

Nomination
(renomination)

WESTERN CAUCASUS

(THE RUSSIAN FEDERATION)

Proposal for Inscription on
THE UNESCO WORLD CULTURAL
AND NATURAL HERITAGE LIST

Prepared by:

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve
NABU-Kavkaz Non-Government Conservation Center
Caucasus Institute for Applied Ecology
Natural Heritage Protection Fund

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Executive Summary

State Party	The Russian Federation.
State, Province or Region	Krasnodarsky Kray: Adlersky, Lazarevsky, Khostinsky, Mostovsky Districts; Republic of Adygeya: Maykopsky District; Republic of Karachay-Cherkessia: Urupsky District.

Name of Property	Western Caucasus. Renomination of the property, File Name: 900.pdf
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Geographical coordinates to the nearest second It is proposed the significant modifications to the boundaries of existing World Heritage property — the Western Caucasus — due to adjoining of the following territories:

1. Conservation and protected areas of Sochi National Park (Krasnodarsky Kray) — 4 plots;
2. Sochi State Wildlife Sanctuary (Krasnodarsky Kray);
3. Natural Monument ‘Buxus Colchica Plantings’ (Republic of Adygeya).

It is also proposed to exclude a part of the Lagonaki Plateau territory failing to meet the criteria of the Outstanding Universal Value and Integrity from the existing property.

Geographical coordinates of the Western Caucasus serial property in its new boundaries:

Id n	Name of the component part	Region(s) / District(s)	Coordinates of the Central Point
1.	The main part of the nominated property: Caucasian Reserve with the conservation and protection areas of Sochi National Park adjoining it, Sochi Sanctuary, natural park and 4 natural monuments.	Krasnodarsky Kray and the Republic of Adygeya	N 43°50'00" E 40°15'00"
2.	The conservation and protection areas of Sochi National Park at the Ashe Upper River, the Main Caucasian Range.	Krasnodarsky Kray	N 44°02'54" E 39°31'13"
3.	The Kamennoye More Range on the Lagonaki Plateau, the part of the Caucasian Reserve.	Republic of Adygeya	N 44°01'50" E 40°00'42"

Geographic Coordinates of new Plots (Fig. 1):

Id n	Name of the Plot	Region(s) / District(s)	Coordinates of the Central Point
1.	The conservation and protection areas of Sochi National Park at the Ashe Upper River. Separate plot.	Krasnodarsky Kray	N 44°02'54" E 39°31'13"

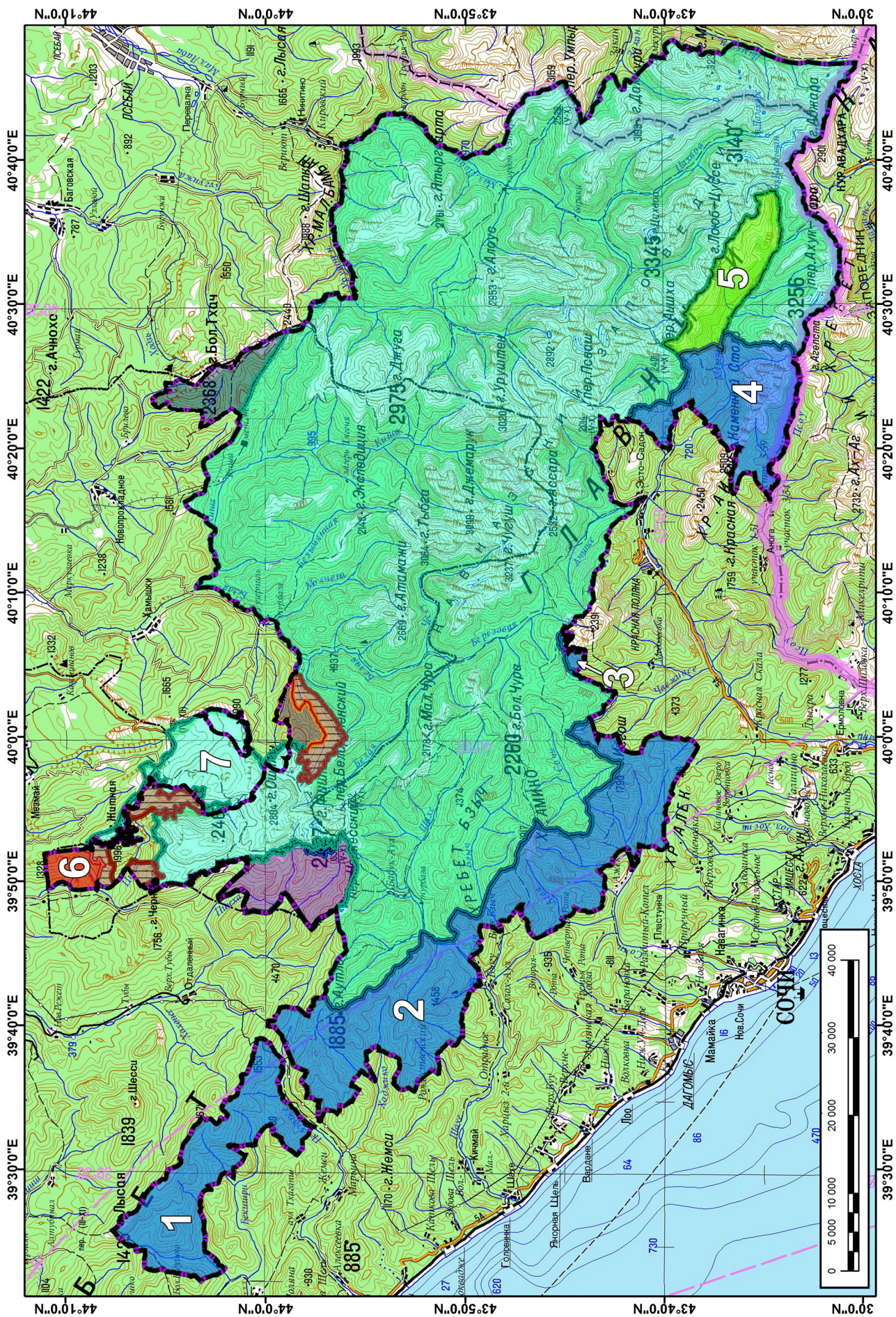


Fig. 1. The layout of the new areas of the nominated territory (the numbers correspond to the table).

