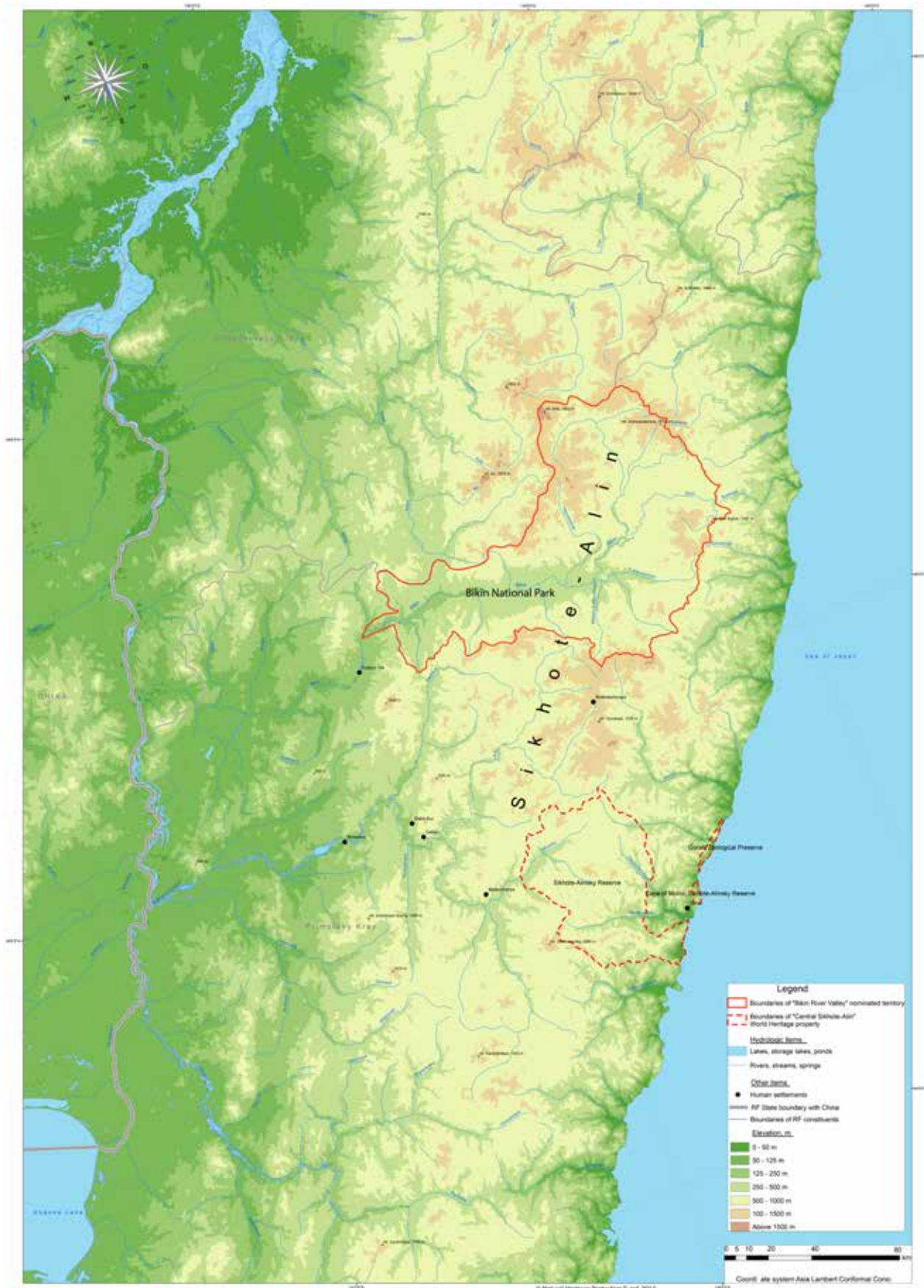
## 1e. Maps and plans, showing the boundaries of the nominated property and buffer zone

- A1. Location of the nominated property on a map of Primorsky Kray.
- A2. A map of the north of Primorsky Kray showing the boundaries of the nominated property Bikin River Valley and the Central Sikhote-Alin World Heritage property (*rolled and to be found separately from the text*).
- A3. A map of the specially protected areas of the north of Primorsky Kray.
- A4. A topographic map, showing the boundaries of the nominated property Bikin River Valley and buffer zone. The scale is 1:250 000 (*rolled and to be found separately from the text*).

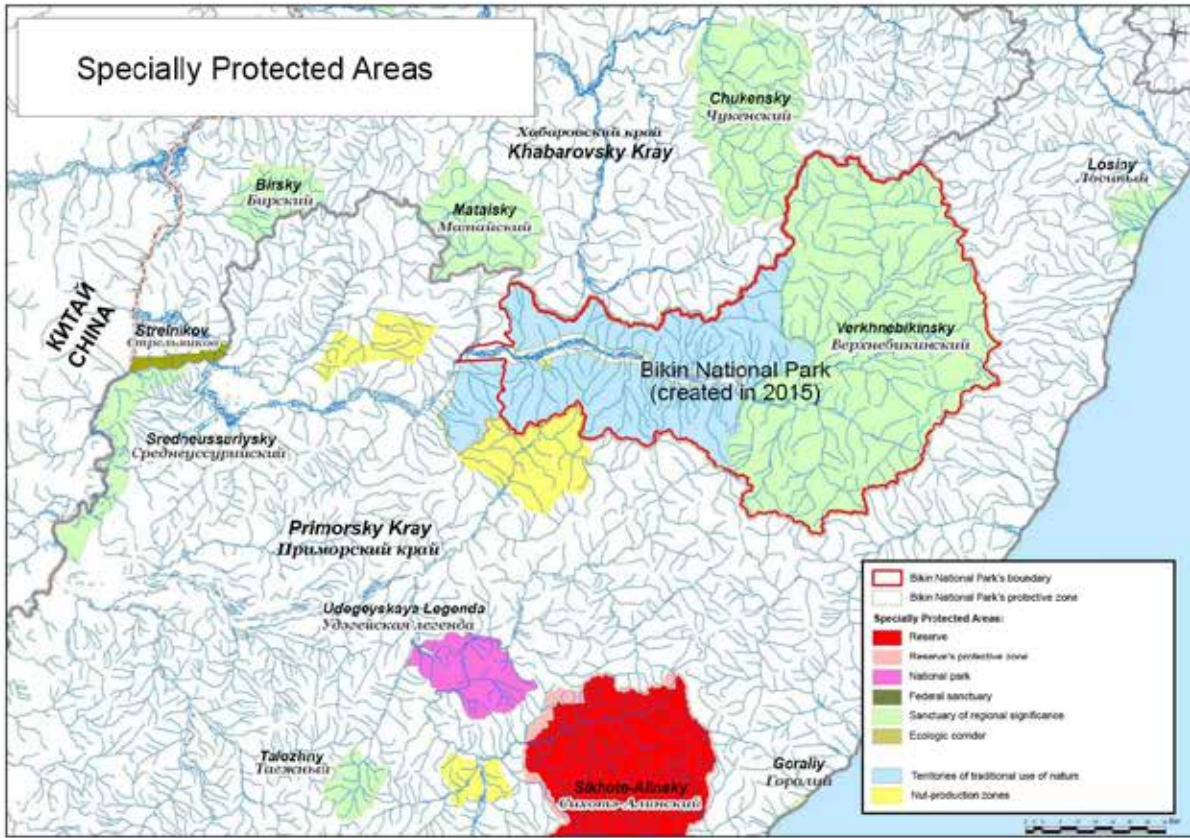
A1. Location of the nominated property on a map of Primorsky Krai.



A2. A map of the north of Primorsky Krai showing the boundaries of the nominated property and the Central Sikhote-Alin World Heritage property (rolled and to be found separately from the text).



A3. A map of the specially protected areas of the north of Primorsky Krai.



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

The total area of the nominated territory within the boundaries of the state nature Bikin National Park amounts to 1,160,469 ha.

The area of the protective zone located along the western boundary of the property amounts to 129,509 ha.

### The serial nomination table:

Id n°	Name of the component part	Region(s) / District(s)	Area of Nominated component of the Property (ha)	Area of the Buffer Zone (ha)	Map N°
001	Sikhote-Alin Nature Reserve (WH property 766)	Primorsky Kray, Terney District	401,600	-	A1, A2, A3
002	Goralij Zoological Preserve (WH property 766)	Primorsky Kray, Terney District	4,749	-	A1, A2
003	Bikin River Valley (nominated property)	Primorsky Kray, Pozharsky District	1,160,469	129,509	A1, A2, A3, A4
<b>Total area (in hectares)</b>			<b>1,566,819 ha</b>	<b>129,509 ha</b>	

## 2 Description



**Bikin River valley  
view in the middle  
reaches**

Photo by A. Butorin

## 2a. Description of Property

The nominated territory is located 80-100 km to the north from the Central Sikhote-Alin World Heritage site. As the main cluster (the Sikhote-Alin State Reserve), it belongs to the Amur-Primorye physiographic country. However, while the Sikhote-Alin State Reserve covers mainly the eastern macroslope of Central Sikhote-Alin, the nominated territory is located on its western macroslope, harmonically supplementing the already recognized outstanding universal value of the World Heritage site. The nominated specially protected natural territory, Bikin National Park, occupies the upper and middle part of the Bikin River basin located in the north of Primorsky Krai.

### PHYSIOGRAPHIC DESCRIPTION

#### General Characteristic of the Basin

Bikin River is one of the main right-bank tributaries of the Ussuri River, which drainage basin boundaries are in line with administrative boundaries of Pozharsky District (see Annex A4). The total length of the River 560 km, basin area - 22.3 thousand km<sup>2</sup>. The upper and middle parts of the basin are located in the mountains of the Sikhote-Alin between N 45° and 47° and E 136° and 138°. In comparison with other regions of Russia, the area has a unique landscape and biogeographical characteristics and a high density of rare and endangered species. Here one can meet reproductive core of northern subpopulation of the Amur tiger (*Panthera tigris altaica*), as well as another 51 species of mammals, there is a high density of hunting animals, caused by inviolate habitats, bulk nesting of the scaly-sided merganser population (*Mergus squamatus*), fish-owl (*Ketupa blakistoni*) and another 169 species of birds, 7 species of

amphibians and 10 species of reptiles occur. Ichthyofauna composite is characterized by 48 species. The most remote salmon spawning area of Ussuri River basin is located in the Bikin River basin. The last major primary forestland of cedar-broadleaved, 5 sites of reference gene pool of typical woody species, and habitats of rare and endangered species of vascular plants are being conserved here.

Substantial part of the Middle and Upper Bikin is occupied by so-called Verkhnebikinskaya intermontane depression, remaining area is occupied by medium-height mountains, and part adjacent to the main watershed is occupied by one of the most extensive table land in Sikhote-Alin. The main right-bank tributaries – Alchan, Takhalo, Klyuchevaya; left-bank – Kilou, Zeva and Svetlovodnaya. The mean water discharge at the Zvenievaya station – 247 m<sup>3</sup>/sec.



## Geology

The area of the Upper and partly Middle Bikin relates to the Sikhote-Alin region of the Mesozoic orogenesis. At the base of the stratigraphic column of the lower infolded complex terrigenous-siliceous or volcanic-siliceous sediments of Triassic-voronsky age lies, fixed on the westernmost margin of the area in the middle flow of Bikin River. In the rest area they are barred by Lower Cretaceous deposits more than 7000 m thick. Patches of rhythmically alternating sandstones and siltstones are dominated among sedimentary rocks. After occurrence of the granitoid magmatism at the end of the Lower Cretaceous, the territory has become a mountain orogen with positive trend to the ascendant movements until the present time.

Superimposed structures, arising during the Upper Cretaceous postfolded stage of development, are associated with the formation of the East Sikhote-Alin volcanic belt. Volcanic structures of this zone are located along the main divide of the Sikhote-Alin and westward of it and represented by the volcanic-tectonic depressions and calderas, which are filled with lava and tuffs mainly acid composition. Many of them are accompanied by dome-shaped uplifts and intrusions of Late Cretaceous granites in cores of these structures. The last ones recorded in recent relief by the steep peaks with the highest elevations.

Cenozoic superimposed structures were formed as a result of autonomous activation that has gripped the area when it joined the regime of platform development. These include single Paleogene-Neogene coal-bearing basins and Neogene basaltic plateau. An example of the coalbearing basin is Verkhnebikinsky fault trough limited by lateral faults and adjacent to the left side of Bikin River valley. It is made of coarsegrained continental deposits with maximum thickness of 2900 m. Occurrence and intensity of the numerous volcanoes in the basin of the Upper Bikin related to the fault trough formation and tectonic movements in Neogene. Basalt lava, effused by these volcanoes, formed volcanic plateau and valley streams, sometimes completely covers the valleys, which led to a partial restructuring of the ancient drainage system, which is only in the late Neogene acquired its modern configuration.

Thus, the main features of the relief were formed by volcanism, neotectonic movements and related erosion. Bottom and lateral river erosion were most intensive in Quaternary and they continue today. Volcanic landforms, particularly the periphery of the basalt plateau, are full of landslides which are increased during the summer-autumn rainfall. Landslide slopes reach tens of kilometers in length with a height of 50-100 m. The largest landslides occur in the valleys of the left upper tributaries of Bikin River which cutting the basalt overlying rocks below its bottom.

**Bikin River.**  
**Airscape**  
Photo by V. Solkin

DESCRIPTION



## Terrain

Much of the Upper and Middle Bikin territory is occupied by medium-height mountains with elevations up to 1600-1700 m above sea level and mountain plateaus. High-relief terrain is very strong, above the medium and high slope gradients are dominated, valleys shut-in is deep and local differences in elevation are of unusually large for medium-altitude mountains. Valleys slope gradients to 35-40° are often covered with screes, rocky ridges are common on watersheds. Rocky cliffs up to 100-150 m with landslide are often in river valleys, cutting through the basalt plateau, while valleys are in the shape of the canyons. Low gradient slope relief is widespread on the right bank of the Bikin River. Tops and watersheds with relative excess of 300 m have more rounded shapes. Upper parts of stream valleys are V-shaped, which downstream take turns in trapezoidal.

**Low-topography** is characterized by absolute elevation of 600 m, and the relative excess of 100 m, rarely to 200 m. This type of relief is developed on the rocks which accessible to denudation, and distributed in the frame of the Verkhnebikinsky depression and downstream in the estuarine parts of the Bikin River tributaries. Mountains tend to have gentler slopes with broad flat tops and watersheds; valleys are wide with gradual smooth transitions from the valley to the bottom of the slope. Rivers in the low-topography area often meander, form a set of flow and have well worked out, usually swampy, valleys.

**Accumulative type** of relief includes an area of Verkhnebikinsky depression, overlapped by Quaternary sediments, and also floodplains and terraces in river valleys. Two floodplains and three terraces are developed in the Middle and Upper Bikin. Low floodplain has height of 0.5-0.8 m and represented by narrow pebbly spits, which constantly flooded during the rains. High floodplain has height of 1.5-2 m and usually swamped, divided by canals and dead channels, filled with water during major floods. First and second terraces have a height 2.5-6 m and 10-12 m above low water line. The first one is of the fill-terrace type of terraces, and the second is often the rock-defended terrace. The surface of the terraces is flat, slightly sloping to the river bed. The width of the terraces from 100 m to 1 km, rarely – up to 3 km (Malaya Svetlovodnaya River). Third terrace is only fixed near confluence of major tributaries of the Bikin River (Takhalo, Svetlovodnaya, etc.). Height above the water's edge 15-30 m, width – up to 500-800 m, often swampy, with a gentle slope to the river bed.

Thus, the total organization of Upper and Middle Bikin surface is one of the factors causing a substantial isolation of the territory and the specificity of natural conditions, determining the need for special approach during organization of an environmental management here.

### Stream-bank erosion

Photo by S. Melnikov



## Hydrography and Hydrological Conditions

Creation of modern river valleys arised against the background of general uplift of the area, accompanied by gashing of high watersheds by rivers and catchment of tributaries of another pool. Currently, the greatest height of watersheds ranged from 900 to 1500 m above sea level. The relief is intensely divided by fairly large river valleys and their numerous tributaries. Density of river network is 1.4 – 1.8 km/km<sup>2</sup>. The depth of dissection reaches 800 m near the major valleys, and usually does not exceed 500 m in the valleys of tributaries.

The highest density of river network occurs in the middle belt of mountains (300-800 m above sea level). Below 300 m and in highland near the watersheds the drainage density decreases. Most of the land area includes basins of I-VI order, where the slope regulation of bulk flow is occured. The channels of these watercourses have a large drop (0.05 – 0.19 m/m); there are

frequent rock outcrops and rapids. Thickness of the alluvial deposits in river beds consisting of cobbly and boulder material is small. The width of the valleys does not exceed several tens of meters at a depth of 300-400 m. The length of slopes typically ranges from 200 to 300 m. It's reduced in the eastern part of the basin.

This area is characterized by the lowest value of hydromorphological coefficient over the Primorsky Kray, which indicates a very low natural regulation of streamflow. Quite a high rate is the total runoff setting at 30 – 40 mm for 100 meters, and the total value of excess moisture during the growing season - 20 – 30 mm. This determines the high water content of the river network. For large rivers of Primorsky Kray 4 types of annual distribution of stream flow defined: A – dominated by spring runoff; B – the approximate equality of water content of spring and summer, separated by long (up to

### **Overslaughs on Bikin River**

Photo by S. Melnikov



two months) phase of low (sometimes low-water) runoff; C –predominance of summer-autumn runoff; D – flood flow pattern expressed throughout the warmer parts of the year with approximately equal distribution by month. Bikin River basin common to B, C and D types (86.4%), which confirms the high water content of the river network of the basin compared with the rest of the Primorsky Krai territory.

Upper and Middle Bikin before gauging section in Krasny Yar village, in 357 km from the source, is characterized by the following: the average slope of the river 3.3%, weight-average - 1.7%, basin area – 13100 km<sup>2</sup>, the average height of catchment 790 m above sea level, wetlands less than 1%, 100% forest cover, plough-land is absent. Annual amplitude of water level fluctuations in the river an average of 2.7 m and maximum - 3.0 m. The highest and lowest costs for the period of open channels varies by 38 times and respectively is 1540 and 10.4 m<sup>3</sup>/sec. Average annual runoff module - 13.1 l/s/km<sup>2</sup>, the

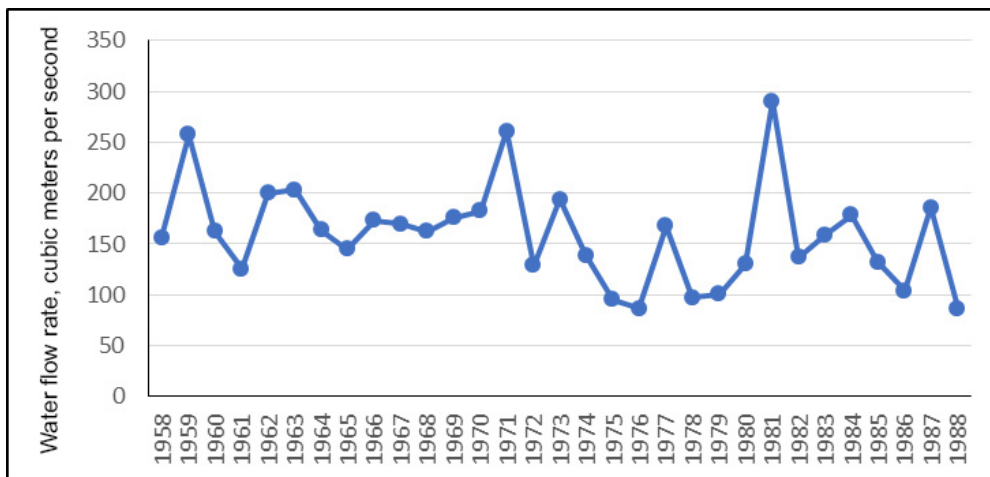
highest - 19.2, and the lowest - 7.3. Annual layer sink at average – 413 mm, in the years of high water content – up to 628, and in the dry - up to 29 mm; 95% run-off occurs on the warm period. River breakup is usually begins in mid-April. During snowmelt there are two relatively small rise of water, following one after another: in April due to the discharge of meltwater from the low mountains of the basin, and in May – due to the discharge from the upper mountain and due to the first spring rains. In the first half of the summer rainfalls is low and the water level in rivers is substantially reduced. In the second half of the summer due to heavy rains the water level is subject to sharp fluctuations, repeated and rapid rise and a slow decay. The duration of the flood recovery in an average of 8 days, recession - 12, and of the total flood – 20 days.

Table 1 as well as Figures 1 and 2 provide the main hydrologic characteristics of the Bikin River.

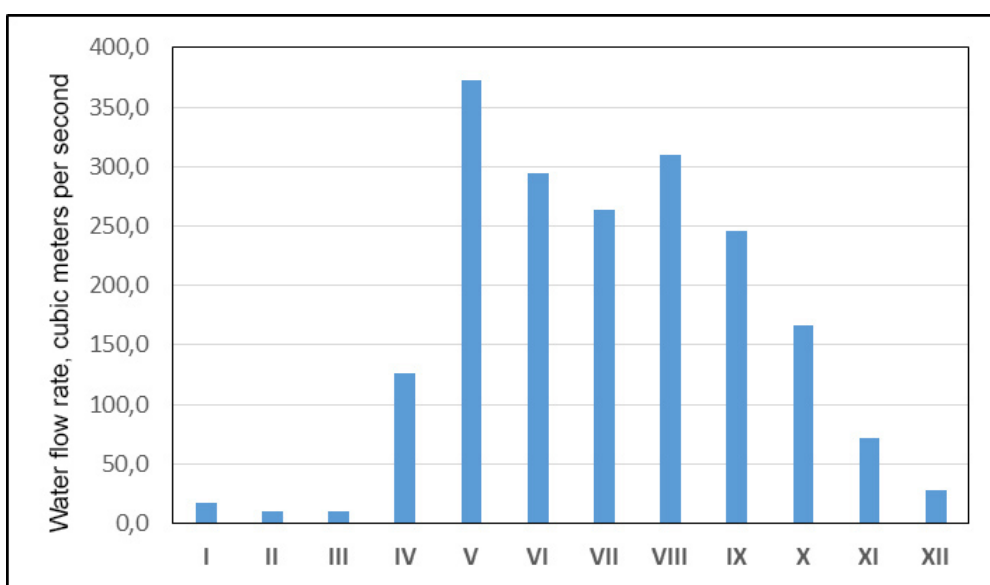
**Table 1.**  
**The main hydrologic characteristics of the Bikin River**

Characteristic	Okhotnichiy village	Rodnikovoye village	Krasny Yar village
Drainage area, km <sup>2</sup>	6 600	9 710	13 100
Yearly water flow rate, m <sup>3</sup> /s:			
Average long-term	95,2	132	168
Ensured at 97%	46,4	67,4	85,7
Maximal freshet rate, m <sup>3</sup> /s:			
Average long-term			1090
Ensured at 1%			2770
Ensured at 10%	1830 1120	2340 1430	2770 1820
Minimal rate within a 30-day period, m <sup>3</sup> /s:			
Summer:			
Average long-term	74,4	106	136
Ensured at 97%	23,1	35	46,2
Winter:			
Average long-term			8,7
Ensured at 97%			4,61

Source: (Resources..., 1972)



**Fig. 1.** The average annual water flow rate dynamics, Bikin River – Krasny Yar village



**Fig. 2.** The runoff distribution in the months within a year, Bikin River – Krasny Yar village

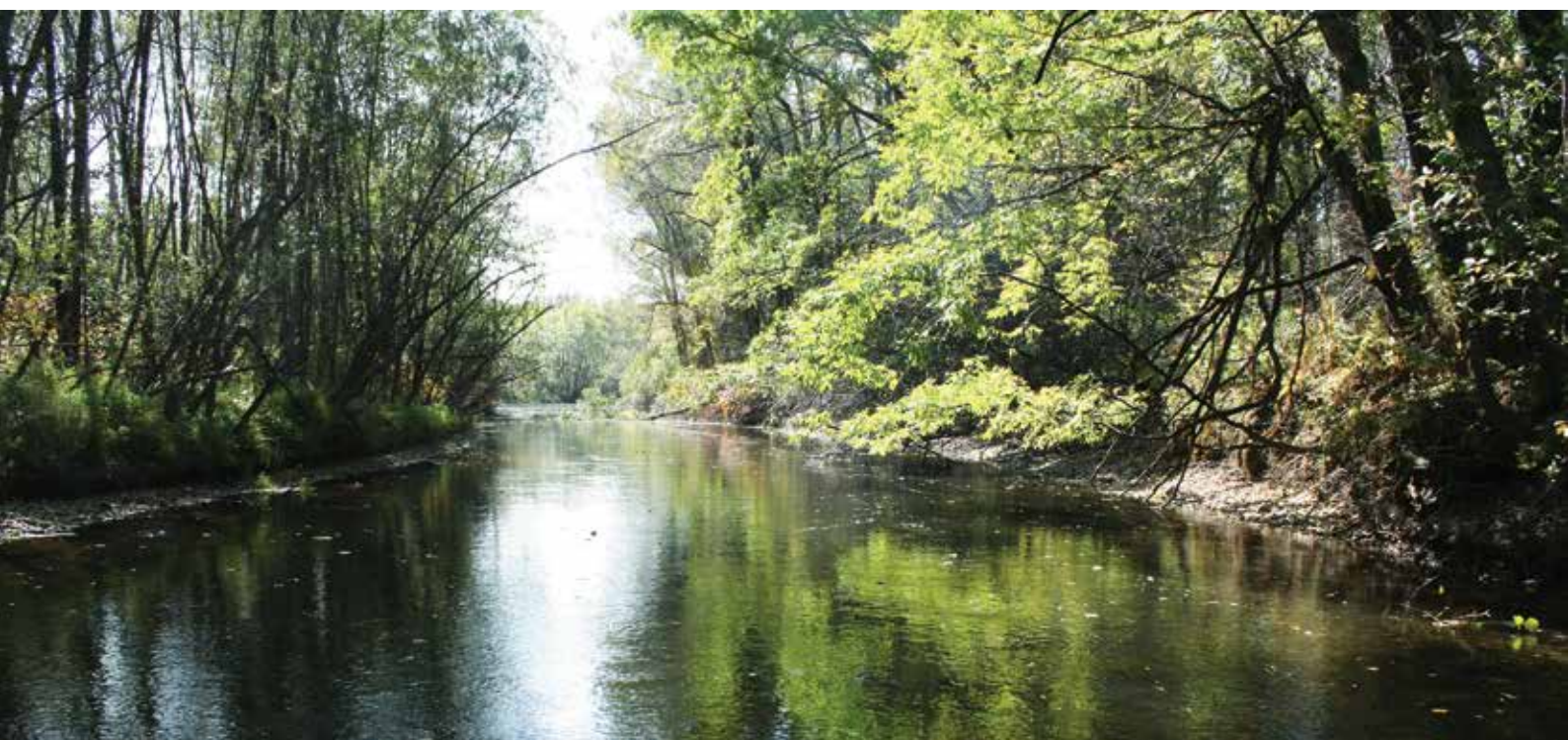
The water temperature is gradually increased from spring to midsummer, reaching the maximum value – 17,2° C – in the end of July – early August (with fluctuations from year to year from 13,0 to 20,2° C). The fall in water level arised in September and October. First slush on the rivers mentioned in the beginning of November, freezing in late November. The duration of ice period is 112-157 days, average – 138 days. The ice thickness reaches maximal values (46-114 cm, average – 76 cm) in the first half of March. Some streams and rivers freeze to the bottom. Ice coating events are widespread everywhere. Icefields may extend to tens or hundreds of meters along the channels of watercourses and various parts of the slopes. Minimum river flow is observed in late February – early March.

The dynamics of water turbidity in watercourse and the costs of suspended sediments correspond to the variation in river flow. The values of these parameters increase sharply in April-May, decrease in June-July and increase again in August. Water turbidity and suspended sediments discharge is 5-6 times decrease in autumn, although may remain quite high because of rains in some years. The highest turbidity (190 g/m<sup>3</sup>) occurs in May-July, the average number of days with the turbidity of more than 50 g/m<sup>3</sup> is 13 days and more than 100 g/m<sup>3</sup> – 2 days. Annual runoff of sediments averages 10 g/km

Thus, the main features of the hydrography and the hydrological regime of the basin are the following: intense dissection of the territory by the hydrological network; significant slope of beds associated with their increased erosion ability; high water content in the streams during the warm season; a large amplitude of daily runoff during the year, and mainly flood regime in summer; the lowest natural regulation of streamflow in comparison with the rest territory of the region; high vertical gradients of the total runoff; the potential for surface runoff and increased of water turbidity even with recent minimal economic impact.

### **Bikin arm**

Photo by P. Phomenko



## Climate

According to the adopted climatic zonation, the territory located in: 1) temperate climatic zone on the eastern edge of Eurasia (southern subregion of monsoon forest region – according to B.P. Alisov, 1956), 2) Pacific region of the temperate climatic zone (Amuro-Ussuriysky region – according to G.N. Vitvitsky, 1969). Features of the impact of major climate-forming factors and processes – radiation and the circulation, determined the proper formation of continental climate with the characteristics of monsoon. Thus, the winter atmospheric regime is under the influence of the Asian anticyclone, on the general background of «dry» western continental winds and is characterized by cold winters, and summer is characterized by typical cyclonic activity, with domination of southern winds and entrance of moist air masses, with formation of situations of high clouds (Vitvitsky, 1962, 1969). Significant differentiation and climate transformation on individual locations creates by the influence of the relief (the difference in exposure, altitude, ridges barrier role) and vegetation (forested, type, crown density, etc.).

Regional and local climate conditions are characterized on materials of regular observations for 2 representative weather stations: Ulunga (Okhotnichy village; alt. 763 m) and Gantsanza (Rodnikovaya village; alt. 246 m), located respectively in the upper (eastern) and middle (western) parts of the Bikin River valley. Also sample data from westward (lowest part of the Bikin River valley) meteorological station Olon (Krasny Yar village; alt. 128 m) were used.

**The sunshine duration** is characterized according to data of observations conducted on one only but very informative for our districts weather station – Ulunga, «which is central in its location». Minimum sunshine duration is observed in early winter (about 140 hours), and the greatest – in the first half of summer (207-210 hours in June-July). In some years, depending on the course and intensity of cloudiness, the number of sunshine hours could strongly fluctuate from the long-term average (from 30-40 hours in winter to 150 hours in summer, either side). Against this backdrop, the annual total solar radiation usually ranges from 100 to 110 kcal/cm<sup>2</sup> (maximum in June – an average

of 15 kcal/cm<sup>2</sup>). About 40% of this amount falls on the annual radiation balance (40-45 kcal/cm<sup>2</sup>), with its maximum intensity in June – up to 0,61 kcal/cm<sup>2</sup>•min.

**Cloudiness annual** course directly related to seasonal change of atmospheric circulation. Cold and dry air masses which are dominated in winter and arised in Asian anticyclone zone on the north-west, cause a clear weather with large majority of clouds in top and middle level, with almost complete absence of lower level clouds. In summer a change of air masses direction to the opposite occur – from the south-east to the north-west (from the zone of the Pacific subtropical anticyclone to the Asian depression) at the same time with increasing moisture content, causing at this time the maximum values of the frequency of different states of the sky and clouds. As a result, significant seasonal differences in the nature and amount of cloudiness is formed: in winter – the domination of the top and middle level; in summer – the domination of lower level clouds (usually stratus forms), often accompanied by the formation of fog. Clear and grey days (according to the total and low clouds) are marked in the east of the area during the year as a whole (58/154 and 117/41) and essentially rarer in the west (41/125 and 140/45). At the same time, the fogs are more frequent in the east than in the west – 111 against 42.

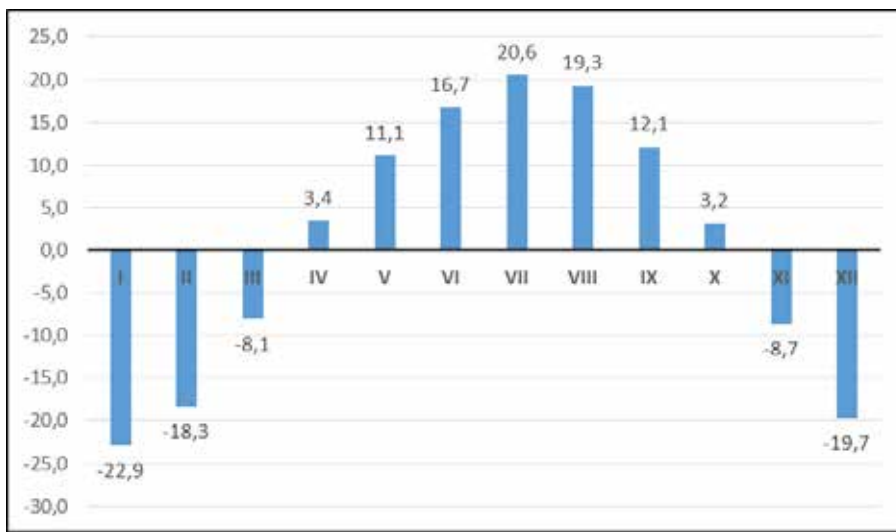
Under these conditions, **atmospheric humidity** (one of the important elements of territory moisture regime – a meaningful, in particular, for comfort level of the climate) meet with notable fluctuations (from 65% to 86%) during the year and seasonably. Much of the year, except the winter season, relatively lower values of monthly average relative air humidity are indicative for the eastern regions in comparison with western ones. The overall picture of the extreme distribution of the number of days with relative air humidity (less than 30% and above 80%, i.e. dry and humid days) is more complicated in comparison with described above. Less than 30% relative air humidity days in summer and winter often occur in the eastern regions and more often in the western in mid-seasons; more than 80% - much higher rates constantly in the eastern



regions with their peaks in December and January. However, variations of relative air humidity in some years could be high, especially in spring and autumn periods.

**Temperature regimes of natural environments** of concerned area are characterized by high spatial and altitudinal contrasts. The latter (for example, between Okhotnichiy village and Rodnikovaya village) can be traced by comparing, respectively, the major indicators of *atmospherical temperature*: the average annual are

-1,5 and -0,3°C, the average monthly in January -22,6 and -23,2°C, and in July 16,3 and 19,0°C; average minimum in January are -25,5 and -29,6°C, and in July 12,4 and 13,5°C; average maximum in January -18,4 and -15,3°C, and in July 22,1 and 26,2°C. At the same time, respectively – the absolute minimum -42 and -49°C (their average per annum -33,9 and -40,3°C); absolute maximum is 34 and 36°C (their average 30,3 and 32,9°C). The temperature passes through 0° in April in spring and in November in autumn (Fig. 3).



**Fig. 3.** The average monthly air temperature at Krasny Yar station

Source: compiled according to the database of the All-Russian Research Institute of Hydrometeorological Information – <http://meteo.ru/data>

First freezings register in the third decade of September, and the last – in the third decade of May; the duration of the frost-free period is on average 117 days in the west and 126 days in the east. The first frost on the soil surface occur in mid-September and the last – at the beginning of June. The duration of the frost-free period is only 104 days of anywhere. Such differences are determined by the higher inertia due to high heat capacity of soils and subsoils. Analysis of the temperature conditions on the soil surface indicates that the contrasts of these temperatures in multiple-elevation areas in

comparison with those in the air, even sharper and more “stretched” in time. For instance, the average soil temperature in a relatively “low” area of Rodnikovaya village during the period from October to April already significantly lower than in the much more “upstanding” area of Okhotnichiy village. This is true concerning absolute values.

Potential summer thawing in depth is higher than winter freezing. The depths of winter freezing, on average, 100-110 cm (with a minimum of 40-50 cm; with a maximum of 150-160

cm). In some years, frozen during winter rock masses couldn't thaw completely in some places in summer, staying as residual frozen interbeds, so-called permanent snow patches. Their conservation during 3-5 years indicates directional freezing of the territory and uprising of thin (1-2 m) and high-temperature (-0, -0,1°C) permafrost islands which are not grow together with the horizon of seasonal freezing. Such phenomena are typical for deep incised up upper and lower parts of the shady slopes of the streams and small rivers valleys (particularly in the eastern regions).

**Precipitation.** Moisture regime of the territory is characterized by a distinct seasonal fluctuation (a large amount of precipitation in summer, during warm and humid period – against a minimum of precipitation during the cold and drier winter). The features of the atmosphere precipitations distribution are determined by the monsoon circulation (a clear change in the ruling moisture-laden ocean air and relatively dry continental flows) and by the complex of orographic conditions (the peculiar combination of river valleys and mountains which control “passes” of air masses; evident expository barrier effect of mountain ridges – “intercept” of the mainly western moisture-laden air by the upwind slopes; as well as “thermal” slope direction at each site

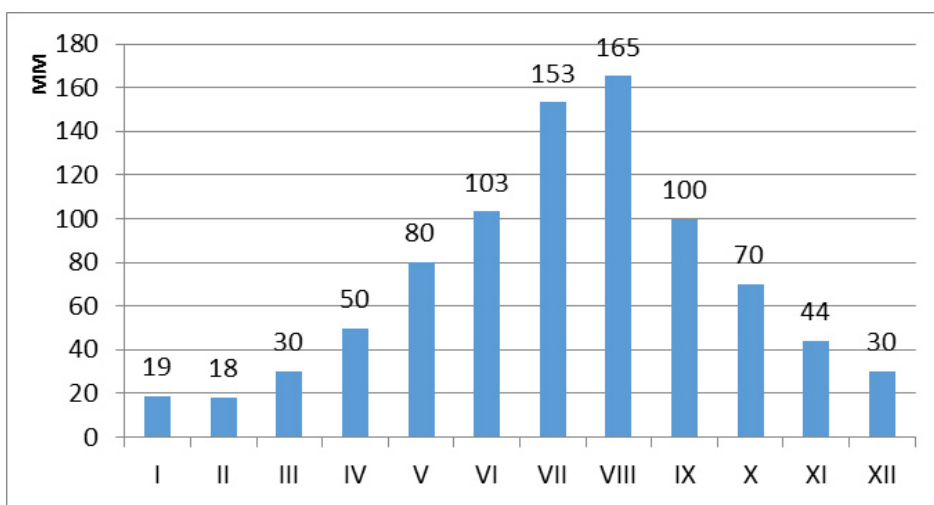
and hypsometric contrasts).

The average annual precipitation varies greatly over the territory: from the 800-850 mm in the east to the 850-900 mm in the west (from April to September, respectively, from the 630-670 mm and to the 710-750 mm; from October to March – from the 170-180 mm to the 140-150 mm).

Western regions, in comparison with the eastern ones, are differing also by the great rates of maximum intensity of precipitation (for example, within the 5-minute interval, 2.2 mm/min vs. 1.4 mm/min).

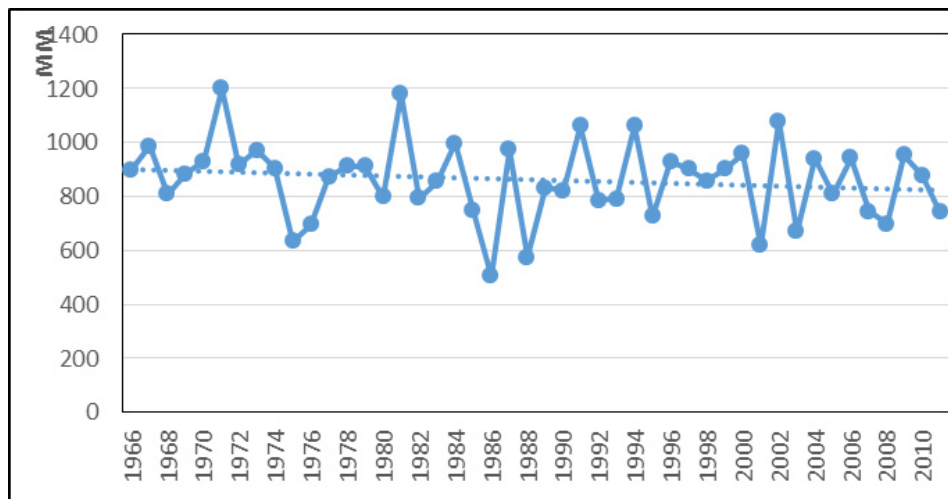
Throughout the territory rain precipitation comes up to more than 72-73% of the annual amount, solid precipitations – more than 22-21% and mixed – about 6-7%. Most of the time they occur in a combination; with the exception in January and February, when only solid precipitations fall, and in July – the only liquid precipitations. Precipitation balance within the month, which depends mainly on general climatic factors, varies only slightly as a whole within the territory.

Fig. 4 provides the distribution of the total precipitations (measured in mm) in months averaged from 1966 to 2011.



**Fig. 4.** The distribution of the total monthly precipitations in the basin of the Bikin River's middle reaches (hydrometeorological station in Krasny Yar settlement) throughout a year. Source: compiled according to the database of the All-Russian Research Institute of Hydrometeorological Information – <http://meteo.ru/data>

The long-term dynamics of the total yearly precipitations demonstrates a descending linear trend over almost the last 50 years, which evidences the reduction of the total humidification of the park's territory (Fig. 5).



**Рис. 5.** The dynamics of the total yearly precipitations in the basin of the Bikin River's middle reaches (hydrometeorological station in Krasny Yar settlement)

Source: compiled according to the database of the All-Russian Research Institute of Hydrometeorological Information – <http://meteo.ru/data>

**Snow cover** has a strong governing effect on temperature and hydrologic balance of active surface, flora, soils and subsoils. Dates of forming and breaking-up of substantial cover are similar to dates of freeze-up beginning and thawing out of soil. Dates of occurring and loss of snow cover are differ in 10-15 days at the average from the time of substantial cover forming and breaking-up. Substantial snow cover usually set up at the beginning of November (at some of the years – less than 50% of winers, at mid-Oktober) and keeps staing more often until 15-20 of April, comparably fit with dates of the soil freeze-up and thawing out beginning. There are no winters without substantial snow cover within the territory.

Medium heights of snow cover on the west fluctuate from 30 sm (within the bare areas) to 40 sm (in the forest), on the east – from 35 sm to 45 sm respectively. Maximum values within the whole area could reach 55-70 sm. The density of snow cover arises along with its height: from 0.14 g/sm<sup>3</sup> (in the early winter) to 0.28 g/sm<sup>3</sup> (to the early April). Ultimate water reserves in snow cover (according to snow surveys over the last day of decade) fluctuate from 60 to 70 mm on the east and from 75 to 85 mm on the west (while the top average winter values are 70-78 mm and 90-95 mm respectively).

**Wind regime**, which is formed as a whole under the influence of two baric centers – Asian and Pacific anticyclones, is characterized by the presence of two background opposite (northern and north-west, south and south-east) wind directions in winter and summer periods. However, orographic factor acts as very complicating and modifying factor in wind's directed move (setting of mountain ranges and narrow valleys hardly changes direction and wind speed). Eastern areas are characterized by the prevailing winds of only two local directions during the year – “western and south-western” and “eastern”. Western areas are characterized by “western - north-western” and “eastern and partly (from May to September) south-eastern” winds. In this case, eastern areas are differing from western areas also in least of zero wind conditions (13 vs. 57). There are also clear differences in the prevailing daily zero wind conditions confinedness over those areas – “night – morning” on the east, “evening – night – morning” on the west.