Id n	Name of the Plot	Region(s) / District(s)	Coordinates of the Central Point
2.	The conservation and protection areas of Sochi National Park. The central plot included into the main component part.	Krasnodarsky Kray	N 43°44'55" E 39°57'34"
3.	The conservation and protection areas of Sochi National Park. The plot at the Zelenaya Mountain included into the main component part.	Krasnodarsky Kray	N 43°44'57,67" E 40°05'56,06"
4.	The conservation and protection areas of Sochi National Park. The south-eastern plot included into the main component part.	Krasnodarsky Kray	N 43°36'05" E 40°24'10"
5.	Sochi State Wildlife Sanctuary included into the main component part.	Krasnodarsky Kray	N 43°36'05" E 40°28'53"
6.	The Massif of Buxus Colchica Natural Monument included into the main component part.	Republic of Adygeya	N 44°09'49" E 39°50'59"
7.	Part of the Caucasus Reserve to be cut out on the Lagonaki Plateau.	Republic of Adygeya	N 44°02'57" E 39°58'04"

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

The Western Caucasus property boundaries are described with all modifications considered.

1. The main component part of the nominated property: Caucasian Reserve with the conservation and protection areas of Sochi National Park adjoining it, Sochi Sanctuary, natural park and 4 natural monuments (Krasnodarsky Kray and the Republic of Adygeya).

Northern border

The most northerly point: Mt. Matazyk (1328.6 m). (N 44°11'02,63"; E 39°51'53,20").

Starting from this point, the border runs directly to Mt. Bukva (1,706.8 m) crossing compartments Nos. 7, 12, 13 of the Tsitsa district forestry of the Maykop forestry to the south where it crosses the boundary of the Caucasus Reserve on the northern slope of Mt. Bukva. Then it adheres to south direction stretching along the eastern slopes of the Lagonaki Ridge, Mt. Maly Murzikal and Mt. Murzikal and coincides with the boundary of the Caucasus State Reserve and forest compartments Nos. 12, 13, 22, 27, 31, 33, 34, 36 of Tsitsinskoye division within Maykop forestry establishment till it crosses the northern border of compartment 37 of the same forest division. From this point — to the west along the northern border of compartment 37 till it crosses the Caucasus State Reserve boundary on the eastern slope of Nagoi-Chuk Ridge.

From this point, the border goes within the territory of the Caucasus State Reserve with regard to natural landmarks and frontiers: southward along the Tsitsa River to Verkhnyaya Tsitsa survey mark, after

that — straight in the direction of Mt. Oshten summit up to the lake in the northern cirque of Mt. Oshten at the origin of the Tsitsa River bypassing the mentioned lake along the coast from the west and the north.

Further — in south-western direction, along a straight line to the height of 2,378.0 *m* on the eastern spur of Mt. Oshten and directly eastwards till it crosses the boundary of the Caucasus Reserve. After that — southward along the eastern slope of Mt. Oshten above the existing tourist trail turning eastward in Guzeriplsky mountain pass direction. Starting from Guzeriplsky mountain pass, the border goes to Mt. Guzeripl summit (2,158.0 *m*), and then to the east crossing the Caucasus State Reserve border at the height of 1,811.0 *m*.

From this point, taking into account natural landmarks and frontiers: eastward along the right tributary of the Armyanka river to the estuary of the stream originating at the height of 1,526.0 *m* and flowing into the tributary, and from this point eastward, then turning to the north, west and north again — to the estuary of the first left tributary of the Armyanka river. Then to the south-east — along the Armyanka river till it crosses the boundary of the Caucasus State Reserve along the Belaya river.

Further along the boundary of the Caucasus State Reserve: along the Belaya river to the estuary of the Kisha river. Then it goes along the right bank upstream of the Kisha river to the estuary of Kosaya dry river bed (left tributary of the Kisha river). From this point — upstream along Kosaya dry river bed, passing the heights of 851.0 *m* and 1,103.0 *m* to the one of 1,587.2 *m* located at Du-Du-Gush Ridge. Then it goes to the height of 1,444.0 *m*, bypassing Marenkina polyana, in the direction of Zhitninskaya dry river bed and then — to the south-east where the northernmost tip of Bulvar Ridge is located. Further the border goes along Bulvar Ridge through the height of 1,678.0 *m* to Mt. Slesarnya (1,956.7 *m*).

From this point, the border goes through the territory of the Republic of Adygeya along the boundaries of the forest compartments being part of Novoprokhladnenskoye division within Guzeriplskoye forestry establishment: north-east along the north-western border of compartment No. 106 and to the north-west along the south-western borders of compartments Nos. 103, 98, 94 turning to the east along the northern border of compartment No. 94 and further to the north along the northern and north-western borders of compartments Nos. 86, 68 and 50. Then, going round compartment No. 50 from the north and north-east, it reaches the border of compartment No. 70.

From this point, it moves to the east along the line coinciding with the administrative border of the Republic of Adygeya, then to the south and south-east along the eastern and south-eastern borders of compartments Nos. 70, 95, 100, 110, 107, 108, 109, 112, 111 and 113 over the peak of the Bolshoi Tkhach Mountain (2,368 *m*), the peak of the Maly Tkhach Mountain (2,237.9 *m*) to the Acheshbok Pass at the border of the Caucasus Reserve.

Afterwards, along the border of the Caucasus Reserve: from the Acheshbok Pass (Chertovy Vorota) to the saddle between the Acheshbok Mountain (Chertovy Vorota) and the Dzyuvya Mountain and downwards over the path along the right tributary of the Dodogachei River to the Dodogachei River (Bolshaya Mertvaya Balka) till it flows

into the Urushten River. Then along the left bank of the Urushten River (Chernaya) turning around the Chernorechye Border from the west and the north upwards along the right bank of the Malaya Laba River to the Balka Sukhaya estuary. Then, it goes upwards along the range from the Balka Sukhaya estuary to the height of 2,031 *m*, over the Sergiev Gai Mountain to the height of 2,749 *m*. From the height of 2,749 *m* along the Magisho Ridge and the Magisho Ridge Branch over the 2,827 *m* height to the Umpyrskiy Pass.