The following differences are discovered by comparison eastern and western regions over the characteristics of average wind speed during the year. Winter and summer months are standed out in the eastern areas (at the average, 6.4 and 3.6 m/sec), winter and summer

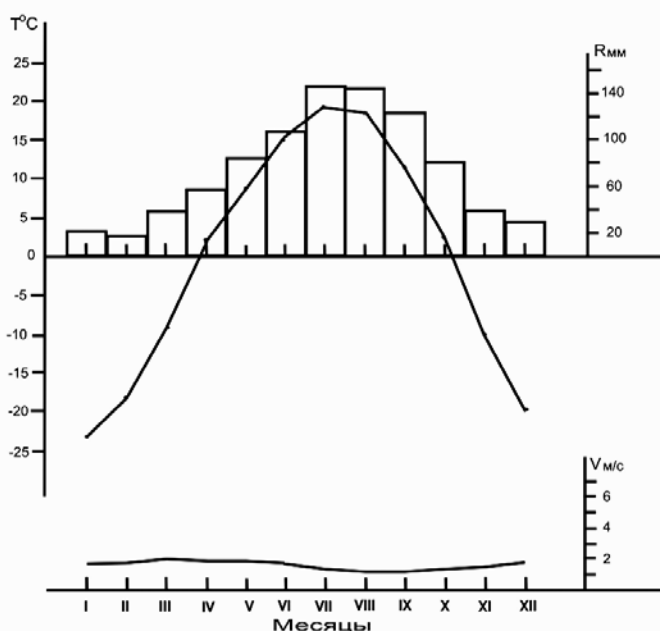
and autumn months which are comparable in their characteristics in the western areas (1.6 and 1.3 m/sec). Thus, eastern regions are significantly higher than western over the wind strength and differ sharply over the number of days with strong wind ( $\geq 15$  m/sec). Number of such days in eastern regions is 5-7 times more than in western. Especially winter months are more rich in contrast for that matter (December – January) – 5.0 and 3.1 days against 0.3 and 0.2. It is also possible highest wind speed equal 25 m/sec once a year here (once in 20 years – up to 32 m/sec).

**Atmospheric phenomena** are also different in spatial-temporal variety within the territory. Besides the previously described fogs, these include snowstorms, thunderstorms and hail (Scientific and Applied handbook ..., 1988). Snowstorms are usually occurring during the front passing and atmospheric-pressure gradients increasing accompanied by a significant increase of wind. Usually snowstorms occur along with western winds in eastern areas, and along with south-western and northern winds in western areas. Depending on the locations protection they arise along with other wind directions and at different wind speeds. Temperature brings large adjustments in the course of snowstorms, because snow becomes denser and loses its mobility while thaws and it is usually easier to transport by wind at low temperatures. As a result, eastern areas are characterized by a large number of days with snowstorms than western areas (28 vs. 4). The highest occurrence of snowstorms usually in

winter: at the temperature from  $-10$  to  $-15^{\circ}\text{C}$  in western areas, at lower temperatures from  $-20$  to  $-25^{\circ}\text{C}$  and with longer duration (the average per day with a snowstorm equal 6.9 hours) in eastern areas.

**Thunderstorms** which formation is often associated with the cold fronts passing, with the processes of convection and strong upward streams in the atmosphere. Less commonly thermal air-mass thunderstorms are being observed. Most thunderstorms occur in summer; significantly less in spring and autumn, rarely in winter. The average number of thunderstorms is 24-26 per year. Their average duration varies widely: from 0 hours in March to 14.5 hours in June. Hail usually falls during the passage of cyclones, the instability of air masses and increase of the convective clouds. The greatest number of days with hail observed in May-June.

**The sort of hydrothermal contrasts** is observed while climatic characteristics of various locations in Bikin River basin are under comparison. Thematic analysis of combined diagrams (Fig. 6 and 7), with additional data demonstrates the structure of the climate and shows that the climate of the territory is continental with monsoon features and characterized by relatively greater continentality in its eastern areas in comparison with western as in general.



**Fig. 6.** Monthly average atmospheric temperature, precipitation and wind speed distribution (according to data from Gantsanza meteorological station).

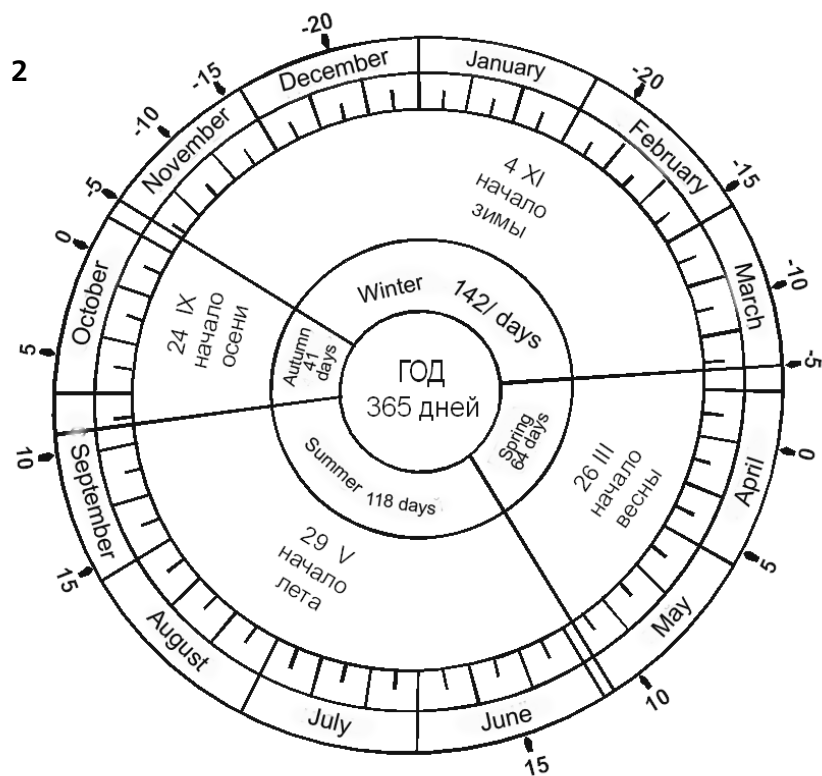
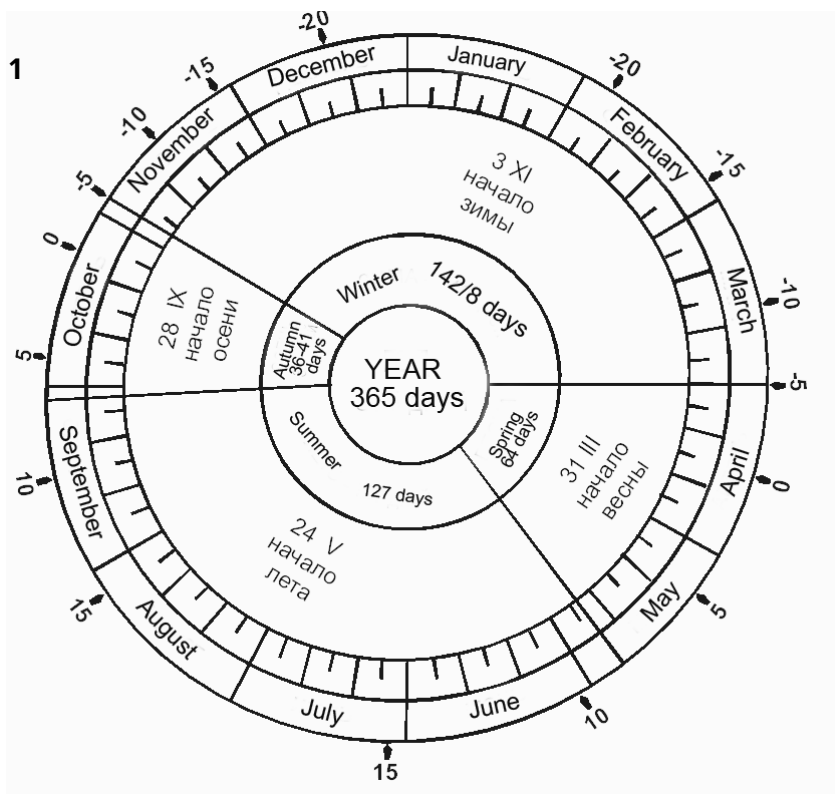


Fig. 7. Climatic seasons of eastern and western regions (1 – Ulunga meteorological station – Okhotnichiy village, 2 – Gantsanza meteorological station - Rodnikovaya village).

The seasons are strongly marked and differ in duration in the region.

**Summer** (from the end of May to the late September) is mostly warm (average air temperature in July and August is 16.3-16.2°C on the east, and 19.0-18.3°C on the west, with absolute maxima of 34 and 36°C); wet (with high relative air humidity 80-85%) and rainy (total amount of precipitation is 340-345 mm on the east and 530-535 mm on the west); with small (3.6-3.7 m/s on the east and 1.4-1.5 m/s on the west) east and west winds; with a lot of sunny days (total duration of sunshine most of the 200-210 hours per month, along with 3-4 days without sun per each month); increased cloud cover (average total of 7 points, while the lower clouds – 4.0-4.5 points); with frequent thunderstorms (2-7 per month on the east, up to 17; and 5-8 per month on the west, up to 15) and fogs (on average 15-17, up to 23 per month on the east; 5-10 – on the west). The duration of the summer period varies from 127 days on the east to 118 days on the west parts of region.

**Winter** (from the early November to the end of March) is cold (average air temperature in December and January is -19.7 and -22.6°C on the east, while -20.0 and -23.2°C on the west with an absolute minimum -42 and 49°C); moist (relative humidity of 84-87% in the east to 77-78% in the west); relatively with not much snow (amount of precipitation in the east is 175-180 mm, 125-130 mm on the west) and with small snow cover (appearance in the mid – late October, losing – the end of April, keeping 174-169 days at all, with the average among heights decade values on the open and forest areas from 30-40 cm on the east to 35-45 cm on the west); with a contrasting wind background (western and south-western winds with average speeds of 6.0-6.5 m/s on the east and western and north-western winds of 1.5-2.0 m/s on the west; the average number of days with strong wind ( $\geq 15$  m/s) is 4-5 per month in the early winter on the east and less than 1 on the west, and with frequent (at the average of 5-6 and

up to 17 per month on the east and at the average of 1 per month on the west) and lasting (at the average of 6.9 hours a day, up to 45 hours per month) snowstorms; with a relatively large number of sunny days (with an average duration of sunshine is 170 hours per month, from 141 hours in December to 208 hours in March, and no more than 5 days per month without sun); not much overcast (the total cloud cover from 4.0 to 5.5 points on the east and the lower clouds from 1.6 to 2.9 points; total cloud cover 4.2-5.0 points and lower clouds 1.8-3.0 points on the west). The duration of the winter period ranges from 148 days on the east to 142 days on the west of the territory.

**Spring and autumn mid-seasons**, in comparison with longer summer and autumn seasons, is more “compacted” in time (spring and autumn, respectively, of 54 and 36 days on the east and 61 and 41 days on the west). Their hydrothermal features are intermediate and fit with the time of baric changes as a whole. In this regard, they differ (but mostly for spring) by increased diurnal variability of air temperature and soil, frequent thaws and the return of cold weather, hail and all kinds of precipitation. However, autumn (the shortest climatic seasons on the territory) as a whole colder than spring (average monthly temperature is 1.8°C against 3.1°C on the east; 2.5°C against 5.1°C on the west). All seasons have continental (mostly in the form of a varied range of amplitudes of air and soil temperature, depth of seasonal freezing-thawing of soils and sub-soils and the appearance of new growth of permafrost, and others) and oceanic (monsoon in the nature of precipitation, high relative air humidity throughout most of the year, the seasonal contrast of the background wind, etc.) features. However, summer and winter differ equally, but geographically differentiated (warmer summer and colder winter in western areas) strongly marked continental and oceanic environment. In this regard spring features are “shifted” to a greater oceanic type, autumn features – to the relatively greater continentality.

In general, we can conclude that “autumn” is the best recreational season in this territory (preferably on the east). It should be emphasized, that any anthropogenic interference (within the natural complexes of the middle and upper reaches of Bikin River basin) should be clearly correlated with the naturally formed hydrothermal regime, because unconsidered and geocologically baseless actions can lead irreversible changes of micro- and mesoclimate.

**Breaking up on rivers usually starts in the middle of April**

Photo by V. Medvedev



## Soils

According to the soil-geographic regionalization, the district under research belongs to the Eastern brownsoil-forest region (Dobrovolsky, Urusevskaia, 1984). The altitude factor deter-

mines and conditions the marking out of the soils of the mountaneous, plain, and flooplain territories within the basin under consideration (Fig. 8).

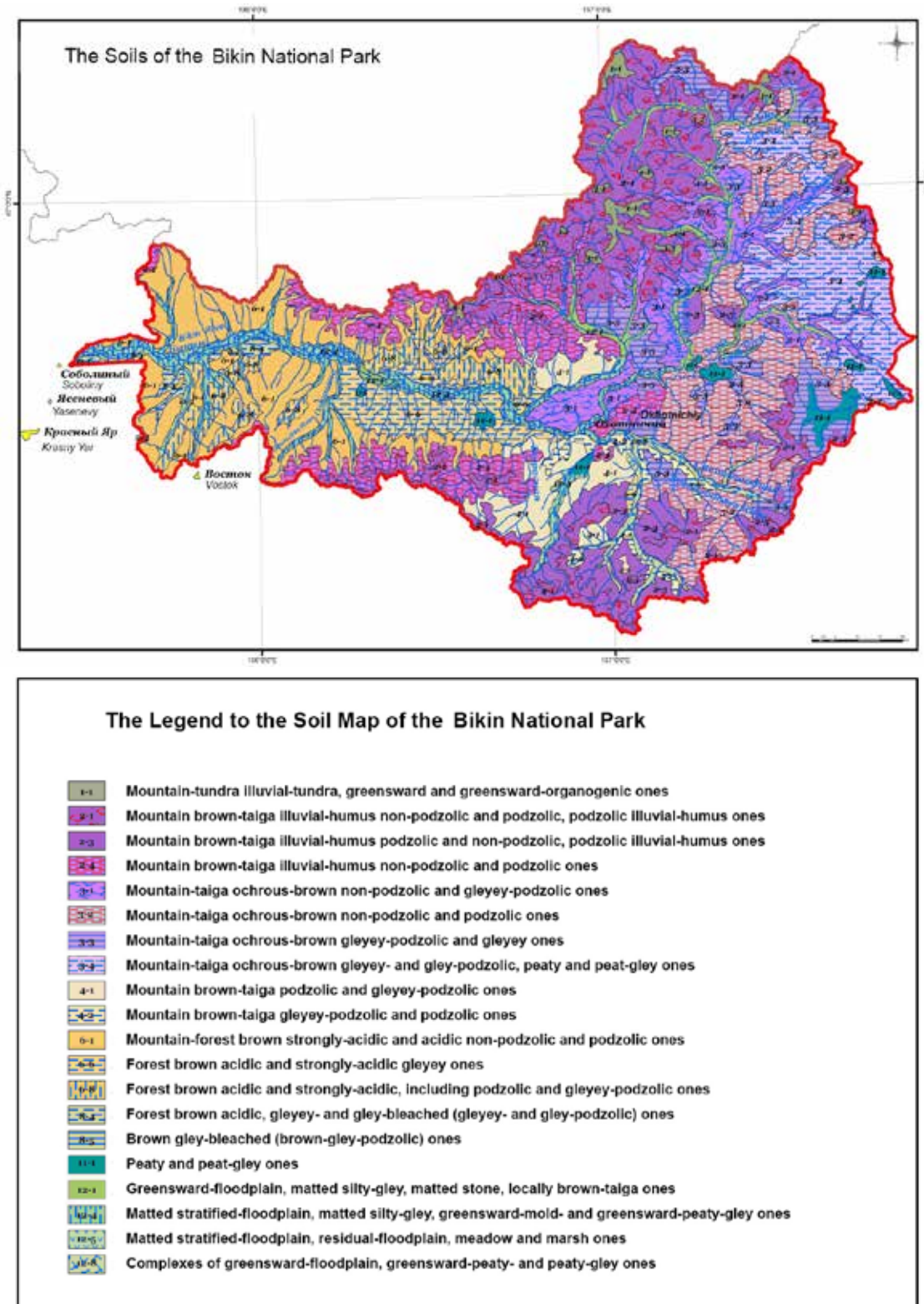


Fig. 8. A soil map of the basin of the Bikin River's middle and upper reaches with the legend.



Soil types and varieties distribution demonstrate a clear dependence on the landscape position, the degree and nature of the wetting. The common features of soils are relatively small depth and a high boulder, presence of permanent snow patches, low resistivity to mechanical destruction and loss. The combination of these factors and the monsoon climate of the area determine the overall erosion instability of the soils and sub-soils. Mountain tundra soils, which common for the watersheds above the limit of forest, are piecewise in their nature, shallow, stony, low arrested by vegetation, extremely unstable against all types of erosion.

High stony, infiltration of water, low resistivity to the impact of destructive factors are typical for the mountain brown taiga illuvial-humic podzolized and nonpodzolized soils, spreading under the fir-spruce forest in the upper altitudinal zone in the mountains. Variety of the mountain taiga ochreous brown non-podzolized and podzolized and mountain brown taiga podzolized soils are dominated in the middle part of the slopes under the fir-spruce and pyrogenic mixed forests. A group of mountain forest brown acid non-podzolized and podzolized soils takes ground in the middle and lower parts of slopes under the cedar-spruce and pine forests. Forest brown acid gleyic, gley-bleached and gleyic-podzolized soils take ground in the lower part of the middle reaches of the Bikin River, on the overmoistening sites.

All soil of mountain forest brownified series has differentiated genetic horizons, often with

fuzzy layer-to-layer transfer. Podzolized degree of these soils varies widely, but never reaches value critical for trees growth and evolution. Potential soil capabilities of brown mountain forest soils could provide much more fertility of growing stock through due care of forests. Peat and peaty-gley soils, which are formed in the drainless depressions in the central parts of the table lands and on other sites with similar moisture regime, are characterized by low fertility in their natural state.

Variety of geomorphological and hydrological conditions in mountain river valleys determines a variety of lowland landscapes soil complex. These soils have a local spread occurrence, but generally occupy 7-9% of the territory. Complexes of grass-covered coarse skeletal, slimy-gley, sometimes brown taiga soils with permanent flood plain moisture regime are dominated at the upper parts of the mountain rivers valleys. Varieties of meadow flood plain, stratified flood plain soils are formed in the valleys with well-developed range of terraces, and residual flood plain grassland, bog and even soddy-peaty-gley soils are indicated within the valley sites with poor drainage and permanent overwetting.

The presence of permafrost in sub-soils in upper part of the Bikin River basin severely increases the risk of its breaking-up and changes in the hydrological regime of rivers rises in its habitat. The examples of the scree debris and detritus formation after the deforestation of frost soils are known in all areas characterized by permafrost presence, including Far East.

## The Mineral Resources

The territory of Upper and Middle Bikin relate to the Sikhote-Alin minerogenetic province (Geology of the USSR, V. 32, 1974). Its western part, which inclusive the middle reaches of the Bikin River, is located within Central minerogenetic province (the zone of the Central fault or structural joint), while the eastern, known as the Upper Bikinsky ore district, is located within the Main minerogenetic province (by the name of Main Sikhote Alin synclinorium).

A large number of deposit occurrences and ore occurrences of base, rare and precious metals are confined to both minerogenetic provinces, but above all wolfram have the economic value for the Central province, while tin is the primary element for the Main province. Gold is of concern in economic value as associated components. The special position within the Main province belongs to the Upper Bikinsky Paleogene carbon-bearing depression.

**The Flora**

According to a floristic regionization scheme (Nedoluzhko, 1995) of the Far East, the nominated territory belongs to two floristic provinces (Manchurian and Okhotsk-Kamchatka one). The boundary of the Okhotsk flora habitat is drawn as a strip that covers the most high-mountainous part of the region and descends from the north-east to the south-west approximately to the latitude of the Bolshaya Ussurka River's right tributaries (Fig. 9). The boundary of the regions is vertical and traverses the territory along the main axis of the Sikhote-Alin range, within the 400-600 m horizontals. Between these marks there is a transitional belt where both floras intermingle evenly and form peculiar plant groupings. When ascending above sea level, typical representatives of the Manchurian flora become rarer, disappear, and are replaced by the Okhotsk flora spruce-fir and larch vegetation dominant in the national park's territory.

Combinations of arboreal plants (the pine and oak tree pair in the first case and the spruce, fir and/or larch triad in the second one) are the main environment-forming components and, at the same time, indicators of the contacting floristic and faunistic complexes in the mountainous Sikhote-Alin.

No special floristic research has been conducted at the Middle and Upper Bikin, but taking into account the diversity of the physiographic conditions, junction of the different floristic regions and the analogy with the Sikhote-Alin Biosphere Reserve, the list of the Bikin National Park's higher vascular plants should total about 1000 species (40% of the Primorye flora).

The rare plants found in this territory include 46 species (Table 2).

**Table 2.**  
**The Bikin National Park's rare plant species**

The plants included in the RF Red Book	
<b>Trees:</b>	1. Spreading yew
<b>Shrubs:</b>	1. Sorbaria rhoifolia 2. Siberian carpet cypress
<b>Herbaceous plants:</b>	3. Asian ginseng 4. Woodland peony 5. Watershield 6. Roseroot 7. Foxnut 8. Japanese iris 9. Fritillaria ussuriensis 10. Large-flowered lady's slipper 12. Ehippianthus sachalinensis 13. Gastrodia elata 14. Pogonia japonica
<b>Leafy mosses:</b>	15. Hondaella caperata
<b>Lichens:</b>	16. Everniastrum cirrhatum 17. Punctelia rudecta
The plants included in the Primorsky Kray Red Book	
<b>Herbaceous plants:</b>	1. Popoviocodonia stenocarpa 2. Galium paradoxum 3. Bergenia pacifica 4. Trapa incisa 5. Trapa japonica 6. Trapa maximowiczii 7. Scirpus maximowiszii 8. Rabbit-ear iris 9. Circular Lip Galearis
<b>Ferny:</b>	10. Cryptogramma raddeana 11. Coniogramme intermedia
<b>Lichens:</b>	12. Coccocarpia erythroxyli 13. Coccocarpia palmicola 14. Leptogium hildenbrandii 15. Lung lichen 16. Cetrelija japonica 17. Cetrelija nuda 18. Cetrelija pseudolivetorum 19. Hypogymnia duplicatoides 20. Hypogymnia fragillima 21. Menegazzia terebrata 22. Myelochroa persidians 23. Nephromopsis laii 24. Nephromopsis ornata 25. Nephromopsis pallescens 26. Parmelina quercina 27. Tuckneraria laureri 28. Heterodermia boryi 29. Pyxine sorediata

## Vegetation

The vegetation of the Bikin River basin belongs to 2 botanical-geographical regions: the South-Okhotsk dark-coniferous-forest one and the East-Asian coniferous-broadleaf-forest one (Kolesnikov, 1956b). The boundary between the two regions is rather twisting. In average, it passes at altitudinal marks of 550-600 m above sea level. The fir-spruce and larch forests belong to the South-Okhotsk dark-coniferous-forest region. The pine-broadleaf forests that form an independent altitudinal belt, the spruce-pine forest stripe, and the valley forests (predominantly) belong to the East-Asian coniferous-broadleaf region.

The altitudinal zoning of the vegetative cover is well developed within the basin part under consideration. The following altitudinal belts are marked out:

- A mountain tundra belt – higher than 1500-1600 m
- A creeping forest belt of the dwarf Siberian pine – 1450 (1500) – 1600 m
- A crooked forest belt of Erman’s birch – 1300-1450 m
- A fir-spruce forest belt – 800-1300 m
- A spruce-pine forest belt – 600-800 m
- A pine-broadleaf forest belt — 200-550(600) m

The present vegetation of the basin is shown by the schematic map M 1:500,000 composed according to the Primorsky Kray Forest Atlas (2005) (Fig. 9). The schematic map displays the distribution of the main formations and association groups. Table 3 gives the ratio of the areas of the contours marked out in conformity to the map.

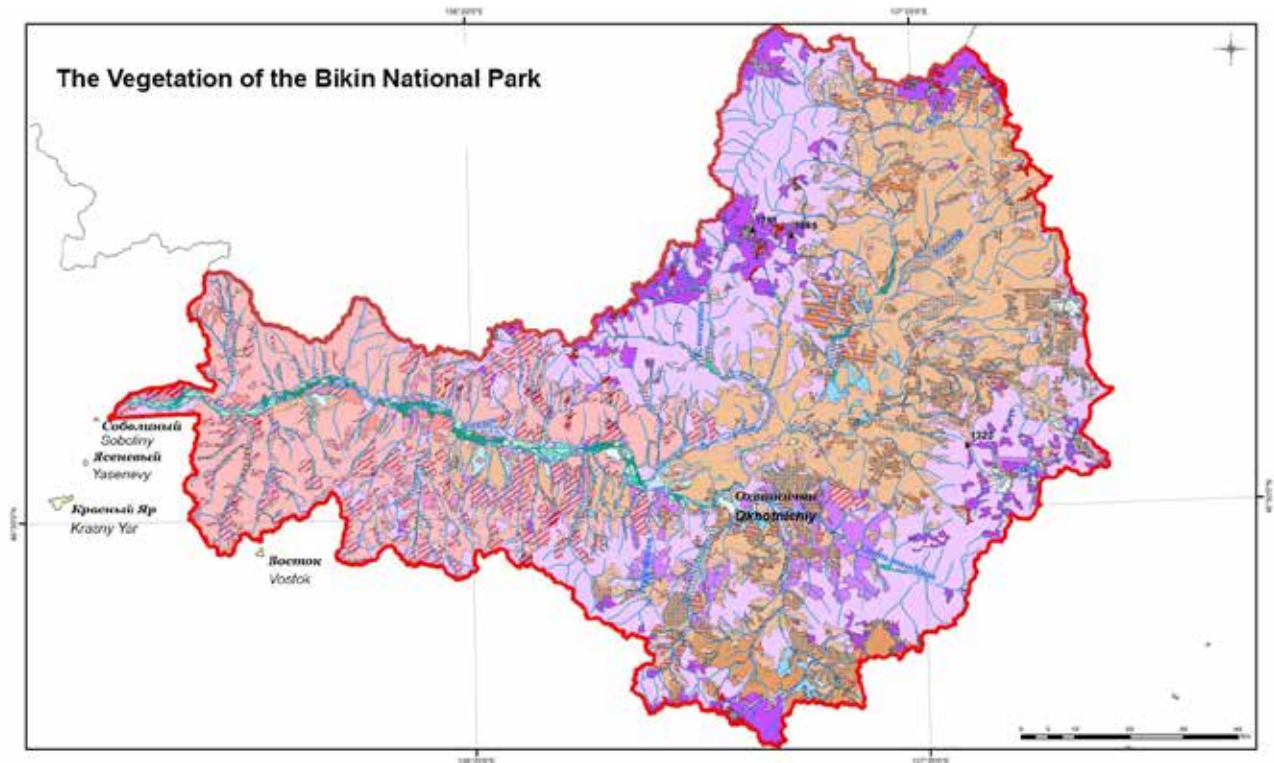






Fig. 9. A map of the vegetation of the basin of the Bikin River’s middle and upper reaches with the legend. According to the Primorsky Kray Forest Atlas (2005)

## The Legend to the Vegetation Map of the Bikin National Park




### Vegetation on the bald mountains and below them

-  Mountain shrubby-lichen tundras
-  Creeping dwarf Siberian pine (*Pinus pumila*) forests



### Boreal vegetation of the mountains

-  High-mountain fir-spruce (*Abies nephrolepis*, *Picea ajanensis*) herbaceous-shrubby forests
-  Erman's birch (*Betula lanata*) herbaceous-shrubby forests



### Fir-spruce (*Abies nephrolepis*, *Picea ajanensis*) forests

-  Small-herbaceous-shrubby and therorhodion ones
-  Green-mossy, herbaceous-mossy and ferny ones
-  Various-herbaceous-shrubby ones

### Pine-spruce (*Pinus koraiensis*, *Picea ajanensis*) forests

-  Mossy-small-herbaceous-ferny ones
-  Mossy-shrubby and mossy-shrubby ones with the creamy bark birch and linden

### Larch-spruce (*Larix dahurica*, *Picea ajanensis*) forests




-  Herbaceous ledum-mossy in the place of the fir-spruce forests
-  Various-herbaceous-shrubby in the place of the fir-spruce forests

### Larch (*Larix dahurica*) forests



#### Open woodlands

-  Larch peaty-sphagnous and green-mossy shrubby ones

#### Closed forests




-  Shrubby-lichen therorhodion ones
-  Green-mossy shrubby and mossy-herbaceous shrubby ones
-  Herbaceous ones

### White birch (*Betula platyphylla*) forests





-  Various-shrubby and various-herbaceous ones
-  Small-reed-shrubby in the place of the spruce and spruce-pine forests

### Nemoral vegetation of the mountains

#### Broadleaf-pine (*Betula costata*, *Tilia amurensis*, *Acer mono*, *Ulmus laciniata*, *Fraxinus mandshurica*, *Pinus koraiensis*) forests

-  Various-shrubby with the creamy bark birch
-  Herbaceous-shrubby with the linden
-  High-herbaceous various-shrubby with the elm and ashtree

### Vegetation of the river valleys

-  **Chosenia** (*Chosenia arbutifolia*) high-herbaceous-shrubby ones
-  **Poplar** (*Populus maximowiczii*) small-reed-high-herbaceous and herbaceous-ferny ones
-  **Ash-elm** (*Fraxinus mandshurica*, *Ulmus japonica*) forests
-  **Fir-spruce** (*Abies nephrolepis*, *Picea ajanensis*) valley forests

### Marshes

-  Herbaceous (lowland) and mossy (highland) ones

### Other designations

-  Human settlements

**Table 3.**  
**The vegetative cover structure within the Bikin National Park's boundaries**

The main units that have been market out	Area, ha	% of the total area
<b>Vegetation on the bald mountains and below them</b>		
Mountain shrubby-lichen tundras	9130,5	0,75
Creeping dwarf Siberian pine ( <i>Pinus pumila</i> ) forests	4158,2	0,35
<b>Boreal vegetation of the mountains</b>		
Erman's birch ( <i>Betula lanata</i> ) herbaceous-shrubby forests	1403,7	0,11
High-mountain fir-spruce ( <i>Abies nephrolepis</i> , <i>Picea ajanensis</i> ) herbaceous-shrubby forests	33761,1	2,8
<b><i>Fir-spruce (Abies nephrolepis, Picea ajanensis) forests</i></b>		
Small-herbaceous-shrubby and therorhodium ones	24624,5	2,1
Green-mossy, herbaceous-mossy and ferny ones	344363,5	28,58
Various-herbaceous-shrubby ones	27576	2,29
<b><i>Pine-spruce (Pinus koraiensis, Picea ajanensis) forests</i></b>		
Mossy-small-herbaceous-ferny ones	4870,8	0,4
Mossy-shrubby and mossy-shrubby ones with the creamy bark birch and linden	60678,5	5
<b><i>Larch-spruce (Larix dahurica, Picea ajanensis) forests</i></b>		
Herbaceous ledum-mossy in the place of the fir-spruce forests	29886,5	2,5
Various-herbaceous-shrubby in the place of the fir-spruce forests	37713,4	3,13
<b><i>Larch (Larix dahurica) forests</i></b>		
<i>Open woodlands</i>		
Larch peaty-sphagnous and green-mossy shrubby ones	7435,6	0,62
<i>Closed forests</i>		
Shrubby-lichen therorhodium ones	28690,4	2,38
Green-mossy shrubby and mossy-herbaceous shrubby ones	261487,3	21,7
Herbaceous ones	41958,3	3,48
<b><i>White birch (Betula platyphylla) forests</i></b>		
Various-shrubby and various-herbaceous ones in the place of the spruce and spruce-pine forests	8178,3	0,68
Small-reed-shrubby in the place of the spruce and spruce-pine forests	4852,5	0,4
<b>Nemoral vegetation of the mountains</b>		
<b><i>Broadleaf-pine (Betula costata, Tilia amurensis, Acer mono, Ulmus laciniata, Fraxinus mandshurica, Pinus koraiensis) forests</i></b>		
Various-shrubby with the creamy bark birch	195566,3	16,23
Herbaceous-shrubby with the linden	12205,3	1,01
High-herbaceous various-shrubby with the elm and ashtree	10277,9	0,85
<b>Vegetation of the river valleys</b>		
<b><i>Chosenia (Chosenia arbutifolia)</i></b> high-herbaceous-shrubby forests	1141,5	0,09
<b><i>Poplar (Populus maximowiczii)</i></b> small-reed-high-herbaceous and herbaceous-ferny forests	5921,7	0,49
<b><i>Ash-elm (Fraxinus mandshurica, Ulmus japonica)</i></b> forests	12793,9	1,06
<b><i>Fir-spruce (Abies nephrolepis, Picea ajanensis)</i></b> valley forests	34946,2	2,9
<b>Marshes</b>		
Herbaceous (lowland) and mossy (highland) ones	92,8	0,007
<b>Other</b>		
Human settlements	1253,3	0,1
Total area	1204968	100,00%

Source: Primorsky Kray Forest Atlas, 2005, amended. According to the vegetation map M 1:500,000.

The highest (over 1450-1600 m above sea level) mountains appear treeless alpine tundra belt. They are linked up with brushwood of mountain pine, stone-birch elfin woodlands and tall grass meadows below; this belt is range from 1200-1300 to 1400-1600 m above sea level. Below its replaced by firry-spruce forests, which replaced by typical moss and moss-ferry firryspruce forests below 1000-1100 m altitude, which are turned into cedar-firry forests below 600-700 m altitude and then into broadleaf-cedar forests. Much of the hardwoods gave way to larch, larch-birch and firry-larch forests in the upper part of the basin as a result of extensive fires in the end of the one before last century – first third of the last century. Larch forests occupied also hydromorphic terraces in extensive parts of river valleys. Lowland leaf bearing forests are more common in the Middle Bikin.

Middle levels of low floodplain occupied by willows and chosenia, pure and mixed. Chosenia and poplar forests with bladed elm (*Ulmus lacinata*), valley elm (*Ulmus propinqua/ Ulmus japonica*) and Manchu ash (*Fraxinus mandshurica*) grows at higher altitudes. Broadleaf poplar and ash elm crops associated with high floodplain. Divers firry-cedar-broadleaf forests occupied terraces above the floodplain. Primary larch forests and larch bogs are indicative for poorly drained low areas of terraces above the floodplain.

A large tract of primary cedar and cedar-broadleaf forests have been preserved in the middle reaches of the Bikin River. The largest nut-production zone is marked here (more than 400 ha). Except protective and regulatory role, these forests also play an important socioeconomic role as the most productive lands of the traditional nature use of the indigenous people.



**Bikin River valley – one of the plots of virgin Ussurijsky taiga**  
Photo by V. Kantor



**Korean pine**  
Photo by V. Philonov



## The Forest Resources

Nutwood commercial zone has 99% of woodiness. The main woody species are Korean pine (*Pinus koraiensis*) – 44%, Ajan spruce (*Picea ajanensis*) – 38%, yellow birch (*Betula mandshurica*) – 9%, larch (*Larix Gmelinii*) – 4%, white birch (*Betula alba L.*) – 3%. The most popular are mixed shrubby cedar woodlands with yellow birch (*Betula mandshurica*) and cedar-firry forests with yellow birch (*Betula mandshurica*) and Amur linden (*Tilia amurensis*). Forests with cedar domination usually are less than 600 m above sea level. And upwards fir-spruce forests, occupied upper parts of slopes, watersheds and upper parts of rivers and springs basins, with mid-level quality of stand III,3 along the nutwood commercial zone. Cedar woodland is more productive with mid-level quality of stand II,7. Spruce forests of upper altitudinal mountain zone represent poor stand. Middle-aged forest stands dominate (43%) in nutwood commercial zone, which include cedar woodlands of III-V age class and other woodlands of II-VI age class. Ripening woodlands occupy 26%, mature – 28%, old growth – 1% of area.

**Prohibited belt along rivers.** Wooded areas of this forest category occupy 93%. Forests with domination of spruce (*Picea sp.*) occupy 38%, cedar (*Pinus sp.*) – 20%, larch (*Larix sp.*) – 13%, elm (*Ulmus sp.*) and rhynofolious ash (*Fraxinus rhynchophylla*) - 10%, chosenia (*Chosenia arbutifolia*) - 7% of total area. Valley spruce forests, cedar forests with ash and elm, larchspruce forests are dominated.

94% of rest basin plots are wooded. Fire-sites of different years and post-fire open forests are unwooded. Peat moss bogs (50%) basically focused in upper reaches of Zeva and Kilou rivers and rocks (40%) are dominated on the nonforested areas. The main forest forming species are: Ajan spruce (*Picea ajanensis*) (44%), larch (*Larix sp.*) (41%), and white birch (*Betula alba L.*) (10%). The biggest areas of hardwoods situated in the most upper reaches of Bikin River, in Klyuchevaya (Bachelaza) River basin, in the upper reaches of Zeva, Svetlovodnaya (Ulunga) rivers. Moss, short grass moss and shrub rich in herbs types of firry-spruce forests dominate. They occupy slopes of various gradients of all directions,

### Korean pine

Photo by P. Krestov

### Mongolian oak

Photo by Y. Darman



characterized by high stocking and normality, presence or domination of Khingam fir (*Abies nephrolepis*) in second growth and dash of hardwoods.

Larch forests concentrate in eastern (upper) part of basin near Bikin, Ada, Kilou, Zeva rivers and on the plateaus in highlands near the watersheds of the Sikhote-Alin ridge. They represented by groups of marsh tea and moss, moss forest types. The former is confined to the high river terraces, low gradient slopes and mountain plateaus; the latter is usual for various gradient slopes and on the flat localities on flood plains. Their site quality more often is III, IV is rarer, density from 0.3 to 0.7. Marsh tea and moss larch forests characterized by wet soils and continuous cover of marsh tea.

White birch and aspen woods appeared after fires and replaced softwood forests. They concentrated in southern part of exploitation woods. White birch forests are intermediate stage in the process of wood species changing and they interchanged by primary types of softwood forests step by step. Mid-level site quality of spruce woodland in exploitation zone is III,8, larch woodland - III,4, white birch woodland - II,4. Low site quality occurs in sub-alpine fir wood belt and in waterlogged larch forests. The age-grade woodland separation is irregular. Mature and overmature forest stands are visibly dominate.

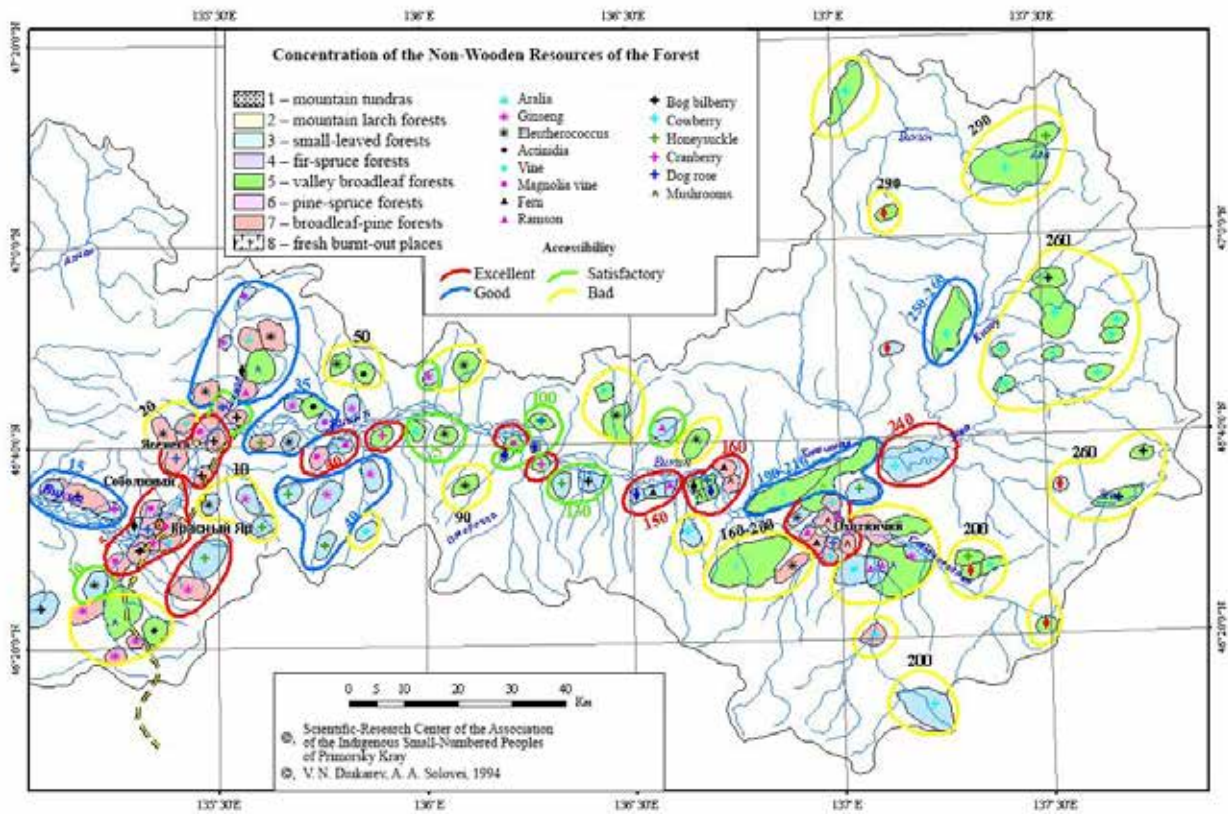
**Larch**

Photo by K. Kobyakov



### Non-Wooden Resources of the Forest

The bulk of the non-wooden resources is concentrated in the pine-broadleaf forest zone of the Bikin River's middle reaches (Fig. 10).



**Fig. 10.** The non-wooden product resource capacity of the forests in the Middle and Upper Bikin territory.

More than 40 species of plant being of medicated, nutritive, technical value find in area's forests. Estimate possible annual harvesting of medicinal herbs in this ecologically clean region could meet the demand in medicinal herbs of all the Primorsky Krai. Table 3 demonstrate approximate value of annual harvesting of some useful plant species of Pozharsky District.

Dynamics of useful plant procurement demonstrate that in spite of the harvest fluctuation there is a real opportunity to procure the harvesting of minor forest products. It is obvi-

ously, that clever combination of conservation status of territory and traditional nature use of the indigenous people should lead to the minimization of timber production that should be limited by demand for fire wood and necessary sanitary protection measures, by doing so the main practical use should lie in sustainable use of all wood benefits. Such approach provides the development of traditional culture and cropping with minor business based on them, match with world trend over primary woodlands conservation and their preservation on sizable territory.

Plant communities have been divided into some categories over set of non-timber forest resources, their diversity and productivity – from alpine-tundra group with minimal resource output to broad-leaved cedar forests of middle and lower mountain altitudinal zone – the heaviest over wood diversity and products. Highlands’s plant group labeled as territory with minimal value of non-timber forest resources. Role of this areally small land could be the subject of distant prospect in combination with recreational facilities of these territories and such medicinal herbs as snowdon rose (*Rhodiola rosea* L.), bergenia pacific (*Bergenia pacifica* kom.) and other plants rare within Primorsky Kray. Different types of larch forests labeled as natural complexes with low resource capacity, as well as secondary small-leaved forests. In spite of the small estimate resource mark, these plant groups are prospective in berry and mushroom resources and for charring arrangement in most accessible woodlands with birch domination. Most part of these woodlands, situated in Kilou River basin, in upper parts of Bikin River, characterized by diffi- Marsh tea larch forests with blueberry sites more than 100 ha, and small-leaved forests, situated in middle reach of Bikin River, are prospective among this group.

The dark-coniferous and spruce-larch forests with 7-8 types and more than 20 species of non-timber forest resources labeled as natural complexes with middle resource capacity. Main restriction in use of these resources related to meaningful farness and low accessibility of the territory. However, it should be considered that this is the most perspective natural complexes on so-called woody greens resources and quality. Areas with valley woods and mountain slopes cedar-spruce woods labeled as natural complexes with high resource capacity. Forest with ash (*Fraxinus sp.*), elm (*Ulmus sp.*), Amur cork tree (*Phellodéndron sp*), cedar (*Pinus sp.*), fir (*Picea sp.*) are rather rich phytocenosis over

**Ginseng** (*Panax ginseng*)

Photo by V. Medvedev

**Magnolia-vine**

Photo by V. Medvedev



the non-timber forest resources and relatively accessible for its development. There are 10 and more types of significant non-timber forest resources and 40-60 of their categories. These lands exceeded the above type of natural complexes over the variety of some categories (berries bee plants, medicinal herbs, etc.) in 2-3 times.