From the Umpyrskiy Pass through the heights of 2,637 and 2,671 *m* to 2,818 *m* to the source of the first (from the Zakan River source) nameless left bank tributary of the Zakan River. Then it goes down along the tributary to the Zakan River and along its left bank, after that, it crosses the river and goes to the estuary of the fifth (from the Zakan River estuary) nameless right bank tributary of the Zakan River, upwards along the tributary to the river source and to the 2,253 *m* height. Down from the 2,253 *m* height along the second (from the Imeretinka River estuary) left bank tributary of the Imeretinka River it crosses the Imeretinka River and goes up along the second (from the Imeretinka River estuary) right bank tributary of the Imeretinka River to its source and over the forest edge to the ninth left bank tributary of the Damkhurts River at 1,367 *m* and down along the tributary to the extreme eastern point of the Damkhurts River.

Eastern border

The extreme eastern point is the estuary of the ninth left bank tributary of the Damkhurts River (N 43°36'29,46"; E 40°48'10,17").

Up from the extreme eastern point along the Damkhurts River to the state border of the Russian Federation, to the Damkhurts Pass, the extreme southern point.

Southern border

The extreme southern point is the Damkhurts Pass (N 43°30'08,72"; E 40°47'09,43").

From the extreme southern point along the state border of the Russian Federation in the western direction through the height of 2,582 *m*, the summit of the Adzhara Mountain (2,970 *m*), the height of 2,467 *m*, the Akhun-Dara Pass, the summit of the Agepsta Mountain (3,256 *m*) to 2,604 *m* and further downwards along the Psou River till the point in the estuary of the right tributary of the Psou River higher than the Aibga settlement which coincides with the western corner of the forest compartment No. 47 of the Aibga district forestry of Sochi National Park.

From this point, it goes along the border of forest compartments of the Aibga district forestry of Sochi National Park in the north-eastern direction along the north-western borders of compartments 47, 43, turning east along the western border of compartment No. 34 and the southern border of compartment No. 23. From the western corner of compartment No. 23 it goes east along the northern borders of compartments Nos. 23, 34, 35, then north along the western border of compartment No. 36 till it joins the western corner of compartment No. 91 of the Krasnaya Polyana district forestry of Sochi National Park.

From this point, it goes along the borders of forest compartments of

the Krasnaya Polyana district forestry of Sochi National Park: to the north-east along the north-western border of compartments No. 91, 92, 83, then to the north-west and west along the south-western and southern borders of compartments Nos. 64, 32, 31, 30, 29 and again to the north-east along the north-western border of compartments 29 and 28 till their joining the boundary of the Caucasian Reserve at the source of the Bzerpiya River on the forest edge.

From here, it goes along the boundary of the Caucasus Reserve: to the north over the forest edge and over it to the upper river of the second left bank tributary of the Laura River; down this tributary to the Laura River, along it to the Achipse River, crossing it, down along its right bank to the south east turning to the north west at the southern end of the Esto Ridge over the ridge through 1,862 *m* and 1,865 *m* then crossing the Achipse River over the forest edge on northern slopes of the Achishkho Ridge to the foot of Mt. Zelenaya to the place where the boundary of the Caucasian Reserve joins the northern corner of Compartment 13 of the Kepsha district forestry of Sochi National Park. From there, it goes along the eastern and southern boundary of the compartment till it crosses the boundary of the Caucasian Reserve at the Chvizhepse River, then down the Chvizhepse River to the Chernaya River estuary.

From there along the borders of the forest compartments in Sochi National Park in the south-western and southern directions along the eastern borders of compartments No. 1, 3, 8, 14, 22, 31, 39, 42, then to the west and north-west along the southern borders of compartments No. 42, 41, 40 of the Kepsha district forestry; compartments Nos. 15, 14, 13, 12, 11 of the Kudepsta district forestry and to the west along the northern border of compartment No. 1 of the Matsesta district forestry. Then, to the north-west along the southern, south-western and western borders of compartments Nos. 42, 35, 34, 33, 32, 24, 17, 1 and 2, further to the north-east along the north-western border of compartments Nos. 2 and 3 of the Verkhnesochinskoye district forestry. From there, totally heading towards the south-west and west along the south-western, western and southern compartments Nos. 66, 65, 61, 62, 28, 31, 34, 36, 35, 32 of the Solokh-Aul district forestry. Then it turns around compartments Nos. 15 and 16 of the Golovino district forestry along their borders from the west and north, the boundary goes to the western corner of compartment No. 108 of the Maryino district forestry. Then the boundary continues generally in the north-western direction along the western, southern and south-western borders of compartments Nos. 108, 87, 83, 58, 79, 54, 55 of the Golovino district forestry.

Western border

The western point is the western corner of compartment No. 55 of the Golovino district forestry of Sochi National Park (N 43°57'17"; E 39°33'19").

From the western point, it goes north-east along the northern borders of compartments 55, 50, 51, 28 of the same district forestry, then from compartment 28, it goes directly crossing compartments 33 and 32 along the line between the northern corner of compartment 30 and the western corner of compartment 9 and along the north-western border of compartment 9 to the northern corner of this compartment

on the administrative border of Sochi Resort City Municipality.

Then it goes south-east along the administrative border of Sochi Resort City Municipality to the boundary of the Caucasus Reserve on the Autl Mountain (1,855.7 *m*).

From this point, it goes along the boundary of the Caucasus Reserve through 1,387.0 *m* to the east turning around the upper reaches of the Azhu River (the right tributary of the Shakhe River) over the dividing crest between the rivers of Tugups (the left tributary of the Pshekhaskha River) and Azhu through the heights of 1,362.1 *m* and 1,360.8 *m* till the crossing place between the Caucasus Reserve and the administrative border of the Republic of Adygeya at Lake Khuko. From here, along the administrative border of the Republic of Adygeya to the north-west over the dividing crest between the rivers of Tugups and Pshekhaskha through 1,827.0 *m* to 1,812.2 *m* further to the north-east towards the Pshekhaskha River and to the north on the Orta-Gerish Range till the crossing place between the administrative border of the Republic of Adygeya with the northern border of the forest compartment No. 41 of the Tsitsa district forestry of the Maykop forestry.

From that point, the border goes over the territory of the Republic of Adygeya along the borders of the forest compartments of the Tsitsa district forestry of the Maykop forestry to the east along the northern border of compartment No. 43, then to the north along the eastern border of compartment No. 41 till the Vtoroi Shumik Brook joining the Pshekha River wherefrom it goes south-east along the north-eastern border of compartment No. 41 through the height of 1,109.0 *m* and east along the northern border of compartment No. 45 till its crossing with the border of the Caucasus Reserve.

From that point, the border lies generally north along the border of the Caucasian Reserve, along the forest upper limit, along the western slope of the Tuba Mountain through the Kotlovina Hole till the border of the Caucasian Reserve joining the administrative border of the Republic of Adygeya on the western slope of the Messo Mountain.

From there, it goes north along the administrative border of the Republic of Adygeya through 1,828.0 *m* till joining the border of the forest compartment No. 28 of the Tsitsa district forestry of the Maykop forestry.

From this point, the border lies along the territory of the Republic of Adygeya, borders of forest compartment No.s of the Tsitsa district forestry of the Maykop forestry and natural boundaries: the border of compartment No. 28 which coincides with the border of the Caucasus Reserve in the south-east turning to the north-west; then, to the north-east — along the north-western border of compartment No. 29 and the western border of compartment No. 21 along the Tsitsa River till the estuary of the Serebryachka River (the left tributary of the Tsitsa River). Further, to the west along the southern border, to the north — along the western border of compartment No. 11 without reaching 100 *m* to the right bank of the Kuzhetka River, then down keeping the same distance from its right bank to its estuary, after crossing the Tsitsa River, down this river to the north also keeping the distance of 100 *m* to its right bank till the administrative border of the Republic of Adygeya.

Therefrom, the administrative border of the Republic of Adygeya, it

goes east to Mt. Matazyk (1,328.6 *m*), the extreme northern point.

2. Component part “The conservation and protection areas of Sochi National Park at the Ashe Upper River” (Krasnodarsky Kray).

The initial northern point is the northern corner of compartment 1 of the Lygotkh district forestry of Sochi National Park on the administrative border of Sochi Resort City Municipality. From there, it goes south-east along the border which coincides with the north-eastern borders of the forest compartments Nos. 1, 2, 3, 7, 8, 16, 17, 18, 19, 20, 30, 31, 32, 33, 77, 86, 87, 94 of the Lygotkh district forestry, 1, 2, 5, 6, 7 of the Maryino district forestry to the eastern point, the north-eastern corner of compartment 7 of the Maryino district forestry.

From the eastern point it goes south-west along the south-eastern borders of compartments 7, 5, 12, 4, 11, 23, 24, 47 of the Maryino district forestry to the southern point, the southern corner of compartment 47 of the Maryino district forestry. Then from the southern point, it goes north-west, after north-east along the northern border of compartment 47 and north-western borders of compartments 21, 22 of the Maryino district forestry. Later, it goes north-west again along the south-western and southern borders of compartments 92, 86, 77, 75, 43, 42, 39, 27, 26, 25, 24, 35 of the Lygotkh district forestry to the western point, the western corner of compartments 35 of the Lygotkh district forestry. From the western point, it goes to the north, east and again to the north along the western borders of compartments 35, 21, 13, 9, 4, 5 and 1 to the initial northern point.

3. Component part “The Kamennoye More Range on the Lagonaki Plateau”.

The initial point is 1,854 *m* on the northern end of the property. From the initial point, the boundary lies along the border of the Caucasus Reserve: eastern cliffs of the Kamennoye More Ridge to the south further to the east from 1,945.4 *m* and the Nagai-Koshki Mountain (2,090.4 *m*), more to the south than 2,050.0 *m* and 2,041.0 *m* till it crosses the source of the Armyanka River.

Then, the boundary lies along the Caucasus Reserve, natural reference points and boundaries, up along the Armyanka River source mentioned through 1,952.0 *m* till it crosses with the existing tourist path to the Lagonaki Plateau, the Kamennoye More Ridge. From the crossing, the boundary goes northward along the indicated path turning around the sources of the Kurdzhips River from the east to 1,833 *m* and further along the Balka Sukhaya, Kurdzhyps Upper Rivers to the initial point.

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

Topographic map with the exact indication of new and existing boundaries related to the Western Caucasus property and its buffer zone, scale 1 : 100 000 (is sent in rolled-up form).

Criteria under which property is nominated (itemize criteria)

(ix), (x)

a) Brief synthesis

The site chosen to be included into the Western Caucasus property has a direct connection with the main territory of the existing World Heritage property. It can significantly enlarge the variety of its ecosystems by taking in the Western Caucasus southern macroslope (area 68,354 *ha*). The nominated territory can sufficiently raise the outstanding universal value of the Western Caucasus property adding a wide range of important features according to ix and x criteria. This territory has not experienced severe human impact, and is full of rare endemic and relict species of animals and plants, some of which are registered as endangered.

Simultaneously with expanding of existing World Heritage property territory, it is proposed to take out some of the Lagonaki Plateau area, which fails to meet the criteria of the Outstanding Universal Value and integrity due to the sufficient anthropogenic displacement.

b) Justification for Criteria

Criteria (ix): All of the various ecosystems of the Western Caucasus forming the unified natural-territorial complex of the Western Caucasus southern macroslope are preserved on the selected property in the original and pristine stage. The nominated territory forms a unique center of evolutionary species development, and one of the reasons for it is the intercrossing of several biogeographical high range chorions.

The evolution and development processes which take place on this territory are of a great importance not only as an example of natural development, but also as an example for regeneration and preserving of such ecosystems in Eurasia.

Criteria (x): The nominated territory has a unique biological diversity. The area has a great value for the natural protection, as there are 26 species of plants and 75 species of animals, which have been registered in the IUCN Red List.

The nominated territory is not only the area where some rare and endangered endemic and relict species can be found, but also a non-modified environment for the most vulnerable big-size mammals, including caucasian red deer (*Cervus elaphus maral*), caucasian gemza (*Rupicapra rupicapra caucasica*), wolf (*Canis lupus cubanensis*), caucasian bear (*Ursus arctos meridionalis*), caucasian lynx (*Lynx lynx dinniki*) and many others

c) Statement of Integrity

The territory is hard to access and thus it has not experienced significant human impact and has been bearing the high natural protection status of the State National Natural Park (its conservation and protected zones) and State Wildlife Sanctuary for more than 30 years (and some separate areas for more than 50 years already). Nominated areas border with the existing World Heritage property and are in fact surrounded by strictly protected areas, and that actually guarantees the abovementioned integrity.