Maximum resource capacity over biodiversity and volume has cedar and broadleaved-cedar forests of middle parts of slopes and foreslopes of high river terraces. Here one can find more than 20 types and 150 species of non-timber forest resources, and these numbers could be greatly increase by means of medical and other

plants of these forests as it was mentioned before. Table 3 illustrate diversity of non-timber forest resources which of a great interest for all-purpose environmental management organization (hunting, fishing, cropping resources are considered separately). Along with big diversity of renewable resources pointed natural complexes are attractive for its economic capacity, ecological cleanness, knowledge of its useful properties, existing of the base resources specific for each of them.

The table illustrates the most significant food, medical and technical resources for biological and economic potential, accessibility, traditional use and lands sustainability.

**Table 4. Non-timber plant resources of the nut-production zone**

Resource type	Production reserves, t	Possible harvest, t	Economic significance
Clusterberry ( <i>Vaccinium vitis-idaea</i> )	30-40	15-20	food, medical
Bog bilberry ( <i>Vaccinium uliginosum</i> )	30-40	20-25	food
Cranberry ( <i>Oxycoccus</i> )	3-4	1-2	food, medical
Actinidia ( <i>Actinidia</i> )	10-12	5-8	food
Magnolia vine ( <i>Schisandra</i> ), berries	25-35	2,120	food, medical
Grapes ( <i>Vitis</i> )	10-15	5-7	food
Guelder rose ( <i>Viburnum</i> )	15-20	10-15	food
Pine nut / Cedar ( <i>Pinus sp.</i> ), nuts	500-600	586,1	food
Manchurian walnut ( <i>Juglans mandshurica Max.</i> )	100-150	30-40	food, paint and varnish
Fern ( <i>Polypodiophyta sp.</i> )	20-25	16,100	food
Edible mushrooms	40-60	10-15	food
Tea plucking	300-400	150-200	food, medical
Tree juice	200-250	50-70	food
Tree greenery	150.000-200.000	70.000- 80.000	for cattle breeding, medical, decorative, technical
Honey plants	300-400	30-50	food
Eleuterococcus ( <i>Eleutherococcus</i> ), root	80-100	24,830	medical
Aralia ( <i>Aralia</i> )		3,320	medical

Nearly two dozens groups of technical non-timber forest resources, which could be used, is presented in Bikin River basin forests. They could be divided in some categories: technical resources of direct application, which do not require any special fashioning: firewood, blocks, chips, cuttings, brooms, axe shafts, feeding parts of plants, etc. Output of improvement thinning, environmental harvesting, reparative harvesting in forests of little value could be potential basic materials here. Another category – pitches, essential oils, tar, coal and their conversion products. The presence of various species composition of stand, huge areas of softwoods and especially hardwoods allow considering this category of technical resources as perspective. The third category – biotechnical resources – hydrolyzed spirits, feed proteins, yeasts, cellulose, biofuel, fertilizers. This category could be divided into two parts:

1. Spirits, feed proteins, yeasts, cellulose – production is practically impossible within the ba-

sin because of pollution caused by this production.

2. Biofuel, hardeners, fertilizers (as biofuel wastes) – development of bioenergetics could be set up on plant biomass of natural systems and farm production wastes. This type of resources could attract special attention under conditions of energy problem increase.

Special attention is given to genetic resources which separately stand out. These are resources of the future. Under conditions of potential break of natural biodiversity within huge Far East areas, lost natural complexes with most productive and sustainable plant communities, such natural reserves as Bikin River basin would be estimated in a proper manner in the near future. Elite trees of main forest-poietic trees in fir, cedar and larch woods, remaining age-long diversity of useful plant forms, complete set of high-producing and sustainable ecosystems – invaluable natural potential of Bikin River basin.

## Fauna and Animal World

Relief features, plant and climate conditions diversity at the Middle and Upper Bikin territory define the species and ecologic diversity of region’s fauna and its distribution on the territory.

Here are habitats of the following mammals: maral (*Cervus elaphus xanthopygus*), elk (*Alces alces*), musk deer (*Moschus moschiferus*), wild hog (*Sus scrofa*), roedeer (*Capreolus capreolus*), Himalayan black bear (*Ursus thibetanus*) and brown bear (*Ursus arctos*), Amur tiger (*Panthera tigris altaica*), Indian marten (*Martes flavigula*), wolverine (*Gulo gulo*), sable (*Martes zibellina*), acclimatized American mink (*Mustela vison*), badger (*Meles meles*), Manchu squirrel (*Sciurus vulgaris mantchuricus*) and Arsenjev’s flying aquirrel (*Pteromys volans arsenjevi* Og.), Siberian striped weasel (*Mustela sibirica*), several species of shrew (*Soricidae*) and mouse-like rodents (*Cricetidae* and *Muridae*).

**Amur tiger** (*Panthera tigris altaica*). Listed in the IUCN Red Data Book and the Russian Red Book. The main object of his hunting is wild hog, which population here is stable even in cedar nut unseed years, due to abundance of Dutch-rush (*Equisetum hyemale* L.). According to the annual monitoring data, its average density is 0.58 tigers per 100 square km (from 0.29 to 0.97), while total amount is up to 40 units.

**Himalayan black bear** (*Ursus thibetanus*). Lives in cedar-broadleaf forests, density is about 1 unit per 10 square km. It is easier to catch Himalayan black bear than brown bear, and despite of small official quota, its population drops from poaching.

**Brown bear** (*Ursus arctos*). Commercial species. The highest density of population is at cedarbroadleaf and cedar forests. Proportion between Himalayan black bear and Brown bear is about 1:1.

**Siberian tiger**

Photo by V. Solkin

**Brown bear**

Photo by V. Solkin



**Sable** (*Martes zibellina*). The main commercial species on most hunting areas of the Middle and Upper Bikin – up to 2000 furs are procured every year. Population density is 5-7 units per 10 square km.

**Otter** (*Lutra lutra*). The common commercial species in the Bikin river basin. The species population is 107-136 units. Otter's population drastically decreased in recent years after reduction of fish resources and poaching.

**Musk beaver** (*Ondatra zibetica*). The commercial species, which have limited habitat – the separate meander lakes and lakes in the western part of the Park. The total population of the commercial species is around 100-120 units.

**Siberian striped weasel** (*Mustela sibirica*). Numerous commercial species with the population density up to 15 units per 10 square km.

**American mink** (*Mustela vison*). The commercial species, which are the successful result of acclimatization in 50's on the territory of the Pozharsky District. The population density on the first yield class areas (rivers' middle parts more than 150 km long and rivers' lower reaches 100-150 km long) is 1.2 – 2.4 units per 1 km of streambed.

**Indian marten** (*Martes flavigula*). Common for this territory but rare species with population density below 0.3 units per 10 square km.

**Common weasel** (*Mustela erminea*). Rare.

**Lynx** (*Lynx lynx*). A commercial but rare species.

**Blue hare** (*Lepus timidus*) and Northern coney (*Ochotona alpina*). This double-toothed rodents class representatives have the population density of 2-3 units per 10 square km.

#### **Sable**

Photo by G. Shaulsky

#### **Lynx**

Photo by V. Medvedev





**Squirrel (*Sciurus vulgaris*).** During population peak period is the most mass commercial species on the territory. Two more representatives of this class have stable population: Siberian chipmunk (*Eutamias sibiricus*) and flying squirrel (*Pteromys volans*), as well as some mouselike rodents.

**Raccoon dog (*Nyctereutes procyonoides*).** This species are common at the Bikin river flood plain almost along all its central part. Commercial species population density is 0.5 – 1 animal per 1000 ha.

**Badger (*Meles meles*).** A quite common commercial species of the territory.

**Elk (*Alces alces*).** The species are common in the upper Bikin river stream, where have the most population density on the old fire sites at the basin of the Ulunga, Zeva, Kilou rivers. This is the last large population of this species in the Primorsky region. The population is 400-500 units.

**Maral (*Cervus elaphus*).** The commercial species with the population density of 6-8 units per 10 square km. Lives almost in all Bikin River basin (except the main dividing ridge).

**Wild boar (*Sus scrofa*).** The commercial species with the population density of 6-7 units per 10 square km. Common in the cedar-broadleaf taiga zone. Кабан (*Sus scrofa*).

**Squirrel**

Photo by G. Shalikov

**Badger**

Photo by G. Shalikov

**Maral**

Photo by V. Medvedev



**Roe deer** (*Capreolus capreolus*). The highest density is along flood plains of the Bikin river till Dunguza and Laukhe. The roe deer population is relatively stable and includes about 500 animals.

**Musk deer** (*Moschus sibiricus*). The common commercial species with the population density up to 30 units per 10 square km. Prefer mountainous spruce-fir forests. During hunting season up to 200 units are procured for musk provision.

**Boar**

Photo by E. Lepeshkin





From the insectivorous (*Insektivora*) the following species are common: Ussurijsky hedgehog (*Erinaceus europaeus ussuriensis*), large mole (*Mogera robusta*), and some species of shrews (*Soricinae*).

Among the species permanently living on the territory and listed in the Russian Red Book, the most important is conservation of tiger, which subpopulation within the Bikin basin and Central Sikhote-Alin is key for this subspecies conservation.



**Musk deer**  
Photo by A. Panichev

**Wide awake roe deer**  
Photo by E. Mogilnikov

The state of the Amur tiger population can be characterized as relatively problem-free at the Bikin. Over the last decades, the relatively high and stable number of them has been noted here. This is favored by conservation of large pine-broadleaf forest tracts on this territory, a good state of the tiger's nutritive base, difficult access to the territory and limited hunting.

When the number of the Amur tiger was last recorded in the entire Russian habitat, 45–50 animals were recorded in Pozharsky District, most of them were in the territory of the planned national park.

Since winter 1997/98, the number of the predator has been recorded at the Bikin monitoring

site located in the habitats that are the best for the tiger in the territory under research (the basins of the Bikin's tributaries: Amba, Malaya Takhalo, Klenovka, Taimen, Pushnaya, Lesnukha, etc.). From 1997 to 2013, on this spot 1027 km<sup>2</sup> in area, the number of the independent tigers fluctuated from 3 to 10 animals (5.8 animals in average). In addition, almost every year tiger cubs (up to 3 animals) were noted on the spot. Over the last 10 years, the recorders noted 28 tiger litters (46 tiger cubs) in the district. 13 times there was 1 tiger cub in a litter; 13 times there were two tiger cubs; once there were three tiger cubs and once there were four tiger cubs. During the 2014 spring recording, the tiger population density was determined to equal 0.3 of an animal / 100 km<sup>2</sup> in the district under research.

**Table 5. The recorded indexes pertaining to the tiger and hoofed animals on the permanent site at the Bikin's middle reaches**

Years	Tiger trail density (trail quantity / 10 km / quantity of days after a snowfall)	Number of the 'independent' tigers (quantity of the adult, young and uncertain animals)	Density of the independent tigers (quantity of the adult, young and uncertain animals per 100 km <sup>2</sup> )	Manchurian deer trail density (quantity of fresh trails per 10 km of the itineraries)	Wild boar trail density (quantity of fresh trails per 10 km of the itineraries)	Roe trail density (quantity of fresh trails per 10 km of the itineraries)
1998	3,6	3,0	0,29	1,47	1,45	1,61
1999	7,7	10,0	0,97	11,24	4,00	4,96
2000	0,9	7,0	0,68	7,14	0,29	1,39
2001	3,7	6,0	0,58	9,53	3,97	2,88
2002	2,3	7,0	0,68	5,32	1,69	4,49
2003	2,6	8,0	0,78	10,37	3,2	3,41
2004	6,3	5,0	0,49	4,52	5,09	4,73
2005	0,6	5,0	0,49	6,91	8,46	5,43
2006	2,2	4,0	0,39	4,13	3,96	3,95
2007	1,2	6,0	0,58	6,85	7,31	5,35
2008	1,0	5,0	0,49	2,86	7,21	5,60
2009	0,5	3,0	0,29	3,96	4,47	5,87
2010	1,6	4,0	0,39	3,83	3,02	6,53
<b>Среднее</b>	<b>2,6</b>	<b>5,6 (3-10)</b>	<b>0,55</b>	<b>6,01</b>	<b>4,16</b>	<b>4,14</b>

Source: *The Amur tiger population monitoring program, the 13-year report: 1998-2010.*

**The bird fauna** of the nominated territory is very uncommon concerning its species composition and ecologic structure. 241 bird species, which belong to 17 classes, are known for being at the Bikin river basin. Among them 171 species (about 71.8%) are noted to nest for a fact, the rest can be met during seasonal migrations period, on wintering grounds or are vagrant. The majority of breeding bird species (97) inhabit the valley broadleaf and pine-broadleaf forests. Rare feathered species, confined to the river bed and, thereafter, to the fish resources and abundance of amphibian in the flood plain forests, are the following: black stork (*Ciconia nigra*), scaly-sided merganser (*Mergus squamatus*), mandarin duck (*Aix galericulata*), grey-faced buzzard (*Butastur indicus*), osprey (*Pandion haliaetus*) and blakiston's fish-owl (*Bubo blakistoni* or *Ketupa blakistoni*). Long-billed ringed plover (*Charadrius placidus*), very rare endemic specie in its areal is common for vast pebble river bars.

Composition of forest massifs and open meadow landscapes attracts many zootypic day birds of prey and owls (hobby falcon (*Falco subbuteo*), amur falcon (*Falco amurensis*), besra sparrow-hawk (*Accipiter gularis* or *Accipiter virgatus*), ural owl (*Strix uralensis*), brown hawk-owl (*Ninox scutulata*), Ussuri screech owl (*Otus sunia*) and others). Columbiformes (*Columbiformes*) are represented by eastern turtle dove (*Streptopelia orientalis*), apodiformes (*Apodiformes*) are represented by northern needletail (*Hirundapus caudacutus*). Coraciiformes (*Coraciiformes*) are represented by oriental dollarbird (*Eurystomus orientalis*). From the piciformes (*Piciformes*) we can name lesser spotted woodpecker (*Dendrocopos minor*), greater spotted woodpecker (*Dendrocopos major*), white-backed woodpecker (*Dendrocopos leucotos*), black woodpecker (*Dryocopus martius*), and the rare specie is grey-capped woodpecker (*Dendrocopos canicapillus*). Common Far East representatives of passeriformes

### Hazel grouse

Photo by E. Mogilnikov





(*Passeriformes*) are large-billed crow (*Corvus macrorhynchos*), azure-winged magpie (*Cyanopica cyana*), masked grosbeak (*Eophona personata*), Tristram's bunting (*Emberiza tristrami*), black-faced bunting (*Emberiza spodocephala*) and yellow-throated bunting (*Emberiza elegans*), long-tailed Rosefinch (*Uragus sibiricus*), black naped oriole (*Oriolus chinensis* L.), white-eye (*Zosterops erythropleura*), ashy minivet (*Pericrocotus divaricatus*), blue-and-white flycatcher (*Muscicapa cyanomelana*), narcissus flycatcher (*Ficedula zanthopygia*), Siberian rubythroat (*Luscinia calliope*), Siberian blue robin (*Luscinia cyane*), gray-backed thrush (*Turdus hortulorum*), eastern crowned warbler (*Phylloscopus coronatus*), pale-legged leaf-warbler (*Phylloscopus tenellipes*), black-browed reed warbler (*Acrocephalus bistrigiceps*) and gray's grasshopper warbler (*Locustella fasciolata*).

48 species nest in fir-spruce forests and mountainous larch and birch-dark-coniferous forests, and the most valuable species for the biodiversity conservation is Siberian grouse (*Falci-pennis falcipennis*). Among common species it is worth to note fugitive hawkbit (*Hierococcyx fugax*), Siberian jay (*Perisoreus infaustus*), Eurasian nutcracker (*Nucifraga caryocatactes*), pale thrush (*Turdus pallidus*), Siberian thrush (*Zoothera sibirica*), golden mountain thrush (*Zoothera dauma*), rufous-tailed robin (*Luscinia sibilans*), pallas' warbler (*Phylloscopus*



#### **Fish owl**

Photo by S. Avdeyuk

#### **Mandarin duck**

Photo by V. Solkin

*proregulus*), Eurasian bullfinch (*Pyrrhula pyrrhula griseiventris*), white-winged crossbill (*Loxia leucoptera Gmelin*), bluetail (*Luscinia cyanura*), black-and-orange flycatcher (*Ficedula mugimaki*).

Relatively poor composition of feathered birds is in the small-leaved forests on old fire sites, where just 21 bird species nest. In mountainous tundra the bird population is more limited (7 breeding species). The main predominant here are chiffchaff (*Phylloscopus*), tree pipit (*Anthus trivialis*), and the most valuable species in terms of bio diversity here is rock capercaillie (*Tetrao parvirostris*).

Waterlogged larch forests and bogs, situated in the Bikin valley, are of special interest because of its bird species diversity (57 species). Junction of northern and southern species of larch-sphagnum bogs and surrounding forest formations appears here in its best way. First of all, these are the following species: hooded crane (*Grus monachus*), pied harrier (*Circus melanoleucos*), Far-Eastern curlew (*Numenius madagascariensis*), Von Schrenck's bittern (*Ixobrychus eurhythmus*), Siberian ruddy crake (*Porzana paykullii*), hemipod (*Turnix tanki*), gray-hooded bunting (*Emberiza fucata*) and grouse (*Lyrurus tetrix*). Nowadays grouse is the very rare species in the Russian Far East. The following species typical for Europe inhabit here: Siberian gray owl (*Strix nebulosa*), European stonechat (*Saxicola rubicola*), golden bunting (*Emberiza aureola*), black-tailed godwit (*Limosa limosa islandica*), sparrowhawk (*Accipiter nisus*) and goshawk (*Accipiter gentilis*), which are in close touch with tropical representatives: oriental dollarbird (*Eurystomus orientalis*), ashy minivet (*Pericrocotus divaricatus*), white-eye (*Zosterops erythropleura*) and some others. For bog lakes and streams the breeding river ducks are common: falcated duck (*Anas falcata*) and mallard duck (*Anas platyrhynchos*).

4 species from all breeding birds of Bikin (171 species) are listed in the IUCN Red Data Book (scaly-sided merganser (*Mergus squamatus*), white-tailed eagle (*Haliaeetus albicilla*), hooded crane (*Grus monachus*), Blakiston's fish-owl (*Bubo blakistoni* or *Ketupa blakistoni*)) and 10 species are listed in the Russian Red Book (black stork (*Ciconia nigra*), mandarin duck (*Aix galericulata*), osprey (*Pandion haliaetus*), grey-faced buzzard (*Butastur indicus*), Siberian

grouse (*Falci pennis falci pennis*), long-billed ringed plover (*Charadrius placidus*)). Moreover, it is expected the nesting of black kite (*Milvus migrans*) and grey-capped woodpecker (*Dendrocopos canicapillus*), listed in the Red Book of the Primorsky region. Brief avifaunistic survey in the Bikin river basin shows, that special protection measures are needed for conservation of this territory's birds.

### Amphibia and Reptiles

7 amphibian species and 10 reptile species dwell in this territory. Among the limited number of reptiles here, there are rare and endemic species: grass lizard (*Takydromus wolteri*), European grass snake (*Rhabdophis tigrina*), Siberian ratsnake (*Elaphe schrenki*), Amur ratsnake (*E. rufodesata*), mamushi (*Agristrodon blomhoffi*) and Korean snake (*Gloydius saxatilis*). The Chinese softshell turtle is of the greatest interest; over the last decades, its number has noticeably decreased, and the species has been included in the RF Red Book. It goes upstream to the middle reaches and inhabits the riverbed and the lakes.

The amphibia and reptiles as well as the fish (especially the mass species) are of a great importance in the trophic chains for the larger vertebrates that feed on them, including the ones of production value (otter, kolinsky, mink, racoon dog, shorebirds).

### Ichthyofauna

Benthos and nekton are well developed in the Bikin river. The river plankton is poorly developed and is mainly represented by microalgae, rotifers (*Rotifera*, =*Rotatoria*) and crustaceans (*Crustacea*). Benthos in the Bikin river basin is represented by various gastropods (*Gastropoda*) and bivalvia (*Bivalvia*) shellfish, water insects larva, oligochaetes (*Oligochaeta*), crustaceans (*Crustacea*) as well as numerous microzoobenthos and microphytobenthos.

The benthos qualitative composition and biomass change from upper to middle stream. In the upper reaches the predominant benthos groups are amphibiotic insects larva: dayfly (*Ephemeroptera*), stone fly (*Plecoptera*), caddis fly (*Trichoptera*) and others. In the middle stream the predominant groups are shellfish (*Mollusca*), which biomass is mainly occupied

with black snails (*Melanoidea*), pearl shell (*Unio*), swan mussel (*Anodonta*), pearl oyster (*Pinctada*). On gravel-pebble and sandy fields in the middle stream (in its upper part) the river benthos is defined by two types of black snails (*Melanoidea*), Dahurica pearl shell (*Dahurinaia dahurica*) and water insects larva. On the open grounds and covers there are plenty of stone fly (*Plecoptera*), dayfly (*Ephemeroptera*) and caddis fly (*Trichoptera*) larva. On the softer silted grounds among volutes (*Gastropoda*) the predominant are black snails (*Melanoidea*), and among bivalvia (*Bivalvia*) – several species of large pearl shell (*Unio*). Rather numerous although lesser by biomass are small gastropods (*Gastropoda*) and bivalvia (*Bivalvia*) shellfish, which are mostly represented not in the river channel, but in flood plain pools. Infauna is well developed on the soft bottoms – some burrow dayfly (*Polamantidae* and *Ephemeridae*) larva, oligochaetes (*Oligochaeta*), eelworms (*Nematoda*, *Nematodes*) and others. Benthos biomass in the middle stream may in some occasions reach 10-13 kg per cubic meter, while mean quantity is 100-300 g per cubic meter (including shellfish), in the upper stream – 8-15 g per cubic meter.

The nekton organisms are represented by fish, crustaceans (caltrop (*Pandalidae*)) and Chinese softshell turtle (*Pelodiscus sinensis*), yet survived in the Middle and Lower Bikin. Out of 130 species of the Amur fish, from 49 to 60 species inhabit the Bikin basin, 33 of which belong to cyprinoid fishes (*Cyprinidae*). In the Upper and Middle Bikin the following species have commercial value: Amur grayling (*Thymallus arcticus grubii*), lenok (*Brachymystax*) and taimen (*Hucho taimen*) (under 35 kg weight). Passing species flow up to the Bikin upper reaches for spawning – autumn chum salmon (*Oncorhynchus keta inf. autumnalis Berg*) and Far Eastern dace (*Leuciscus brandti*). Passing fish population steady decreases because of raise of anthropogenic pressure in the Amur river, and

resident fish population in lack of overfishing stay at the same level. Other valuable fish species in the middle stream are represented by Amur pike (*Esox reicherti*), in small lakes and on the flood plain and terraces above there are plenty of golden carp (formerly *Carassius auratus gibelio*, since 2003 - *Carassius gibelio*). In the upper reaches there are also brook lamprey (*Lampetra reissneri*), Lagowski's minnow (*Phoxinus lagowskii*); in the middle reaches – Amur ide (*Leuciscus waleckii*), Amur gudgeon (*Gobio gobio cynocephalus Dybowski*), Siberian bullhead (*Cottus poecilopus*) and small ruderal species of slack waters: Amur sleeper (*Perccottus glenii*), nine-spined stickleback (*Pungitius pungitius*) and others.

The fish fauna of the Upper and Middle Bikin consists of various species within 7 families. Salmonidae (salmonids) with 5 species and Cyprinidae (carp family) with 10-12 species are the richest families with respect of species. The northern lampreys (1 species), graylings (2 species), cottids (2 species), loachgobies (1 species), and true loaches (2 species) are small families. The fish systematics has been brought to conformity with the monograph 'A Catalogue of Jawless Animals and Fishes in the Fresh and Brackish Waters of Russia' (Bogutskaya, Naseka, 2004).

### Entomofauna

28 insect species listed in the Russian Red Book, inhabit the territory (Annex C1). Lepidopterous insects fauna includes many southern species, endemics and widespread species: swallowtail butterfly (*Papilio*), number of large emperor moths (*Actias*), purple emperor (*Apatura*), underwing moth (*Limemtis*) and black-and-white aeroplane (*Neptis*); beetles are represented by pruners (*Cerambycidae*), bark beetles (*Ipididae*) and gold-beetle (*Chrysomelidae*).



## Landscapes

25 types (species) of landscapes are erected within the area of Upper and Middle Bikin. These landscapes spacially and genetically are unified in six series, at that the main factor of these series erection is lithogenic (geologic-geomorphological) factor, specifically orographic status and exposition.

**1. Mountain tundra and half-grown forests.** This series is represented by four landscape species related to society of mountain landscapes for external features and functioning conditions.

**2. Secondary slope and slope-valley small-leaved forests.** This series is represented by four landscape species and the main unify characteristic value is the fact of their secondary natural growth appeared after cutting (more often) or fires (rarer) on the place of early existing natural complexes which often didn't related to the same species or series of landscapes.

**3. Dark-coniferous on low gradient slopes and flatten watersheds.** These landscapes occupy the greatest area among other landscapes in Upper and Middle Bikin basin, situated along left Bikin River valley side. The main unify characteristic value of seven landscape species is similarity of forest cover: the main timber species are Ajan spruce (*Picea jezoensis*, rarer *Picea ajanensis*) and Khingam fir (*Abies nephrolepis*) with large admixture of Daurian larch (*Larix dahurica*) especially indicative for landscapes subjected to forest fires short past.

**4. Pine-dark-coniferous on low gradient well alight slopes.** This series is represented by two landscape species where Korean pine (*Pinus koraiensis*) is of significant value. The main aspect of their difference is insignificant admixture of hardwoods in one landscape species and admixture of Khingam fir (*Abies nephrolepis*) and specifically Ajan spruce (*Picea jezoensis*; *Picea ajanensis* more rarely) for another, also hardwoods could appear as main timber species and Korean pine (*Pinus koraiensis*) could pass into admixture species.

**5. Valley and slope-valley mainly broadleaved and mixed coniferous-broad leaved forests.** These landscapes spacially adjoin Middle Bikin valley, butting into space of other landscape series by means of "tongue" over flood plains in Upper Bikin and Svetlovodnaya. Near western boundary of mapping area these landscapes are spread over low gradient slopes of Bikin tributaries valley sides and goes to lowlevel watersheds here and there.

**6. Woodless territories.** Two remained landscape species joined in one series with kind of convention because they are not similar genetically. But considering that vegetation composition is a new characteristic for landscape diagnosis and mapping in this investigation, so we can consider the integration of these landscape species into one series as rightful, because they are most similar for this characteristic owing to more or less lack of woody vegetation within these landscapes.

## 2b. History and Development

**The geological history** of the Primorye is defined by clear trend and continuity of Earth crust structures development. From the ancient times the Khankaysky massif has been representing the stable core with continental crust growing around it. It was surrounded by volcanic islands arcs and deepwater trenches, which continuously drifted towards the east forming folded-block basement of the Sikhote-Alin, which was developed as a volcanic mountainous system about 100 millions years ago. At this time all main structural zones were raised, which then were developing and served as a basis of modern landscape diversity. Relatively recent geologic events – extravasion of basaltic lavas in the Pliocene, uplift of the Sikhote-Alin, transgression of the Khanka lake, forming of small valley glaciers in the Pleistocene – did not cause any catastrophic consequences for biologic species association and helped increase its diversity. Combination of different geologic structures reflecting the continuous stages of Earth crust evolution – within relatively small territory – makes the Primorye the sample transitional area (from continent to ocean).

**Antropogenic development** of the nominated territory started in very ancient times. Ilou hunters (arrived from Zabaikalie) in the process of interaction with the local tribes created a new Tungus-language society (Mukri) in the 7th century AD. Its further development went very close connected to the history and culture of neighbour countries (Old Turkic and Old Mongolian people). Finally they came to form modern ethnoses of South Tungus language group – the Manchu, Udege, Orochis, Nanais, Ulchis peoples. In the middle of the 19th century when the Ussurijsky region finally became the part of Russia, aborigines had occupied the vast territory from Tatar Strait in the north to the southern tributaries of the Ussuri river.

In the 20's the Udege people had 4 territorial groups, each of them included different families' representatives. Each family occupied certain territory, but there was no land ownership. The collectivization among Bikin Udege people started in the second half of 30's. Population consisted of 13 camps was consolidated to 2 vil-

lages – Olon and Krasny Yar, where agricultural artels were founded and then united to the trade artel "Okhotnik". The main activities were hunting and wild-growing herbs gathering in the middle and upper parts of the Bikin river basin. Besides aborigines there lived and led the same way of life other peoples like Russians, Ukrainians, Belarus and other nationalities. The particular group was represented by Russian old believers – clerical outcasts hide away from Soviet regime pursuers and Orthodox church in the most far taiga stows and valleys, right in the places of traditional activities of aborigines. In addition with ingress of trade Chinese to taiga in the late 19th – early 20th centuries, the organized implementation of European culture representatives into the culture and life of aborigines, made on the nominated territory the unique, rare in the world synthetic culture of taiga treatment and use of its biological and spiritual energies, as well as the system of religious faiths, which has a bizzare interweaving of the Udege paganism, early churchless Christianity and naive Chinese Taoism.

Basically, at the turn of the 20th century, the Central Sikhote-Alin became the place on the Planet, where East and West - two eternal antipodes of the Earth civilization – true-life and really met, found common language and blended together. Economic activity of the Europeans managed not to become aggressive for unhasting, in some ways lazy (from European point of view) aborigines, and managed to absorb Chinese pragmatism and energy, excessive for even some Europeans, and to dissolve all of that into eternal harmony of great taiga, full of mysteries and pagan symbols. Bearing on this deep ethic-cultural and ethic-ecological synthesis, this harmony of taiga life, which was shared by representatives of each nationality on the nominated territory, legislators of the Primorye in 1933 managed to develop and approve the ideology and status of the ethnic territory of the Sikhote-Alin, based not on ethnic character, but on the character of prevailing human attitude to the nature of taiga. Unique character of this model was noted by society many times on the highest level, and nowadays it remains an invaluable patrimony of all mankind, desirable and hard-to-achieve standard for many territories, where interests of indigenous people and drastic settlers cross.

In 1962, the state production entity (gospromkhoz) was formed on the basis of the Okhotnik ('Hunter') artel in Krasny Yar village. The Pozharsky Gospromkhoz became one of the most effective forms for the management and development of the hunting production. By the middle of the 1970s, about 120 hunters worked there, including about 90 on a permanent basis. The hunting entity's boundaries formed at the time of the state production entity, and it is limited by them now, too, with its total area of 1,352,100 ha. Today in this territory, hunting is conducted by the Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger' created in Krasny Yar village in 2003. The community has united and organized the management of all the hunters who perform the production in this territory (Krasny Yar, Olon, Yasenevoye, Sobolinoye, and Okhotnichye villages). In 2008, The Tiger Territorial-Neighbour Community of Indigenous Small-Numbered Peoples has been

assigned the rights to use the animals (Primorsky Kray Governor's Resolution No. №571-pa dated October 07, 2008, "On Giving the Territory and Waters 1,352,100 in area to the Kinship Community 'The Tiger' for 10 Years in Order to Use the Animals". License 25 No. 000027 dated November 13, 2009. Long-term license No. 2 dated November 17, 2008).

For the indigenous minorities (the Udege and Nanais people) as well as for early settlers of Russian Far East, the reasonable and sparing use of natural resources is typical from ancient times. Traditional activities (hunting, fishing and, in a less degree, gathering) are mostly directed to satisfaction of local population needs. Till present days nobody from indigenous population will lift hand against deer dam, nobody will shoot a tiger, nobody will kill more wild fowl than can take with away from taiga by himself or more that it is necessary for his family. Due to these peoples' traditional way of life, culture, customs and attitude to nature, the nominated territory conserved the natural landscapes and wildlife on its state of nature. However today the existing way of life is at stake of serious transformation or even total disappearance. Its conservation and resurgence on the base of local initiatives is the task maybe more important that the simple provide of physical guard of nominated territory. Creation or renewal of strong ethno-cultural complex is much more reliable mechanism of nature and human protection from all negative impact from both sides.

Valleys of the Bikin and Bolshaya Ussurka (Iman) rivers are the last places in the world where the habitats of indigenous minorities of Far East people, Iman and Bikin groups of Udege people, are conserved. Their traditional way of life, permanently solicitous and respectful attitude to nature, peculiar ancient culture are closely connected with natural complex of Ussurijsky taiga. Hunting, fishing, wild-grow herbs gathering never were means of profit for them, - they take from taiga just minimum, necessary for self-support.

This territory contains nature-historical sites, widely respected by the Bikin Udege people and other minorities of Primorsky region, such as ancient camps (Bynga, Davastys, Laukhe, Metakheza, Kartun, Notovasigchi, Bejlaza, Kandagou, Khabagou, Tantsanza, Sidungou, Kate-Datani, Tugulu, Tsamo-Dynza, Sigou, Ulunga, Bajchelaza, Nyolo and others).

This territory contains ancestor's burials, sacred mountain Sulaymay and other sites that comprise the base of ethnic culture of the Udege people and other native peoples of Primorsky region. Moreover, this territory is natural habitat of Siberian tiger (*Panthera tigris altaica*), which is a sacred animal for the Udege people.

### The History of Protecting the Middle and Upper Bikin

State federal, regional and municipal authorities over and over again recognized the necessity of conservation of middle and upper Bikin river basin territory to create favorable conditions for indigenous people economic development based on traditional use of natural resources and conservation of unique natural ecosystems and for providing conditions for ecologic and ethnologic tourism. In 1971 in the middle part of Bikin river a nutwood commercial zone with principal felling prohibition was established (Resolution of RSFSR Council of Ministers № 535, dated 27.09.1971 and № 581, dated 25.10.1971).

As per decision of Primorsky Executive Board of Regional Council № 618 "On additional securing of nutwood commercial zones", the nutwood commercial zone situated in middle part of Bikin River valley was completed for long-term enjoyment for Pozharsky State Economics for Hunting and Trade Administration. It was confirmed by RSFSR State Planning Committee № 163, dated 14.09.1979.

Special chapter of "Long term Program till 2005 on Primorsky Kray nature conservation and rational use of nature resources" (Environmental

Program, adopted by 5th Session of 21st convening of Primorsky Kray Regional Council on 28.06.1991) titled "Primorsky Kray SPAs system" specified so-called "ethnical territories" with total area of 19 800 km<sup>2</sup> including upper and middle reaches of Bikin River basin with area of 12 500 km<sup>2</sup>, the main place of Udege living and trade, for reservation and separation into special environmental fund. The same Programme labeled Upper Bikin with total area of 71 000 ha as perspective for conservation among territories of continental part of Ussurijsky forests natural complex. The following items are pointed out there under the character of conservation sites: spruce-fir forest complexes enriched with Manchu flora including group of Tertiary relics; 20 species of plants listed in Red Data Book, 34 species of vascular plants growing at the boundary of their habitat.

In 1992, the special regime and ways of forest fund usage were established within the territory of upper and middle part of Bikin River valley with total area of 1250 thousand ha by the Resolution of Soviet of Nationalities of Supreme Soviet RF № 4537-1, dated 24.02.1992, "On natural complex of Udege, Nanaj and Oroch living in Pozharsky District of Primorsky Kray" and by

the Decision of Minor Council of Primorsky Kray of Council of People's Deputies № 316, dated 25.08.1992, "On place of Primorsky Kray aboriginal indigenous residence and economic activity protection". Also all forests situated within the territory were subjected to reclassify in 1 group. The territory of traditional nature use by indigenous people living in Primorsky Kray was established within the territory of nutwood commercial zone on total area of 407.8 thousand ha by the Resolution of Head of Administration of Primorsky Kray (№ 165, dated 11.06.1992). After arriving at decision to reclassify the forests into 1 group, it was made a decision to lead a correction of the project on forest sector organization and development in Verkhne-Perevalnenskoye forestry by the Decision of 2nd Forestry Management Meeting of Primorsky Board of Forest Management in 1993.

In 1998, in the upper part of the Bikin River basin, the State Nature Landscape Sanctuary of kray significance was created (Primorsky Kray Governor's Decree No. 468 dated September

15, 1998) with a view to preserve the unique Sikhote-Alin's natural landscapes of universal value. It is 746.5 thousand ha in area.

Actively assisted by non-governmental nature-protective organizations, the creation of the state nature sanctuary of federal significance at the Bikin River in 2012 was included in the Conception of Developing the Federal Specially Protected Natural Territories in Russia for the period until 2020. (The Government's Resolution dated December 22, 2011, No. 2322-r, Sub-clause 1.5).

Finally, the RF Government's Decree dated November 3, 2015, No. 1187 'On Creation of the Bikin National Park' established the specially protected natural territory of federal significance in the middle and upper parts of the Bikin River's basin. The national park with a total area of 1,160,469 ha has been created in order to fulfil the Russian President's assignments (dated November 7, 2013, No. Pr-2624 and dated April 18, 2015, No. Pr-729).

## 1991-2016 Events

**28.05.1991** Primorsky Regional Council of People's Deputy arrived at decision № 145 "On Primorsky Kray SPAs net" and all territories included respective block of Environmental Programme are considered to be reserved. Including ethnical territory of middle and upper reaches of Bikin River.

**22.04.1992** Decree of the RF President "On high priority measures for the Northern indigenous small people residence and economic activity protection" where a mission on territory of traditional use of nature determination is set and proposals on national parks and preserves establishing within the areas of indigenous people living and husbandry are put forward.

**11.06.1992** The Resolution № 165 of Primorsky Kray Head of Administration "On the territory of traditional nature use of the indigenous small people of Pozharsky District" about granting the territory of traditional nature use of the indigenous small people situated in middle part of Bikin River basin (nutwood commercial zone) with protective status, the area of the territory is 407.8 thousand ha.

**24.02.1993** Resolurion of Soviet of Nationalities of Supreme Soviet RF № 4537-1 "On natural complex of Udege, Nanaj and Oroch living in Pozharsky District of Primorsky Kray" where a mission "to provide a formalizing of Upper Bikin agricultural lands the territory of traditional nature use and adjoin it to previously established territory in middle reaches of Bikin River" is set.

**25.08.1993** As per a Decision № 316 of Minor Council of Primorsky Krai of Council of People's Deputies "On place of Primorsky Krai aboriginal indigenous residence and economic activity protection" a special regime of forests usage in upper and middle parts of Bikin River basin within the total area of 1250 thousand ha is set, a special regime of forest usage in upper part of Bikin River valley is set and a mission on reclassification of forests in 1 group is set.

**08.07.1997** RF Government Decree № 843 "On Federal Target Programme "Siberian Tiger Conservation" is adopted and required that forestry management should be oriented on tiger (*Panthera tigris altaica*) conservation and net of national parks and federal preserves should be a guarantee of tiger rescue.

**15.09.1998** Verkhnebikinsky Landscape Preserve was established by the Resolution of the Primorsky Krai Governor № 468 with total area of 746 482 ha. An effort to let down the Preserve regime was made, but the Resolution of Governor was dissolved at law. New Regulations for the Preserve was approved by the Resolution of the Primorsky Krai Governor № 169-na dated 28.07.2008. Wood harvesting (trees, shrubs, and lians) is forbidden, except arrangements on care of stands. Forest sites involved in Preserve boundaries are subjected to allocation of specially protected sites along with design planning of forestries and forestry-based orders preparation. Traditional use of nature providing sustainable use of natural resources is admitted to minorities within the territory of Preserve.

**16.12.2001** As per decision of 25th Session of the World Heritage Committee Sikhote-Alin Reserve and State Zoological Reserve "Goralii" were inscribed on the UNESCO World Heritage List in nomination "Central Sikhote-Alin", and SPAs within the boundaries of Bikin River valley (territory of the territory of traditional nature use of the indigenous small people of the Pozharsky District minorities and Verkhnebikinsky Preserve) were recommended to be

inscribed on the List after drawing up a one whole management plan for all Bikin site.

**2002, spring – autumn.** Preparation of documentation on protective status granting the territory of traditional nature use situated in middle and upper parts of Bikin River valley by the Association of Indigenous Small People of Primorsky Krai (according to changed requirements adopted after 07.05.2001 FZ "On the territories of traditional nature use of the indigenous small people of the North, Siberia the Far East of Russian Federation").

**19.12.2002** Meeting of Krasny Yar and Olon villages' residents on the question of territory of the territory of traditional nature use establishing and coming to a decision to appeal to the Government.

**2003, March – April.** Primorsky lumberers actuated a process of question considering on reorganization or decrease of Verkhnebikinsky Preserve area with a view to begin cutting within its boundaries.

**28.05.2003** UNESCO World Heritage Centre addressed a letter to Governor of Primorsky Krai with request to consider the outstanding universal value of Upper Bikin while formulation of management project for this territory.

**28.05.2003** NGOs addressed letters signed by State and Regional Principal Environmental Specialists to the Ministry of Natural Resources and Ecology, to Primorsky Krai Forest Management and to Regional Legislative Assembly and also published it in mass media and Internet.

**29.05.2003** Ministry of Natural Resources and Ecology staff conference took place on the question of possible cuttings.

A report on "Environmental improvement in Russian Federation" prepared toward State Council General Committee meeting on June 4, 2003.

**02.06.2003** An official appeal and a set of documents for the territory of traditional nature use "Bikin" with total area of 1 352 000 ha establishing were surrendered to RF Government by the Association of Indigenous People of Primorsky Kray.

**09.06.2003** Meeting of Krasny Yar, Olon and Okhotnichiy villages' residents, adoption of the appeals addressed to V.V. Putin, President of Russian Federation, G.N. Seleznev, Chairman of the State Duma, S.N. Mironov, Chairman of the Federation Council, M.M. Kasianov, Chairman of the Government, and to lumberer companies "Terneyles" and "Primorsklesprom".

**16-17.08.2004** "Round table" - "Bikin conservation as factor of sustainable development of Udege people: reality and prospects".

**17-18.02.2005** "Round table" - "The territories of traditional nature use - reality and prospects".

**30.05.2005** Department of Regional Expansion. Moscow. Interdepartmental meeting on project Regulation of the model territory of traditional nature use of the indigenous small people of federal value "Bikin" and on preparation of proposals on RF Government regulatory enactment adoption. Adoption of the decision on launching the initiative of Department of Regional Expansion and the "Bikin" territory of traditional nature use admitted as efficient for conservation native habitat and traditional way of living of aboriginal people.

**08.06.2005** Meeting of General Committee of Russian Academy of Natural Sciences (protocol № 181) which put in a petition on national park establishing.

**03.06.2005** The Association of Indigenous People of Primorsky Kray addressed again to RF Government with a view to the "Bikin" territory of traditional nature use establishing.

**11.10.2006** Conference "Bikin Conservation" and establishing of NPO alliance "For Bikin". Vladivostok.

**08.07.2007** International meeting on ensures the rights of the indigenous small people and on Bikin River inclusion in World Heritage property "Central Sikhote-Alin". Vladivostok.

**07.10.2008** The Resolution of the Governor of Primorsky Kray (№ 571-pa) on occupation of hunting area within 1352100 ha territory by the community of the indigenous small people "Tiger" for a term of 10 years.

**02.06.2009** The Order of Forest Directorate of Primorsky Kray on providing The Tiger community with forest area within the Bikinskaya nut-production zone and the adjacent water protection zone with total area of 461 154 ha for a term of 49 years.

**02.07.2010** Creation of the specially protected natural territory of federal significance with conserving the traditional uses of the nature at the Bikin River was approved by A Strategy for Preserving the Amur Tiger in Russia (The Russian Ministry of Natural Resources and Environment's Resolution dated 2.07.2010, No. 25-r, Subclause 3.1.6 of the Action Plan).

**22.12.2011** Creation of the state nature sanctuary of federal significance at the Bikin River in 2012 was included in the Conception of Developing the Federal Specially Protected Natural Territories in the RF for the period until 2020. (The Government's Resolution dated December 22, 2011, No. 2322-r, Subclause 1.5).

**22.10.2012** At the informative meeting in Moscow with S. B. Ivanov, the Chief of Staff of the Presidential Executive Office of the Russian Federation, assignments were adopted to forbid felling in the basin of the Bikin River's upper and middle reaches (subclause 3.1) and to elaborate the issue of the optimal status for the federal specially protected natural territory (subclause 3.2). (Minutes dated October 25, 2012, No. A4-14831).

**22.02.2013** The Regulations concerning the territory of traditional use of the nature by the small-numbered peoples who reside in Pozharsky Municipal District was approved (Primorsky Kray Governor's Decree No. 72-па).

**07.11.2013** The Enumeration of the assignments concerning the Amur Tiger and Far Eastern leopard preservation issues approved by the RF President directed the Russian Federation Government jointly with the Primorsky Kray Administration to ensure the drafting and adoption of the normative legal act aimed at creating the specially protected natural territory of federal significance in the form of the national park in the basin of the Bikin River's upper and middle reaches, with paying a special attention to the necessity of settling the issue of the possible participation of the representatives of the indigenous small-numbered peoples who reside in this territory in its managerial bodies (No. Pr-2624).

**19.06.2014** At the informative meeting with the Primorsky Kray Governor, a decision was adopted concerning amendments to the federal law on the specially protected natural territories, concerning formation of the group of initiators in Krasny Yar village and concerning an ethnological expert examination of the national park project. WWF Russia and the Pacific Institute of Geography of the Far Eastern Division of the Russian Academy of Sciences were charged to draft the package of the ecological and economical substantiation documents for creating the Bikin National Park.

**03.11.2015** The Russian Ministry of Natural Resources and Environment signed the Russian Federation Government's Decree No. 1187 'On Creation of the Bikin National Park' in order to fulfil the Russian President's assignments.

**20.09.2016** The Regulations on the Bikin National Park, which takes into account the indigenous small-numbered peoples' rights, entered into force.



### 3 Justification for Inscription



**Siberian tiger**  
Photo by V. Solkin

### 3.1.a Brief Synthesis

The nominee National Park 'Bikin', about 1.2 million ha in area, occupies the middle and upper parts of the drainage basin of the Bikin River, a large right tributary of the Ussuri River, which goes 200 km and then flows into Amur, one of the most powerful water arteries of the whole East Asia. It is the Russia's region that is the most distant from the country's European part – Primorye Kray, more exactly – its northern, the least developed part that lies at the junction with Khabarovsk Kray, another region of Russian Far East. The site is located at latitudes of 46 47° north, in the southern part of the temperate zone, approximately 50 km westward from the coast of the Sea of Japan, 150 km eastward from the border between Russia and China, and 500 km northward from Vladivostok city, the capital of Primorye Kray.

The National Park is located on the western macroslope of the Sikhote-Alin mountain range, in its central part, and covers the heights from 200 to 1900 m above sea level. It includes practically undisturbed mountain taiga landscapes almost fully covered with forests (more than 95 %), with traces of ancient glaciations and volcanism, along with a greatly partitioned relief: numerous deep ravines, scree steeps, rocky ridges, insular mountains and greatly indented plateaus.

The Bikin River Valley is located within the Udvardi's biogeographical province Manchurian-Japanese Mixed Forest, which is relatively small in area; now only 2 World Natural Heritage properties are present there: Sikhote-Alinsky Reserve (Russia) and Shiretoko National Park (Japan).

By the wealth of the floristic composition, holocoenotic variety, abundance of relict and endemic, rare and vanishing species, the quantity of arboreal and shrubby stocks as well as other important parameters, these thick, sometimes impenetrable forests, the so-called Ussuriyskaya taiga, are among the first in the whole Northern Hemisphere.

It is one of the last reliable shelters of the Amur tiger in whole East Asia – therefore in the

whole world (the habitat of this subspecies lies within Russian Far East, North-Eastern China, and North Korea). Here, in the mountain valley, the predator still finds suitable conditions for habitation, reproduction and nutrition; its main enemy – Homo Sapiens – still penetrates here occasionally, and the traces of the stay and economic activities of the latter are minimal so far.

The Bikin River Valley is a real "tigers' nook", a reserve created by the nature and almost entirely surrounded by barely passable mountain ridges (with heights up to 2000 m), which have always preserved the local nature from human offensive. When talking about Russia's Far East, it is usually accepted to note the presence of "bears' nooks" here, which is absolutely correct and sounds very Russian, but in this case such wording is not quite suitable. What is at issue is the Amur tiger first of all, an extremely exotic representative of the animal world for Russian territory, whose habitat reaches the locality from China's side, as if opening a way to the unusual sub-tropical nature of South-Eastern Asia. The Bikin River Valley, this huge natural 'cup' 100 150 km across that provides shelter not only for the tiger but also for other taiga animals (including big ones such as the bear, elk, and Manchurian deer), can be compared in this respect with the famous Ngorongoro crater conservation area in Tanzania, one of the most famous African World Heritage properties.

This natural 'cup' contains the whole spectrum of altitudinal belts: from floodplain broad-leaf and low-mountain pine-broadleaf forests to medium-mountain dark and light coniferous forests as well as birch crooked forests, dwarf Siberian pine tangles and stony tundras. This permits talking about a high degree of integrity and representativeness of the territory.

This corner of nature has been conserved by not only natural reasons (the mountainous relief, difficult access, compactness) as well as the remoteness of this tract from the civilization, but also by virtue of the recently conferred federal protected natural territory status, which

will help to preserve the unique forests and their inhabitants more effectively henceforth than it was earlier.

From this viewpoint, the location of the national park at the boundary between the two large regions of the Russian Federation – Primorye and Khabarovsk Krays – is also quite important, as the territory development degree is the least at the junctions of different administrative-territorial allotments.

The distance between the site and the most densely populated – European – oblasts of Russia is 8–10 th. km, and the former is located in the south-easternmost outlying districts of Russia. The local nature is very contrasting: at the same time both taiga fauna together with Okhotsk flora representatives and southern species characteristic of North-Eastern China and North Korea (Manchurian species) can be found in the National Park 'Bikin', since it is located in the central part of the Sikhote-Alin. That is why the Bikin River Valley's nature, with its tigers, indigenous Udege population and unusually-looking Ussuriyskaya taiga with high pines, oaks, lindens, poplars, ash trees, and elms, along with lianas that entwine round them, tangles of the thorny medicinal eleutherococcus and aralia, the famous ginseng, the gorgeous Amur cork tree, various brightly-blooming southern plants, is exclusively exotic.

Thus, the Bikin River Valley, where the large national park was established in 2015, undoubtedly deserves the attention of international nature-protecting organizations and is

worth UNESCO patronage. At that, taking into account the district's similarity with the Russian World Natural Heritage property Central Sikhote-Alin, which already has the status and is geographically located relatively close (about 100–150 km), making the National Park 'Bikin' a nominee for extension of the existing nominated site seems the best option. The same criterion (x) is kept in mind together with the same two aspects: conservation of the Ussuriyskaya taiga as a unique plant formation and the support of the population of the Amur tiger inscribed on the International Red Data Book (refer to 3.1. b.).

The aforesaid is corroborated by the results of a comparative analysis conducted (refer to 3.2.): no obvious analogs of the Bikin River Valley's natural complexes have been found: neither among the existing or prospective World Heritage properties in different countries of the world (including China, Japan, and North Korea, where the most real competitors could hypothetically be discovered), nor among the reserves of the same geographical region (the south of Russia's Far East).

The outstanding global value of the Bikin River Valley (conformity to criterion (x)) has already been confirmed by IUCN experts and was reflected by the decision of the 25th session of the World Heritage Committee (Helsinki, 2001). Since 2010, the Bikin River Valley has been inscribed of Russia's Tentative List as a prospective extension of the existing nomination Central Sikhote-Alin (inscribed on the World Heritage List since 2001, according to criterion (x), too).

### 3.1.b Criteria under Which the Inscription is Proposed (and Justification for Inscription under These Criteria)

The Bikin River Valley fully meets criterion (x), and this manifests itself in the following two aspects:

**- Conservation of the large, compact and undisturbed broadleaf and pine-broadleaf Far-Eastern forest tract ("Ussuriyskaya taiga")**

The pine-broadleaf complex in the upstream and especially middle stretch of the Bikin River is in fact the sole East-Asian (consequently, the world's one) such a large, well-conserved, and integral tract of Ussuriyskaya taiga, which was very widespread in this geographical region with monsoon climate and mountainous relief, between the River Ussuri and the coast of the Sea of Japan, in the old days.

Compactly represented in the Bikin's basin, the broadleaf and pine-broadleaf forests (with a total area exceeding 800 th. ha, i. e. approximately 2/3 of the National Park's area) are actually full analogs of Eurasia's preglacial broadleaf forests, but such ecosystems have almost completely transformed or disappeared entirely on the rest of the territory. More than 95 percent of this vast territory is covered with forests; it is located on the western macroslope of the Sikhote-Alin range; it is the sole large basin where trees have never been felled, and that is why it is only this site that can give the idea about how Ussuriyskaya taiga looked like till the mid 19th century.

As a variety of East-Asian broadleaf and mixed forests, Ussuriyskaya taiga may be well recognized as a leader by the biodiversity degree, since these tracts are logically reputed to be among the richest and the most original forest types by the species composition in the whole Northern Hemisphere. These virgin forests play an extraordinarily important role for sustaining the taiga inhabitants' gene pool.

The valley forest tract is notable for its high concentration of rare, vanishing, and relict

plant species. 22 plant species are inscribed on the Russian Red Book and 2 species of vascular plants are in the IUCN Red List. Here the boundaries of habitats of 34 vascular plant species are located: Therorhodium redowskianum (*Rhododendron redowskianum*), Siberian cypress (*Micro-biota discussata*), wrinkled holly (*Ilex rugosa* Fr.), *Bergenia classifolia* var. *pacifica* (*Bergenia pacifica*), roseroot (*Rhodiola rosea*), and this is not the full list of them.

The synthetic character of the flora and fauna of the territory under research is of a great importance: at the same time here one can find both taiga fauna along with Okhotsk-Kamchatka flora representatives characteristic of the more northern districts of Russian Far East and south-ern species typical of North-Eastern China and North Korea – Manchurian species (the same mixture of the various species, both northern and southern ones, is a peculiarity of the Sikhote-Alinsky Reserve, which is proposed to be supplemented with the National Park 'Bikin').

Besides the indubitable nature-protective value, this taiga tract is important for sustaining the habitat of the Bikin River basin autochthons – the Bikin group of the Udege and Nanai. These small-numbered peoples have been populating this territory for many centuries; recently their number has noticeably decreased, their cultural originality is gradually lost and is preserved only on separate "breeding grounds", the River Bikin being one of them.

Finally, the Bikin River Valley, with its virgin forests, is essential for preserving the Earth's climate (global warming, Kyoto Protocol): it is a huge reservoir of CO<sub>2</sub> that makes it possible to retain and conserve carbon dioxide as organic substance – wood (please refer to Section 2 of this nomination for more detailed information about Ussuriyskaya taiga in the Bikin River Valley).

**- The population of the Amur tiger inscribed on the IUCN Red List as an endangered sub-species**

Along with the Sikhote-Alinsky Reserve already inscribed on the UNESCO List, the Bikin River Valley is a key dwelling place of the Amur tiger (*Panthera tigris altaica*) within its area of habitation, which has catastrophically shrunk over the last several decades and has split into separate loosely connected with each other spots of primary taiga that have remained whole only within reserves and national parks. It is here that by the mid last century one of the last breeding grounds of the Amur tiger had been conserved, thanks to which this unique cat has managed to renew its habitation area in Russia. By now in the Bikin River Valley about 40 tigers have been recorded, which make up approximately 10 % of the total population.

The Amur tiger population can be characterized as quite problem-free at the Bikin. Over the last decades, the relatively high and stable number of them has been noted here. This is favored by conservation of large pine-broadleaf forest tracts on this territory, a good state of the tiger's nutritive base, difficult access to the territory and limited hunting as well as the respectful attitude towards the predator by the autochthons: the Udege and Nanai people.

The tiger is especially attached to the broadleaf and pine-broadleaf tracts in the middle part of the Bikin River, but the animal is more and more often noted near its upstream stretch, in the mountains, where only dark coniferous forests grow.

Establishment of the regime of a federally-subordinated protected natural territory in this locality in 2015 will undoubtedly favor

the successful renewal and preservation of the tiger population. Along with other Russian reserves of this region (the Sikhote-Alinsky, Lazovsky, Us-suriysky, and Botchinsky Reserves; the National Parks 'Call of the Tiger', 'Udegeyskaya Leg-enda', Anyuysky and 'Land of the Leopard'), the National Park 'Bikin' will become a most important element of the united 'tigers' econet' formed now in the south of Russia's Far East (please refer to Section 2 of this nomination for more detailed information about the Bikin population of the Amur tiger).

Moreover, the nominee territory is inhabited by some other rare and vanishing animal and plant species, which also meets criterion (x).

For example, the IUCN Red List includes 2 species of vascular plants and 5 vertebrate animal species (Amur tiger (*Panthera tigris altaica*), hooded crane (*Grus monachus*), scaly-sided merganser (*Mergus squamatus*), Blakiston's fish-owl (*Ketupa blakistoni*), and white-tailed sea-eagle (*Haliaeetus albicilla*)).

The Red Book of the Russian Federation contains: 22 plant species (including 17 vascular plant species, for example: ginseng (*Panax*), mountain peony (*Paeonia oreogeton*), and Chinese peony (*Paeonia lactiflora* Pall.)); 5 species of fungi and lichens; and 26 animal species, including 11 vertebrate species, out of which 10 are birds (for example, black stork (*Ciconia nigra*), mandarin duck (*Aix galericulata*), osprey (*Pandion haliaetus*), grey-faced buzzard (*Butastur indicus*), Siberian grouse (*Falco pennis falcipennis*), long-billed plover (*Charadrius placidus*), as well as 15 invertebrate species. Let us also mention that the Bikin and its tributaries contain a large quantity of a valuable resource for trophy fishing – the Siberian taimen, recently inscribed on the IUCN Red List.

### 3.1.c Statement of Integrity

The Bikin River's basin, which is located in the central part of the Sikhote-Alin mountain chain, is a united, integral and composite natural macrocomplex, the main components of which are closely connected by their common origin, history and evolutionary dynamics, as well as the peculiarities of the modern ecologic processes that take place here.

The protected territory has a shape of a huge, oval, and almost fully closed natural 'cup' about 100–150 km across, slightly open only in the west (towards the lower reaches of the Bikin River, Luchegorsk district center and Khabarovsk-Vladivostok highway). It means that the outer ring of the geochemically dominating landscapes (the upper parts of the mountain ridges and surfaces near to the summits) is in fact a buffer zone for the inner, geochemically dependent natural complexes (the low mountains, floodplain and terraces of the Bikin River). The boundaries of the national park have been drawn along the natural ones (watersheds), which, from the viewpoint of nature protection, is rated as a very important advantage, since it permits significantly enhancing the effectiveness of the restrictions imposed. All these make the protected mountain taiga landscape that covers the integral drainage basin highly resistant to external influences.

The national park comprises the whole characteristic spectrum of mountain taiga landscapes of the Central Sikhote-Alin: floodplain spots

and low mountains covered with broadleaf and pine-broadleaf forests (about 200–600 m high), medium mountain landscapes with their dark coniferous forests, larch forests, birch crooked forests and the dwarf Siberian pine (600–1600 m), and finally, a zone of bald mountains with scattered stones and mountain tundras that occupy the lofty spots (more than 1600 m high). I. e., this protected natural territory is highly representative.

From the viewpoint under consideration, it is important to note that the National Park 'Bikin' is located on the western, more gentle slopes of the Sikhote-Alin, which successfully supplements the main location of the Sikhote-Alinsky Reserve on the opposite, more steep eastern slopes.

The circumstance that the park is located relatively close to the Sikhote-Alinsky Biosphere Reserve, the National Park 'Udegeyskaya Legenda' and several sanctuaries of great significance also works for the integrity idea. All these make it possible to hope that a reliable regional 'econet' with effectively operating 'biocorridors' aimed at both preserving the tiger population and exchanging the genes among different spots of Ussuriyskaya taiga will be created in the near future. In other words, being self-sufficient and integral, the Bikin River Valley is a part of the more powerful system of the regional protected natural territories that pursue the analogous nature-protective goals.

### 3.1.e Protection and Management Requirements

Since 1993, the considered territory has been preserved under two regional statuses: TTNU – a Territory of Traditional Nature Use (the middle part of the Bikin River, about 400 th. ha) and Verkhnebikinsky Sanctuary ('zakaznik' in the Russian language, in the upper reaches, about 750 th. ha). The TTNU and the Sanctuary had a common border, adjoined each other, thus entirely covering the Upper and Middle Bikin. However, the regime imposed there was not strict enough to preserve the valuable – on the Eurasian and even worldwide scale – natural phenomena such as Ussuriyskaya taiga and the population of the vanishing Amur tiger.

In 2015, the two territories were united into one large federal-level protected natural territory – the National Park 'Bikin', the regime of which optimally satisfies the goals set. Under the existing Russian laws, "on the territories of the national parks, it is forbidden to conduct any activities that can damage the natural complexes, flora and fauna beings, cultural and historical objects and that contradict the goals and missions of the national park" (the Law "On the Specially Protected Natural Territories" No. 33-Φ3 adopted in 1995, Article 15, Subclause 2). Such problems as conservation of the native forest cover and populations of the rare animals are traditionally devoted paramount attention in Russia's national parks, and taking into account these factors, as a rule, the whole functional zonal system of the protected territory is built. It was so in this case: approximately 1/3 of the total territory of the National Park 'Bikin' has been defined as the 'reserve zone' (about 22 % of the total area) and the 'zone of special protection' (about 10 %). This clearly evidences that the purely nature-protective goals, along with recreational and educational ones, conservation of the cultural heritage properties and support of traditional nature use forms play an essential role here.

In conformity to the international classification (IUCN), Russian national parks belong to category II. It is the status that, though imposing less restrictions than Russian reserves (category Ia), enables rather a reli-

able conservation of separate sights – point nature monuments – and vast spots of both virgin and tame nature (cultural landscape). The last circumstance is crucial, because the discussed territory is compactly inhabited by representatives of the small-numbered indigenous peoples: Udege and Nanai, who continue to need the possibility of using the natural resources on the basis of reasonable, nature-saving consumption. One of the main missions of the National Park 'Bikin', its most important specificity consists in preservation of the way of life, traditions, and customs of the small-numbered Northern peoples (which is usually called sustainable development). According to the functional zonal scheme of the National Park 'Bikin', the traditional economy is permitted on approximately 2/3 of the total territory.

Further, practically the whole territory (99.9%) belongs to forest fund lands and is federally-owned (under the operational management of the Forestry Department of Primorye Kray Administration). It is managed by a specially created Directorate composed of specialists from all the necessary domains, including zoologists-gamekeepers – experts at preservation of tigers, forester – experts at maintenance of the unique broadleaf and pine-broadleaf tracts of the Middle and Upper Bikin, as well as ethnographers who study the autochthons' life activities. Moreover, it is planned to actively attract the local representatives to the management of the protected natural territory (it is already being done – the Territorial-Neighbor Community of Indigenous Small-Numbered Peoples 'The Tiger' works in the district).

However, the guarantees of reliable preservation of this locality consist not only in the federal protection status acquired recently, the united subordination and management by the single Directorate. The peculiarities of the territory and geographical position of the National Park 'Bikin' are important in this respect, first of all, such as: the difficult access, large size (about 1.2 million ha – the fourth in area among the 49 National Parks of Russia) and compactness of the tract that fully lies

within the Bikin River's drainage basin and is limited by the natural boundaries.

The nominee territory (it is the eastern, the least populated part of Pozharsky district of Primorye Kray) is rather distant from big human settlements, harmful industrial factories and are-as of intense farming. For example, the most considerable local human settlement – Luchegorsk district center, together with several small satellite settlements – is already outside the National Park's boundaries. The distance to the biggest city of the region, the kray center Khabarovsk (0.6 million inhabitants), is about 200–300 km. And only about 1000 people live in the several small settlements that lie inside the park boundaries. At present the anthropogenic load is minimal in the region and it has been minimal lately: at that, as it has already been noted, there has never been any significant felling in the region. At the same time, here most people have always (and are) engaged in hunting fur-bearing animals, fishing, picking various 'gifts of the forest' – wild fruits and herbs, procuring pine nuts and wood for personal needs; however, such activities, as it is known, are the least dangerous from the nature protection viewpoint. The civilization approaches the National Park from one side only – from the west, where logging districts are concentrated and there is a relatively well-developed infrastructure.

Preservation of the Bikin River's drainage basin is additionally guaranteed by the national park's protective zone, which functions as an important buffer on its western outskirts, in order to protect the territory from a direct contact with the logging districts.

Finally, let us note that organization of the national park in the Bikin River Valley will favor popularization of the property, since before this the touristic development of the territory was spontaneous and unorganized, sometimes with elements of poaching, which was dangerous for the forests and animals, especially for the fish resources. Great hopes are set on development of the organized tourism (especially sport fishing, ecotourism and aboriginal tourism) in future.



## 3.2 Comparative Analysis

In 2001 the World Natural Heritage status was conferred on the Sikhote-Alinsky Biosphere Reserve (about 400,000 ha in area) and the nearby Goralii Sanctuary (about 5,000 ha in area), which were nominated according to criterion (x) for the two main reasons:

- taking into account the universal value of the native dark coniferous, light coniferous, coniferous-broadleaf and broadleaf forest tracts that have remained intact here (the so-called 'Us-suriyskaya taiga');
- as a key habitat of the Amur tiger (*Panthera tigris altaica*), an endangered subspecies listed on the International Red List.

The Bikin River Valley, which is recommended as extension of the existing nomination, is of the universal value in the same two aspects and is therefore an excellent addition to the Sikhote-Alinsky Reserve territory. And it is important to note that both the Ussuriyskaya taiga and the tiger are 'narrowly localized natural properties' preserved just in few 'core areas', mostly in the south of the Russian Far East. The destiny of the Ussuriyskaya taiga as a unique ecosystem and the survival of the Amur tiger, who is a very rare wild predator, depend on the state of these 'core areas'. Protection of only one of these few 'core areas' is essential but not enough.

This is why we should discuss transformation of the existing Central Sikhote-Alin World Natural Heritage site into a serial property that would include if not all but at least the main districts of the Ussuriyskaya taiga growth and the most important habitats of the Amur tiger.

### A) USSURIYSKAYA TAIGA

#### THE GLOBAL CONTEXT:

#### Comparison with Other World Heritage Properties that Include Mixed and Broad-leaf Forests

As it is known, three main regions of mixed and broadleaf forest growth can be marked out: 1) North America (east of the USA and south-east of Canada); 2) Eastern Asia (south of the Russian Far East, Japan, Korea and north-east of China); 3) Western and Eastern Europe (Great Britain, France, Germany, Poland, Belarus, Ukraine, some other countries, and a significant part of the European territory of Russia).

In whole, these areas correspond to one of the biomes from M. Udvardi's classification of the biogeographical provinces – Temperate Broadleaf Forests. They are confined mainly to the southern part of the Temperate Zone (as well as to the northern regions of the Subtropical Zone) and are located between the latitudes of 30–50 degrees north. The high humidity of the climate (in the Eastern Asia it is conditioned by influence of the monsoons) and the relatively warm average annual air temperatures are the most important conditions for such forests to form.

The European forests, which have been greatly changed, are sensibly inferior to the North American and especially Asian ones by the wealth of their floristic composition, holocoenotic variety, abundance of relic and endemic, rare and vanishing species, number of arboreal and shrubby stocks and other important parameters.

A variation of the East Asian mixed and broad-leaf forests, the Ussuriyskaya taiga can be well recognized as a biodiversity leader, because these tracts are logically considered to be among the richest and the most original forest types by their species composition in the Northern hemisphere. Table 6 clearly illustrates this fact by showing that the Bikin River Valley outstrips, by some important charac-

teristics, or is approximately equivalent to the other areas of the world mixed and broadleaf forests that already have the World Heritage status. The following are the most important in this comparison:

1) Not all the indicated sites – the potential analogues of the Bikin – were nominated for the UNESCO List according to criterion (x), but only some of them. This demonstrates that the priorities of inscribing such sites onto the UNESCO List were not related to any special biodiversity or presence of globally rare animal and plant species.

2) The East Asian mixed and broadleaf forests (and the Bikin River Valley in particular) differ from the North American and European forests in principle by their species composition for understandable natural reasons. The great differences are observed in the standing trees as well as in the shrubby and herbaceous layers. As a rule, the affinity can be traced only at the levels of a genus, a family and higher taxonomic ranks. Thus, neither Great Smoky Mountains National Park nor several European World Heritage properties can be considered analogous to the Bikin River Valley.

3) The Bikin River Valley differs from its nearest East Asian 'geographic neighbors', i. e. from other forest World Heritage properties, in its huge area (about 1.2 million ha) of practically intact dense forests (of almost 100% coverage) (the area of the neighboring Chinese and Japanese World Heritage properties does not exceed 25 thousand ha, the forests sometimes covering only 50-60% of the land). Moreover, the species composition of those heritage properties is noticeably different from the Bikin vegetation, although certain similarity can be noted.

4) The Sikhote-Alinsky Reserve had been the only property with the World Heritage status within the Manchu-Japanese Mixed Forest biogeographical province until 2005, when the same high status was conferred to Shiretoko, a small national park in the north-east of the Japanese Hokkaido island. However, despite having some common characteristics (for example, the monsoon climate and mountainous relief), Shiretoko and the Bikin River Valley (which belong to the same biogeographical province) cannot be recognized as analogues. For example, Shiretoko is a small peninsula, but not a vast mountain valley as the Bikin, i. e. the sites' sizes are disparate. Moreover, the Japanese heritage property includes the marine waters and several offshore spots as its essential features (the interaction between the land and the sea is highlighted). The ice cover that forms in the shallows (it is the southernmost place in the Northern Hemisphere where coastal ice forms in wintertime) is a peculiarity of Shiretoko. In addition, though they have some common species and both of their floras are synthetic (the northern and southern species are combined), the floral characteristics of the Bikin and Shiretoko are notably different. Finally, if we talk only about the fauna, the Bikin's universal value is mainly related to the Amur tiger that dwells here. At the same time, the universal value of Shiretoko is related to some rare and vanishing species of seabirds and birds of passage as well as to the various salmonid fishes and marine mammals including cetacea.

**Table 6. Characteristics of the World Heritage properties that include mixed and broadleaf forest tracts (Northern Hemisphere, southern part of the Temperate Zone and northern part of the Sub-tropical Zone)**

Name of the World Heritage property / UNESCO criteria	Location / geographic coordinates	Biogeographical province according to Udvardi's classification	Area of the heritages property / percentage covered with forest	Number of vascular plant species	Prevalent arboreal stocks
<b>Great Smoky Mountains, the USA</b> <i>vii, viii, ix, x</i>	South-east of the USA  35° N, 83° W	Eastern forest	209 thousand ha / 80 90%	More than 3.5 thousand	White spruce, etc ( <i>Picea alba</i> , etc), Canadian hemlock ( <i>Tsuga canadensis</i> ), Douglas fir ( <i>Pseudotsuga menziesii</i> ), Weymouth pine ( <i>Pinus strobus</i> ), northern red oak, etc ( <i>Quercus rubra</i> , etc), red maple, etc ( <i>Acer rubrum</i> , etc), American beech ( <i>Fagus grandifolia</i> , etc), tulip tree ( <i>Liriodendron tulipifera</i> ), hickory ( <i>Carya</i> )
<b>Plitvice Lakes</b> CROATIA <i>vii, viii, ix</i>	Eastern Europe  44° N, 15° E	Mediterranean Sclerophyll	29.5 thousand ha / 60 70 %	More than 1200	European beech ( <i>Fagus sylvatica</i> ) – 73%, fir ( <i>Abies sp.</i> ) – 22%,  spruce ( <i>Picea sp.</i> ) - 5%, pine ( <i>Pinus sp.</i> ) – less than 1%
<b>Bialowieza Forest</b> POLAND-BELARUS <i>vii</i>	Eastern Europe  52° N, 23-24° E.	Middle European Forest	112 thousand ha / about 90%	More than 900	Norway spruce ( <i>Picea abies</i> ), Scots pine ( <i>Pinus sylvestris</i> ), pedunculate oak ( <i>Quercus robur</i> ), Norway maple ( <i>Acer platanoides</i> ), littleleaf linden ( <i>Tilia cordata</i> ), European ash ( <i>Fraxinus excelsior</i> ),  European beech ( <i>Fagus sylvatica</i> ), common hornbeam ( <i>Carpinus betulus</i> ), aspen ( <i>Populus tremula</i> )

<p><b>Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany</b></p> <p>SLOVAKIA-UKRAINE-GERMANY</p> <p><i>ix</i></p>	<p>Eastern and Western Europe</p> <p>48-49° N</p> <p>22-24° E</p>	<p>Middle European Forest</p>	<p>15 spots with a total area of 33.7 thousand ha /</p> <p>80-90%</p>	<p>About 1 thousand</p>	<p>The European beech (<i>Fagus sylvatica</i>) is the absolute dominant, also oak (<i>Quercus sp.</i>), linden (<i>Tilia sp.</i>), maple (<i>Acer sp.</i>), hornbeam (<i>Carpinus sp.</i>), pine (<i>Pinus sp.</i>), spruce (<i>Picea sp.</i>) and fir (<i>Abies sp.</i>)</p>
<p><b>Shiretoko</b></p> <p>JAPAN</p> <p><i>ix, x</i></p>	<p>North-east of Hokkaido island</p> <p>43° N</p> <p>144° E</p>	<p>Manchu-Japanese Mixed Forest</p>	<p>56.1 thousand ha /</p> <p>80-90%</p>	<p>More than 700</p>	<p>Sakhalin fir (<i>Abies sachalinensis</i>), Glehn's spruce (<i>Picea glehnii</i>), Yezo spruce (<i>Picea ajanensis</i>), Mongolian oak (<i>Quercus mongolica</i>), painted maple (<i>Acer mono</i>), Japanese linden (<i>Tilia japonica</i>)</p>
<p><b>Shirakami</b></p> <p>JAPAN</p> <p><i>x</i></p>	<p>North of Honshu island</p> <p>40° N</p> <p>140° E</p>	<p>Oriental Deciduous Forest</p>	<p>10.1 thousand ha / more than 95%</p>	<p>More than 500</p>	<p>Siebold's beech (<i>Fagus Crenata</i>) is the absolute dominant</p>
<p><b>Yakushima</b></p> <p>JAPAN</p> <p><i>vii, x</i></p>	<p>Ryukyu islands</p> <p>30° с. ш.</p> <p>130° в. д.</p>	<p>Japanese Evergreen Forest</p>	<p>10.7 thousand ha / 90%</p>	<p>About 2 thousand</p>	<p>Hemlock (<i>Tsuga sieboldii</i>), momi fir (<i>Abies firma</i>), Japanese red cedar (<i>Cryptomeria japonica</i>), as well as beech (<i>Fagus sp.</i>) and oak (<i>Quercus sp.</i>)</p>
<p><b>Taishan</b></p> <p>CHINA</p> <p><i>i, ii, iii, iv, v, vi, vii</i></p>	<p>Eastern China</p> <p>36° N</p> <p>116-117° E</p>	<p>Oriental Deciduous Forest</p>	<p>25 thousand ha / 70-80%</p>	<p>About 1 thousand</p>	<p>Pine (<i>Pinus sp.</i>), spruce (<i>Picea sp.</i>), cypress (<i>Cupressus sp.</i>), oak (<i>Quercus sp.</i>)</p>
<p><b>Huangshan</b></p> <p>CHINA</p> <p><i>ii, vii, x</i></p>	<p>Eastern China</p> <p>30-31° N</p> <p>118° E</p>	<p>Oriental Deciduous Forest</p>	<p>15.4 thousand ha / 50-60%</p>	<p>More than 1.6 thousand</p>	<p>Pine (<i>Pinus massoniana</i>, <i>Pinus huangshanensis</i>), oak (<i>Quercus stewardii</i>), beech (<i>Fagus engleviana</i>)</p>
<p><b>Emeishan</b></p> <p>CHINA</p> <p><i>iv, vi, x</i></p>	<p>Central China</p> <p>29° N</p> <p>103° E</p>	<p>Oriental Deciduous Forest/ Subtropical Chinese Forest</p>	<p>18 thousand ha / 80-90%</p>	<p>More than 3 thousand</p>	<p>Oak (<i>Quercus sp.</i>), beech (<i>Fagus sp.</i>), pine (<i>Pinus sp.</i>), fir (<i>Abies sp.</i>), many subtropical stocks</p>

<p><b>Central Sikhote-Alin</b> (Sikhote-Alinsky Reserve) RUSSIA x</p>	<p>South of Russian Far East 44-45° N 135-136° E</p>	<p>Manchu-Japanese Mixed Forest</p>	<p>About 400 thousand ha / more than 95%</p>	<p>About 1.2 thousand</p>	<p>Yezo spruce (<i>Picea ajaiensis</i>), Hinggan Fir (<i>Abies nephrolepis</i>), Dahurian larch (<i>Larix Gmelinii</i>), Korean pine (<i>Pinus koraiensis</i>), Mongolian oak (<i>Quercus mongolica</i>), lobed elm (<i>Ulmus laciniata</i>), Amur linden (<i>Tilia amurensis</i>), Arahaga maple (<i>Acer ukurunduense</i>) and Manchurian striped maple (<i>Acer tegmentosum</i>), Amur cork tree (<i>Phellodendron amurense</i>), Manchurian walnut (<i>Juglans mandshurica</i>)</p>
<p><b>Bikin National Park</b> RUSSIA x</p>	<p>South of Russian Far East 46-47° N 135-138° E</p>	<p>Manchu-Japanese Mixed Forest</p>	<p>About 1,2 million ha / more than 95%</p>	<p>About 1 thousand</p>	<p>Yezo spruce (<i>Picea ajaiensis</i>), Hinggan fir (<i>Abies nephrolepis</i>), Dahurian larch (<i>Larix Gmelinii</i>), Korean pine (<i>Pinus koraiensis</i>), Amur linden (<i>Tilia amurensis</i>), Japanese elm (<i>Ulmus propinqua</i>), Japanese poplar (<i>Populus maximoviczii</i>), Manchurian ash (<i>Fraxinus mandschuricus</i>), Asian white birch (<i>Betula mandshurica</i>), vetla (<i>Chosenia arbutifolia</i>)</p>

There are also several mountain forest reserves and parks – World Natural Heritage properties, which are located approximately at the same latitudes and also include mixed and broadleaf forest tracts. For example, these are the **Western Caucasus** property in the south of Russia (x), the **Durmitor Park in Montenegro** (vii, viii, x), **Canadian Rocky Mountain Parks** (vii, viii) and **Olympic Park** in the north-west of the USA (vii, ix). Also, quite a new property inscribed on the UNESCO List in 2016: **Hubei Shennongjia forest reserve** in the Central Eastern China (criteria ix, x), which represents the neighbouring biogeographical province – Oriental Deciduous

Forest – in the subtropics, is one of them and is one of the main breeding grounds for biodiversity in China. However, unlike the low and medium mountain territory of the Bikin National Park (with the maximal marks of about 1600–1700 m), where the mixed and broadleaf tracts are zonal, all the aforementioned are real highlands up to 3–4 km and more, where the forest tracts we are interested in are only one of the altitudinal belts.

Thus, no evident analogues for the Bikin National Park and for the Sikhote-Alinsky Reserve, with their vast tracts of the Ussuriyskaya taiga, have been found among the World Natural Heritage properties.

Finally, judging by the content of the Tentative World Heritage Lists of the countries the territories of which overlap the mixed and broadleaf forest zone (USA and Canada, China, Japan and DPRK, some European countries), there are no obvious analogues of the Bikin National Park among the prospective properties either. For example, **Atikaki/Woodland Caribou**, which is located in the central provinces of Canada, is among the prospective ones. It is a mixed heritage property: a cultural and a natural one, nominated, inter alia, according to criterion (x). However, as a matter of fact, it is classic taiga of the Temperate Zone. The Chinese **Jinfushan Forest Park** is another property in the Tentative List; it lies at a latitude of 29 degrees, id est considerably further south than the Sikhote-Alin, in the subtropical zone. Let us also mention the proposed extension of the serial transboundary property that includes the most preserved spots of beech forests in Slovakia, Ukraine, and Germany – **Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany** (criterion ix). Now it is planned to include surviving beech forests located in the territories of other European countries – Albania, Austria, Belgium, Bulgaria, etc. (12 states in total) – in it. But as it can be easily understood, this type of forest differs in essence from the Ussuriyskaya taiga considered herein.

### REGIONAL CONTEXT:

#### Comparison with Other Specially Protected Territories in the South of the Russian Far East

Ussuriyskaya taiga is a unique ecosystem that has formed in the south of the Russian Far East, where the taiga zone of the temperate belt gradually turns into the moist deciduous (monsoon) forests of the subtropics. It is here, in the basin of the Ussuri River (a right tributary of Amur), on the slopes of the Sikhote-Alin range, that it is represented the most fully. It is in the central part of the range (to which the Sikhote-Alinsky Reserve and Bikin River Valley belong) that one can meet both the northernmost variations of this taiga (with prevalence of dark the coniferous stocks – Yezo spruce (*Picea ajanensis*) and Hinggan fir (*Abies nephrolepis*) – the so-called Okhotsk flora) and more southern ones (with prevalence of native pine-broadleaf tracts and clear evolution of the so-called Manchurian flora).

The mixed – pine-broadleaf forests as well as seaside oak and other broadleaf – forests occupy about a half of the total area in the Sikhote-Alinsky Reserve. And the pine-broadleaf forests together with the broadleaf forests proper occupy at least 20 percent of the territory of the Bikin National Park, the forests being the most fully represented in the middle part of the Bikin River basin.

Along with this, other significant protected natural territories of this region of Russia could also be under consideration as extension of the Central Sikhote-Alin property, since they represent the same ecosystem – Ussuriyskaya taiga. But these protected natural territories are still not so promising as the Bikin River Valley.

On the one hand, these are reserves of the south of Primorye Kray: **Lazovsky** and **Ussuriysky**, as well as the **Call of the Tiger** and **Land of the Leopard National Parks**, which represent the broadleaf and pine-broadleaf forests as well as the Manchurian flora rather well. However, the areas of these protected territories are relatively small (121, 40, 82 and 80 thousand ha respectively). Further, they do not show the same wide variety of the ecosystems as the

Bikin River Valley (evident domination of the southern variations of Ussuriyskaya taiga and lack of the northern ones). Moreover, these protected natural territories are significantly far from the main one – Sikhote-Alinsky Reserve (approximately 200–400 km southward), and geographically some of them are already not a part of the Sikhote-Alin mountain range and exceed its bounds.

On the other hand, the protected natural territories in the south of Khabarovsk Krai that are located 300–400 km to the north of the Sikhote-Alinsky Reserve – **Botchinsky Reserve** and **Anyuysky National Park** – are the ones. Their significant areas (267 and 429 thousand ha respectively) allow considering them to be prime taiga reserves; however, they are located not in the central, but in the northern part of the Sikhote-Alin, with all the specificity that follows from this (the evidently prevailing northern subkind of Ussuriyskaya taiga).

It is the **Udegeyskaya Legenda National Park** (the western slopes of the Central Sikhote-Alin, 88.6 thousand ha) that deserves to be specially mentioned in this aspect. In perspective, it could be considered as one more cluster of the Central Sikhote-Alin nomination. The park is located between the Sikhote-Alinsky Reserve and the Bikin National Park, including the valuable virgin Ussuriyskaya taiga tracts.

Thus, the mentioned protected natural territories reflect various parts of the Sikhote-Alin mountain system, and all of them belong to the coniferous-broadleaf as well as broadleaf Far Eastern forests. It is all of them could hypothetically be considered as augmenters of the existing Central Sikhote-Alin nomination. Nevertheless, the Bikin National Park greatly outstrips the afore-mentioned reserves both by the area of the Ussuriyskaya taiga within the boundaries and by preservation of these tracts, which has been conserved practically intact, the northern forms of Ussuriyskaya taiga combining with its southern varieties successfully and organically.

## B) THE AMUR TIGER

### GLOBAL CONTEXT: Comparison with Other World Heritage Properties where Various Subspecies of the Tiger are Protected

The Amur tiger (*Panthera tigris altaica*) is one of the 5 tiger subspecies who have survived in the wild by now. This beast was mentioned in the most endangered category – Critically Endangered – of the International Red List relatively not long ago; by now it has been moved to the category of Endangered animals. The Amur tiger dwells on a very limited area – mainly in the south of the Russian Far East, and the coniferous-broadleaf forests that cover the Sikhote-Alin slopes are the optimal habitat for the animal. Almost the whole today's world population of the Amur tiger is associated with this habitat, i.e. approximately 450 500 animals. Also, about 20 tigers of the same subspecies dwell in the adjacent Chinese districts.

The Amur tiger can be met nowhere outside this area; and none of the rather numerous World Natural Heritage properties located in Southern, Eastern and South-Eastern Asia, famous for their rare fauna and inscribed on the UNESCO List according to criterion (x) can be said to pre-serve this tiger subspecies, except for the one – the Russian property Central Sikhote-Alin. The Indian, Nepalese, Indonesian, Thai and Bangladeshi World Natural Heritage properties enumerated below meet the challenge of preserving other tiger subspecies, mainly the Bengal tiger (*Panthera tigris tigris* or *Panthera tigris bengalensis*), Indochinese tiger (*Panthera tigris corbetti*) and Sumatran tiger (*Panthera tigris sumatrae*) (refer to Table 7).

**Table 7. Characteristics of the World Heritage properties where tiger subspecies are protected**

Name of the World Heritage property / UNESCO criteria	Location / geographic coordinates	Area of the Heritage property	Tiger subspecies / international rarity category	Approximate total numbers of the tiger in the wild / numbers within the property
<b>Sundarbans</b> INDIA– BANGLADESH <i>vii, viii, ix, x</i>	Ganges delta 21-22° N 88-90° E	About 270 thousand ha	Bengal tiger ( <i>Panthera tigris tigris</i> or <i>Panthera tigris bengalensis</i> )/ Endangered	1.7-2.5 thousand / about 260
<b>Kaziranga</b> INDIA <i>ix, x</i>	Eastern India 26° N 93° E	43 thousand ha	Bengal tiger ( <i>Panthera tigris tigris</i> or <i>Panthera tigris bengalensis</i> )/ Endangered	1.7-2.5 thousand / about 90
<b>Manas</b> INDIA <i>vii, ix, x</i>	North-Eastern India 26° N 90-91° E	50 thousand ha	Bengal tiger ( <i>Panthera tigris tigris</i> or <i>Panthera tigris bengalensis</i> )/ Endangered	1.7-2.5 thousand / ?
<b>Royal Chitwan</b> NEPAL <i>vii, ix, x</i>	South of Nepal 27° N 83-84° E	93 thousand ha	Bengal tiger ( <i>Panthera tigris tigris</i> or <i>Panthera tigris bengalensis</i> )/ Endangered	1.7-2.5 thousand /ok. 80
<b>Thungyai-Huai-Kha-Khaeng</b> THAILAND <i>vii, ix, x</i>	Western Thailand 15-16° N 98-99° E	600 thousand ha	Indochinese tiger ( <i>Panthera tigris corbetti</i> )/ Endangered	550-1240/ ?
<b>Dong Phrayayen-Khao Yai</b> THAILAND <i>x</i>	Southern Thailand 14° N 102° E	615 thousand ha	Indochinese tiger ( <i>Panthera tigris corbetti</i> )/ Endangered	550-1240/ ?
<b>Tropical Rainforest Heritage of Sumatra</b> INDONESIA <i>vii, ix, x</i>	Sumatra island 2° N 110° E	2.6 million ha	Sumatran tiger ( <i>Panthera tigris sumatrae</i> ) Critically Endangered	300-680/ ?