Occupying the territory of 68,354 *ha*, the nominated property is considered satisfactory to support the functioning of the Western Caucasus southern macroslope natural complexes and to fully represent the

features and processes showing its high value.

Biophysical processes and features of the natural landscape of the nominated property have not been interrupted or changed. The property includes the non-populated and non-developed parts of the mountain ridges of the Western Caucasus southern macroslope, there are no traces of human presence. This complex natural territory has no analogues judging by its size and preservation state, and is representative for all of the Western Caucasus (Colchis).

e) Requirements for protection and management

All areas selected for the expansion of the Western Caucasus property have high conservation status, which guarantees long-term protection and preserving of the nominated territory. All business and economical activities are strictly forbidden within the borders of these Special Protected Areas (SPAs), as they can harm the reserve and lessen its Outstanding Universal Value.

At present all listed SPA are being used according to the Regulations, which allow the following activities: protection, ecological education, monitoring, scientific and tourist research. There are also several Federal and Regional legal documents, which regulate and restrict SPAs activities.

National Park, Wildlife Sanctuary and Nature Monument has the necessary amount of personnel, material and financial support to preserve the outstanding universal value of the property.

The main active plan for the existing property is “Management plan for the World Heritage property — Western Caucasus — for the years of 2010—2014”, which has provisions for research and monitoring activities for the Property complexes, legal and regulatory measures for its functioning, institutional support, protective and promotional activities for the Property.

The new management plan for the re-nominated Western Caucasus property will have been ready by the end of 2014.

Name and contact information of official local institution/agency

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve
Address: Karla Marksa (Karl Marx) str., 8 Sochi
354340, Krasnodarsky Krai
Russian Federation.
Tel.: +7-862-240.51.36
Fax: +7-862-240.52.65
E-mail: kzles@mail.ru
www.kgpbz.ru

Sochi National Park
Address: Moskovskaya str. 21, Sochi 354340
Krasnodarsky Krai, Russian Federation
Tel./Fax: +7-862-262.18.42
E-mail: forest_sochi@mail.ru
www.sochinp.ru

SPAs of the Republic of Adygeya
Department of Environmental Protection, Natural Resources and
Emergency Situations in the Republic of Adygeya

Address: Krestyanskaya str. 236,
Maykop 385000,
Republic of Adygeya,
Russian Federation.
Tel./Fax: +7- 8772-57.09.24
www.adygheya.ru/government/commit/resurs



1 IDENTIFICATION OF THE PROPERTY

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

The Russian Federation.

✕ 1b. State, Province or Region

Krasnodarsky Krai: Adlersky, Lazarevsky, Khostinsky, Mostovsky Districts;
Republic of Adygeya: Maykopsky District;
Republic of Karachay-Cherkessia: Urupsky District.

✕ 1c. Name of Property

Western Caucasus. Renomination of the property, File Name: 900.pdf

✕ 1d. Geographical coordinates to the nearest second

It is proposed the significant modifications to the boundaries of existing World Heritage property — the Western Caucasus — due to adjoining of the following territories:

1. Conservation and protected areas of Sochi National Park (Krasnodarsky Kray) — 4 plots;
2. Sochi State Wildlife Sanctuary (Krasnodarsky Kray);
3. Natural Monument 'Buxus Colchica Plantings' (Republic of Adygeya).

It is also proposed to exclude a part of the Lagonaki Plateau territory failing to meet the criteria of the Outstanding Universal Value and Integrity from the existing property.

Geographical coordinates of the Western Caucasus serial property in its new boundaries:

Id n	Name of the component part	Region(s) / District(s)	Coordinates of the Central Point	Map N°
1.	The main part of the nominated property: Caucasian Reserve with the conservation and protection areas of Sochi National Park adjoining it, Sochi Sanctuary, natural park and 4 natural monuments.	Krasnodarsky Kray and the Republic of Adygeya	N 43°50'00" E 40°15'00"	
2.	The conservation and protection areas of Sochi National Park at the Ashe Upper River, the Main Caucasian Range.	Krasnodarsky Kray	N 44°02'54" E 39°31'13"	
3.	The Kamennoye More Range on the Lagonaki Plateau, the part of the Caucasian Reserve.	Republic of Adygeya	N 44°01'50" E 40°00'42"	

Geographic Coordinates of New Plots (Fig. 1):

Id n	Name of the Plot	Region(s) / District(s)	Coordinates of the Central Point	Map N°
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3.	The conservation and protection areas of Sochi National Park. The plot at the Zelenaya Mountain included into the main component part.	Krasnodarsky Kray	N 43°44'57,67" E 40°05'56,06"	Fig. 1
4.	The conservation and protection areas of Sochi National Park. The south-eastern plot included into the main component part.	Krasnodarsky Kray	N 43°36'05" E 40°24'10"	Fig. 1
5.	Sochi State Wildlife Sanctuary included into the main component part.	Krasnodarsky Kray	N 43°36'05" E 40°28'53"	Fig. 1
6.	The Massif of Buxus Colchica Natural Monument included into the main component part.	Republic of Adygeya	N 44°09'49" E 39°50'59"	Fig. 1
7.	Part of the Caucasus Reserve to be cut out on the Lagonaki Plateau.	Republic of Adygeya	N 44°02'57" E 39°58'04"	Fig. 1

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

Appendix A contains the following maps and plans:

- A1.** Location of the Western Caucasus property on the map of the Russian Federation.
- A2.** Topographic map with the exact indication of new and existing boundaries related to the Western Caucasus property, scale — 1 : 100 000 (is sent in rolled-up form).
- A3.** Topographic map of SPAs included in the Western Caucasus property in their new boundaries, Scale — 1 : 500 000.
- A4.** Map of Sochi National Park with the exact indication of boundaries related to the territory proposed for the extension of existing property, Scale — 1 : 500 000.
- A5.** Map of the territory of Sochi National Park proposed for the extension of existing property with specified forest compartments, Scale — 1 : 500 000.
- A6.** Map of Sochi State Wildlife Sanctuary with the exact indication of boundaries, Scale — 1 : 100 000.
- A7.** Map of the Natural Monument of the Republic of Adygeya 'Buxus Colchica Plantings' with the forest compartments marked and exact designation of the borders of the territory proposed for enlarging the existing property. Scale — 1 : 100 000.
- A8.** Map of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve with specified forest compartments, Scale — 1 : 500 000.
- A9.** Map of the natural monument of regional importance 'Buiniy Ridge' with specified forest compartments, Scale — 1 : 100 000.
- A10.** Map of the natural monument of regional importance 'The upper reaches of Pshekha and Pshekhaskha rivers' with specified forest compartments, Scale — 1 : 100 000.
- A11.** Map of the natural monument of regional importance 'The upper reaches of Tsitsa river' with specified forest compartments, Scale — 1 : 100 000.
- A12.** Map of Bolshoi Tkhach nature park with specified forest compartments, Scale — 1 : 100 000.
- A13.** Map of SPAs located at the Lagonaki part of the Republic of Adygeya included in the new boundaries of the Western Caucasus property, Scale — 1 : 200 000.