<b>Central Sikhote-Alin</b> (Sikhote-Alinsky Reserve) RUSSIA x	South of Russian Far East 44-45° N 135-136° E	About 400 thousand ha	Amur tiger (Panthera tigris altaica)/ Endangered	450-500/30-40
<b>Bikin National Park</b> RUSSIA x	South of Russian Far East 46-47° N 135-138° E	About 1.2 million ha	Amur tiger (Panthera tigris altaica)/ Endangered	450-500/40

There are no evident competitors to the Bikin Park among the prospective nominations either. For example, if one studies the content of the Tentative Lists of those countries of the Southern, South-Eastern, and Eastern Asia that overlap the tiger’s habitat, they will find several reserves there; however, they preserve other subspecies of this predator (id est not the Amur tiger):

**Neora Valley National Park, India:** the Bengal subspecies (*Panthera tigris tigris*)

**Kaeng Krachan, Thailand:** the Indochinese subspecies (*Panthera tigris corbetti*)

**Cat Tien National Park, Vietnam:** the Indochinese subspecies (*Panthera tigris corbetti*)

**Peninsula Malaysia National Park:** Malaysia, the Malayan subspecies (*Panthera tigris jacksoni*)

**Shennongjia Nature Reserve, China:** the South China subspecies (*Panthera tigris amoyensis*)

**REGIONAL CONTEXT:**  
 Comparison with Other Specially Protected Territories in the South of the Russian Far East

Because the present-day habitat of the Amur tiger (*Panthera tigris altaica*) is very limited, the survival of the animal as a particular subspecies almost fully depends on the environmental protection measures (first of all, on creation of the specialized protected natural territories) in the Ussuriyskaya taiga zone, i.e. in Primorye Krai and in the south of Khabarovsk Krai.

As it is known, now the Central Sikhote-Alin World Heritage property is located in the zone; one of the main challenges of the Sikhote-Alinsky Reserve, its ‘core’, is to preserve this rare predator. The estimated number of the tigers who dwell in the Reserve is 30–40 animals, which is considered to be one of the biggest pockets of the subspecies within its whole habitat.

Considerably fewer tigers can be met in other protected natural territories of the south of the Russian Far East, for example, in **Lazovsky, Ussuriysky, Botchinsky Reserves** and in the recently established national parks: **Call of the Tiger, Udegeyskaya Legend, Ayunsky**, and Land of the Leopard. All these protected natural territories play an essential role in creation of a united ‘tigers’ econet’ in the south of the Russian Far East. However, the Bikin River Valley, especially its middle part, should be recognized as the second pocket in order of im-

portance for the Amur tiger habitation in the south of the Russian Far East. Owing to the vast and virgin Ussuriyskaya taiga tracts, the predator finds excellent conditions for living here. Approximately 40 animals dwell in the locality. They are the reproductive 'core' of the northern subpopulation of the Amur tiger that can be connected with the Sikhote-Alinsky Reserve through effectively acting 'biopassages' in view of the relatively short distance. For this reason it is the Bikin River Valley that is nominee number one to extend the existing Central Sikhote-Alin property in the context of preservation of the Amur tiger (*Panthera tigris altaica*) subspecies.

Let us also mention several regional sanctuaries that lie approximately in the same geographic region as the Sikhote-Alinsky Reserve and the Bikin National Park (the south of Khabarovsk Krai and the north of Primorye Krai). These are the regional **zakazniki (sanctuaries) Taiozhny, Ma-taisky, Chukensky, and Losiny**. They cannot be considered serious alternative options either. All these are relatively small mountain taiga territories that, though formally overlapping the Amur tiger's habitat as well as the coniferous-broadleaf forest zone, play a substantial role neither in the first aspect nor in the second. Let alone their regional (not federal) protection status.

### THE BRIEF SUMMARY:

The territory of the Bikin National Park, which was created in 2015 (it has become the 49th Russian national park), is of an exceptional, universal level value in the two following important aspects that belong to criterion (x):

1. The largest surviving tract of the virgin Ussuriyskaya taiga, a unique ecosystem now represented on the World Heritage List only by virtue of the Sikhote-Alinsky Reserve, is located here. The forest has never been felled at the Bikin; that is why it is only this site that can give the idea about how Ussuriyskaya taiga had looked like till the mid 19th century. So, the vast biome of Temperate Broadleaf Forests as well as the small biogeographical province of Manchu-Japanese Mixed Forest can be represented on the World Heritage List still more fully.

None of the other existing World Natural Heritage properties of Eastern Eurasia (except for the Sikhote-Alinsky Reserve) conserves such ecosystems so well. There are no analogues of Bikin in other regions of the world either (the east of North America and Western Europe), where mixed and broadleaf tracts are widespread, since forests identical to Ussuriyskaya taiga are absent from there at all.

2. This huge and virgin territory is a key dwelling place of the Amur tiger (*Panthera tigris altaica*), who is present on the International Red List as an endangered subspecies. Along with the Sikhote-Alinsky Biosphere Reserve, the Bikin River Valley is the most important dwelling place of this predator, who concentrates here in much greater numbers than in other reserves and national parks in the south of the Russian Far East. Inscription of the Bikin River Valley on the World Heritage List would make the 'tigers' econet' now formed in this region even more effective.

The other tiger reserves of the Southern, Eastern, and South-Eastern Eurasia that have already received the World Heritage status protect not the Amur subspecies but the other tiger subspecies: Bengal, Indochinese, and Sumatran ones.

Judging by the content of the Tentative Lists of those Asian countries where coniferous-broadleaf forests are also widespread and/or where tigers dwell (first of all, China, India, Thailand, Malaysia, and Vietnam), there are no analogues of the Bikin National Park among the prospective World Natural Heritage properties either.

Thus, the Bikin National Park is the largest and integral protected natural territory of the federal level located relatively close to the Sikhote-Alinsky Biosphere Reserve, and compared to the other alternatives available, is the most valuable one from the viewpoint of conservancy of the virgin coniferous-broadleaf forests and support of the Amur tiger population. It is the best option for extending the already existing World Heritage nomination – Central Sikhote-Alin, which was inscribed on the UNESCO List according to criterion (x) by virtue of the same aforesaid two reasons in

2001. The distance between the reserve and the closest part of the Bikin Valley is about 100–150 km. Moreover, from the viewpoint of geography and nature protection, it is well that the Bikin National Park is located on the western slopes of the Sikhote-Alin, while the Sikhote-Alinsky Reserve mainly covers the opposite, eastern slopes.

In perspective, new plots may be added to this growing nomination, first of all, the Udegeyskaya Legenda National Park, which lies between the two aforementioned large protected natural territories and is valuable from the viewpoint of protection of both the Ussuriyskaya taiga and Amur tigers, but not only that: this place is inhabited by the Udege – representatives of the small-numbered indigenous people whose life is inseparably linked with the surrounding natural setting; maintenance of their habitual way of life is a special task.

It is also sensible to study the possibility to add the Land of the Leopard National Park (recently formed in the south of Primorye Kray) to this nomination; the park contains not only rather a lot of Amur tigers, but also another very rare wild cat – the Amur leopard (*Panthera pardus orientalis*). In this case, the Central Sikhote-Alin nomination could be not only extended, but also re-named, because it would exceed the geographical bounds of the Sikhote-Alin mountain range. The potential name for the nomination that would comprise the Sikhote-Alinsky Reserve, the Bikin, Udegeyskaya Legenda, and Land of the Leopard National Parks (and, perhaps, other protected natural territories of the federal level in this region) is the 'Ussuriyskaya Taiga: Wild Cats and Autochthons' (such practice is not rare during formation of the UNESCO List recently replenished with more and more complicated nominations united by a common approach). This nomination can become mixed, i. e. a natural and a cultural one.

### 3.3 Proposed Statement of Outstanding Universal Value

#### a) Brief Synthesis

The nominee National Park 'Bikin', about 1.2 million ha in area, occupies the middle and upper parts of the Bikin River's drainage basin (the basin of the Sea of Okhotsk). The site is located in the south of Russia's Far East, in Primorye Krai, in the central part of the Sikhote-Alin mountain chain, on its western macroslope.

The territory covers the heights from 200 to 1900 m above sea level, including the whole spectrum of the valley, mountain taiga, and bald mountain complexes of this region. More than 95 % of it is covered with forest, which has never been industrially felled here, the resident population numbers only 1 th. people (mainly in the property's buffer zone), who have always engaged in hunting, fishing, picking wild plants, pine nuts, and other forest gifts.

The territory of the Middle and Upper Bikin has unique landscape and biogeographical characteristics. Being a genuine model of Russian Far East nature, it is one of the largest, the most integral and well-preserved mixed forest tracts in the whole Northern Hemisphere. A variation of East-Asian mixed forests, the local Ussuriyskaya taiga includes practically undisturbed broadleaf and pine-broadleaf plantings that are notable for the wealth of their floristic composition, holocoenotic variety, abundance of relict and endemic, rare and vanishing species, arboreal and shrubby stocks.

The Ussuriyskaya taiga in the Bikin Valley shelters a number of vanishing and rare plant and animal species, the Amur tiger (*Panthera tigris altaica*) being the main one (endangered in the IUCN Red List), the local population of which consists of about 40 animals.

This corner of nature has been conserved by not only natural reasons (the mountainous relief, difficult access, compactness) as well as the remoteness of this tract from the civilization, but also by virtue of the recently conferred federal protected natural territory status (national

park), which will help to preserve the unique forests and their living inhabitants.

#### b) Justification for Criteria

The unique natural characteristics of the Middle and Upper Bikin evidence its full compliance with criterion (x), and this manifests itself in the following two aspects:

- Conservation of the large, compact and undisturbed broadleaf and pine-broadleaf Far-Eastern forest tract ("Ussuriyskaya taiga")

The pine-broadleaf complex in the upstream and especially middle stretch of the River Bikin is in fact the sole East-Asian (consequently, the world's one) such a large, well-conserved, and integral tract of Ussuriyskaya taiga, which was very widespread in this geographical region with monsoon climate and mountainous relief, between the River Ussuri and the coast of the Sea of Japan, in the old days.

Compactly represented in the Bikin's basin, the broadleaf and pine-broadleaf forests (with a total area exceeding 800 th. ha) are actually full analogs of Eurasia's preglacial broadleaf forests, but such ecosystems have almost completely transformed or disappeared entirely on the rest of the territory. It is the sole large basin where trees have never been felled, and that is why it is only this site that can give the idea about how Ussuriyskaya taiga looked like till the mid 19th century.

As a variety of East-Asian broadleaf and mixed forests, Ussuriyskaya taiga may be well recognized as a leader by the biodiversity degree; these tracts are among the richest and the most original forest types by the species composition in the whole Northern Hemisphere.

The synthetic character of the flora and fauna of the territory under research is of a great importance: taiga fauna along with Okhotsk-

Kamchatka flora representatives, on the one hand, combine with southern, Manchurian species.

The forests in the Bikin basin are inhabited by the autochthons of the River Bikin basin – the Bikin group of the Udege and Nanai people. Life activities of these peoples are impossible without preserving the taiga.

- Conservancy of the population of the Amur tiger inscribed on the IUCN Red List as an endangered subspecies

Along with the Sikhote-Alinsky Reserve already inscribed on the UNESCO List, the Bikin River Valley is a key dwelling place of the Amur tiger (*Panthera tigris altaica*). It is here that by the mid last century one of the last breeding grounds of the Amur tiger had been conserved, thanks to which this unique cat managed to renew its habitation area in Russia. By now in the Bikin River Valley about 40 tigers have been recorded, which make up approximately 10 % of the total population.

The Amur tiger population can be characterized as quite problem-free at the Bikin. The tiger is especially attached to the broadleaf and pine-broadleaf tracts in the middle part of the Bikin River, but the animal is more and more often noted near its upstream stretch, too.

Along with other Russian reserves of this region, the National Park 'Bikin' will become an essential element of the united 'tigers' econet' formed now in the south of Russia's Far East.

Moreover, the nominee territory is inhabited by some other rare and vanishing animal and plant species, which also meets criterion (x). For example, the IUCN Red List includes 2 species of vascular plants and 5 vertebrate animal species (*Panthera tigris altaica*, *Grus monachus*, *Mer-gus squamatus*, *Ketupa blakistoni*, and *Haliaeetus albicilla*).

### c) Statement of Integrity

The Bikin River's basin, which is located in the central part of the Sikhote-Alin mountain chain, is a united, integral and composite natural macrocomplex, the main components of which are closely connected by their common origin, history and evolutionary dynamics, as well as the peculiarities of the modern ecologic processes that take place here.

The protected territory has a shape of a huge, oval, and almost fully closed natural 'cup' about 100–150 km across, slightly open only in the west, towards the lower reaches of the Bikin River. The boundaries of the national park have been drawn along the natural ones – the lofty watershed ranges up to 1500–2000 m high. This makes the protected mountain taiga landscape that covers the integral drainage basin highly resistant to external influences.

The National Park comprises the whole characteristic spectrum of mountain taiga landscapes of the Central Sikhote-Alin: floodplain spots and low mountains covered with broadleaf and pine-broadleaf forests (200–600 m), medium mountain landscapes with their dark coniferous forests, larch forests, birch crooked forests and the dwarf Siberian pine (600–1600 m), as well as a zone of bald mountains with scattered stones and mountain tundras that occupy the lofty spots (more than 1600 m high).

The National Park 'Bikin' is located on the western slopes of the Sikhote-Alin, which successfully supplements the main location of the Sikhote-Alinsky Reserve on the opposite, eastern slopes.

### d) Requirements for Protection and Management

The National Park 'Bikin' is a federal-level protected natural territory, its regime satisfies the set goals optimally. In conformity to the international classification (IUCN), Russian national

parks belong to category II. It is this status that enables a reliable conservation of both the separate sights and vast spots of the virgin or tame nature.

Conservation of the valuable forest planting is a priority of the adopted functional zonal system of this park; that is why 1/3 of its total territory has been defined as the 'reserve zone' and 'zone of special protection'.

A second mission consists in preserving the way of life of the small-numbered Northern peoples – Udege and Nanai – who live here. That is why benign economic activities to support the local people are permitted on 2/3 of the park's total territory.

Practically the whole territory is federally owned. It is managed by a specially created Directorate, and representatives of the aborigines are actively attracted to the management.

Preservation of the Bikin River's drainage basin is additionally guaranteed by the national park's protective zone created on its western outskirts and planned round the protected natural territory mountains.

At present, there are no strong and direct threats to the natural complexes of the Bikin River Valley; however, logging districts have extended from the west close to the boundaries of the protected natural territory. This circumstance should be taken into account first of all when planning the national park's activities in future.

## 4 State of Conservation and factors affecting the Property



**Early morning on Bikin River**  
Photo by V. Kantor

#### 4a. Present state of conservation

There is no danger of industrial pollution to the Upper and Middle Bikin territory, since no industrial enterprises are situated in the upper reaches of the river's basin.

In general, the economic activities do not noticeably influence the natural system proposed for the inscription on the List (except the possibility of anthropogenic fires).

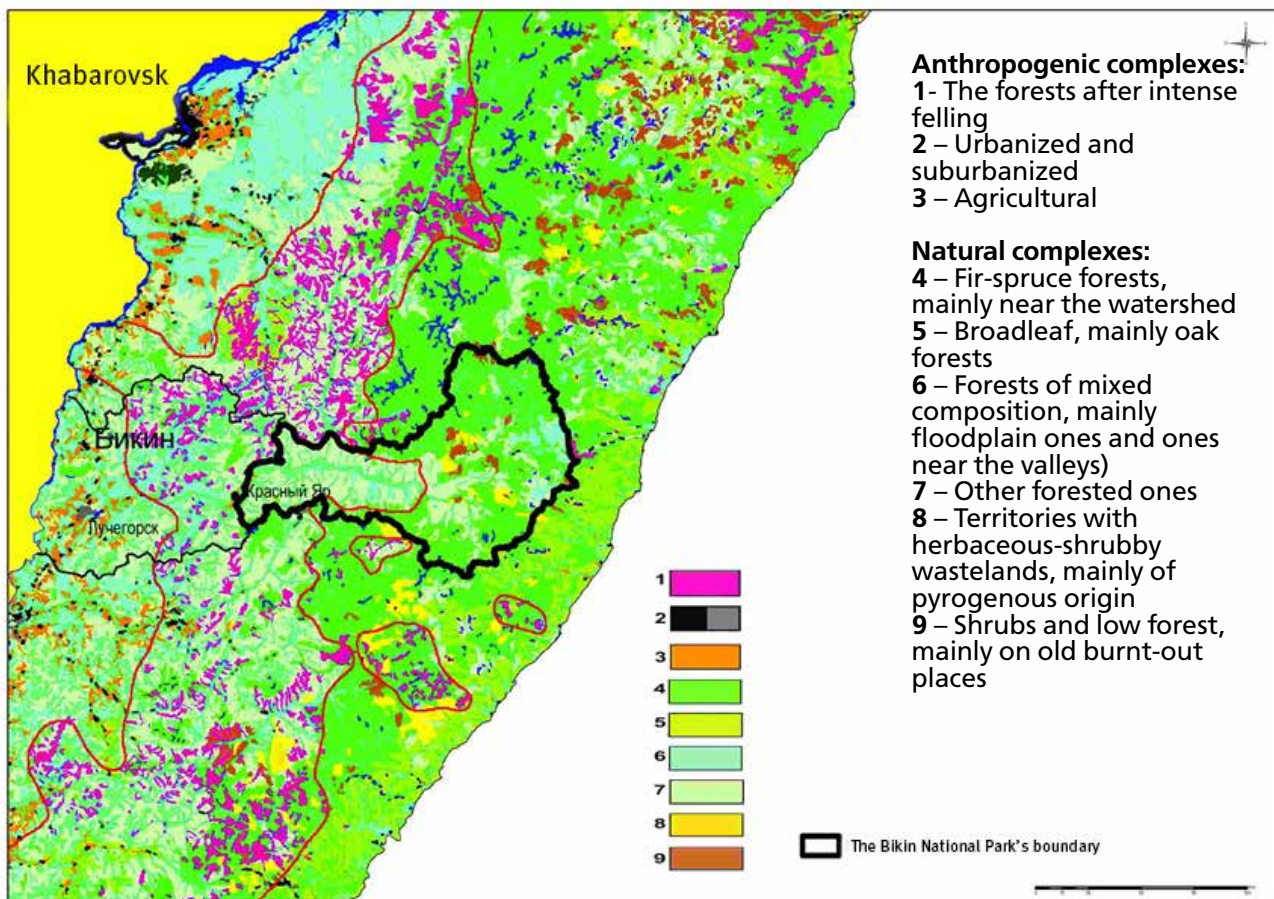
Inspections and inventories have not shown any changes in the biota structure of the forest ecosystems not affected by fires. Only annual fluctuations in the duration of certain stages of the phytocenosis evolution connected with the climatic peculiarities of a certain year have been noted.

The rare conservancy state of a greater part of the Bikin basin as a natural system has become possible by virtue of concurrence of some circumstances. The following are the main ones among them: the insignificant time that has passed since the Sikhote-Alin territory began to be used; the difficult access to the territory of the middle and upper parts of the Bikin

basin; the location on the border between Khabarovsk and Primorsky Krays, the permanent residence of the indigenous human population in this river valley (and their number has been balanced with the available natural resources); the State policy favorable to the aborigines in 70-80s of the last century (the Government made concessions to the people's wishes); finally, the nature-protective activities of people in general and of the local population in particular that had risen by the end of the last century.

The forest has never been industrially felled on the spot from Krasny Yar settlement to Okhotnichiy settlement, on the forested territory with a great portion of the pine (their area amounts to about 400 thousand ha). These forests that have miraculously remained primeval are the largest relict island among the landscapes that have already been changed on the scale of the whole Sikhote-Alin and, apart from that, they are the most productive hunting places for the Bikin Udeges at the present time. They are the most productive hunting places that the Udeges lease on the scale of the whole Sikhote-Alin.





**Fig. 12.** Disturbed landscapes of the central part of Sikhote-Alin (GIS Center for TIGIS of the Pacific Institute of Geography of the Far Eastern Division of the Russian Academy of Sciences; according to A.V. Aleshin, V.V. Ermoshin, 1995): The red line shows the approximate boundary of the pine forest habitat.

The map shows well that almost the whole zone of the pine forests that occupy the middle spots of the basins of the Ussuri's large tributaries (the world-famous taiga) has already been passed through by felling. The Middle Bikin has miraculously remained intact as the sole more or less large island out of the bygone taiga wealth.

## 4.b. Factors affecting the property

### (i) Development Pressures

(e.g., encroachment, adaptation, agriculture, mining)

**At present, the arboreal forest resources** are being actively used only of the western skirt of the territory under consideration. In the Okhotnichye and Krasnoyarskoye plot forestries wood is not harvested on an industrial scale by virtue of the existing protection status. The community of the indigenous peoples performs sanitary and care felling in small volumes, up to 8 thousand m<sup>3</sup> per year, in the vicinity of Krasny Yar village, thus meeting the settlement's requirement in firewood.

**The hunting places**, their productivity and sizes determine the composition and amount of the hunting resources. At present, all the lands of the Middle and Upper Bikin are leased by the Udege national community 'The Tiger' (earlier called the Bikin National Hunting Entity) and are distributed among the indigenous human population of the territory in compliance with the federal and kray legislation concerning the animal world and with the community's Charter.

**The use of the nature by the indigenous people** is based on the multi-purpose use of the various products of the forest. The traditional uses of the nature and traditional way of life conducted in the nominated territory include, in particular:

- Hunting, processing, and realization of the hunting products
- Procurement, processing, and realization of the animals that are not hunted
- Gathering, including picking wild fruits and herbs, as well as processing and realization of wild plants and their fruits (berries, mushrooms, edible and medicinal herbs, nuts, etc.)
- Fishing, processing and realization of the water biologic resources
- Tanning the animal skins
- Making the national utensils, implements, sledges, boats, national fur clothes, footwear, and realizing them
- Making the national souvenirs, other artis-

- tic and other works of the national culture, as well as realizing them
- Other production and handicrafts connected with treatment of fur, skins, bones, ornamental and semi-precious stones
- Farmstead olericulture
- Building the national accommodations or equipping accommodations in conformity to the national traditions and customs
- Building the cultic and other structures as well as beautification of the places of historical, cultural, religious, ecologic, spiritual and other value for the Udeges in accordance with their national traditions and customs
- Organizing the ceremonial festivities related to the maintenance of the traditional intra- and interethnic relationships and to the development of the ethnic tourism
- Transmitting the traditional ecologic knowledge and ecologic education as well as developing the special sphere of the ethnoecologic tourism in this connection
- Other traditional production, rural and community manufactures.

By 2004, the industrial harvesting of the non-wooden products of the forest had been practically curtailed at the Bikin, without taking into account harvesting the ginseng roots bought up by the Chinese as well as the eleutherococcus roots harvested in small batches by inhabitants of Yasenevy and Soboliny settlements. Since 2010, the territory of the traditional use of nature has been assigned to The Tiger community under a long-term lease. The approved Use Plan provides for the yearly harvesting of the pine nuts (up to 100 t), eleutherococcus roots (up to 50 t), the *Osmunda* fern (3 t), bracken fern (5 t), magnolia vine (juice, seeds, frozen berries – up to 4 t), and bog bilberries (10 t).

### *(ii) Environmental pressures (e.g., pollution, climate change, desertification)*

Registered by workers of the Pacific Institute of Geography of the Far Eastern Division of the Russian Academy of Sciences for more than 40 years of observation (Panichev et al., 2012), steady natural changes in the flora and fauna composition in the upper part of the Bikin River basin and in the adjacent districts of the central Sikhote-Alin permit supposing with a high degree of certainty that they are a consequence of the regional climate changes towards warming. Judging by the relics of the pine forests that have remained intact in the Upper Bikin territory since the past times, the detected climatic changes are most probably cyclical and repeating with a periodicity of several centuries (6-8). And it is very likely that

the climate warming apogee can be reached within the next century. At the warming peak, the upper boundary of the pine forests can ascend up to 700 and more meters in the Sikhote-Alin, which means that such forests would expand onto 80 % of the territory for the Bikin's upper reaches. It is not ruled out that the pine forests would grow even on the surfaces of the Upper Bikin plateau basalts. For the present, in the territory of the Bikin's upper reaches, the most noticeable changes in the flora composition manifest themselves in the evident expansion, since late 1980s, of the Korean pine (*Pinus koraiensis*) undergrowth appearance places in the localities where the pine was not found earlier or only solitary trees were met.

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

The territory is located in a magnitude-five seismic zone (according to the USSR Seismic Regionalization Map, 1983), i. e. it belongs to seismically tranquil ones.

The Bikin River basin is considerably subject to freshets, including catastrophic floods, which occur regularly 2 or 3 times per century. And under the monsoon climate condition, the floods are a part of the natural process and maintain the existence of the floodplain and the valley forests with their

entire diversity. The pyrogenous disturbance of the ecosystems and, as a consequence, the danger of new forest fires is high only in the central part of the Upper Bikin. This factor can be brought under control only if the whole complex of the State protection of the forests is performed. The danger of landslips, avalanches, mud torrents and other natural calamities is insignificant in the whole territory.

### *(iv) Responsible visitation at World Heritage sites*

At present, low recreational activities are characteristic of this territory. In general, several thousand Russian tourists and not more than 5-10 groups of foreign tourists (4-12 people in each) visit the entire territory annually. The Bikin banks are much more intensely visited by fishermen in summertime, as well as for holidays and weekends. In winter, up to 170 representatives of the indigenous small-numbered peoples conduct production hunting in this territory. The natural

complexes are perceptibly affected only in the outskirts of the sole human settlement (Okhotnichiy), which are locally polluted by the wastes and household garbage. When masses of fishermen visit the territory uncontrollably, the amount of the river fish can be somewhat reduced in the big rivers.

The territory spots favorable for developing the recreational use of the nature are mainly connected with the nut production zone

in the Bikin River's middle reaches and the outskirts of Okhotnichiy settlement. Here the total admissible yearly recreational load amounts to 3854 hours/ha per year, if the seasonal excursion rest takes place. The maximal recreational capacity of the territory is 1,205,000 people.

The main mass of the tourists visit the Bikin for river rafting with sport fishing. At the height of the season, along the 200 km of the riverbed, one can meet up to 150 boats (350-400 people) that either go down the stream after being dropped by plane in Okhotnichiy settlement or move by rubber boats with outboard motors from the bridge across the Bikin River on the Khabarovsk-Nakhodka highway. 25-30 Udege hunters with their cargo boats participate in organizing the drop of the fishermen, too.

The active touristic season does not last long: from the end of May to October, and the increased activity of bloodsucking insects causes a serious discomfort and the diseases transmitted by the ticks are dangerous for the tourists' health. In connection with the limited transport accessibility (unsatisfactory state or absence of the transport infrastructure), the streams of the tourists are insignificant.

At present, several touristic itineraries function in the territory under consideration:

1. 'The natural sights of the Bikin River' is a water-pedestrian one with the ethnocultural bias – 240 km
2. 'Along the primordial Zeva River' is a water-pedestrian one from Svetlaya settlement to Krasny Yar settlement – 310 km

3. 'The ornithological tour. Natural sights of the Alchan River basin' is an automobile-pedestrian one – 45 km

4. 'The ornithological tour. Natural sights of the Ulitka River basin' is an automobile-pedestrian one – 50 km

5. 'Where the legend lives' is an ethnographic automobile-water itinerary – 180 km.

Interpreting and excursion explanations have been arranged and are provided by the guides along the itinerary paths and by publications.

In Primorsky Kray there are rather a lot of organizations that can and are ready to organize the advertisement and conduct the exotic tours in the Bikin River valley. At the Bikin they have a substantial experience of such tourism with rafting by Udege boats, drop by plane to the upper reaches, with the organized hunting and fishing, living in the Udege families. It has become possible to drop them onto the mountain plateau at the watershed of the main range from Svetlaya settlement near the bank at the existing road for them to raft along the tributaries in the Bikin basin. Such an itinerary can amaze even the most sophisticated traveler by its absolute savagery and virginity of the local nature. In such tours, overnight stays in a tent – Udege – variant are possible, the main bases being situated in Okhotnichiy and Krasny Yar settlements, where there is a small Udege museum and the indigenous people's traditions are maintained.

### *(v) Number of inhabitants within the property and the buffer zone*

In general, Pozharsky District (the Bikin River basin) is characterized by a very low density of the human population – 10.1 thousand rural people live on the 22.57 thousand km<sup>2</sup> (0.45 of a human per km<sup>2</sup>). 4 human settlements are situated near the western boundary of the nominated plot: Krasny Yar village (551 people), Olon village (38 people), Sobolinoye settlement (189 people), and Yase-nevoye settlement (274 people). There live 1052 people, 48% of whom belong to the indigenous small-numbered peoples: Udeges, Nanais, Orochis. In the territory of the Verkhnebikinsky (Upper Bikin) Sanctuary there is Okhotnichiy ('Hunting') settlement with a permanent population of 14 people.

#### ***Estimated population located within:***

***Area of nominated property 14***

***Buffer zone 1052***

***Total – 1066***

***Year – 2010***

## 5 Protection and Management of the Property



**Bikin river**  
Photo by S. Melnikov

## 5a. Ownership

The Russian Federation owns the nominated territory, which is located within the boundaries of the specially protected natural territory in the form of the national park and is under the authority of the Ministry of Natural Resources and Environment of the Russian Federation. The State has provided the Federal State Budgetary Establishment 'Bikin National Park' with the land, waters, subsoil, flora and fauna located in the property territory for use.

In the territory, the traditional economic activities and traditional way of life are permitted to the local indigenous small-numbered peoples. The indigenous humans use those types of the natural resources that have been historically (traditionally) used for personal purposes and for sale on their ancestral plots that have been traditionally formed. The traditional economic activities are performed in compliance with the effectual federal legislation of the Russian Federation and the Regulations on the Bikin National Park (Appendix B3).

## 5b. Protective designation

The Federal Budgetary Establishment 'Bikin National Park'.

Founded by the Russian Federation Government's Decree No. 1187 dated 3.11.2015 'On Creation of the Bikin National Park' (Appendix B2).

## 5c. Means of implementing protective measures

In conformity to the Regulations on the Bikin National Park approved by Russian Federation Ministry of Natural Resources and Environment's Order dated August 12, 2016, No. 429:

21. In the national park's territory, the state supervision in the sphere of protecting and using the territory of the national park is conducted by the Establishment officials who are state inspectors in the sphere of environmental protection.

22. In the national park's territory, the state supervision in the sphere of protecting and using the territory of the national park, the federal state supervision in the sphere of protecting, reproducing, and using the animals and their habitation environment in the national park's territory is performed by the Federal Service for Supervision in the Sphere of Nature Use.

23. Workers of law-enforcement authorities may be involved in protecting the territory of the national park; their raids in the national park's territory are conducted jointly with the Establishment officials who are state inspectors in the sphere of environmental protection.

24. In the national park's territory, persons who belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation may be involved in order to protect the native habitation environment, traditional way of life, economy and production of the indigenous small-numbered peoples of the Russian Federation and to take measures aimed at preserving the natural complexes and national park's objects.

## 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)

A Strategy for Preserving the Amur Tiger (*Panthera tigris altaica*) in Russia. Approved by the Minister of Natural Resources and Environment's Resolution No. 25-p dated July 02, 2010.

At present, the Federal State Budgetary Establishment 'Bikin National Park' is devising the

plans of activities permitted in the National Park's territory in conformity to its objectives and tasks. In particular, according to Clause 3 of the Russian Federation President's assignment dated April 22, 2015, No. Pr-729, the program of the complex development of touristic activities in the national park's territory is being drafted.

## 5e. Property management plan or other management system

The Regulations on the Bikin National Park approved by the Russian Federation Ministry of Natural Resources and Environment's Order dated August 12, 2016, No. 429 (Appendix B3).

Since the NP has been created not so long ago, on November 5, 2015, the management plan is still being devised, it is planned to approve it within year 2017. Appendix B4 gives the main provisions of the management plan draft.

## 5f. Sources and levels of finance

The annual funding of 45 million rubles (approximately 740,000 US dollars) has been provided for ensuring the activities of the Federal State Budgetary Establishment 'Bikin National Park' within the federal budget allocations for the Ministry of Natural Resources and Environment of Russia. Also, within the framework of the programs devised by the Establishment, after they will have been approved by the Russian

Federation Government with the concurrence of the Russian Ministry of Natural Resources and Environment, allotment of additional funding will be provided for taking measures determined by the programs approved. Financing of the additional Establishment's measures from non-budget funds obtained as a result of permitted activities, sponsor aid and grants is possible, too.



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

The national park's territory is distant and the access is difficult, few people reside there; these factors limit the labor resources substantially. In order to attract experienced and qualified specialists as well as to train, develop, and improve the work of the existing workers, the Establishment's budget provides for funding for the personnel to live, study, and participate in qualification upgrade and additional education obtainment programs.

The Chief of the Establishment, the Deputy Chiefs and the heads of the divisions have a higher education in compliance with the qualification requirements.

## 5h. Visitor facilities and infrastructure

13 touristic (hunting) bases with a total capacity for 76 people are used directly in the park's territory (including Okhotnichiy settlement) (Figure 13).

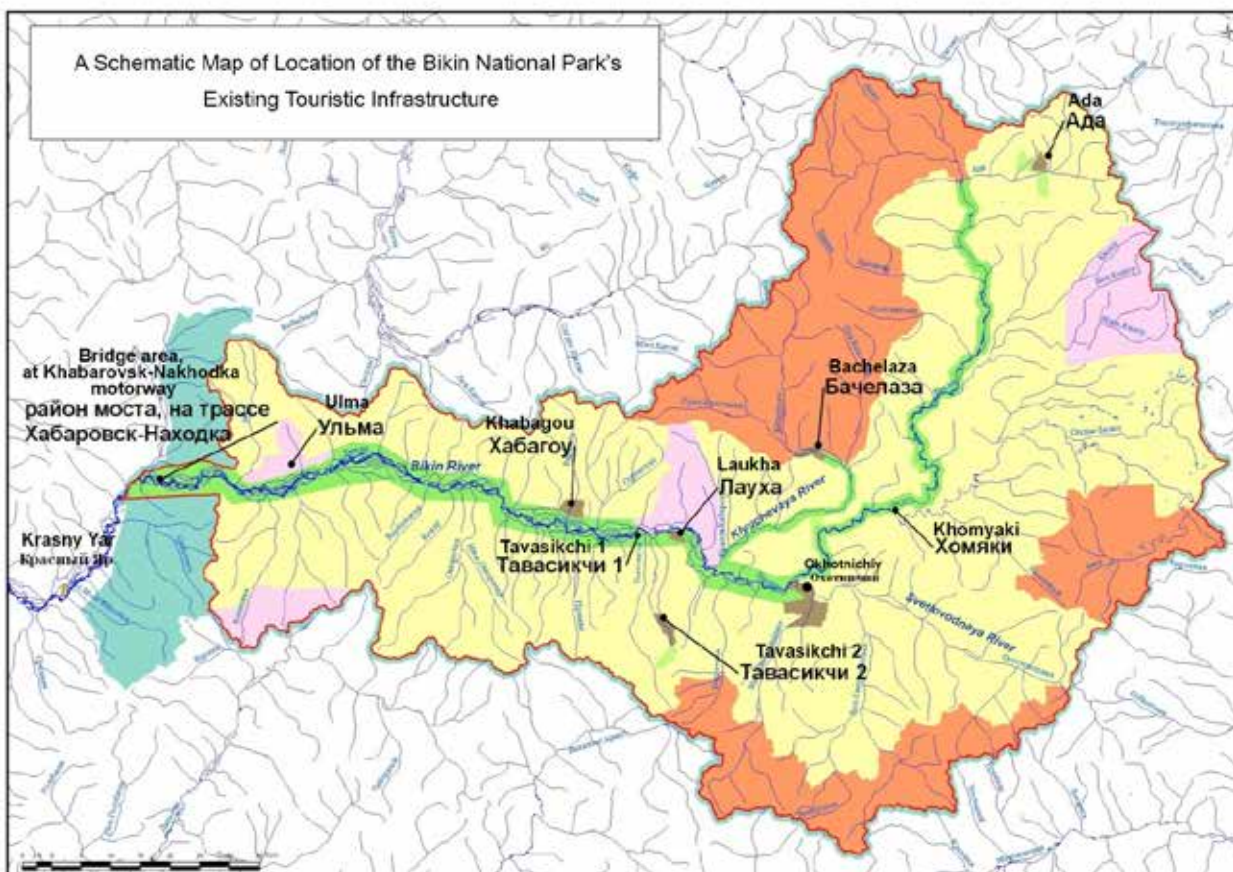


Fig. 13. The existing touristic infrastructure in the Bikin National Park's Territory.

**Table 8. Characteristics of the Available Touristic Infrastructure in the Middle and Upper Bikin Territory.**

Name	Place (linkage or coordinates)	Capacity (people)	Comfort level*
Tavasikchi 1	Q. 506, allotment 12 (River Tavasikchi's outfall)	10	4
Khabagou	Q. 339, allotment 11 (Vidinka Spring's outfall)	6	3
Tavasikchi 2	Q. 541, allotment 6 (upper reaches of the Melnichny Spring)	8	4
Laukha	agricultural lands (Staraya Rechka or Laukha settlement area)	6	4
Ada	Ada Spring, a left tributary of the Bikin River	6	3
Bachelaza	Q. 671, allotment 17 (Klyuchevaya or Bachelaza Rivers)	8	5
Tourbase	4, Krasnoyarskaya St., Okhotnichiy settlement	20	4
A post of the Pacific Institute of Geography of the RAS Far Eastern Division	Okhotnichiy settlement	3	2
Bochkareva	Okhotnichiy settlement, Barylnikov's private yard	3	4
The Ulma station	The Ulma Hole (height 310, Mount Ulma)	6	2
Bikin check-point	The area of the Bikin River bridge on the Khabarovsk-Nakhodka motorway that is being built		1
A base near the bridge			1
An apiary near the road			1

\*1 – is unfit for use in touristic activities;

2 – is habitable but not comfortable, it can be used for the tourists' overnight stay;

3 – is a year-round one with the minimal set of services;

4 – is a year-round one with accommodating in separate houses or rooms, a medium comfort level;

5 – the infrastructure permits ensuring a comfortable sojourn in nature.

On the Bikin River's banks, there are no staging posts with facilities, camping sites or other infrastructure. The rafters usually make their tents of the spits. The amateur tourists use the natural resources at their own discretion, which harms the region's ecology.

Fishermen and hunters come in winter, too; mainly they are already regular clients of the local hunters, but their number is insignificant. In the forest, they live in the hunting winter huts of the local inhabitants. Such a winter hut is a small uncomfortable house, a bathhouse and a barn.

In Krasny Yar settlement situated in the vicinity of the NP, for accommodating the guests, there are a stony office building of the Territorial-Neighbor Community of Indigenous Small-Numbered Peoples (TSO KMN) 'The Tiger', an ethnoecologic center two-storey squared-beam building that belongs to the TSO KMN 'The Tiger', which contains an ethno-nature museum, a souvenir studio and guest rooms for 4 people. The center is situated in the recreational park on the Bikin's bank, where an ethnographic village has been created, an open concert stage and pavilions have been equipped. Also, Olon guest complex with rooms for 10 people has been built at the lake 2 km away from Krasny Yar settlement.

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

The informational, educative, and advertising activities are conducted by issuing and distributing brochures, booklets, guide-books, calendars, and through the informational centers; by delivering lectures, conducting excursions with schoolchildren, organizing school forestries; using publications in mass media (radio, television, newspapers). At present, an informative, richly illustrated Internet page dedicated to the Central Sikhote-Alin as a World Heritage Property is being created.

Along the river's banks, 8 bases for accommodating the tourists have been built, 4 of them belong to The Tiger community. In Krasny Yar village, an Ethno-Cultural Center with a museum and a souvenir shop has been built, an Ecologic-Touristic Club and a Pathfinder School have been created.

The Association of the Indigenous Small-Numbered Peoples of the North, Siberia, and Far East of Russia and the respective Association in Primorsky Krai, which closely cooperate with the Arctic Council and UN Working Group on Indigenous Populations, widely popularize the touristic opportunities and natural complexes of the Upper and Middle Bikin with emphasizing the traditional culture elements of the indig-

enous people – the Udeges. The Amur Branch of WWF Russia, Pervotsvet Scientific Production Association (Luchegorsk), the Institute for Sustained Use of Nature and the Wildlife Protection Center 'The Call of Taiga' (Vladivostok) work in this area.

Among foreign organizations, some non-governmental foundations and scientific institutes show significant interest in developing the scientific and ecologic-informative tourism in the nominated territory of the Udeges' economic activities: Friends of the Earth – Japan, Taiga Rescue Network, Audubon Society (USA), Global Security Network (GSN, USA), Russian Nature Reserve Travel Company (Massachusetts, USA), Japan Fund for Global Environment, IUCN, Parks Canada Agency, etc. Each of these organizations conducts its own independent advertising campaign of the said territories in its region. At the same time, there are trends of consolidating these efforts. In 1998 in Primorye, the Krai Committee for Tourism under the Administration and the Association of Touristic Agencies conducted a series of conferences and exhibitions dedicated to developing the exotic and adventure tourism, in the nominated and adjacent territories first of all. The kraiy program of developing the ecologic tourism

is being devised on the basis of the elaborated proposals and accumulated scientific information about the recreational capacity of the territories.

At the same time, activities are developed to restore the traditional production of the indigenous human population in the nominated territory. A Sewing workshop and Carpenter's one that produce souvenirs, national clothes and utensils have been created within the TACIS project. More than 20 people have taken special courses, contracts for realization of the products have been concluded with 8 shops. In order to solve the issues of quality, procurement volumes, processing technology and marketing of the products, the Amur Branch of WWF Russia and the Association of the Indigenous Small-Numbered Peoples of the North of Primorsky Krai have initiated a large-scale project that consists in development of the small community enterprises, every kind of assistance to their activities for using the non-wooden products of the taiga and consolidating the efforts when entering the modern market.

The Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger' has been created; it consists of about 170 inhabitants of Krasny Yar village and has been allotted hunting lands across the whole nominated territory and the right to use the non-wooden products of the forest in the territory of the traditional use of nature. On the latter plot, forest management has been conducted, and a Use Plan has been devised and approved by the Forest Directorate of Primorsky Krai. In compliance with it, the Business Plan has been prepared, storage premises are built and equipment is bought in for harvesting, processing, and storing the wild fruits and herbs. At present, all these materials are needed for the indigenous community's practical work and become a basis for a large-scale advertising company in order to form an independent model of financial support for the nominated territories through the traditional economic activities.

The ethnographic tourism is being developed, the significant experience of the event measures has been accumulated. Every year (usually in early August), the Bikin Day is celebrated, when guests from the entire Far East, mainly representatives of the indigenous small-numbered peoples and their organizations, gather together in Krasny Yar. Japanese are frequent guests. The national rites and dances, contests in the national sports adorn the celebration, chess tournaments take place. A lot of houses in the village have a peculiar style and are ornamented according to the Udege and Nanai traditions.

The Bikin National Park's territory is a huge reservoir of CO<sub>2</sub> that permits keeping and tying carbon dioxide as the organic wood substance. It has been calculated that the sole territory of the Bikin nut-production zone permits tying 113.8 million tonnes of CO<sub>2</sub>, thus helping to fight the global climatic change.

Since 2009, a project on greenhouse gas emission reduction by virtue of preserving the forest tract from felling and fires has been implemented within the framework of Russian-German cooperation. WWF Russia and WWF Germany have been the main developers together with their partners, the community of the indigenous small-numbered peoples 'The Tiger', funded by the Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of Germany (BMU) via the German KfW Development Bank. In June 2011, in the course of bilateral negotiations between the heads of the RF, D. Medvedev, and FRG, A. Merkel, the special Memorandum of Mutual Understanding on protection of the Bikin River's virgin forests in order to reduce the effects of the climate change was signed.

## 5j. Staffing levels and expertise (professional, technical, maintenance)

The staff of the Federal State Budgetary Establishment 'Bikin National Park' started on November 01, 2016; 30 people made up the national park's staff as of December 31, 2016. The planned manning table for 2017 contains 117 people. There should be 5 Deputy Directors and 8 divisions according to the main areas of work. The Director and the Deputy Directors have a higher education and the head of the divisions have a higher or technical one.