«Западный Кавказ»
 «The Western Caucasus»

A1. Location of the Western Caucasus property on the map of the Russian Federation.

1. IDENTIFICATION OF THE PROPERTY

A14. Zoning with regard to the Lagonaki part of the Republic of Adygeya according to the level of plant communities disturbance and new boundaries of the Western Caucasus property as per the nomination map of 1999, Scale — 1 : 200 000.

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

The area of the Western Caucasus Property is 358,112.94 ha within the new boundaries. The buffer zone of the property shall have been created by the end of 2014.

The total area of parts suggested for the Property expansion is 69,828 ha, the area of the part to be cut out of the Lagonaki Plateau being 6,550 ha.

Id n°	Name of the Plot	Region(s) / District(s)	Area of Plot of the Property (ha)	Area of the Buffer Zone (ha)	Map N°
Plots included in the existing Property			294,834.94		
1.	Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve	Krasnodarsky Kray, Republic of Adygeya, Republic of Karachay-Cherkessia	278,181.94		A3
2.	'Bolshoi Tkach' nature park	Republic of Adygeya	3,700.00		A3
3.	'Buinyi Ridge' natural monument	Republic of Adygeya	1,480.00		A3
4.	'The upper reaches of Tsitsa river' natural monument	Republic of Adygeya	1,913.00		A3
5.	'The upper reaches of Pshekha and Pshekhashkha rivers' natural monument	Republic of Adygeya	5,776.00		A3
6.	Protected (buffer) zone of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve		3,884.00		A3
Plots proposed for enlarging the existing Property			+69,828.00		
1.	Conservation and protected areas of Sochi National Park — 4 plots	Krasnodarsky Kray	62,152.00		A3
2.	Sochi State Wildlife Sanctuary	Krasnodarsky Kray	6,202.00		A3
3.	'Buxus Colchica Plantings' natural monument	Republic of Adygeya	1,474.00		A3
Plot proposed to exclude from the existing Property			-6,550.00		
1.	Part of the Caucasus Reserve on the Lagonaki Plateau	Republic of Adygeya	6,550.00		Fig. 1
Total area (in hectares)			358,112.94 ha	<i>ha</i>	



2 DESCRIPTION

✕ 2a. Description of Property

The Western Caucasus new nomination (renomination) is intended to settle the following main issues:

1. Enlarging the territory of the existing World Heritage property due to broad-leaved relict forests, being at present hardly available within the boundaries of the Property, of Sochi National Park and Sochi State Wildlife Sanctuary located on the southern macroslope of the Greater Caucasus forming almost uninterrupted stripe along the southern and south-western boundaries of the Western Caucasus property;
2. Correcting the boundaries of the SPAs in the Republic of Adygeya (such natural monuments as the Buinyi Ridge, the upper reaches of Tsitsa River, the upper reaches of Pshekha and Pshekhashkha Rivers, Bolshoi Tkhach Nature Park, protected area of the Caucasus State Biosphere Reserve); obvious mistakes were made when nominating them which can be seen from the nomination file as of 1999;
3. Cutting out of the existing World Heritage property a part of the Lagonaki Plateau failing to meet the criteria of outstanding universal value and integrity due to significant anthropogenic disturbance of the given territory resulting from intensive cattle pasturing in the second half of the XX century and big tourist activity;
4. Preparing the basis and offers for creating a buffer zone for the Western Caucasus property within the new boundaries and their general management plan.

The Western Caucasus property proposed as a new nomination is represented by the 175-kilometer segment of unoccupied and undeveloped western part of the Greater Caucasus mountain system, which is the most important watershed and climatic barrier between Eastern Europe and Western Asia, i. e. between the two continents. The property represents all typical landscapes and main vegetation types of the Greater Caucasus with its distinctive latitude zoning and vertical belts.

The territory proposed to expand the existing Western Caucasus World heritage property is located on the southern macroslope of the Greater Caucasus and forms an almost continuous belt along the southern and southwestern borders of the Western Caucasus property. This new site is a part of Sochi National Park and Sochi Wildlife Sanctuary located in the North-Western Transcaucasia between the two rivers of Magri and Psou. With its length from east to west equal to 140 *km* and the width from north to south between 3 and 10 *km*, the proposed site occupies an area of 69,828 *ha*.

⊠ Geology

The Western Caucasus property as the part of the Greater Caucasus mountain system has a complex geological structure, it is characterized by radial distribution of rocks of different age and composition. Thus, in its axial part Precambrian and Paleozoic crystalline rocks crop out, fringed with the Jurassic, Cretaceous and Paleogene strata of limestone, sandstone and shales.

The most ancient and solid rocks are of Cambrian and Paleozoic age: these are various gneiss, granites, quartzite, metamorphic schists, conglomerates, and marbles.

In general, Precambrian and Paleozoic deposits (with the age as ancient as 230 *million years*) are present in spots and strips mainly in the axial part of the Main Caucasus Ridge. The wings of the extremely folded structure of the Greater Caucasus are primarily composed by younger rocks of Mesozoic and Cenozoic age occupying a significant area — various slates, limestone, marl, argillite, siltstone, sandstone and conglomerates, the variety of volcanogenic-sedimentary rocks (Fig. 2).

In the Mesozoic complex, except for the deposits of Jurassic and Cretaceous periods, there are more ancient deposits of the Triassic period (230—195 *million years*). Most fully Triassic sediments in the form of limestone, sandstone and conglomerates are pre-

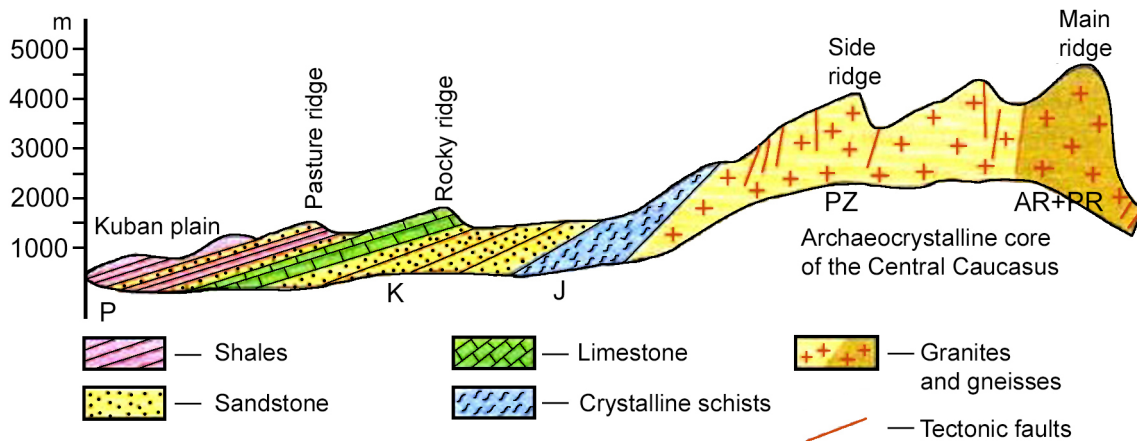


Fig. 2. Geological structure of the Western Caucasus property.

sented in the upper reaches of Malaya Laba and Belaya rivers. Therefore, geologists consider this Caucasus area to be the link between the Alps and the Himalayas.

The suburban part of the Western Caucasus property is occupied by Jurassic deposits (195—140 million years). These are sedimentary and volcanic rocks: a variety of shale, limestone, sandstone, argillites, gypsum, tuffs, welded tuffs, tuffbreccia, tuffsandstone, amygdaloid and others. For example, in the Northern part, in the basins of Laba and Belaya rivers, within the drying marine lagoons some time ago the gypsum masses were formed. And the Fisht district in the Upper Jurassic time had been a coral reef flowing in the salt and warm sea, from which the organic limestone had been formed (Photo 1). Jurassic sediments are rich in fossils. Here one can often see remnants of corals, mollusks, sea lilies, bryozoans, sponges, sea urchins, starfishes and algae.

Rocks of Cretaceous period (140—70 million years old) are marine sediments — interbedded limestone, marl, argillite, siltstones, sandstones.

In the district of **Sochi National Park** (Khosta, Adler districts) the Mesozoic remnants are represented by limestones of Jurassic and Cretaceous periods. They come to the surface in the form of karst massifs of Akhun, Ahshyr, Aleck, Akhtsu gorge, Dzyhra and Vorontsov.

Karst phenomena is also well developed in limestone Lagonaki Plateau — Rocky ridge — belonging to the territory of Abkhazia (karst massifs Arabica and Bzybski). The deepest caves (from 500 up to 630 m) are found within the karst massifs of Fisht and Aleck. The deepest and the longest cave in the Western Caucasus is the Cross-Tourist karst system on the mountain Fisht (depth 633 m, length 14,000 m). Vorontsovskaya cave system (10,640 m) is the longest karst system of Sochi National Park.

The Cenozoic deposits are represented by the zone of Palaeogene, Neogene rocks and Quaternary soils spread along the Black Sea coast around Sochi from the river Shah to



Photo 1. The mountain peaks of Fisht (2,868 m) and Oshten (2,804 m) add an astonishing view to the areas of the Western Caucasus — remains of ancient coral reefs. Photo S. Trepet.

the river Psou. Palaeogene deposits (70—30 *million years*) are represented by rhythmically formed thick layers of sandstones and mudstones. There are no igneous rocks, and no limestone among them. Neogene (30—3 *million years*) occupies a small area in Adler, shaped in the form of a column, formed by inter-laying loam, poorly cemented sandstones and conglomerates.

Tectonic evolution of the Caucasus mountains happened during three periods: Prehercynian, Hercynian and Alpine. Relatively young mountains of the Caucasus were formed about 20 *million years ago*. At the end of the Neogene and the beginning of the Quaternary period, as a result of the active pressure of the Arabian tectonic plate on to the East European tectonic plate, powerful processes of mountain building began in ancient Tethys ocean.

In the middle of the Mesozoic era, the islands began to appear, and they grew in size due to the steady raising of the axial part of the modern Caucasus. Simultaneously there happened an increased sediment deposition in the areas of geosynclinal deflections. The powerful process of mountain building was accompanied by volcanic eruptions.

The next stage of the mountains formation was glaciation, the processes of which led to

the creation of heavily dissected mountain terrains with pointed peaks and ridges. As a result of erosion-tectonic cracks the numerous gorges were formed. Narrow Abadzhenskoe gorge in the upper river Tsitsa has the depth of 1 *km*, and along its length of 10 *km* it clearly represents the vertical section of the main geological horizons of the Caucasus.

Triassic anticline, located between the rivers Bolshaya Laba and Belaya, particularly well-developed in the area of the Bolshoi Tkhach mountain, does not occur anywhere else in the Caucasus (Cherpakov, 1995). The valley of the river Belaya has become world famous due to numerous discoveries of giant shells of ammonites (Photo 2).



Photo 2. Petrified ammonite shell found in the vicinity of the Belaya River. *Photo A. Ivanenko.*

☒ Relief

The area of the property is located within the Western part of the Greater Caucasus mountain system which consists of several parallel ridges. The base of its relief is the Main Caucasian range, which stretches from North-West to South-East. In general the ridge is asymmetric, it has a steep southern slope going down to the Black sea and into the Colchis region of the Caucasus mountains. The more slanting wide Northern macroslope, is composed of a system of additional ridges: Bokovoy, Peredovoy and Skalistiy.