## 6 Monitoring



**Leaf fall ashore  
Bikin River**  
Photo by P. Phomenko

## 6a. Key indicators for measuring state of conservation

Table 9.

Indicator	Periodicity	Location of Records
The quantity of Amur tigers on the permanent monitoring site	Yearly	Pacific Institute of Geography of the Far Eastern Division of the RAS, since 2016 – FSBE 'Bikin National Park'
The number of the wild hoofed animals, bears, and main bird species	Yearly	Pacific Institute of Geography of the Far Eastern Division of the RAS, since 2016 – FSBE 'Bikin National Park'
The quantity and area of the fires	Yearly	Forest Directorate of Primorsky Kray, since 2016 – FSBE 'Bikin National Park'
Chronicling the nature	Yearly	Pacific Institute of Geography of the Far Eastern Division of the RAS, since 2016 – FSBE 'Bikin National Park'
Detecting and suppressing the nature-protection violations	Daily	Pacific Institute of Geography of the Far Eastern Division of the RAS, since 2016 – FSBE 'Bikin National Park'

## 6b. Administrative arrangements for monitoring property

Federal State Budgetary Establishment 'Bikin National Park', Primorsky Kray, Pozharsky District, Krasny Yar village

Amur Branch of WWF Russia, 18A Verkhneportovaya St., Vladivostok city

Pacific Institute of Geography of the Far Eastern Division of the Russian Academy of Sciences, 7 Radio St., Vladivostok city

Forestry Directorate of Primorsky Kray, 3 Belinskogo St., Vladivostok city

## 6c. Results of previous reporting exercises

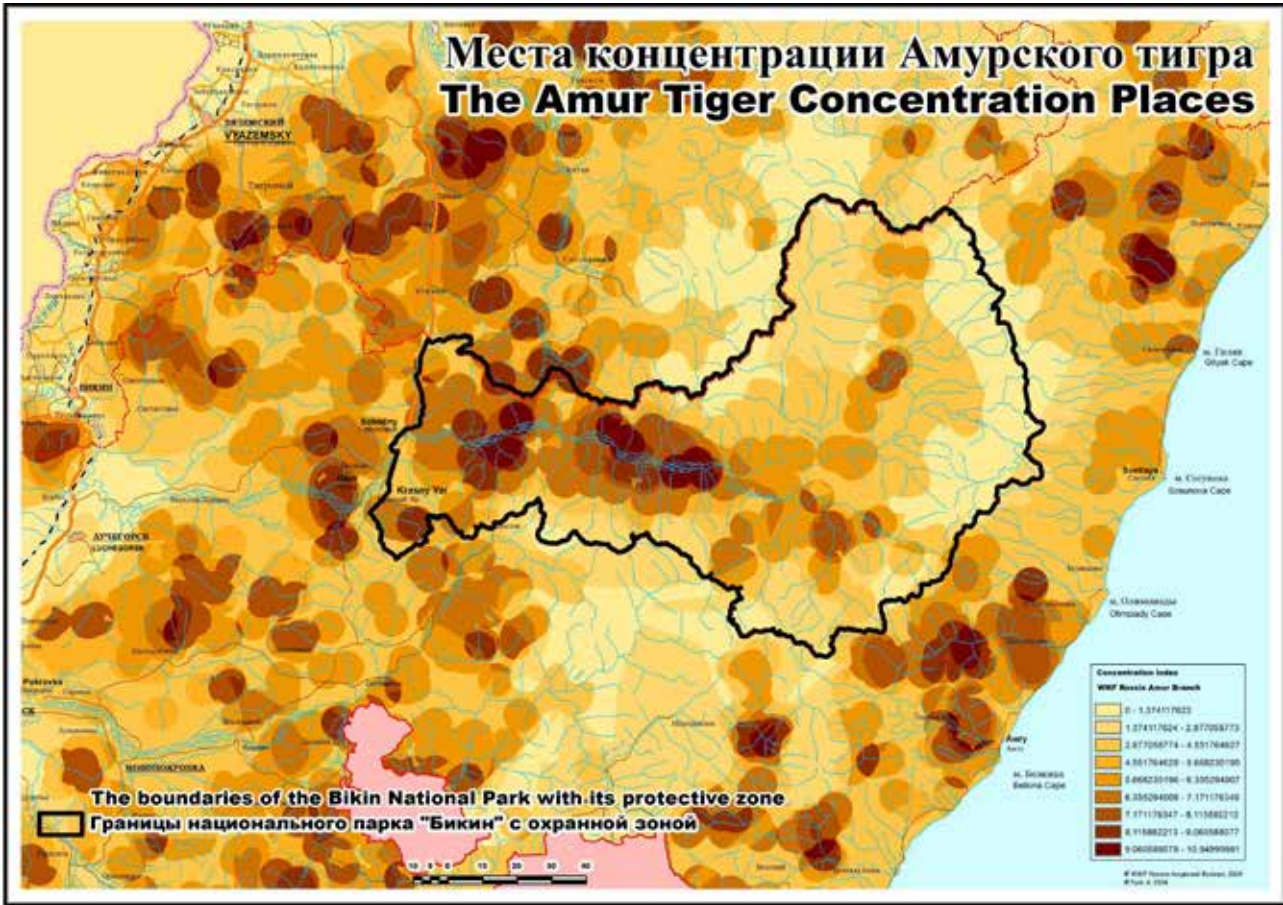


Fig. 13. The Amur tiger concentration places.

The results of recording the Amur tigers by scientific and non-governmental organizations for the last several decades in the Russian Far East evidence that in the Bikin River basin (Pozharsky District of Primorsky Krai), a stably high number of the Amur tigers is constantly noted, which is conditioned by conservation of the primordial pine-broadleaf forests intact by felling in this territory. The limited hunting by the indigenous small-numbered peoples – Udege and Nanai – is also of no small importance. In the middle of the last century, when the northern subspecies of the tiger was on the verge of extinction and its number did not exceed 50 animals (Kaplanov, 1948), the big-

ger part of the grouping that existed at that moment dwelled in the territory of Pozharsky, Terneysky, and Krasnoarmeysky Districts. It was from there that the renewal of the whole population of the Amur tiger started in Russia.

The full-scale researches of the Amur tiger distribution and number were conducted in 1996 and 2005 (Matiushkin et al., 1996, Mikell et al., 2006). Under the conditions of difficult access to the tiger's habitats at the Bikin River, it was objectively difficult to count the animals, so the data can be somewhat understated. According to the 1996 data, the number of the tigers in the Bikin River basin was 41 animals in aver-

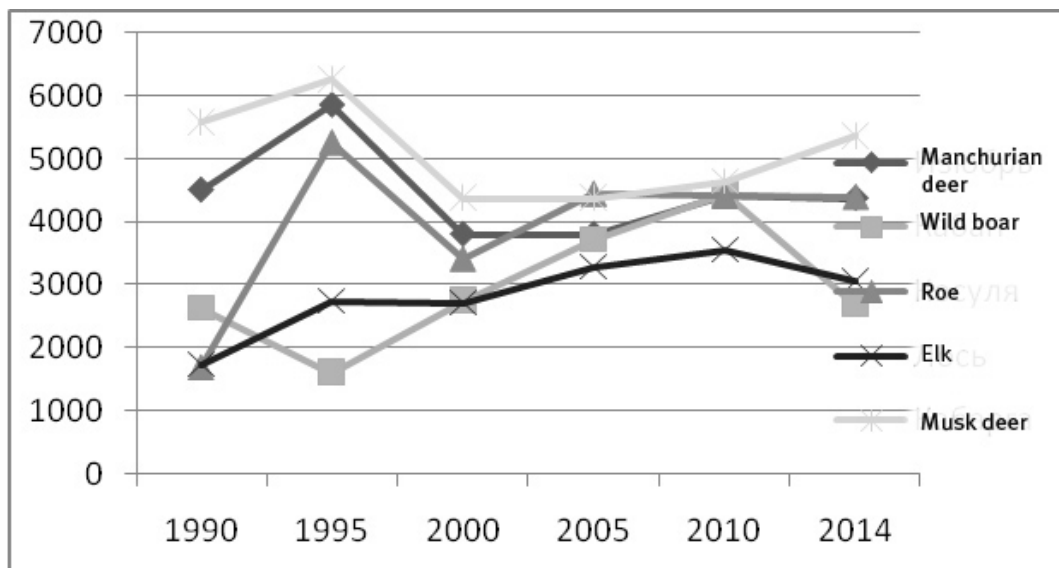


age, 24.4 % of them were tiger cubs (9.25 % of the entire quantity of the tigers in Russia). Ten years later, when the tigers were recorded in the whole Russian habitation area for the last time, the situation did not change dramatically – 40 animals in average were recorded, 22.5 % of them were tiger cubs, which made up 8.7 % of the whole tiger population.

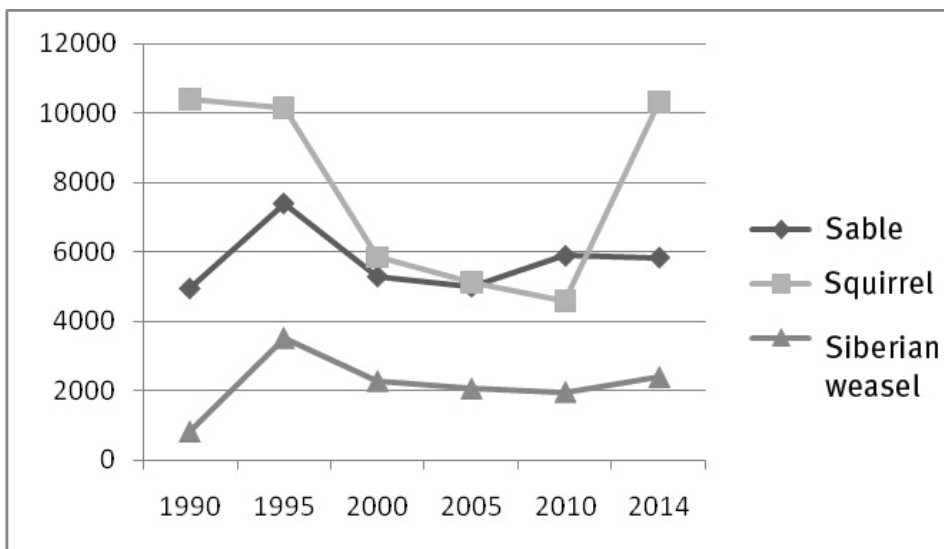
The location of the nominated territory ensures settlement of the tigers and exchange of the animals among the neighboring territories that are also of great significance for preserving the tiger. The Bikin Valley is the main migration corridor for wild hoofed animals and ensures genetic relationship between the tiger populations of the Sikhote-Alin's eastern and western macroslopes. A natural ecologic corridor through which the Primorye and Khabarovsk parts of the tiger population interconnect exists on the spot of the watershed

range between the upper reaches of Pushnaya and Takhalo Rivers. In the south of the territory under consideration, the Bikin and Bolshaya Ussurka basins exchange the tigers. The Bikin grouping of the Amur tiger plays a special role in sustaining the population of the rare predator on the Wandashan range in the PRC. The tigers naturally move across the Ussuri via the newly created kray Sredneussuriysky (Middle Ussuri) Sanctuary at the Bikin outfall.

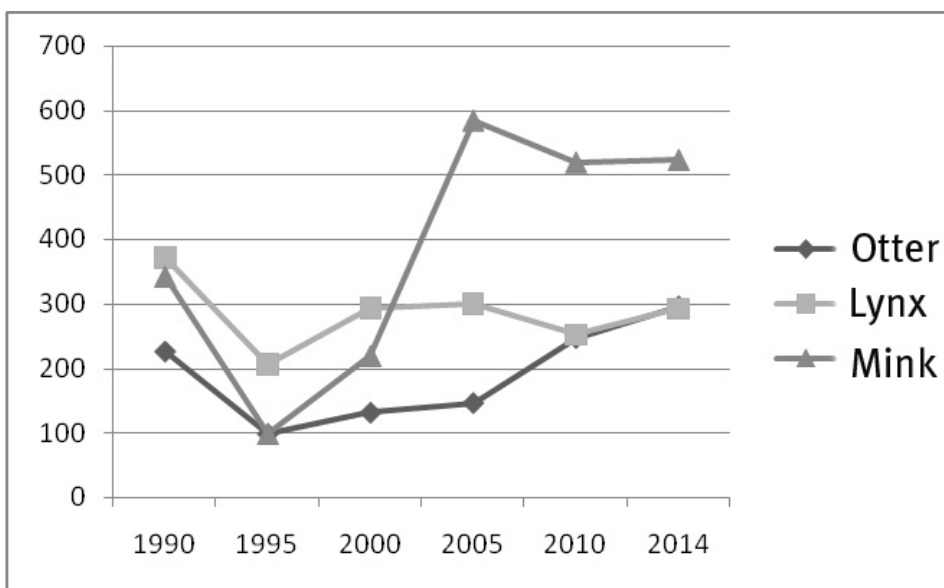
The Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger' has provided materials of recording the hunted animals on the grounds of the production mapping, recording the winter itineraries and the site records. Please find below the population number dynamics of the basic hunted wild hoofed animals according to the after-production record results (Fig. 14-16).



**Fig. 14.** The wild hoofed number dynamics on the hunting lands of the Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger'



**Fig. 15.** The population dynamics of the sable, squirrel and Siberian weasel on the hunting lands of the Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger'.



**Fig. 16.** The population dynamics of the otter, lynx and mink on the hunting lands of the Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger'.

The collected material permits determining the dynamics and characterizing the state of the populations of the main wild animal species, which is summarized in the various indicators aggregated by *Tables 10 and 11* below.

**Table 10. Characteristic of the state of the populations from 2003 to 2014 in The Tiger community's hunting places.**

Animal species	Land area, thousand ha		Population state	Quantity trend
	Suitable	Populated		
Red deer	1352,1	1352,1	Satisf.	Stable
Wild boar	660,4	660,4	Good	Decrease
Roe	1352,1	1352,1	Good	Stable
Elk	932,4	932,4	Satisf.	Decrease
Musk deer	1352,1	1352,1	Good	Growth
Brown bear	1352,1	1352,1	Satisf.	Stable
Asiatic black bear	660,4	660,4	Satisf.	Stable
Sable	1352,1	1352,1	Satisf.	Stable
Otter	81,7	81,7	Satisf.	Growth
Wolf	1352,1	1352,1	Bad	Stable
Raccoon dog	1352,1	1352,1	Bad	Stable
Lynx	1352,1	1352,1	Satisf.	Stable
Badger	519,7	519,7	Satisf.	Stable
Glutton	932,4	932,4	Satisf.	Stable
Indian marten	1352,1	942,5	Satisf.	Stable
Siberian weasel	1352,1	1352,1	Bad	Stable
Mink	81,7	81,7	Bad	Stable
Mountain hare	1352,1	1352,1	Good	Growth*
Squirrel	1352,1	1352,1	Good	Growth*
Muskrat	81,7	81,7	Bad	Growth*
Hazel grouse	1352,1	1352,1	Good	Growth*
Tiger	1352,1	942,5	Good	Stable

\* - the data have dramatically changed because the calculation method has been altered.

**Table 11. Aggregated data about the quantities of the basic wild animal species in The Tiger community's hunting places.**

Animal species	Recorded quantities, in years				
	2010	2011	2012	2013	2014
Red deer	4429	4202	4299	4269	4371
Wild boar	4442	4509	4309	2394	2685
Roe	4415	4750	4512	4313	4400
Elk	3557	3061	2915	2908	3058
Musk deer	4636	4543	4622	5430	5361
Brown bear	380	330	380	380	380
Sable	5884	5848	5990	5308	5834
Otter	247	231	272	260	296
Lynx	252	252	303	270	292
Siberian weasel	1964	2647	1499	2215	2395
Mink	523	491	535	580	519
Mountain hare	2005	1893	2117	3119*	3403
Squirrel	4572	4612	4831	14481*	16306
Hazel grouse	8093	7991	7642	39702*	43359
Asiatic black bear	258	292	258	224	224
Amur tiger	40	39	40	40	40

\* - the data have dramatically changed because the calculation method has been altered.

**7** Documentation



**Siberian tiger**  
Photo by V. Solkin

## 7a. Photographs and audiovisual image inventory and authorization FORM

7

### PHOTOGRAPHS AND AUDIOVISUAL IMAGE INVENTORY AND AUTHORIZATION FORM

DOCUMENTATION

Nº	Format (slide/print/video)	Caption	Date Of photo (mo/yr)	Photographer/ Director of the video	Copyright owner (if different than photographer/director of the video)	Contact details of copyright owner (Name, address, tel/fax, and email)	Non exclusive cession of rights
1.	Photo	One of the localities of virgin Ussuriysky taiga conserved in Bikin River valley	07/2001	V.Kantor	V.Kantor	<a href="mailto:vadimkantor@mail.ru">vadimkantor@mail.ru</a>	Yes
2.	Photo	Early morning on Bikin River	07/2001	V.Kantor	V.Kantor	<a href="mailto:vadimkantor@mail.ru">vadimkantor@mail.ru</a>	Yes
3.	Photo	Bikin River	07/2010	S.Melnikov	S.Melnikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
5-8.	Photo	Views of the upper reaches of the Bikin River	09/2009	V.Solkin	V.Solkin	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
9.	Photo	The break-up of the river usually begin in mid-April	04/2009	S.Melnikov	S.Melnikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
10.	Photo	Ginseng	07/2009	V.Medvedev	V.Medvedev	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
11.	Photo	Chinese magnolia vine	07/2009	V.Medvedev	V.Medvedev	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
12.	Photo	Grapes	07/2007	P.Phomenko	P.Phomenko	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
13-14.	Photo	Nearly 40 zooids of Siberian tiger inhabits in Bikin River valley	02/2008 07/2009	V.Solkin	V.Solkin	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes

15.	Photo	Brown bear	07/2008	E.Mogilnikov	E.Mogilnikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
16.	Photo	Black bear	04/2009	S.Karamanchuk	S.Karamanchuk	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
17.	Photo	Lynx	02/2008	V.Medvedev	V.Medvedev	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
18.	Photo	Badger	08/2007	G.Shalikov	G.Shalikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
19.	Photo	Boarish family	08/2009	E.Lepeshkin	E.Lepeshkin	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
20.	Photo	Musk deer	03/2006	A.Panichev	A.Panichev	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
21.	Photo	Roe deer	09/2009	E.Mogilnikov	E.Mogilnikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
22.	Photo	Maral	07/2009	V.Medvedev	V.Medvedev	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
23.	Photo	Sable	07/2001	G.Shaulsky	G.Shaulsky	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
24.	Photo	Ground-squirrel	04/2009	S.Karmanchuk	S.Karmanchuk	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
25.	Photo	Fish owl	03/2008	S.Avdeyuk	S.Avdeyuk	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
26.	Photo	Mandarin duck	07/2009	V.Solkin	V.Solkin	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
27.	Photo	Hazel grouse	07/2008	E.Mogilnikov	E.Mogilnikov	via <a href="mailto:butorin@nhpfund.org">butorin@nhpfund.org</a>	Yes
28.	Photo	Siberian tiger (Panthera tigris altaica)	03/2003	V.Solkin	WWF Russia	<a href="mailto:russia@wwf.ru">russia@wwf.ru</a>	Yes
29.	Photo	Siberian tiger (Panthera tigris altaica)	02/2008	V.Maleev	WWF Russia	<a href="mailto:russia@wwf.ru">russia@wwf.ru</a>	Yes
30-34.	Photo	Korean pine-broad-leaf forests in the Bikin River valley	09/2016	A.Khitrov	WWF Russia	<a href="mailto:russia@wwf.ru">russia@wwf.ru</a>	Yes
35.	Photo	Korean pine-broad-leaf forests in the Bikin River valley	09/2002	V.Filonov	WWF Russia	<a href="mailto:russia@wwf.ru">russia@wwf.ru</a>	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

- B.1 An extract from the Federal Law of the Russian Federation 'On the Specially Protected Natural Territories'.
- B.2 The Russian Federation Government's Decree No. 1187 dated November 03, 2015, 'On Creation of the Bikin National Park'.
- B.3 The Russian Ministry of Natural Resources and Environment's Order No. 429 dated August 12, 2016, 'On Approving the Regulations on the Bikin National Park'.
- B.4 The draft management plan of the Bikin National Park.

The proposals about organizing the property protection measures, other managerial decisions, and developing the management plan are included in the complex ethnocultural, ecological and social-economic substantiation of creating the specially protected natural territory of federal significance – the Bikin National Park in the middle and upper parts of the Bikin River basin (Primorsky Krai), 2014.

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

- The forest fund inventory as of January 01, 2009 (characteristics and state of the forest fund in the territory of the property)
- The data about the forestry management of the Bikinskaya nut-production zone. 2009-2010
- Annual reports of the Verkhne-Perevalnenskoye forestry (Pozharsky forestry entity), where the National Park is located
- Annual reports of the Directorate for Protecting, Controlling and Regulating the Use of the Animals according to the work results of the service for supervision over the hunting

V. N. Bocharnikov, Iu. N. Glushchenko, K. E. Mikhailov, E. G. Egidarev. The Bikin National Park // Pacific Institute of Geography of the Far Eastern Division of the Russian Academy of Sciences / Biota and Environment of Far East Reserves. 2016. Nos. 1-2 (8-9).

Panichev A. M., Pikunov D. G., Bocharnikov V. N., Seryodkin I. V. Natural Changes in Plant and Animal Life in the Bikin River Basin Connected with Climate Factors // Achievements in the Life Sciences. 2012. No. 5. Pp. 66–76.

An executive summary of the work done in order to prepare the ecologic-economic substantiation for the territory of the planned Bikin National Park in the Verkhne-Perevalnenskoye forestry of Primorsky Krai. Far Eastern Branch of the State Inventory of the Forests (Dallesproekt), Khabarovsk. 2014. 48 p.

Publications of the recent years that reflect the state of the nominated natural complex:



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

Ministry of Natural Resources and Environment of the Russian Federation  
Department for the State Policy in the Environmental Protection Sphere:  
GSP-5, D-242, 4/6, Bolshaya Gruzinskaya St.,  
Moscow city, 123995

Federal State Budgetary Establishment  
'Bikin National Park':  
Krasny Yar village, Pozharsky District,  
Primorsky Kray, 692017

Forestry Directorate of Primorsky Kray:  
3 Belinskogo St., Vladivostok city, 690035

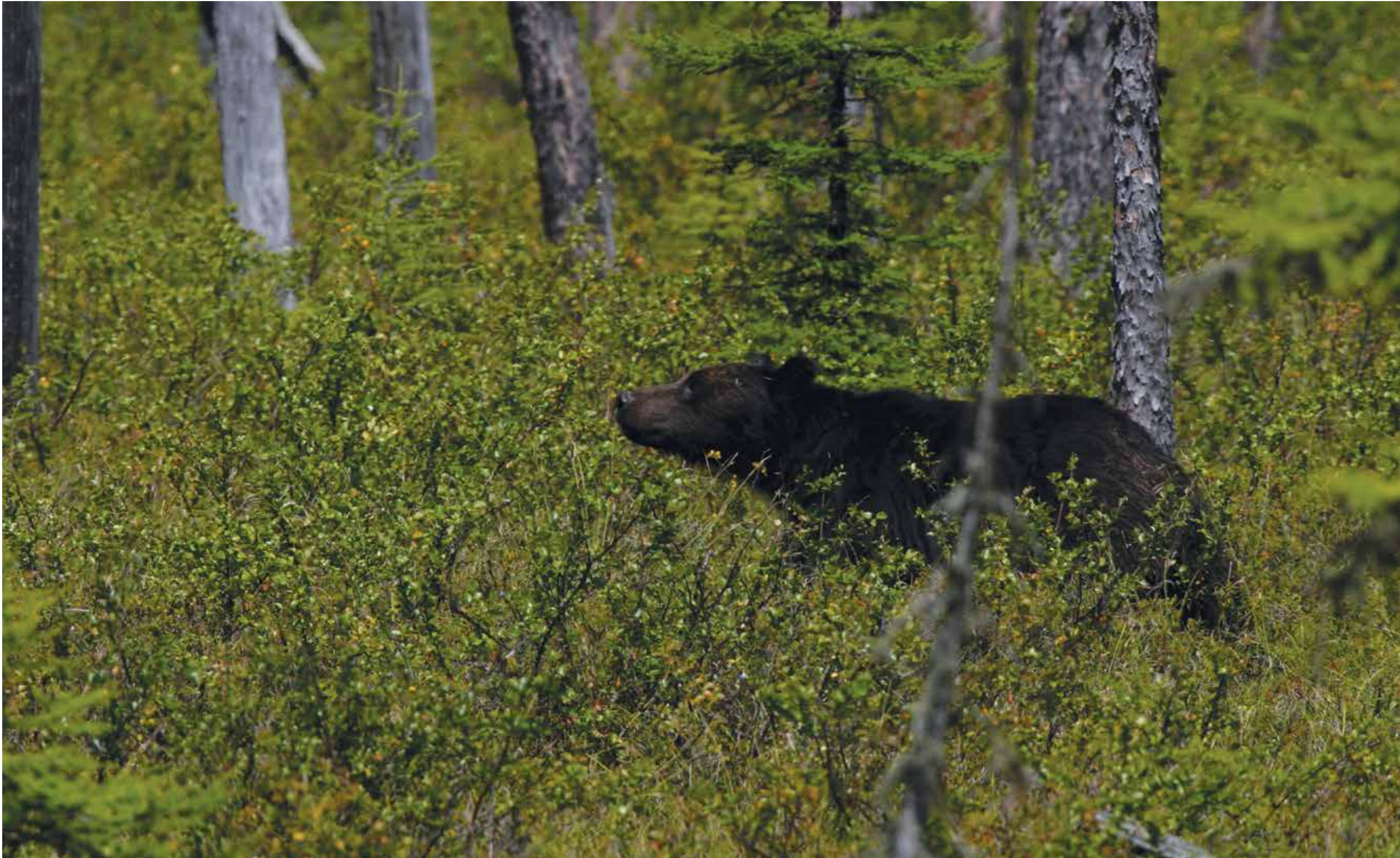
Directorate for Protecting, Controlling and Regulating the Use of the Animals of Primorsky Kray:  
45a, Aleutskaya St., Vladivostok city, 690091

Primorskaya Administration of the specially protected natural territory:  
19, Nekrasova St., Ussuriysk town, Primorsky Kray, 692519

## 7e. Bibliography

Appendix D contains about 90 works dedicated to the nominated territory.

## 8 Contact Information of responsible authorities



**Brown bear on walk**  
Photo by E. Mogilnikov

## 8a. The individual responsible for preparing the nomination

Name: Butorin Alexey  
Position: President of the Natural Heritage  
Protection Fund /  
research scientist, Institute of geography RAS  
Address: 13/1, the 1st Khvostov lane  
City/town, oblast/kray, country: 109017,  
Moscow city, Russia  
Telephone: +7 (910) 414-53-15  
E-mail: butorin@nhpfund.ru

## 8b. Official Local Institution/Agency

Ministry of Natural Resources and  
Environment of the Russian Federation  
Department for the State Policy in the  
Environmental Protection Sphere:  
GSP-5, D-242, 4/6, Bolshaya Gruzinskaya St.,  
Moscow city, 123995

Federal State Budgetary Establishment 'Bikin  
National Park':  
Krasny Yar village, Pozharsky District,  
Primorsky Kray, 692017  
Kudriavtsev Alexey Victorovich, Director

## 8c. Other Local Institutions

Amur Branch of WWF Russia 18A,  
Verkhneportovaya St., Vladivostok city,  
690003, telefax 8-4232-414868,  
e-mail <ydarman@amur.wwf.ru>  
Darman Iurii Aleksandrovich, Director

Territorial-Neighbor Community of the  
Indigenous Small-Numbered Peoples  
(TSO KMN) 'The Tiger' 1A, Novaya St.,  
Krasny Yar village, Pozharsky District,  
Primorsky Kray, 692017, telefax 8-52357-  
32623, e-mail <vladimir-shirko@yandex.ru>,  
<okmntigr@yandex.ru>  
Shirko Vladimir Arkadevich, President

## 8d. Official Web address

<http://www.parkbikin.ru>  
Contact name: Kudriavtsev Alexey Victorovich  
E-mail: 79147933080@ya.ru

## **9. Signature on behalf of the State Party**




SIGNATURE ON BEHALF OF THE STATE PARTY

**The Deputy Minister of Natural Resources and Environment of the Russian Federation**

**Murad K. Kerimov**

# ANNEX



ANNEX

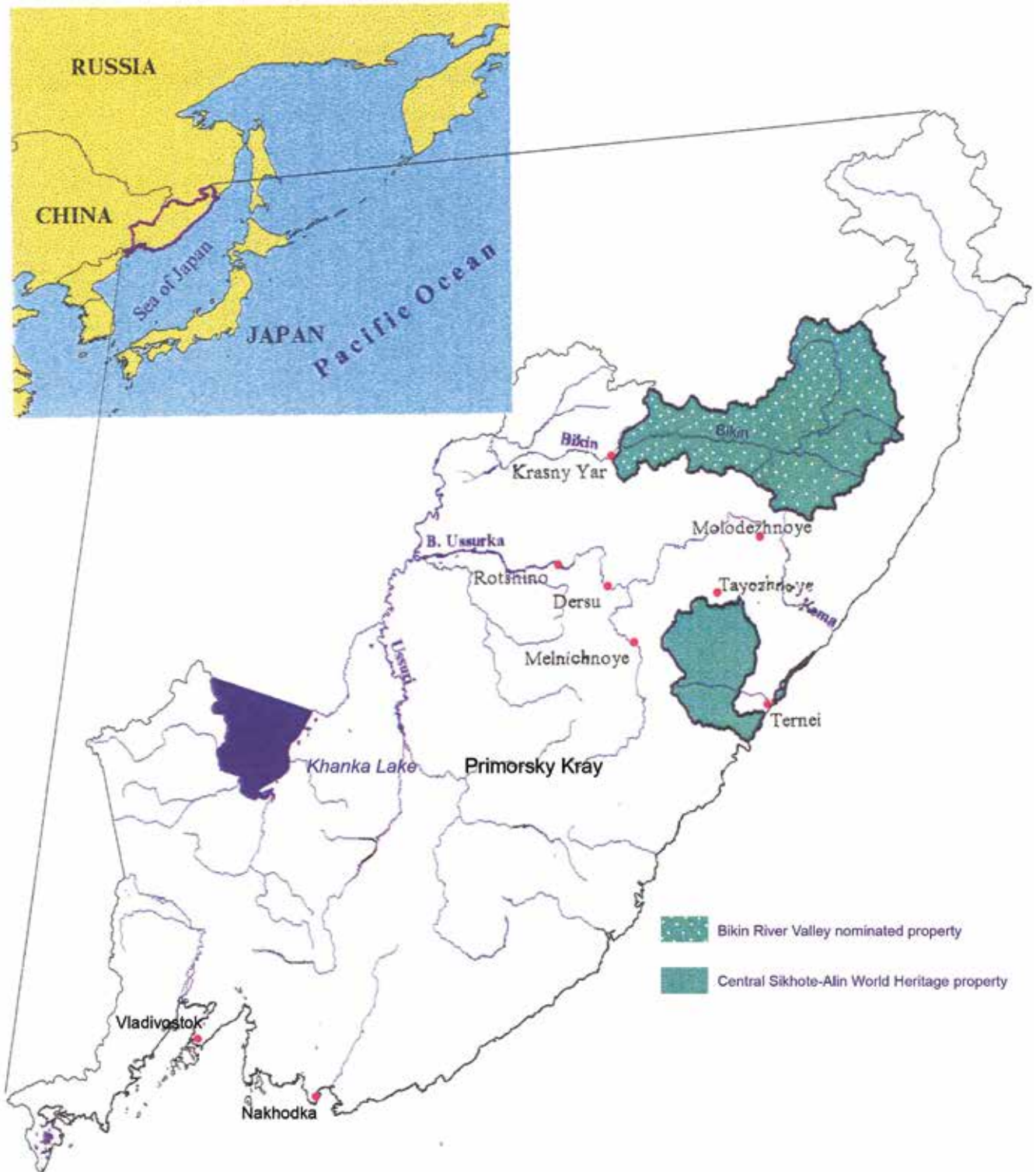
## ANNEX A

### MAPS AND PLANS

- A1. Location of the nominated property on a map of Primorsky Kray.
- A2. A map of the north of Primorsky Kray showing the boundaries of the nominated property Bikin River Valley and the Central Sikhote-Alin World Heritage property (*rolled and to be found separately from the text*).
- A3. A map of the specially protected areas of the north of Primorsky Kray.
- A4. A topographic map, showing the boundaries of the nominated property Bikin River Valley and buffer zone. The scale is 1:250 000 (*rolled and to be found separately from the text*).

## ANNEX A

### A1. Location of the nominated property on a map of Primorsky Kray.



## ANNEX A

A2. A map of the north of Primorsky Krai showing the boundaries of the nominated property and the Central Sikhote-Alin World Heritage property (rolled and to be found separately from the text).

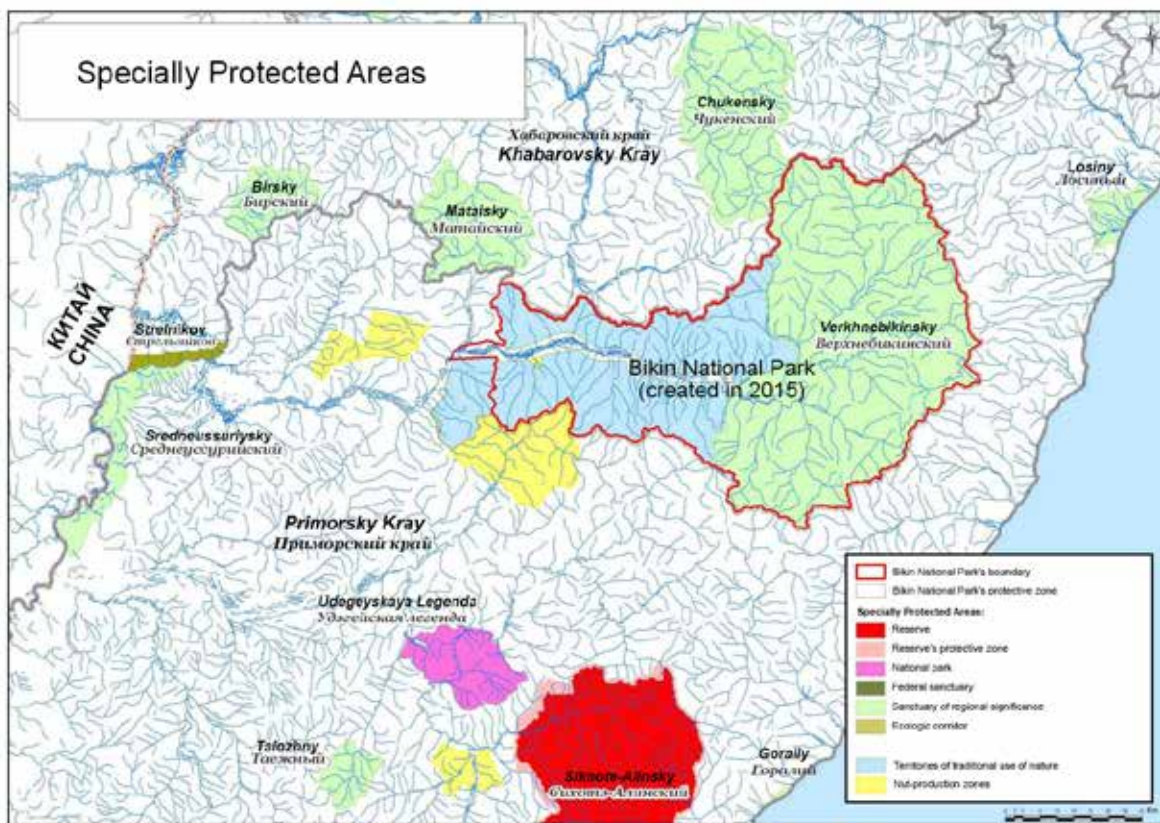


Nomination Bikin River Valley

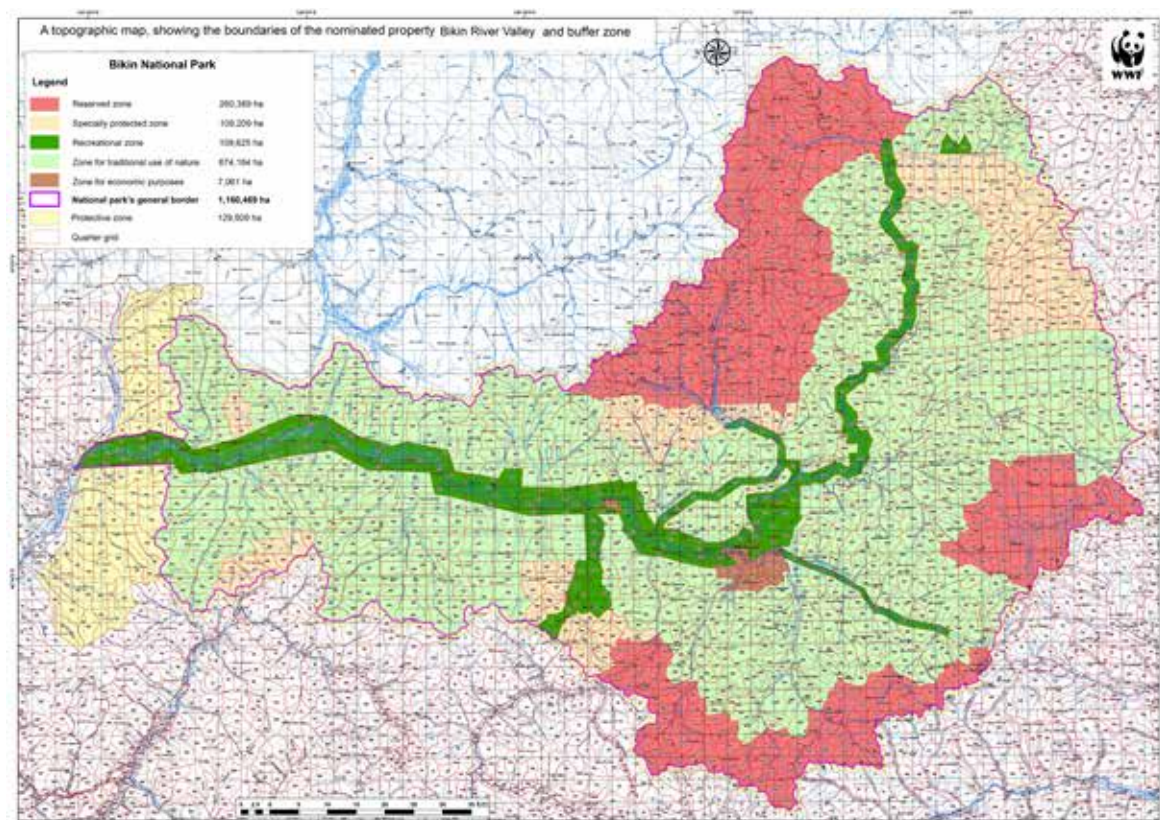


## ANNEX A

A3. A map of the specially protected areas of the north of Primorsky Krai.



A4. A topographic map, showing the boundaries of the nominated property Bikin River Valley and buffer zone. The scale is 1:250 000 (rolled and to be found separately from the text).



## ANNEX B

### TEXTS RELATING TO PROTECTIVE DESIGNATION

- B.1 An extract from the Federal Law of the Russian Federation 'On the Specially Protected Natural Territories'.
- B.2 The Russian Federation Government's Decree No. 1187 dated November 03, 2015, 'On Creation of the Bikin National Park'.
- B.3 The Russian Ministry of Natural Resources and Environment's Order No. 429 dated August 12, 2016, 'On Approving the Regulations on the Bikin National Park'.
- B.4 The draft management plan of the Bikin National Park.

## ON THE SPECIALLY PROTECTED NATURAL TERRITORIES

### A Federal Law of the Russian Federation dated March 14, 1995

Specially protected natural territories are plots of land, water surface and air space above them where there are natural complexes and objects of special nature-protective, scientific, cultural, esthetic, recreational and health-improving significance that have been fully or partly withdrawn from economic use by government authorities' decisions and for which a special protection regime has been established.

The specially protected natural territories are nation-wide possessions.

### SECTION 3. THE NATIONAL PARKS (BIKIN NATIONAL PARK)

#### Article 12. General Provisions

1. The national parks belong to the specially protected natural territories of federal significance. Within the national parks' boundaries, zones shall be marked out where the natural environment shall be conserved in its natural state and any activities not provided for by this Federal Law are prohibited; as well as zones where economic and other activities are restricted in order to preserve the natural and cultural heritage objects and to use them for recreational purposes.
2. The federally-owned natural resources and real estate located within the national parks' boundaries shall be withdrawn from the civil circulation, unless otherwise provided by the federal laws.
3. It is forbidden to change the purpose of the land lots located within the national parks' boundaries, except the cases provided for by the federal laws.
4. The Regulations on a national park shall be approved by the federal executive body that exercises authority over it.

#### Article 13. The Main Tasks of the National Parks

The following main tasks are entrusted to the national parks:

- a) Preserving the natural complexes, the unique and prominent natural spots and objects
- b) Conserving the historical-cultural objects
- c) Conducting ecologic enlightenment of people
- d) Creating conditions for the regulated tourism and rest
- e) Devising and implementing scientific methods of nature protection and ecologic enlightenment
- f) The state ecologic monitoring (state monitoring of the environment)
- g) Restoring the harmed natural and historical-cultural complexes and objects

#### Article 15. The Regime of Specially Protecting the National Parks' Territories

1. In order to establish the regime of a national park, the following zones shall be marked out in its territory:
  - a) A reserved zone intended for conserving the natural environment in its natural state and within the boundaries of which any economic activities are forbidden
  - b) A specially protected zone intended for conserving the natural environment in its natural state

- and within the boundaries of which excursions and informative touristic visits are permitted
- c) A recreational zone intended for ensuring and performing recreational activities, developing physical culture and sport as well as for placing the touristic industry objects, museums and informational centers
  - d) A zone for protecting the Russian Federation peoples' cultural heritage objects (history and culture monuments) that is intended for conserving the said objects and within the boundaries of which it is allowed to conduct activities necessary for their conservation as well as recreational activities
  - e) A zone for economic purposes within the boundaries of which it is allowed to conduct activities aimed at ensuring the functions of the federal state budgetary establishment that manages the national park and the life activities of the citizens who reside in the national park's territory
  - f) A zone for the traditional extensive use of nature intended for ensuring the life activities of the indigenous small-numbered peoples of the Russian Federation and within the boundaries of which the traditional economic activities and related non-exhaustive uses of the nature are permitted

1.1. Reducing the area of the reserved zone and the specially protected zone is not allowed.

2. Any activities that can harm the natural complexes, flora and fauna, cultural-historical objects and that contradict the goals and tasks of a national park are prohibited in the national parks' territories. The activities include:

- a) Mineral exploration and development
- b) Activities that damage the soil cover and rocky outcrops
- c) Activities that change the hydrologic regimen
- d) Allotting horticultural and cottage plots in the national parks' territories
- e) Construction of motorways, pipelines, electric and other utility lines; construction and usage of utility and habitable objects, except the objects the placement of which is provided for by subclause 1 of this Article, objects related to the national parks' functioning and to ensuring the functions of the human settlements situated within their boundaries
- f) Wood harvesting (except wood harvesting by citizens for their own needs), crude turpentine harvesting, commercial hunting, industrial fishery and coastal/riverside fishing, harvesting of eatable forest resources (food forest resources), of other non-wooden forest resources (except harvesting of such resources by citizens for their own needs), activities that impede the flora and fauna habitation conditions, gathering of biological collections, introduction of living organisms in order acclimatize them
- g) Movement and parking of mechanized vehicles not related to the national parks' functioning, passage of domestic animals outside the commonly used roads, water routes and outside the places specially provided for this, wood floating along the watercourses and waterbodies
- h) Organization of mass sport and entertainment events, organization of touristic staging posts and making fires outside the places specially provided for this
- i) taking out objects of historical and cultural value

3. Issues of social and economic activities of undertakings as well as projects aimed at developing the human settlements situated in the territories of the respective national parks and their protective zones shall be coordinated with the federal executive environmental protection authorities.

## ANNEX B1

4. The differentiated special protection regime (functional zoning) of the national parks shall be established by the authorized federal executive body

5. Natural persons who are not the workers of the federal state budgetary establishments that manage the national parks or who are not officials of the federal executive body that exercises authority over the national parks are allowed to stay in the national parks' territories (except for the plots located within the boundaries of the human settlements) only if they have the permission of the federal state budgetary establishment that manages the national park or the federal executive body that exercises authority over the national parks.

The federal state budgetary establishments that manage the national parks collect a payment for visiting the national parks' territories (except for the plots located within the boundaries of the human settlements) by natural persons for the purposes of tourism and rest; the payment determination procedure shall be established by the federal executive body that exercises authority over the national parks.

### **Article 16. Managing the National Parks**

1. The national parks shall be managed by the federal state budgetary establishments created in conformity to the procedure established by the Russian Federation legislation.

2. The land lots (including forested ones) within the national parks' boundaries shall be given to the federal state budgetary establishments that manage the national parks for a permanent (termless) use in conformity to the Russian Federation legislation. Other owners' and users' land lots may also be located within the national parks' boundaries without withdrawing them from economic use.

3. It is forbidden to confiscate or otherwise terminate the rights for the land lots and forest lots given to the federal state budgetary establishments that manage the national parks, except the cases provided for by the federal laws.

4. Within the zone for economic purposes, the federal state budgetary establishments that manage the national parks are entitled to give their workers allotments for gratuitous time use according to the procedure established by the federal laws.

5. The Russian Federation peoples' cultural heritage objects (history and culture monuments) included in the unified state register of the Russian Federation peoples' cultural heritage objects (history and culture monuments) shall be given to the federal state budgetary establishments that manage the national parks in conformity to the Federal Law dated June 25, 2002, No. 73-Φ3 "On the Russian Federation peoples' cultural heritage objects (history and culture monuments)".

6. The federal state budgetary establishments that manage the national parks have their symbols (flags, pennons, emblems and other verbal, graphic, and three-dimensional designations or their combinations that reflect characteristic peculiarities of the national parks), the procedure of approval and use of which shall be established by the federal executive body that exercises authority over the national parks.

## ANNEX B1

### **Article 17. Organization of Recreational Activities in the National Parks' Territories**

1. In the national parks' territories, recreational activities, including physical culture, health-improving and sport activities, shall be organized with observing the special protection regime of the national parks.
2. In order to organize the recreational activities, including physical culture, health-improving and sport activities, land lots may be leased to citizens and legal entities in the corresponding functional zones in conformity with the land legislation.
3. The procedure of drafting and concluding the contract for leasing a land lot located within the boundaries of the corresponding functional zones shall be established by the federal executive body authorized by the Government of the Russian Federation.

## ANNEX B2

### THE GOVERNMENT OF THE RUSSIAN FEDERATION

#### DECREE

dated November 3, 2015, No. 1187

MOSCOW

#### On Creation of the National Park 'Bikin'

The Government of the Russian Federation **d e c i d e s**:

1. To create the National Park 'Bikin' with a total area of 1,160,469 hectares, including the forest fund lands 1,159,287 hectares in area and other users' lands with a total area of 1182 hectares (without withdrawing them from economic exploitation) in Pozharsky Municipal District of Primorye Kray.
2. To put the National Park 'Bikin' under the authority of the Ministry of Natural Resources and Environment of the Russian Federation.
3. The Ministry of Natural Resources and Environment of the Russian Federation shall:
  - Ensure the regime of special protection of the natural complexes and objects on the lands indicated in Clause 1 of this Decree
  - Take necessary measures connected with the creation of the National Park 'Bikin'
  - Ensure due preparation of the draft Act of the Russian Federation Government on converting the forest fund lands indicated in Clause 1 of this Decree into the lands of the specially protected territories and objects and submit it to the Russian Federation Government until December 1, 2017
4. The National Park 'Bikin' shall be created and function within the budget allocations from the federal budget allotted for the Ministry of Natural Resources and Environment of the Russian Federation in 2015 and the following years to provide for the subordinate federal state budget establishments' activities, without increasing the maximum number of the employees of the said establishments and the payroll.

Prime Minister  
of the Russian Federation

D. Medvedev

**ANNEX B3**

**On Approving the Regulations on the Bikin National Park**

**MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT  
OF THE RUSSIAN FEDERATION  
ORDER**

**dated August 12, 2016, No. 429**

**On Approving the Regulations on the Bikin National Park**

On the basis of Subclause 5.2.69 of the Regulations on the Ministry of Natural Resources and Environment of the Russian Federation approved by the Russian Federation Government's Decree dated 11.11.2015 No. 1219 (Russian Federation legislation collection, 2015, No. 47, p. 6586; 2016, No. 2, p. 325; No. 25, p. 3811; the official Internet portal of legal information <http://www.pravo.gov.ru>, 07.07.2016; 12.07.2016),

I order:

To approve the Regulations on the Bikin National Park attached hereto.

The Minister  
S.E.Donskoi

Registered  
in the Ministry of Justice  
of the Russian Federation  
on September 8, 2016,  
registration number 43605



## The Regulations on the Bikin National Park

APPROVED  
by the Order  
of the Ministry of Natural Resources and Environment  
of the Russian Federation  
dated August 12, 2016, No. 429

### I. General Provisions

1. These Regulations had been elaborated in conformity to the requirements of **the Federal Law dated 10.01.2002 No. 7-Φ3 "On the Environmental Protection"** (Russian Federation legislation collection, 2002, No. 2, p. 133; 2004, No. 35, p. 3607; 2005, No. 1, p. 25; No. 19, p. 1752; 2006, No. 1, p. 10; No. 52, p. 5498; 2007, No. 7, p. 834; No. 27, p. 3213; 2008, No. 26, p. 3012; No. 29, p. 3418; No. 30, p. 3616; 2009, No. 1, p. 17; No. 11, p. 1261; No. 52, p. 6450; 2011, No. 1, p. 54; No. 29, p. 4281; No. 30, p. 4590, p. 4591, p. 4596; No. 48, p. 6732; No. 50, p. 7359; 2012, No. 26, p. 3446; 2013, No. 11, p. 1164; No. 27, p. 3477; No. 30, p. 4059; No. 52, p. 6971, p. 6974; 2014, No. 11, p. 1092; No. 30, p. 4220; No. 48, p. 6642; 2015, No. 1, p. 11; No. 27, p. 3994; No. 29, p. 4359; No. 48, p. 6723; 2016, No. 1, p. 24; No. 15, p. 2066; No. 26, p. 3887; No. 27, p. 4187; the official Internet portal of legal information <http://www.pravo.gov.ru>, 04.07.2016), **the Federal Law dated 14.03.95 No. 33-Φ3 "On the Specially Protected Natural Territories"** (Russian Federation legislation collection, 1995, No. 12, p. 1024; 2002, No. 1, p. 2; 2005, No. 1, p. 25; No. 19, p. 1752; 2006, No. 50, p. 5279; 2007, No. 13, p. 1464; No. 21, p. 2455; 2008, No. 29, p. 3418; No. 30, p. 3616; No. 49, p. 5742, p. 5748; 2009, No. 1, p. 17; No. 52, p. 6455; 2011, No. 30, p. 4567, p. 4590; No. 48, p. 6732; No. 49, p. 7043; 2012, No. 26, p. 3446; 2013, No. 52, p. 6971, 2014, No. 11, p. 1092; No. 26, p. 3377; No. 42, p. 5615; No. 48, p. 6642; 2015, No. 1, p. 52; No. 29, p. 4347, p. 4359; 2016, No. 27, p. 4187), **the Forest Code of the Russian Federation dated 04.12.2006 No. 200-Φ3** (Russian Federation legislation collection, 2006, No. 50, p. 5278; 2008, No. 20, p. 2251; No. 30, p. 3597, p. 3599, p. 3616; No. 52, p. 6236; 2009, No. 11, p. 1261; No. 29, p. 3601; No. 30, p. 3735; No. 52, p. 6441; 2010, No. 30, p. 3998; 2011, No. 1, p. 54; No. 25, p. 3530; No. 27, p. 3880; No. 29, p. 4291; No. 30, p. 4590; No. 48, p. 6732; No. 50, p. 7343; 2012, No. 26, p. 3446; No. 31, p. 4322; 2013, No. 51, p. 6680; No. 52, p. 6961, p. 6971, p. 6980; 2014, No. 11, p. 1092; No. 26, p. 3377, p. 3386; No. 30, p. 4251; 2015, No. 24, p. 3547; No. 27, p. 3997; No. 29, p. 4350, p. 4359; 2016, No. 18, p. 2495; No. 26, p. 3887), **the Land Code of the Russian Federation dated 25.10.2001 No. 136-Φ3** (Russian Federation legislation collection, 2001, No. 44, p. 4147; 2003, No. 27, p. 2700; 2004, No. 27, p. 2711; No. 41, p. 3993; No. 52, p. 5276; 2005, No. 1, p. 15, p. 17; No. 10, p. 763; No. 30, p. 3122, p. 3128; 2006, No. 1, p. 17; No. 17, p. 1782; No. 23, p. 2380; No. 27, p. 2880, p. 2881; No. 31, p. 3453; No. 43, p. 4412; No. 50, p. 5279, p. 5282; No. 52, p. 5498; 2007, No. 1, p. 23, p. 24; No. 10, p. 1148; No. 21, p. 2455; No. 26, p. 3075; No. 31, p. 4009; No. 45, p. 5417; No. 46, p. 5553; 2008, No. 20, p. 2251, p. 2253; No. 29, p. 3418; No. 30, p. 3597, p. 3616; No. 52, p. 6236; 2009, No. 1, p. 19, No. 11, p. 1261; No. 29, p. 3582; p. 3601; No. 30, p. 3735; No. 52, p. 6416; p. 6419; p. 6441; 2010, No. 30, p. 3998; 2011, No. 1, p. 47, p. 54; No. 13, p. 1688; No. 15, p. 2029; No. 25, p. 3531; No. 27, p. 3880; No. 29, p. 4284; No. 30, p. 4562, p. 4563, p. 4567, p. 4590, p. 4594, p. 4605; No. 48, p. 6732; No. 49, p. 7027, p. 7043; No. 50, p. 7343, p. 7359, p. 7365, p. 7366; No. 51, p. 7446, p. 7448; 2012, No. 26, p. 3446; No. 31, p. 4322; No. 53, p. 7643; 2013, No. 9, p. 873; No. 14, p. 1663; No. 23, p. 2881; No. 27, p. 3440, p. 3477; No. 30, p. 4080; No. 52, p. 6961, p. 6971, p. 6976, p. 7011; 2014, No. 30, p. 4218, p. 4225, p. 4235; No. 43, p. 5799; 2015, No. 1, p. 11, p. 38, p. 40, p. 52; No. 10, p. 1418; No. 17, p. 2477; No. 27, p. 3997; No. 29, p. 4339, p. 4350, p. 4359, p. 4378; No. 41, p. 5631; No. 48, p. 6723; 2016, No. 1, p. 80; No. 18, p. 2495; No. 22, p. 3097; the official Internet portal of legal infor-

mation <http://www.pravo.gov.ru>, 04.07.2016), the **Water Code of the Russian Federation dated 03.06.2006 No. 74-Φ3** (Russian Federation legislation collection, 2006, No. 23, p. 2381; No. 50, p. 5279; 2007, No. 26, p. 3075; 2008, No. 29, p. 3418; No. 30, p. 3616; 2009, No. 30, p. 3735; No. 52, p. 6441; 2011, No. 1, p. 32; No. 29, p. 4281; No. 30, p. 4590, p. 4594, p. 4596, p. 4605; No. 48, p. 6732; No. 50, p. 7343, p. 7359; 2012, No. 26, p. 3446; No. 31, p. 4322; 2013, No. 19, p. 2314; No. 27, p. 3440; No. 43, p. 5452; No. 52, p. 6961; 2014, No. 26, p. 3387; No. 42, p. 5615; No. 43, p. 5799; 2015, No. 1, p. 11, p. 12, p. 52; No. 29, p. 4347, p. 4350, p. 4359, p. 4370; No. 48, p. 6723), the **Urban-Building Code of the Russian Federation dated 29.12.2004 No. 190-Φ3** (Russian Federation legislation collection, 2005, No. 1, p. 6; No. 30, p. 3128; 2006, No. 1, p. 10, p. 21; No. 23, p. 2380; No. 31, p. 3442; No. 50, p. 5279; No. 52, p. 5498; 2007, No. 1, p. 21; No. 21, p. 2455; No. 31, p. 4012; No. 45, p. 5417; No. 46, p. 5553; No. 50, p. 6237; 2008, No. 20, p. 2251, p. 2260; No. 29, p. 3418; No. 30, p. 3604, p. 3616; No. 52, p. 6236; 2009, No. 1, p. 17; No. 29, p. 3601; No. 48, p. 5711; No. 52, p. 6419; 2010, No. 31, p. 4195, p. 4209; No. 48, p. 6246; No. 49, p. 6410; 2011, No. 13, p. 1688; No. 17, p. 2310; No. 27, p. 3880; No. 29, p. 4281, p. 4291; No. 30, p. 4563, p. 4572, p. 4590, p. 4591, p. 4594, p. 4605; No. 49, p. 7015, p. 7042; No. 50, p. 7343; 2012, No. 26, p. 3446; No. 30, p. 4171; No. 31, p. 4322; No. 47, p. 6390; No. 53, p. 7614, p. 7619, p. 7643; 2013, No. 9, p. 873, p. 874; No. 14, p. 1651; No. 23, p. 2871; No. 27, p. 3477, p. 3480; No. 30, p. 4040, p. 4080; No. 43, p. 5452; No. 52, p. 6961, p. 6983; 2014, No. 14, p. 1557; No. 16, p. 1837; No. 19, p. 2336; No. 26, p. 3377, p. 3386, p. 3387; No. 30, p. 4218, p. 4220, p. 4225; No. 42, p. 5615; No. 43, p. 5799, p. 5804; No. 48, p. 6640; 2015, No. 1, p. 9, p. 11, p. 38, p. 52, p. 72, p. 86; No. 17, p. 2477; No. 27, p. 3967; No. 29, p. 4339, p. 4342, p. 4350, p. 4378, p. 4389, No. 48, p. 6705; 2016, No. 1, p. 22, p. 79; No. 26, p. 3867; the official Internet portal of legal information <http://www.pravo.gov.ru>, 04.07.2016), the **Federal Law dated 24.04.95 No. 52-Φ3 "On the Animal World"** (Russian Federation legislation collection, 1995, No. 17, p. 1462; 2003, No. 46, p. 4444; 2004, No. 45, p. 4377; 2005, No. 1, p. 25; 2006, No. 1, p. 10; No. 52, p. 5498; 2007, No. 1, p. 21; No. 17, p. 1933; No. 50, p. 6246; 2008, No. 30, p. 3616; No. 49, p. 5748; 2009, No. 1, p. 17; No. 11, p. 1261; No. 30, p. 3735; 2011, No. 1, p. 32; No. 30, p. 4590; No. 48, p. 6732; 2013, No. 19, p. 2331; 2015, No. 29, p. 4359, p. 4370; 2016, No. 27, p. 4160; the official Internet portal of legal information <http://www.pravo.gov.ru>, 04.07.2016), the **Federal Law dated 20.12.2004 No. 166-Φ3 "On Fishery and Preservation of Water Biologic Resources"** (Russian Federation legislation collection, 2004, No. 52, p. 5270; 2006, No. 1, p. 10; No. 23, p. 2380; No. 52, p. 5498; 2007, No. 1, p. 23; No. 17, p. 1933; No. 50, p. 6246; 2008, No. 49, p. 5748; 2011, No. 1, p. 32; No. 30, p. 4590; No. 48, p. 6728, p. 6732; No. 50, p. 7343, p. 7351; 2013, No. 27, p. 3440; No. 52, p. 6961; 2014, No. 11, p. 1098; No. 26, p. 3387; No. 45, p. 6153; No. 52, p. 7556; 2015, No. 1, p. 72; No. 18, p. 2623; No. 27, p. 3999; the official Internet portal of legal information <http://www.pravo.gov.ru>, 04.07.2016), the **Russian Federation Government's Decree dated 10.08.93 No. 769 "On Approving the Regulations on the National Nature Parks of the Russian Federation"** (the Collection of the Russian Federation Presidential and Governmental Acts, 1993, No. 34, p. 3180; Russian Federation legislation collection, 2011, No. 42, p. 5922; 2012, No. 46, p. 6339), the **Federal Law dated 30.04.99 No. 82-Φ3 "On the Guarantees of the Rights of the Indigenous Small-Numbered Peoples of the Russian Federation"** (Russian Federation legislation collection, 1999, No. 18, p. 2208; 2004, No. 35, p. 3607; 2007, No. 27, p. 3213; 2008, No. 20, p. 2251; 2009, No. 1, p. 17; No. 14, p. 1575; 2015, No. 29, p. 4382), the **Russian Federation**

**Government's Resolution dated 08.05.2009 No. 631-p "On Approving the Enumeration of the Places of Traditional Habitation and Traditional Economic Activities of the Indigenous Small-Numbered Peoples of the Russian Federation and the Enumeration of the Traditional Economic Activities of the Indigenous Small-Numbered Peoples of the Russian Federation"** (Russian Federation legislation collection, 2009, No. 20, p. 2493; 2015, No. 49, p. 7019).

2. The Bikin National Park (hereinafter referred to as the National Park) was created by **the Russian Federation Government's Decree dated 03.11.2015 No. 1187 "On Creation of the Bikin National Park"** (Russian Federation legislation collection, 2015, No. 46, p. 6379).

3. The national park is located in the territory of Pozharsky Municipal District of Primorye Kray.

4. Also, other users' lands with a total area of 1182 hectares without withdrawing them from economic usage have been included within the national park's boundaries.

5. The national park's boundaries have been determined within the Pulkovo-1942 geographical coordinate system and are represented by **Appendix 1 to these Regulations**.

6. The national park has been put under the authority of Russia's Ministry of Natural Resources and Environment by **the Russian Federation Government's Decree dated 03.11.2015 No. 1187**.

7. The boundaries and peculiarities of the special protection regime of the national park shall be taken into account when devising plans and prospects of the economic and social development, forestry rules and forest development projects, elaborating the territorial plan documents, managing the forests and inventorying the lands.

8. The national park shall be managed by the Federal State Budgetary Institution 'Bikin National Park' (hereinafter referred to as the Institution) created by **the Russian Federation Government's Resolution dated 30.03.2016 No. 546-p** (Russian Federation legislation collection, 2016, No. 15, p. 2110).

## II. The Tasks of the National Park

9. The national park is entrusted with the following main tasks:

- 1) Preserving the natural complexes, the unique and prominent natural spots and objects
- 2) Conserving the historical-cultural objects
- 3) Conducting ecologic enlightenment of people
- 4) Creating conditions for the regulated tourism and rest
- 5) Devising and implementing scientific methods of nature protection and ecologic enlightenment
- 6) The state ecologic monitoring (state monitoring of the environment)
- 7) Restoring the harmed natural and historical-cultural complexes and objects

8) Protecting the habitation environment and traditional way of life of the indigenous small-numbered peoples of the Russian Federation

### III. The Regime of Special Protection of the National Park's Territory

10. Any activities that can harm the natural complexes, flora and fauna, cultural-historical objects and that contradict the goals and tasks of the national park are prohibited in the national park's territory. The activities include:

- 1) Mineral exploration and development
- 2) Activities that damage the soil cover and rocky outcrops
- 3) Activities that change the hydrologic regimen
- 4) Allotting horticultural and cottage plots in the national park's territory
- 5) Construction of motorways, pipelines, electric and other utility lines; construction and usage of utility and habitable objects, except objects of touristic industry, museums, informational centers and objects related to the national park's functioning
- 6) Wood harvesting (except wood harvesting by citizens for their own needs)
- 7) Crude turpentine harvesting
- 8) Commercial, sport and amateur hunting
- 9) Industrial fishery
- 10) Harvesting of eatable forest resources (food forest resources), except harvesting of such resources by citizens for their own needs and within the boundaries of the traditional extensive nature use zone; of other non-wooden forest resources (except harvesting of such resources by citizens for their own needs)
- 11) Activities that impede the flora and fauna habitation conditions
- 12) Gathering of biological collections, except the one performed within the framework of the scientific and research activities provided for by the themes and plans of the Institution's scientific researches
- 13) Introduction of living organisms in order acclimatize them
- 14) Pasturage and passage of domestic animals outside the commonly used roads, water routes and outside the places specially provided for this
- 15) Wood floating along the watercourses and waterbodies
- 16) Organization of mass sport and entertainment events, organization of touristic staging posts and making fires outside the places specially provided for this

## ANNEX B3

17) Unauthorized archeological excavations, gathering and taking out objects of historical and cultural value

18) Staying with fire, pneumatic, and missile arms, including hunting firearms in assembled form on the commonly used roads, with traps and other hunting gears, together with the procured fauna products and water bioresource procurement (catching) gears; except for cases related to the state supervision measures in the sphere of protecting and using the national park's territory by the authorized officials, with hunting in order to ensure the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation, hunting by persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities and for whom the hunting is the basis of their existence, sport and amateur fishery, fishery aimed at ensuring the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation in conformity to these Regulations

19) Explosive works

20) Making sites of fire, burning out the vegetation (except the fire-fighting measures taken with the Institution's assent)

21) Continuous tree felling, except continuous sanitary felling, felling related to extinguishment of forest conflagrations, including the one with creating fire-prevention gaps, and felling related to building, reconstruction, and usage of linear objects performed in conformity to these Regulations

22) Creation of objects for placing wastes of production and consumption, radioactive, chemical, explosive, toxic, poisonous and noxious substances, except for the accumulation of the production and consumption wastes in conformity to these Regulations

23) Washing vehicles on the banks of the waterbodies

24) Movement and parking of mechanized vehicles outside the commonly used roads and places specially provided for this, passage and mooring of vessels and other floating means outside the commonly used water routes and the places specially provided for this (except the cases related to the national park's functioning and the use of the vehicles by the indigenous small-numbered peoples of the Russian Federation when conducting their traditional economic activities and traditional way of life within the national park's boundaries)

25) Destroying and damaging the banners, boom barriers, stands, boundary posts and other informational signs and indicators, the rigged ecologic paths and places for rest, structures in the national park's territory, along with the Institution's property, making inscriptions and signs on the boulders, trees, rocky outcrops and historical-cultural objects

26) Flights of aircraft lower than 500 meters over the national park's territory without the Institution's assent;

27) Application of pesticides, mineral fertilizers, chemical plant protection means and growth enhancers

11. A differentiated special protection regime has been established on the national park's territory taking into account the natural, historical-cultural and other peculiarities, according to which the following zones have been marked out:

11.1. A reserved zone intended for conserving the natural environment in its natural state and within boundaries of which any economic activities are forbidden.

Any economic activities and recreational use of the territory are forbidden within the reserved zone in addition to the restrictions enumerated in **Clause 10 of these Regulations**.

Scientific and research activities, ecologic monitoring, taking nature-protective, biotechnical and fire-preventive measures, forest management and land management works are permitted in the reserved zone.

Reducing the area of the reserved zone is not allowed.

11.2. A specially protected zone intended for conserving the natural environment in its natural state and within boundaries of which excursions and informative touristic visits are permitted.

The following are forbidden within the specially protected zone in addition to the restrictions enumerated in **Clause 10 of these Regulations**:

Hunting in order to ensure the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation; hunting by the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities and for whom the hunting is the basis of their existence

Sport and amateur fishery

Fishery aimed at ensuring the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation

Citizens' staying outside the commonly used roads and the specially assigned itineraries

Construction of buildings and facilities intended for accommodating visitors of the national park along with arrangement and equipment of the staging posts for overnight stay

Accumulation of production and consumption wastes

Harvesting and picking non-wooden forest resources, food forest resources and medicinal plants by citizens for their own needs; wood harvesting by citizens for their own needs

Haymowing, except the one conducted for fire prevention

The following are permitted in the specially protected zone:

Scientific-research and ecologic-enlightening activities

Ecologic monitoring

Nature-protective, biotechnical and fire-preventive measures, forest management and land management works

Organization and rigging of the excursion ecological paths and itineraries

Reducing the area of the specially protected zone is not allowed.

11.3. A recreational zone intended for ensuring and performing recreational activities, developing physical culture and sport as well as for placing the touristic industry objects, museums and informational centers.

The following are forbidden within the recreational zone in addition to the restrictions enumerated in **Clause 10 of these Regulations**:

Haymowing, except the one performed for fire prevention

Rest and overnight stay outside the places provided for this

The following are permitted in the recreational zone:

Hunting in order to ensure the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation; hunting by the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities and for whom the hunting is the basis of their existence

Sport and amateur fishery

Fishery aimed at ensuring the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation

Harvesting and picking of non-wooden forest resources, food forest resources and medicinal plants by citizens for their own needs

Wood harvesting by citizens for their own needs on the basis of purchase-and-sale agreements regarding the forest plantations

Placement of hives and apiaries on the plots specially determined by the Institution

Scientific-research and ecologic-enlightening activities, ecologic monitoring, nature-protective, biotechnical, forestry and fire-preventive measures, forest management and land management works

## ANNEX B3

Organization and rigging of the excursion ecologic paths and itineraries, sightseeing platforms, touristic staging posts and places for rest

Building, reconstruction, and usage of guest houses and other recreational infrastructure objects

Placement of museums and informational centers of the Institution, including the ones with the exposition in the open air

Temporary storage of residential wastes (for a period of not more than six months) in the places (on the grounds) specially determined by the Institution and equipped in conformity to the requirements of the Russian Federation legislation on environmental protection for them to be further used, rendered harmless, placed and transported

Works on the complex improvement of the territory

11.4. A zone for economic purposes intended for activities aimed at ensuring the Institution's functions and the life activities of the citizens who reside in the national park's territory.

The following are permitted in the zone for economic purposes:

Hunting in order to ensure the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation; hunting by the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities and for whom the hunting is the basis of their existence

Sport and amateur fishery

Fishery aimed at ensuring the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation

Wood harvesting by citizens for their own needs on the basis of purchase-and-sale agreements regarding the forest plantations

Harvesting and picking non-wooden forest resources, food forest resources and medicinal plants by citizens for their own needs

Placement of hives and apiaries on the plots specially determined by the Institution

Agriculture on the plots specially determined by the Institution

Scientific-research and ecologic-enlightening activities, ecologic monitoring, nature-protective, biotechnical, forestry and fire-preventive measures, forest management and land management works

Organization and rigging of the excursion ecologic paths and itineraries



## ANNEX B3

Placement of museums and informational centers of the Institution, including the ones with the exposition in the open air

Works on the complex improvement of the territory

Development of folk and artistic crafts and uses of the natural resources related to them that do not contradict the special protection regime

Temporary storage of residential wastes (for a period of not more than six months) in the places (on the grounds) specially determined by the Institution and equipped in conformity to the requirements of the Russian Federation legislation on environmental protection for them to be further used, rendered harmless, placed and transported

Building, reconstruction, repair and usage of utility and habitable objects, including roads, pipelines, electric lines and other linear objects related to the national park functioning and to ensuring the functioning of the human settlements situated within the national park's boundaries

reconstruction, repair, and usage of the roads, pipelines, electric lines and other linear objects that exist within the national park's boundaries.

11.5. A zone for the traditional extensive use of nature intended for ensuring the life activities of the indigenous small-numbered peoples of the Russian Federation and within the boundaries of which the traditional economic activities and related non-exhaustive uses of the nature are permitted.

The following are forbidden within the zone for the traditional extensive use of nature in addition to the restrictions enumerated in **Clause 10 of these Regulations**:

Citizens' staying outside the commonly used roads and the specially assigned itineraries, except the persons who belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation and the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities

Rest and overnight stay outside the places provided for this, except the persons who belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation and the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities

The following are permitted in the zone for the traditional extensive use of nature:

Hunting in order to ensure the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation; hunting by the persons who do not belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation but who permanently reside in the places of their traditional residence and traditional economic activities and for whom the hunting is the basis of their existence

## ANNEX B3

Fishery aimed at ensuring the traditional way of life and traditional economic activities of the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation

Wood harvesting by citizens for their own needs on the basis of purchase-and-sale agreements regarding the forest plantations

Harvesting, processing, and realization of the food forest resources and medicinal plants; harvesting of the non-wooden forest resources for one's own needs

Pasturage and passage of domestic animals

Haymowing

Artistic crafts and folk trades

Building of the national traditional dwellings and other structures necessary for the traditional economic activities

Organization and rigging of the excursion ecologic paths and itineraries, sightseeing platforms, touristic staging posts and places for rest

Building, reconstruction, and usage of guest houses and other recreational infrastructure objects

Temporary storage of residential wastes (for a period of not more than six months) in the places (on the grounds) specially determined by the Institution and equipped in conformity to the requirements of the Russian Federation legislation on environmental protection for them to be further used, rendered harmless, placed and transported

Works on the complex improvement of the territory

Reducing the area of the traditional extensive nature use zone is not allowed.

12. Natural persons who are not the Institution workers or officials of Russia's Ministry of Natural Resources and Environment are allowed to stay in the national park's territory only if they have the permission of the Institution or Russia's Ministry of Natural Resources and Environment.

The citizens who reside in Okhotnichiy settlement and Krasny Yar, Olon, Sobolinoye, Yasenevoye villages, as well as their near relatives (spouse, parents, children, adopters, adopted, full-blooded and half-blooded siblings, grandparents, grandchildren, guardians, custodians, wards) are allowed to stay in the national park's territory (except the reserved and specially protected zones) without the permit.

13. **Appendix 2 to these Regulations** provides the composition of the national park and a description of its functional zones, and **Appendix 3 to these Regulations** shows a schematic map of the functional zoning of the national park's territory.

14. The functional zoning of the national park's territory may be changed only after having amended these Regulations.

15. In the national park's territory, economic activities shall be conducted in compliance with these Regulations and **the Requirements for Preventing Deaths of Animals During Production Processes and Usage of Transport Motorways, Pipelines, Communication and Electric Lines approved by the Russian Federation Government's Decree dated 13.08.96 No. 997** (Russian Federation legislation collection, 1996, No. 37, p. 4290; 2008, No. 12, p. 1130).

16. The issues of the social and economic activities of undertakings as well as projects for development of the human settlements situated in the national park's territory shall be coordinated with Russia's Ministry of Natural Resources and Environment.

17. In the national park territory, building and reconstruction of permanent facilities are allowed through the permits issued by Russia's Ministry of Natural Resources and Environment in conformity to the Russian Federation legislation.

18. The project documentation for the permanent facilities allowed to be built or reconstructed in the national park's territory in conformity to the Russian Federation legislation and these Regulations shall undergo the state ecological expert examination of the federal level.

19. The liability for a breach of the established regime or other rules of protecting and using the environment and natural resources in the national park's territory shall ensue in conformity to the Russian Federation legislation.

20. In the locality, the national park's boundaries shall be marked with special warning and informational signs along its territory perimeter boundaries.

#### **IV. The State Supervision in the Sphere of Protecting and Using the National Park's Territory**

21. In the national park's territory, the state supervision in the sphere of protecting and using the national park's territory shall be performed by the Institution officials who are state inspectors in the sphere of environmental protection.

22. In the national park's territory, the state supervision in the sphere of protecting and using the national park's territory, the federal state supervision in the sphere of protecting, reproducing, and using the animals and their habitation environment in the national park's territory shall be performed by the Federal Service for Supervision in the Sphere of Nature Use.

23. Workers of law-enforcement authorities may be involved in protecting the national park's territory, their raids in the national park's territory shall be conducted jointly with the Institution officials who are state inspectors in the sphere of environmental protection.

24. In the national park's territory, persons who belong to the indigenous small-numbered peoples of the North, Siberia, and Far East of the Russian Federation may be involved in order to protect the native habitation environment, traditional way of life, economy and production of the indigenous small-numbered peoples of the Russian Federation and to take measures aimed at preserving the natural complexes and national park's objects.

## ANNEX B3

### Appendix 2. Composition of the Bikin National Park and a Description of Its Functional Zones' Boundaries

Appendix 2  
to the Regulations  
on the Bikin National Park

ANNEX

#### 1. The Reserved Zone

The zone area is 260,389 ha.

The zone comprises the following plots:

Name of the plot forestry	Nos. of the quarters
Okhotnichye	576-662, 674-691, 960, 961, 965-981, 994-998, 1001, 1010-1024, 1030-1092, 1119-1158, 1209-1215, 1238-1245, 1267-1277, 1489-1493, 1510, 1520-1528, 1540-1548, 1564-1587

#### 2. The Specially Protected Zone

The zone area is 108,791 ha.

The zone comprises the following plots:

Name of the plot forestry	Nos. of the quarters
Okhotnichye	427, 428, 431, 435, 450, 451, 455-469, 525, 526, 537, 549-552, 555-558, 561, 562, 568-570, 572-575, 663-670, 672, 673, 692, 693, 701, 1165-1175, 1177-1180, 1189-1196, 1233-1237, 1260-1266, 1308-1312, 1319-1351
Krasnoyarskoye	192, 194, 196, 197, 263, 264, 266-273

### 3. The Recreational Zone

The zone comprises the following plots:

Name of the plot forestry	Nos. of the quarters
Sobolinoye	68, 107 (allotments 12-16, 33, 34, 36), 108 (allotments 13, 14, 24-37, 42-45, 47), 109 (allotments 1-20, 23-25, 31-37), 110 (allotments 19-36, 39-56, 58-61, 63-87, 89-91, 103), 111-117
Okhotnichye	325, 338-341, 496-511, 513, 516, 519, 522, 527, 528, 538-540, 553, 554, 559-571, 714, 718, 720, 725, 729-734, 736-738, 747-751, 771-786, 788-790, 846-852, 1112, 1159, 1164, 1188, 1226, 1252, 1291, 1292, 1364, 1372, 1394, 1418, 1423, 1450
Krasnoyarskoye	118, 119, 213-223, 326-337

### 4. The Zone for Economic Purposes

The zone comprises the following plots:

Name of the plot forestry	Nos. of the quarters
Okhotnichye	541, 671, 787, 845, 856, 858-863, 1113
- Limited by quarters 779 and 787 in the north, by quarters 845 and 859 in the east, 786, 784 and 856 in the south, quarter 778 of Okhotnichye plot forestry in the west	
- Limited by quarter 510 in the north and east, 509 in the south, quarter 508 of Okhotnichye plot forestry in the west	

## ANNEX B3

### 5. The Zone for the Traditional Extensive Use of Nature

The zone area is 674,184 ha.

The zone comprises the following plots:

Name of the plot forestry	Nos. of the quarters
Okhotnichye	309-324, 408, 410-412, 414-416, 418-426, 429, 430, 432-434, 436-449, 452-454, 470-495, 512, 514, 515, 517, 518, 520, 521, 523, 524, 529-536, 542-548, 563-567, 694-699, 702-713, 715-717, 719, 721-724, 726-728, 735, 739-746, 752-770, 791-844, 853-855, 857, 864-959, 962-964, 982-1000, 1002-1009, 1025-1029, 1093-1111, 1114-1118, 1160-1163, 1176, 1181-1187, 1197-1208, 1216-1225, 1227-1232, 1246-1251, 1253-1259, 1278-1290, 1293-1307, 1313-1318, 1334, 1335, 1352-1363, 1365-1371, 1373-1393, 1395-1417, 1419-1422, 1424-1449, 1451-1488, 1494-1509, 1511-1519, 1529-1539, 1549-1563
Krasnoyarskoye	165-191, 193, 195, 198-212, 224-262, 265, 274-308, 342-407, 409, 413, 417

## PROPOSALS ON DEVISING THE BIKIN NATIONAL PARK MANAGEMENT PLAN

### 1. THE INFRASTRUCTURE FORMATION

In order to fulfil the Bikin National Park's tasks effectively, it is planned to create the production infrastructure (Fig.1), including:

- The Central Office in Krasny Yar settlement
- The operational office in Luchegorsk urban-type settlement
- A visit center at the Khabarovsk-Nakhodka motorway, near the bridge across the River Bikin
- A visit center in Okhotnichiy settlement
- An office for organizing the protection in Maximovka settlement (or Terney settlement)
- An office for organizing the protection in Vostok-2 settlement (or Roshchino settlement)
- 2 scientific monitoring centers (Ulma and Laukha)
- 4 basic protective cordons (Ada, Zeva, Tavasikchi, Vostok-2)
- 15 permanent protective cordons
- Patrol itineraries and paths with stop points
- Permanent inventorying itineraries and paths
- Permanent sites for monitoring and observing the wild animals, birds, and vegetation
- 3 airdromes for small aircraft (Laukha, Okhotnichiy settlement, Ada)
- 9 helidromes

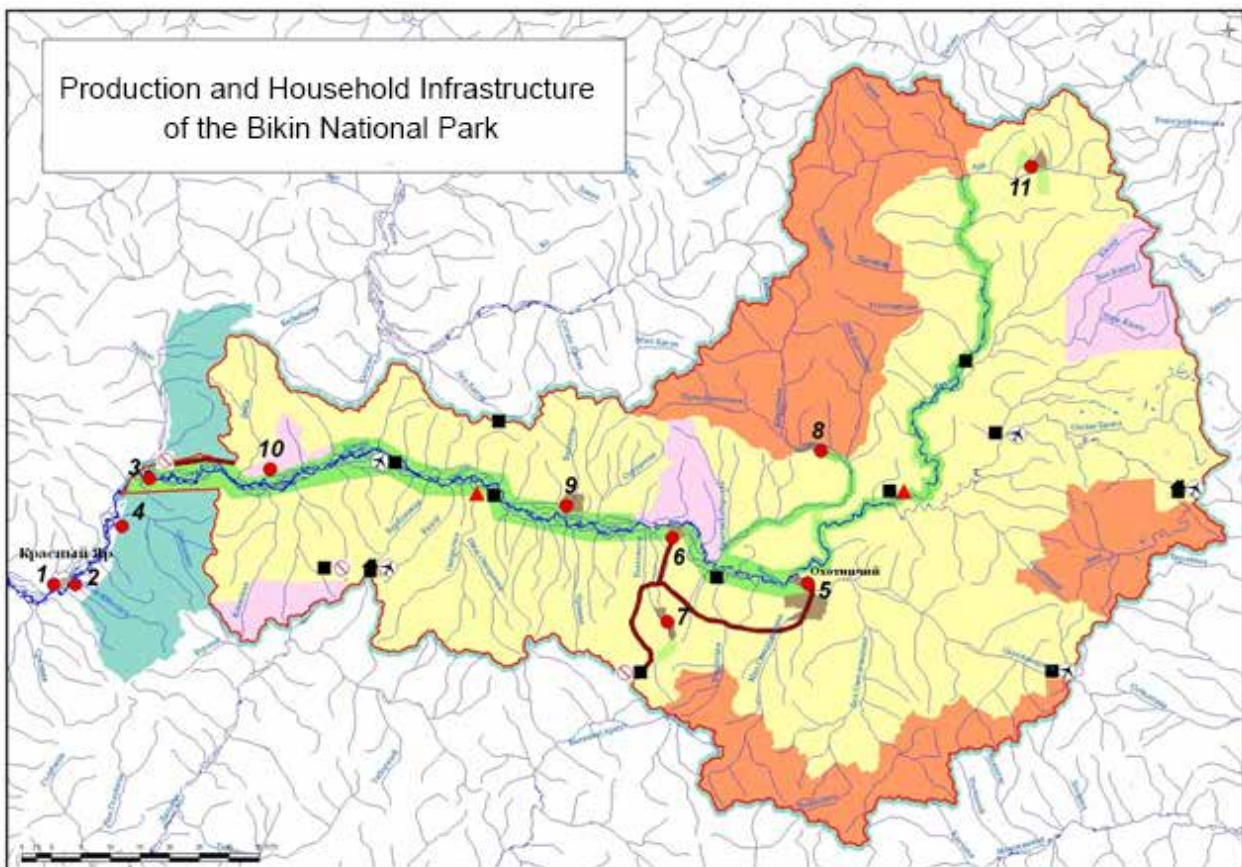














Fig. 1. Production and Household Infrastructure of the Bikin National Park

## The Legend to the Map of the Bikin National Park's Production and Household Infrastructure

### Functional zones

	Reserved zone
	Special protection zone
	Recreational zone
	Zone for economic purposes
	Zone for traditional use of nature
	Protective zone

### Production and household infrastructure

	Central protective cordon
	Permanent protective cordons
	Infrastructure for recreation and rest
	Places where roads are blocked
	Helidrome
	Planned earth roads

- **1. Bikin River's bank in Olon village:**
  - Airdrome for small aircraft (servicing the runway without a hard-surface pavement, equipping the place for storing and filling with fuels and lubricants for air and automobile transport, equipping the place for the passengers to wait for the plane, consolidation of the Bikin River bank from the side of the airdrome in order to prevent inundation).
- **2. Krasny Yar village:**
  - Construction of the Bikin National Park Administration building, with a helicopter pad on the roof of the building and other buildings and structures necessary to ensure the National Park functioning (garage, warehouse, etc.)
  - Construction of a nationally-styled building for accommodation and work of the Permanent Council of the Indigenous Small-Numbered Peoples of the Federal State Budgetary Establishment 'Bikin National Park'
  - Repairing and arranging the ethnocultural center of the indigenous small-numbered peoples (museum, souvenir workshop, hotel) and its territory
- **3. The area of the bridge across the River Bikin on Khabarovsk-Nakhodka motorway:**
  - Place for stopover and overnight stay of the guests and tourists (hotel, bath, pavilion, car parking, helidrome, equipment and transport rental place)
  - Motor filling station
  - Bikin National Park's check-point
  - Bikin National Park's visit center
- **4. On Khabarovsk-Nakhodka motorway, in the Bikin National Park's economic zone:**
  - Places where roads are blocked
  - National Park's permanent protective cordon
- **5. Okhotnichye village:**
  - Airdrome for small aircraft (servicing the runway without a hard-surface pavement, equipping the place for storing and filling with fuels and lubricants for air and automobile transport, equipping the place for the passengers to wait for the plane)
  - Hotel for the tourists and guests
  - Bikin National Park's visit center
  - Bikin National Park's check-point



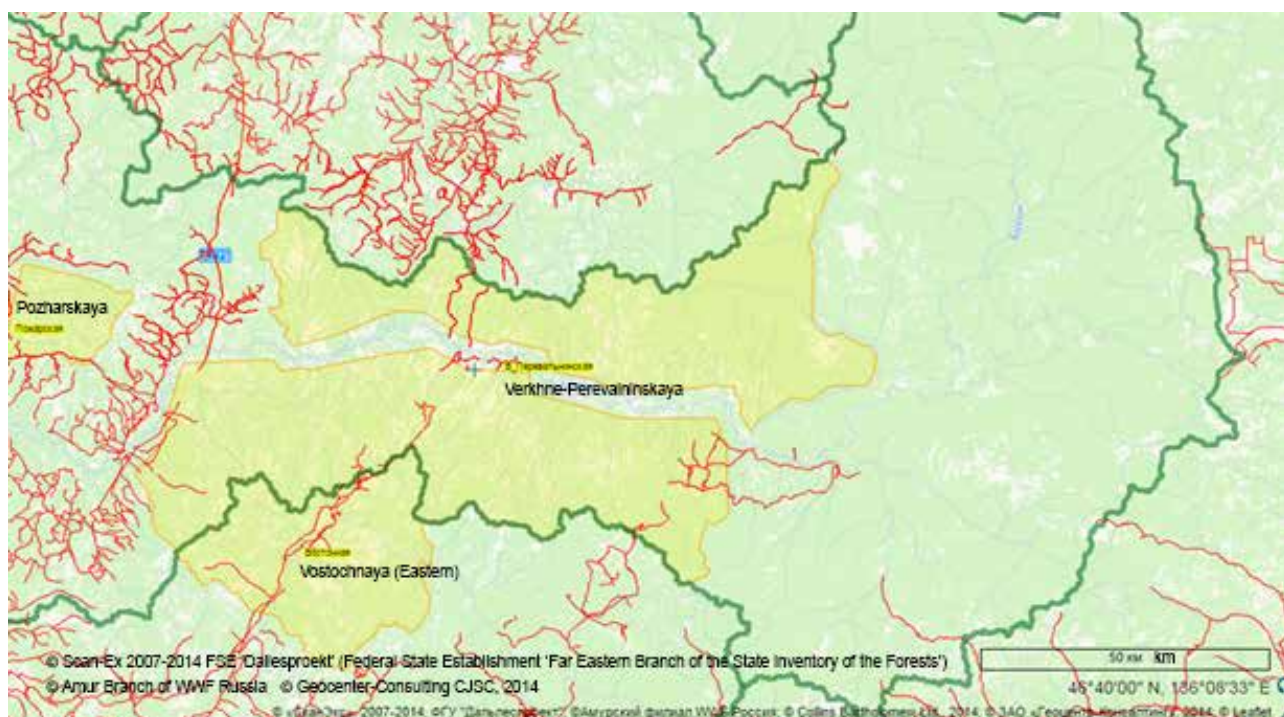
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- **6.** Laukha site:
  - Bikin National Park's scientific monitoring center
  - Bikin National Park's permanent protective cordon
  - Airdrome for small aircraft (servicing the runway without a hard-surface pavement)
  
- **7.** Tavasikchi site, Melnichny Spring:
  - Infrastructure for recreation and rest
  - National Park's central protective cordon
  - Helidrome
  
- **8.** Bachelaza site:
  - Infrastructure for recreation and rest
  - National Park's permanent protective cordon
  - Helidrome with place for storing fuels and lubricants
  
- **9.** Khabagou site:
  - Infrastructure for recreation and rest
  - National Park's permanent protective cordon
  - Helidrome
  
- **10.** Ulma site:
  - Bikin National Park's scientific monitoring center
  - Infrastructure for recreation and rest
  - National Park's permanent protective cordon
  
- **11.** Ada site:
  - Infrastructure for recreation and rest
  - National Park's central protective cordon
  - Airdrome for small aircraft (servicing the runway without a hard-surface pavement),

## 2. PROTECTING THE NATURAL COMPLEXES

### Organizing the Protection

The access to a greater part of the national park's territory is difficult, that is why the controlling efforts should be concentrated near the roads available or the spots where neighboring roads come close to the boundaries of the specially protected natural territory (Fig. 2).



**Fig. 2. The road network in the Bikin National Park territory and adjacent districts (based on the automatic analysis of Landsat satellite photos).**

When deciphering the satellite photographs, the wheel-worn blizzard tracks and abandoned geological roads have also been classified as the roads. Nevertheless, the scheme well reflects the problematic spots and places from where people enter the specially protected natural territory. Moreover, the Bikin riverbed is the main 'road': by motorboats in summer and snowmobiles in winter. It is on these entrances that the cordons are planned to be placed in order to control the national park visitors (Fig. 1):

1. 'Vilyuyka' — at the boundary of the Bikin territory of traditional use of the nature, the motorway that joins Verkhny (Upper) Pereval village with Yasenevoye, upper reaches of the River Vilyuyka (a tributary of the Bikin River), height 441.5.
2. 'Takhalo' — at the boundary of the national park's protective zone (the administrative border of Khabarovsk and Primorsky Krays) on the Khabarovsk-Nakhodka motorway, 426.0 height slope, Mount Pogranichnaya.

## ANNEX B4

3. 'Takhalinsky Bridge' — near the bridge across the Bikin on the Khabarovsk-Nakhodka motorway, the River Bikin's left bank, 370.5 height slope, Mount Blizkaya.
4. 'Vostok' — at the administrative border of Pozharsky and Krasnoarmeysky Districts on the timber-carrying road that goes from Vostok-2 settlement, 1057.3 height slope, Mount Biser-naya.
5. 'Bikin' — on the right bank of the River Bikin in the River Videnka's outfall.
6. 'Snezhnaya' — at the administrative border of Pozharsky and Krasnoarmeysky Districts, the watershed between the Sukhoy Spring (a tributary of the Spring Snezhny) and Tavasikchi (a tributary of the River Bikin) on the forest road.
7. 'Okhotnichiy' — at the outfall of the River Svetlovodnaya (a tributary of the River Bikin).
8. 'Kamenny' — the administrative border of Pozharsky and Terneysky Districts at the watershed of the Rivers Svetlovodnaya (a tributary of the River Bikin) and Sobolevka.
9. 'Zeva' — at the administrative border of Pozharsky and Terneysky Districts in the middle reaches of the River Zeva.
10. 'Ada' — on the right bank of the River Ada (a tributary of the Bikin River) in the basin of the Spring Khmury (a tributary of the Ada River).

The national park will be managed and its protection will be organized from the central office in Krasny Yar village and additional offices in Terneysky and Krasnoarmeysky Districts. For promptly reacting and constantly inspecting the territory in order to detect and suppress violations of the established regime in the planned territory, the work of 4 operational groups of specially trained specialists will be organized.

Systematic involvement of small aircraft will be needed for patrolling the territory and possibly dropping the inspectors to the protective cordons as well as for timely detecting and promptly quenching the forest fires. Also, introduction of the GLONASS system and a reliable radio or satellite communication is necessary to organize the work effectively, to control the fulfilment of the tasks set and the safety precautions in the national park's territory because of its large area, distant character and difficult access to the territory.

The national park's territory is a historical place where the indigenous small-numbered peoples conduct their traditional way of life. In the course of time, the local people's traditions and customs have formed to protect the territory and use its natural resources, not only the Udeges' and Nanai's ones, but also the ones of all the other nationalities who live with them and use the nature. Division of the territory into the ancestral (hunting) plots is one the most significant and effective methods of controlling and protecting the territory. The local people are directly interested in preserving the lands assigned to them. Official employment of the locals is recommended in the national park for them to be additionally interested and motivated, to still enhance the control effectiveness, the material and technical support. To do this, the manning table that is being elaborated provides for positions of low-qualified workers, for example, firemen, watchmen, or keepers of the scientific stations.

### Fire-Fighting

The detailed plan of fire precautions for the territory will be devised during the national park forest management; now, the materials prepared for the Bikin nut-production zone spot (Project..., 2009) can be taken as the basic ones. The national park's territory is a part of Roshchinsky Forest Fire Okrug of Ussuriyskaya Forest Fire Oblast. In conformity to 'The Rules of Fire Safety in the Forests' dated June 30, 2007, No. 417, as well as 'A Scale for Assessing the Natural Fire Hazard of the Forest Spots' (Khabarovsk, 1982), the forests have been distributed as follows by the natural fire hazard classes:

- Quarters Nos. 121, 214, 216, 218, 220, 223, 274, 269, 326, 328, 330, 332, 334, 337, 365, 367, 407, 409, 413 of Krasnoyarskoye plot forestry and quarters Nos. 335, 340, 341, 408, 443, 444, 446, 447, 448, 449, 450, 451, 452, 454, 471, 472, 473, 476, 477, 478, 479, 480, 498, 499, 500, 502, 503, 507, 508, 509, 512, 571 of Okhotnichye plot forestry belong to class IV of the natural fire hazard.
- The rest of the quarters of Sobolinoye, Krasnoyarskoye, and Okhotnichye plot forestries belong to class III of the natural fire hazard.

In general, the forest plot has been assigned the medium (third) class of the natural fire hazard. The subaerial protection of the forests from fires is provided for only on 4827 ha of the area in quarters 107, 108, 109, 110, 112, 113 of Sobolinoye plot forestry with availability of year-round roads. The rest of the territory needs aviapatrolling and using paratroopers.

Fire precautions on a forest spot provides mainly for preventive measures. *Table 1* gives information about the availability and need for fire machinery, equipment, outfits and implements in compliance with 'The Rules of Fire Safety in the Forests' (2007).

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**Table 1. Calculations of the need in fire machinery, equipment, outfits and implements**

Name	Measurement unit	In compliance with the guidelines in force	Projected acquisition, lease, making
Hand tools:			
Spades	Item	15	-
Axes	Item	5	-
Rakes	Item	10	10
Crosscut saws	Item	5	5
Buckets or other containers for water with a volume up to 12 liters	Item	20	20
Electromegaphones	Item	1	1
Portable ultrashort or short waveband radio stations	Item	2	-
Motopumps with accessories	Item	1	-
First-aid kit	Item	2	-
Individual dressing packages	Item	According to the number of the workers	-
Cans or canisters for drinking water with a capacity of up to 20 liters	Item	3	3
Cups for water	Item	According to the number of the workers	-
Off-road vehicle	Item	-	-
Wooden motorboats	Item	-	-
Petrol saws	Item	-	-
Backpack fire-extinguishers	Item	-	-
A fireman's outfit	Kit	-	-

A fire-fighting team of 25 people, including 4 leaders, must be formed on the basis of the national park for the prompt reaction. 20 seasonal workers have to be involved in patrolling and quenching the forest fires from April 1 to October 31. The preparedness of the subaerial forest protection units and their working regulations must comply with the requirements of the "Guidelines on Fire Prevention in Forests and Regulations on the Work of Forest Fire Services". The Protection Deputy Director is responsible for fire safety at the enterprise.

The fires will be detected and promptly quenched on the basis of the contract with the aviation forest protection establishment of Primorsky Kray. The permanent stock of fire-fighting implements, coveralls and field feeding will be created in Krasny Yar and Okhotnichiy settlements as well as at the basic cordons. Formation of the special team from the local people who traditionally use the nature in the national park's territory is an effective method of extinguishing the forest fires that arise. In Krasny Yar and Sobolinoye settlements, a voluntary fire-fighting brigade will be formed and trained in addition to the national park staff. It is supposed that the producing hunters will be able to work as watchmen thus ensuring the fire-fighting work directly on their plots during the fire-hazardous period.

### 3. SCIENTIFIC RESEARCH AND MONITORING

Taking into account the unique value of the national park, which is inscribed on the Tentative List of the World Natural Heritage properties, it is necessary to provide for a full-fledged scientific department as a part of its staff to be similar to scientific departments of Russian reserves, but with additional tasks of studying the culture of the indigenous small-numbered peoples and the traditional use of the nature, for ensuring the development of aboriginal and ecological tourism and for tracking their influence on the natural complexes. The national park's scientific department will conduct continuous stationary research on their own and will involve researchers from different universities and scientific centers under the conditions of the stringent compliance with the nature-protective restrictions of the national park.

In order to ensure the scientific work, it is planned to create scientific stations in the pine-broadleaf forests (Ulma and Laukha), as well as in the high-mountain spruce forests and alpine meadows (the upstream stretch of the River Peshcherka or in the vicinity of Mount Anik). By creating the conditions for habitation and full-fledged scientific work of the Russian and foreign scientists, the national park can involve hundreds of scientists in order to conduct researches in conformity with the programs agreed or simply to familiarize themselves with the natural complexes (scientific tourism), which will enhance the international authority of the specially protected natural territory and will bring in significant income. The initial data for the further in-depth research are available.

The following scientific research areas seem the most topical:

- Inventorying the flora and fauna of the Bikin River basin and adjoining territories
- Studying the populations of the Amur tiger and the wild hoofed animals
- Studying the old-aged pine-broadleaf forests
- Assessment of the climate change influence of the Central Sikhote-Alin biota
- Studying the populations of the scaly-sided merganser and fish owl
- Assessing the touristic influence on the Bikin River ecosystems

In order to ensure the succession of the observations and to compile the long-term data ranges, it is sensible to use the methods and inventory sites where such works were performed in the previous years (Kudriavtsev, 2014) when organizing the monitoring of the animals to chronicle the National Park's nature.

#### **The complex winter after-production inventory (February and March):**

- Inventory at 20 stationary sites with a total area of 24,542 ha, (red deer (Manchurian deer), elk, wild boar, roe, musk deer, lynx, sable, yellow-throated marten, Siberian weasel (kolinsky), squirrel, hare. Also some trails are found: of the tiger, wolf, brown and Asiatic black bears, as well as birds are met: hazel grouse, spotted capercaillie, Siberian sickle-winged grouse)
- The winter itinerary inventory: 46 itineraries with a total length of about 460 kilometers (the trails of the Manchurian deer, elk, wild boar, roe, musk deer, lynx, sable, yellow-throated marten, Siberian weasel (kolinsky), squirrel, hare, and hazel grouse are met)

## ANNEX B4

- The production is mapped by interviewing the hunters (using the questionnaires). In total, 31 hunters are interviewed, the total area of the mapped spots equals 438,320 ha, with gathering information about all the wild animal species in general as well as the field observations about the characteristic factors that influence the animals' habitation conditions and environment (climate, crop yield, etc.).
- Inventorying the otter and mink through the itinerary method. In total, 180 out of 730 km of the total extent of the floodplains where these species usually dwell are examined.

In April-May, **the brown and Asiatic black bears** are inventoried when they leave their dens. The work is done at eight inventory sites of 23,000 ha in area: the brown bear usually dwells on 1,269,400 ha of the hunting entity's territory and the black bear inhabits 860,800 ha.

According to the hunting management data, waterbodies with 725 km of the bank length fit for swimming birds' habitation are located in the Middle and Upper Bikin territory, 125 km out of them are of type 2 and 600 km are of type 3. **The swimming birds are inventoried** from the boats from mid July to mid August. Three itineraries 520 km long in total have been established:

1. Krasny Yar — along the River Bikin — along the left bank to the outfall of the River Svetlovodnaya (Ulunga) — Okhotnichiy settlement with all the tributaries and gulfs, 210 km long
2. Krasny Yar — along the River Bikin — along the right bank to the outfall of the River Plotnikov with all the channels and gulfs, 280 km long
3. Krasny Yar — along the River Bikin — along both sides to the outfall the Channel Chintafu with all the channels and gulfs, 30 km long

Besides the basic inventory work complex, information about other species is also collected. The last examinations of the territory in order to estimate the number of the badger and racoon dog were conducted in 2008, the muskrat — in early September 2007, and the pheasant — in late September 2007.

Since 1998, the trails of the tiger and wild hoofed animals have been inventoried annually within the framework of the **Amur Tiger Monitoring Program** at the Bikin's middle reaches.

## 4. ORGANIZING THE TRADITIONAL USE OF THE NATURE

### The Principles of Organizing the Traditional Use of the Nature

In the entire national park's territory (except the reserved and special protection zones), the traditional economic activities are conducted by the indigenous small-numbered peoples, their communities, as well as by the people who do not belong to the indigenous small-numbered peoples but who permanently reside in the places of the traditional dwelling of the indigenous small-numbered peoples and who practice the same traditional use of the nature and traditional way of life as the indigenous small-numbered peoples. The citizens entitled to use the nature traditionally in the national park's territory will be identified by the Permanent Council of the Indigenous Small-Numbered Peoples under the Bikin National Park.

The above-mentioned persons and their communities conduct the traditional economic activities free of charge, including allotment of place for them to create the infrastructure necessary for conducting their traditional economic activities and traditional production in compliance with the approved plans and projects devised jointly by the National Park's Directorate and the Council of the Indigenous Small-Numbered Peoples.

The traditional economic activities must be conducted in compliance with the principles of non-exhaustive use of the nature within the volumes sufficient for satisfying the vital economic, material, and spiritual needs, as well as for preserving and developing the entire traditional culture of the Udeges and Nanai as a united system. In the territory, the traditional activities will include:

- Hunting, processing, and realization of the hunting products
- Procurement, processing, and realization of the animals that are not hunted
- Gathering, including picking wild fruits and herbs, as well as processing and realization of wild plants and their fruits (berries, mushrooms, edible and medicinal herbs, nuts, etc.)
- Fishing, processing and realization of the water biologic resources
- Making the national utensils, implements, sledges, boats, national clothes, footwear, and realizing them
- Making the national souvenirs, other artistic and other works of the national culture, as well as realizing them
- Farmstead olericulture
- Beekeeping
- Building the national accommodations or equipping accommodations in conformity to the national traditions and customs

For the most effectively defending the native habitation environment, preserving and developing the traditional use of the nature, the culture and the way of life of the small-numbered peoples who conduct their activities in the national park's territory and for ensuring the participation of the indigenous small-numbered peoples in the co-management, the following basic principles must be complied with:

1. Any economic activities must be coordinated with the representatives of the indigenous small-numbered peoples and their communities united into the Council of the Indigenous Small-Numbered Peoples under the Director of the National Park



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2. The Council of the Indigenous Small-Numbered Peoples under the Director of the National Park directly distributes the hunting plots, limits, and ecotour schedule among representatives of the indigenous small-numbered peoples
3. Building of the infrastructure objects, touristic bases and stopover sites must be coordinated directly with the Council of the Indigenous Small-Numbered Peoples and the representative of the indigenous small-numbered peoples for whom this territory has been allotted
4. The executive authorities of Primorsky Krai have to take into account the peculiarities of the traditional use of the nature and the way of life of the indigenous small-numbered peoples, provide for tax benefits and facilitation of the product processing and cottage industries
5. The executive authorities of Primorsky Krai and the local self-government bodies have to devote more attention to teaching and employing the youth of the indigenous small-numbered peoples by assisting them through allotment of special scholarships and in building the accommodations in the countryside.
6. Representatives of the indigenous small-numbered peoples and the persons equated to them must be given priority when employing to the national park's staff in accordance with their qualification and experience.

The Directorate of the National Park is in charge of and manages the zone for the traditional extensive use of the nature, the recreational and economic ones in a close cooperation and concurrence (taking into account their opinions and recommendations) with the specially created permanent Council of the Indigenous Small-Numbered Peoples under the Director in conformity to the Regulations on the Council approved by the Minister of Natural Resources and Environment of the Russian Federation. The Council is formed from 12 locals, mainly (2/3 of the numbers) from the indigenous small-numbered peoples according the voting at their general meeting. The Council members are approved by the National Park Director's order. The President of the Council performs his/her duties in conformity to the position of the National Park's Deputy Director on the issues of preserving and developing the traditional economic activities of the indigenous small-numbered peoples as well as conserving the conditions for the traditional way of life in the national park's territory.

The permanent Council of the Indigenous Small-Numbered Peoples under the National Park:

- Takes part in controlling the use of the lands of different categories necessary for the traditional economy and traditional production of the small-numbered peoples
- Participates in controlling the compliance with the Russian Federation legislation and these Regulations
- Participates in preparing and taking decisions, submits its proposals and recommendations about conducting any activities in the national park's territory, with a special attention to the zone for the traditional extensive use of the nature, to the Directorate of the National Park
- Initiates and participates in performing ecological and ethnological expert examinations
- Devises the rules, procedures and recommendations for the citizens who traditionally use the nature in the national park's territory taking into account the traditions and customs and without violating the Russian Federation legislation in force
- Receives all the necessary information and documentation from the Establishment and, if necessary, from the Russian Federation state authorities in order to ensure the duties entrusted

## 5. RECREATIONAL USE OF THE TERRITORY AND DEVELOPMENT OF THE ECOLOGIC AND ABORIGINAL TOURISM

In the national park's territory, the best recreational districts are covered with various types of pine and pine-broadleaf forests and, to a lesser extent, with larch forests and bald mountains with their panoramic view, the far less number of blood-sucking insects and, at the same time, with considerable reserves of berry subshrubs (cowberry, bog bilberry) and medicinal herbs (golden root, etc.). The territory spots that are the most favorable for developing the recreational use of the nature are mainly associated with the nut-production zone of the River Bikin's middle reaches, its ecological recreational capacity amounts to about 1,205,000 people (Vyshin, 2003).

The recreational capacity of the nominated property can be significantly increased by providing the necessary facilities and developing the infrastructure, the transport network, selecting the qualified personnel capable of using the nature for recreational purposes correctly. In order to create favorable conditions for organizing the mass, excursion, touristic rest and walks, to increase the recreational capacity of the territory and to reduce the load on the natural complexes, it is recommended to improve the recreational places allotted.

**Table 2. The recommended amount of measures for improving the recreational forests of the Verkhne-Perevalnenskoye forestry**

Entry No.	Improvement element	Measurement unit	Amount
1.	Gravel roads	km	122 km
2.	Car parking places	item	10
3.	Benches	item	12030
4.	Picnic tables (for 6 people)	item	1445
5.	Sheds against rain	item	240
6.	Hearths for cooking	item	720
7.	Litterbins	item	2400
8.	Waste receptacles	item	10
9.	Toilets	item	240
10.	Passage bridges	item	as needed
11.	Banners	item	300
12.	Sports grounds	m <sup>2</sup>	10
13.	Indicators	item	10
14.	Scenic spots	item	50
15.	Sites for putting up tents	m <sup>2</sup>	250

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The tourism will be developed mainly in the national park's recreational zone (109,625 ha) in the valley of the Bikin and its tributaries, near the Takhalinsky bridge and available hunting bases, as well as in the economic zone (7,061 ha) around Okhotnichiy and Staraya Rechka settlements. Ecologic, fishing, sport tourism that involves active movement along the itineraries and ethnical (aboriginal) tourism are the most preferable. These types of tourism exist now, too (up to ten thousand fishermen and rafting amateurs per year), that is why putting them in good order, organizing and further development are the top priority task. The intact virgin nature and the culture of the Udeges and Nanai, the possibility to catch fish and gather mushrooms, nuts and berries, the picturesque landscapes as well as the Amur tiger and the traces of its stay, other rare animals and plants will be of the main interest.

The full-fledged development of tourism in the Bikin National Park's territory and a substantial improvement of the quality of people's life in Pozharky District depend, first of all, on creation of the **road-and-transport infrastructure**; to do this, it is necessary:

- To ensure the constant maintenance and quality of the motorway from Verkhny Pereval village to Krasny Yar and maintenance of the bridge in Krasny Yar settlement across the River Bikin
- To ensure the constant maintenance and quality of the motorway from Krasny Yar — Yase-nevo — Sobolinoye to the federal Khabarovsk-Nakhodka ('Vostok') motorway
- To promote resumption of building of the federal Khabarovsk-Nakhodka ('Vostok') motorway with the direct junction to Krasny Yar village
- To organize regular deliveries of fuels and lubricants to Krasnoyarskoye rural settlement
- To repair the forest road from Okhotnichiy settlement to the neighboring Krasnoarmeysky District, with a branch to the Laukha site
- To inspect the state of the existing helidromes, the takeoff and landing grounds and, if necessary, to create new helidromes
- To make air service to Krasny Yar and Okhotnichiy settlements affordable for a wider circle of consumers, to replace the AN-2 plane with a D-6 plane made in Canada for 19 people and to perform regular flights at least 2 times a week

Organization of **the public utilities and communication** requires taking decisions in the following areas:

- Elaboration of measures for using the traditional and alternative sources of electricity (solar cells and mini hydropower plants) at the touristic infrastructure enterprises
- Electrification of the place where the national park's visit center is situated
- Arranging water supply, water disposal and sewerage at the created touristic infrastructure objects in compliance with the sanitary-epidemiologic and ecologic safety norms
- Organization of the litter collection, sorting and disposal system in the national park's recreational zone
- Expansion of the coverage zone and improvement of the cellular communication and Internet
- Consideration of the issue of whether wire telephone and fiber-optic communication are advisable at the places where the touristic infrastructure objects are situated and, if yes, providing them

These work areas will permit supporting not only the work of the touristic infrastructure enterprises, make the National Park accessible to order and organize the services, but are also aimed at ensuring the safety of the park visitors and workers, contributing to the nature-protective functions and enhancing the effectiveness of the scientific and research activities of the specially protected natural territory personnel.

Creation of **accommodations for the tourists** is a key task of the touristic infrastructure development. At the initial stage, it is sensible to use the existing accommodations and places of the touristic stream attraction; the new infrastructure should be created in future (*Fig. 1*).

Okhotnichiy settlement is one of the main attraction places for fishermen tourists; this category of the tourists create demand for hotel services and motorboat escort along the rivers. Also, days-long pedestrian (horse) itineraries can be developed. It is necessary to create the following infrastructure: a Visit Center stylized as an Old Believers' village, a hotel-touristic center with 20 beds including a year-round hotel, a bathhouse complex, a touristic outfit rental post, a boat-house for storing the boats and motors, yard structures (livestock yard, stable) and kitchen garden. It is also necessary to repair the road and equip the places for the tent camp near the Bikin River banks.

The Laukha site can be deemed promising for the development of the ecologic tourism, accommodating the fishermen and participants of the scientific and research events. For this aim, it is necessary to devise the project and equip a hotel with 10-15 beds and the zone near the banks. Today the forest road from Krasnoarmeysky District to Okhotnichiy settlement, with a branch to the Laukha site is barely passable, but is strategically important for ensuring the territory with materials, fuels and lubricants. This way conditions the accessibility of the territory for tourists and ensures entrance to the main infrastructure places. This forest road can also be a good recreational itinerary, if the places for the staging posts, tent camps and for the tourists to sight are equipped with the necessary facilities.

The Ulma site is located on the right bank of the Bikin River, 25 km upstream of the Takhalinsky bridge. Today here are a small two-storey house and a winter hut (3 4 m); an ecologic path to the scenic sightseeing ground (1.5 km) has been equipped. Taking into account the natural uniqueness and interest of international scientific and nature-protective organizations, it is necessary to use the potential of the special protection zones for development of scientific works on studying the natural complexes and objects in their territories. It is proposed to equip two scientific stations of international level in the close vicinity of the special protection zones on the Ulma and Laukha sites for the year-round accommodation of scientific workers, postgraduate and undergraduate students (up to 10-15 people).

At the Tavasikchi site, it is required to complete building the yard and the interior of the buildings. There are all the necessary utility structures, a kitchen, a bath, a two-storey guest house, and rooms for the personnel. The ecologic tourism is a promising area, it possible to organize hunting the brown and Asian black bears, Mancurian deer, elk and wild boar within the scope of the permitted activities in the national park. These places are rich in mammals and fish, there are natural saline soils.

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The Takhalinsky bridge is the area of the bridge across the River Bikin on the federal Khabarovsk-Nakhodka ('Vostok') motorway, which is under construction. Today it is the main place through which the main stream of the tourists enter the national park's territory, mainly fishermen on motorboats. There is a check-point house and a private residential house. In order to develop the touristic infrastructure, it is necessary to build a Visit Center stylized as a Jurchen stronghold, hotels, public catering enterprises (cafes), a guarded car parking, and places for a tent camp. It is necessary to organize a service for escorting the tourists and providing flotation devices as well as for organizing winter (ice) fishing.

Ada Spring area. It is located in the very center of the Sikhote-Alin mountain range, at a height of approximately 650 meters above sea level. It is one of the uppermost tributaries of the River Bikin. Accommodation of the tourists, ecologic itineraries, sites for observing the wild animals and birds (brown bear, elk, spotted capercaillie, Siberian sickle-winged grouse, etc.), sport amateur fishing (these places are famous for the large grayling) are promising services. There is a site for small aircraft, 3 log houses (3–4 m) and a bath (3–4 m), which can be used for accommodating the personnel and as utility rooms. It is necessary to build a highly-comfortable hotel for 15-20 people in order to accommodate the tourists, a kitchen and a bath. Because the district is distant and the transport communication is expensive, prosperous tourists can be the target consumers of the touristic services, consequently, the accommodation and service conditions should be highly comfortable.

At the initial stage, it is sensible to develop the touristic activities on the basis of the existing infrastructure of Okhotnichiy settlement and Tavasikchi site. They provide a year-round accommodation for the visitors and adequate service quality. Also, first of all it is necessary to equip tent camps at Khomyaki and Laukha sites, at the River Terrasnaya's outfall, and, if possible, also year-round guest houses and utility structures for arrangement of the winter tours. All these places should be closed by a network of itineraries along the rivers and on the land in order to organize the rest, ecologic paths, observation of the wild animals, summer and winter (ice) fishing. An itinerary with sites for observing the wild animals can be organized at the Tavasikchi site. It has all the necessary for the initial tourism organization measures: the personnel and initial infrastructure. The rooms should be equipped and finished for accommodating the tourists.

## 6. ECOLOGIC ENLIGHTENMENT AND EDUCATION

The work of the ecologic (ethnologic) enlightenment and tourism department will be conducted in two areas: organizing the touristic activities and enlightening the locals.

1. Two heads of the visit centers (in Okhotnichiy settlement and at the Takhalinsky bridge) as well as the head of the museum (ethno-natural center) in Krasny Yar village will work directly with the tourists. It is desirable that they be representatives of the indigenous small-numbered peoples with higher or secondary special education who would use the local colors for the work. They will provide the tourists with maps, booklets, leaflets, souvenir products, conduct talks, lectures, show video films. If the tourists have free time, they will be able to attend paid training master classes where they will be taught the simplest ways of making the souvenirs so that the tourists can both buy the ready-made souvenirs and try themselves to make the articles from birch bark, leather and beads.

Two methodologists on ecological (ethnological) enlightenment devise printed products for the national park. They must be specialists with higher education, be skilled in special computer programs and able to select, analyze and process the material.

The national park's manager orders the touristic souvenir products at the souvenir and joiner's workshops that already exist in Krasny Yar and where the locals who have the skills work. The national park accepts the products to be sold not only on the spot but also at outlets in cities. Not only the souvenirs but also the non-wooden products of the forest, for example, berries, herbal teas, dried and salted fern, nuts can be sold through the visit centers and museum. It is important that a professional marketing manager will help to arrange selling the products made by the local masters and provide the advertisement.

Teachers of the local schools, students who come home for summer holidays and elder pupils can work as the guides in Krasny Yar settlement in summertime, when there are a lot of the tourists. Some guides who ensure the permanent tours along the river in summer and by snowmobiles in winter can be employed on a permanent basis to the department.

A press officer together with an Internet resource specialist ensure dissemination of information about the park's work in official mass media, social networks, are in charge of the site and attract both Russian and foreign tourists to the park.

2. Three target groups have been marked out in the work with the locals: hunters, schoolchildren, and the other inhabitants.

The hunters are marked out as a special target group because it is they that will be the main keepers of the national park's nature. It is necessary to give them explanations about the rare and vanishing species, elucidate the wildlife monitoring system, obtain information from the questionnaires about the numbers of the animals and forage harvests, familiarize them with the work of trail cameras, with modern ways of procuring the fur-bearing animals, with the rules and norms of procuring the hoofed animals. The hunters will work as the seasonal fire watchmen, which will also need additional training.

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The children will be able to study the national dances in Agdaymi ensemble, which will be directed by a worker of the national park. This will permit not only preserving the unique traditional culture, but also advertising the special ethnological tourism. The girls will be able to study how to make the souvenirs, be competent in medicinal herbs, compose herbal teas, prepare traditional national dishes and take care of the household.

At the 'Pathfinder School', which will open in the national park, the boys will study to use the nature traditionally: to hunt, fish, gather the forest gifts and make tools for the work: boats, fishing rods, skis, traps, etc. Training of how to survive under the severe taiga conditions and the ability to read the trails of the animals and birds will take a special place. The good traditions of the Udege and Nanai people permit them to exist in harmony with the nature by taking only the most necessary for their lives. The hunters who go in for these activities today become older. It is necessary to prepare teenagers so that the successors come in the taiga.

The manager of the works on ecology and regional studies in the national park will give lessons to the schoolchildren who will decide to choose studies in specialties necessary for the national park. The history of the native land, basics of biology and ecology, role and significance of the specially protected natural territories for preserving the nature, basics of ecological and ethnological enlightenment and tourism will be the main topics.

Two methodologists will carry out popularization works with other inhabitants, including artistic family contests, colorful festivals, films about nature and the work of the national park, publication of the national park's newspaper. The methodologists will create groups of interested local initiators to assist the national park. One group can accommodate the tourists in their houses. A second one can show how to cook the national dishes for the tourists. A group of those who love the national songs and stories can appear and offer the tourists the evening program. All these will help the national park to attract a lot of tourists and the locals to earn money.

## 7. THE MANNING TABLE OF THE BIKIN NATIONAL PARK

Taking into account the huge area, the length of the boundaries and the complicated territory management logistics, a manning table that includes 220 people has been proposed for the Bikin National Park to work effectively. The Director of the Establishment is the Chief State Inspector at the same time. His rights and obligations have been stipulated in the Establishment's Regulations. The Director will be appointed by the Ministry of Natural Resources and Environment of the Russian Federation with the concurrence of the President's plenipotentiary representative in the Far Eastern Federal Okrug and Primorsky Kray Governor taking into account the opinion of the Council of the Indigenous Small-Numbered Peoples. It is proposed to appoint 6 Deputy Directors for managing the departments and, in addition, a Deputy Director for the development and one for building.

**Table 3. A draft manning table of the Bikin National Park.**

Position	Number of units	Note
<b>Directorate</b>		
Director	1	Chief State Inspector
Deputy Director for Development	1	
Secretary	2	
<b>Total:</b>	<b>4</b>	
<b>Department of Accounting, Economy and Planning</b>		
Deputy Director, Head of Department	1	Chief Accountant
Accountant	2	
Planning economist	1	
Specialist for state purchases and public sales	1	
Cashier	1	
<b>Total:</b>	<b>6</b>	

The Bikin National Park is a pilot project that has to demonstrate the possibility of combining the nature protection and support of the indigenous small-numbered peoples' culture. To do this, representatives of the indigenous small-numbered peoples who reside in Krasny Yar settlement or those who are ready to return there should be employed by the Establishment. All the specialists belonging to the indigenous small-numbered peoples who have received education closely related to the activities should be employed according to their qualification. It is necessary to encourage the youth who have not returned to the settlement after having graduated from higher educational institutions due to absence of job or habitation prospects to come back. With the concurrence of Kray Governor, a support program will be fulfilled for Krasny Yar school-leavers to study at the expense of the state budget at higher educational institutions re-



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lated to the park's activities. First of all, these are forestry and gamekeeping specialties at Perm State Agricultural Academy, the touristic specialty at Vladivostok State University of Economics and Service. Vyazemsky Forestry Technical School is ready to provide middle-level training for work in the national park's forest engineering service. A system for preparation of guides on the aboriginal tourism will be organized jointly with the Russian Federation Tourism State Committee. These tasks will be entrusted to the Establishment's department of human resources.

<b>Human Resources</b>		
Head of the Human Resources Department	1	
Human Resources specialist	1	
Archivist	1	
<b>Total:</b>	<b>3</b>	

<b>Scientific Department</b>		
Deputy Director for Scientific Work	1	
Leading Scientific Worker	2	Mammalogist, geobotanist
Senior Scientific Worker	3	Ichthyologist, ornithologist, ethnographer
Scientific worker	2	Recreation specialist, silviculturist
Programmer	1	GIS specialist
Laboratorian	2	Zoologist, phenologist
<b>Total:</b>	<b>11</b>	

<b>Department for Ensuring the Traditional Use of the Nature</b>		
Deputy Director for the Traditional Use of the Nature	1	President of the Permanent Council of the Indigenous Small-Numbered Peoples
Assistant of the Deputy Director for the Traditional Use of the Nature	1	Secretary of the Permanent Council of the Indigenous Small-Numbered Peoples
Chief Gamekeeper	1	
Chief Specialist for Harvesting the Food and Medicinal Herbs	1	
Head of the museum (ethno-natural center)	1	According to the contract with the Territorial-Neighbor Community of the Indigenous Small-Numbered Peoples 'The Tiger'
Methodologist for production of souvenirs	1	
Marketing manager	1	
<b>Total:</b>	<b>7</b>	

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Organization of the ecological and ethnological enlightenment, ecological and aboriginal tourism will be entrusted the special department, which will also include a press group. In compliance with the RF President's instruction about the necessity of a wide involvement of the indigenous small-numbered peoples in the management and work of the national park, the manning table will include the positions of the Head of the ethnographical ensemble 'Agdaymi', the manager of the works on ecology and regional studies under the secondary school (in order to prepare the pupils for specialties necessary for work in the national park) and the Head of the Pathfinder School to conduct the vocational counselling for the future hunters and guides on the aboriginal tourism. In order to develop the aboriginal tourism, personnel who belong to the indigenous small-numbered peoples will be maximally involved, some of them will be employed on a permanent basis and some based on contracts.

<b>Department for Ecological (Ethnological) Enlightenment and Tourism</b>		
Deputy Director for Ecological (Ethnological) Enlightenment and Tourism	1	Chief Manager
Head of Tourism Department	1	
Head of the Visit Center	2	Okhotnichiy settlement, Bikin River bridge
Methodologist for ecological (ethnological) enlightenment	2	
Specialist for ecological (ethnological) enlightenment	3	Head of Agdaymi ensemble, Head of Pathfinder School, manager of the works on ecology and regional studies
Tour operator	1	
Guide	10	Seasonal work
Press officer	1	
Internet resource specialist	1	On Internet resources
<b>Total:</b>	<b>22</b>	

The estimated number of the territory protection inspectors is based on the average norm of 15 thousand ha for one inspector. In principle, the Protection Department is divided into two services. In order to detect and suppress the gravest violations of the nature-protective legislation in the National Park's territory and protective zone effectively and in time, the manning table provides for formation of the Operational Detachment consisting of 3 operational groups. They will be the most trained specialists for a continuous inspection of the territory and sorties, if certain information appears. They will also control observance of the park's nature-protective regime by the national park workers proper. The groups will be formed territorially in order to ensure the control from the side of Krasny Yar and Khabarovsk (the western group), from the side of Krasnoarmeysky District (southern) and from the side of Terneysky District (eastern). Each group will comprise one plot inspector and 3 inspectors, an off-road vehicle, snowmobiles and motorboats. When devising the operations, the leader of the operational detachment will be directly subordinate to the National Park's Director.

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The second service will be responsible for fire-fighting, forest engineering and biotechnical measures. It will also be organized based on the territorial principle (3 plot forestries). It will include 24 inspectors to ensure the shift control at the 4 national park's entrance check-points and 24 inspectors responsible for order in the ancestral plots of the indigenous small-numbered peoples. This will permit employing the responsible hunters who have their permanent hunting plots. Division of the territory into the plots and assignment of them to the responsible locals for the traditional use of the nature is a method of protecting the territory (traditional method). The Establishment will be able to encourage their work additionally (permanent salary and other pecuniary and technical assistance), will obtain the possibility to influence on and organize the hunter's work in order to fulfil the territory protection tasks. The National Park's protection service, including the fire-fighting one, is planned to have some positions that do not require special education or high qualification (25 fire watchmen).

<b>Protection Department</b>		
Deputy Director for Protection, Head of the Department	1	
Plot State Inspector for Protecting the Specially Protected Natural Territory	1	Lawyer for nature protection issues
Senior State Inspector for Protecting the National Park's Territory	1	Leader of the operational detachment
Plot State Inspector for Protecting the Reserve Territory, Leader of the Operational Group	3	1. Pozharsky District 2. Terneysky District 3. Krasnoarmeysky District
State Inspector for Protecting the Territory – member of the operational group	9	1. Pozharsky District 2. Terneysky District 3. Krasnoarmeysky District
Senior State Inspector for Protecting the National Park's Territory, Head of the Forest Engineering Service	1	Responsible for fire-fighting, forest engineering and biotechnical measures
Plot State Inspector for Protecting the Specially Protected Natural Territory	3	Heads of forest engineering service subdivisions in Pozharsky, Terneysky, and Krasnoarmeysky Districts
State Inspector for Protecting the Specially Protected Natural Territory	24	Making rounds, ensuring the fire-fighting and forest engineering measures
Plot State Inspector for Protecting the Specially Protected Natural Territory	24	Stationary service (cordons and shifts)
Fire watchmen	25	Seasonal work
<b>Total:</b>	<b>92</b>	

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<b>Department for Ensuring the Basic Activities</b>		
Deputy Director for General Issues, Head of Department	1	
Deputy Director for Building	1	Building and repairing the infrastructure objects
Engineer for Labor Protection and Occupational Safety	1	Responsible for the arms room and radio communication devices
Legal Advisor	1	Responsible for electronic public sales and state purchase quotations
Chief of the Garage	1	Chief Mechanic
Mechanic	2	Motor mechanic
Superintendent	3	of the Central Office; 2 Visit Centers
Keeper of the scientific station	2	Ulma and Laukha
Chief of the Central Warehouse	1	
Chief Power Engineer	1	
Metalworker-electrician for repairing the electric equipment	1	
Driver	24	
Tractor driver	4	
Metalworker-plumber	1	
Joiner	1	
Carpenter	1	
Auxiliary worker	14	Temporary work
Yard cleaner	3	
Stoker	4	Seasonal work
Watchman	4	
Cleaner of the service rooms	4	
<b>Total:</b>	<b>75</b>	

## Rare and endangered species of Bikin River valley flora and fauna which are be subjected to special protection

### Vascular plants:

*Pyrrhosia lingua*;  
*Selaginella tamariscina*;  
*Coniogramme intermedia*;  
*Taxus cuspidata*;  
*Symplocarpus renifolius*;  
*Lilium distichum*;  
*Lilium pensilvanicum*;  
*Lilium buschianum*;  
*Lilium*;  
*Lilium pumilum*;  
*Dioscorea nipponica*;  
*Cypripedium guttatum*;  
*Cypripedium macranthon*;  
*Cypripedium calceolus*;  
*Ephyppianthes sachalinensis*;  
*Pogonia japonica*;  
*Lichnis fulgens*;  
*Euriala ferox*;  
*Nuphar minor*;  
*Paeonia lactiflora*;  
*Paeonia obovata*;  
*Bergenia pacifica*;  
*Panax ginseng*;  
*Rhododendron mucronulatum*;  
*Abelia coreana*;  
*Popoviocodonia stenocarpa*;  
*Microbiota decussata*;  
*Calipso bulbosa*;  
*Galium paradoxum*;  
*Fritillaria ussuriensis*.

### Lichens:

*Cetraria komarovii*,  
*C. laureri*,  
*Coccocarpia cronia*,  
*C. rytroxili*,  
*Hypohymnia hypotripella*,  
*Leptogium hildenbrandii*,  
*Lobaria mplissima*,  
*L. pulmonaria*,  
*L. retigera*,  
*Menegazzia terebrata*,  
*Phytoconis viridis*,  
*Asahinea scholanderi*.

### Insect:

*Forficula vicaria*,  
*Diestrammena unicolor*,  
*Carabus schrenckii*,

## ANNEX C

Calasoma maximowiczi,  
Callipogon relictus,  
Pyrocaelia rufa,  
Bombus muscorum,  
Bombus schrenckii,  
Bombus modestus,  
Bombus sporadicus,  
Bombus unicus,  
Bombus czerskii,  
Liometopum microcephalum,  
Actias artemis,  
Epicopeia mencia,  
Brahmae tancrei,  
Nossa palaeartica,  
Ophideres tyrannius,  
Dermaleipa junco,  
Iotaphora admirabilis,  
Catocala fraxini,  
Papilio maackii,  
Papilio,  
Parnassius eversmanni,  
Coenonympha hero,  
Euthalia schrenckii,  
Apatura iris,  
Kaniska canace.

### **Mollusks:**

Dahurinaia dahurica  
Middendorffinaia mongolica  
Middendorffinaia arsenievi

### **Amphibia and reptiles:**

Pelodiscus sinensis

### **Birds:**

Ciconia nigra,  
Aix galericulata,  
Mergus squamatus,  
Pandion haliaetus,  
Butastur indicus,  
Grus monachus,  
Falcipennis falcipennis,  
Ketupa blakistoni  
Charadrius placidus  
Haliaeetus albicilla

### **Mammals:**

Panthera tigris altaica.

All listed species are inscribed on Russian Federation Red Data Book, and Siberian tiger (*Panthera tigris altaica*), scaly-sided merganser (*Mergus squamatus*), hooded crane (*Grus monachus*), white-tailed eagle (*Haliaeetus albicilla*) and fish owl (*Ketupa blakistoni*) – on IUCN Red Data Book.

## ANNEX D

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