Typical mountain relief is characterized by elevations from 250 up to 3,360 *m* above the sea level. The highest points of the mountains are: Akaragvarta (3,360 *m*), Tshahvoa (3,346 *m*), Pseashkho (3,256 *m*) and Chugush (3,228 *m*) which belong to the Main Caucasus ridge. It is a territory with a predominance of high-mountainous relief, which is filled with ancient glacial forms: trough valleys in the upper reaches of rivers, karrens and moraines. Above them rise the peaks with glaciers and snowfields.

The height of the mountain peaks of the Main Caucasian ridge increases from West to East. The highest, most North-Western peaks are — Thab (921 *m*), Pochepsuha (910 *m*), Agoy (994 *m*) — which barely go out of the forest belt and carry small sub-Alpine meadows. After a small decrease called Colchis gates, the height of the Main Caucasus range begins to increase from 1,800 up to 3,000 *m* and more. Colchian gate is a decrease in the Main Caucasian ridge between vertices Achishkho and Chugush down to 1.5 *km* altitude. Here the dividing range is below the forest border. Through the Colchian gate

masses of warm and moist air rush into the Belaya valley, performing miracles on the Northern slopes of the Caucasus. Firstly, due to the moist air of the South, the snow line on the Fisht falls to very low for the Caucasus mark — 2,650 m, while in the rest of the Caucasus its height varies from 2,850 to 3,800 m in the East. This mark is even below the snow line in the Alps, the height of which here is from 2,700 to 2,800 m (Fig. 3).

2—5 km away to the North of the Main ridge goes the Side ridge with an expressed mountain relief.

To the North of the Side ridge and parallel to the Main ridge there is the Front ridge, which runs along the Northern border of the nominated territory. It stretches from the left bank of river Belaya in the West to the southern edge of the Lagonaki Plateau. The width of this range varies from 5 to 15 km, and it is cut by the valleys into separated parts, which have their own names. The highest peaks are: the mountains of Pshekish (2,257 m), Bolshoi Tkhach (2,364 m), Yatyrgvarta (2,760.1 m). Considerably lower in height than the Main ridge the Front ridge has a very specific morphological structure. On the background of snow-axial zone of the Great Caucasus the Front ridge looks like a pedestal, with soft and flat forms of relief.

The North-Western part of the Western Caucasus is formed by the Fisht-Oshten mountain range, often referred to as the mountain group of Fisht. The massif consists of three peaks, Fisht (2,867.7 m), Psheho-Su (2,743.9 m) and Oshten (2,804.0 m). This limestone massif is dissected by numerous craters, caves, karrens, vauclauses due to the influence of water and snow. Despite of the external deserted appearance — woody vegetation is found only on the southern slopes and at the foot of the massif — this area is considered to be one of the richest centres of biodiversity. The massif is directly coming into Lagonaki Plateau, which represents a system of mid-mountain-aligned ridges with extensive subalpine and Alpine meadows, developed on the karst limestone massif.

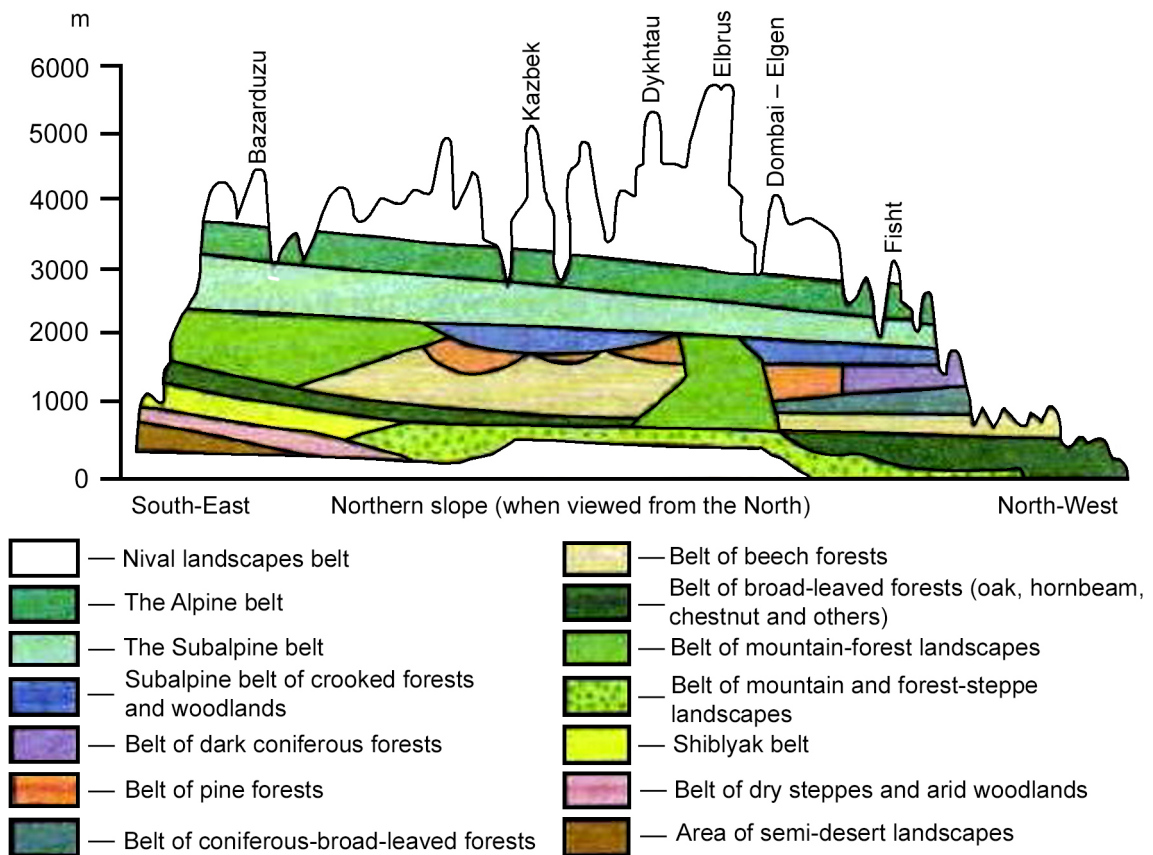


Fig. 3. Altitudinal zonation of the Great Caucasus.

All types of the karst can be found there. Thus, only on the Lagonaki Plateau there is about 130 caves and mines, which often have a huge system of underground passages with rivers, lakes and even waterfalls. One of the unique geomorphologic formations is the Abadzhetskoe gorge in the upper Tsitsa, which is a natural vertical slit, reaching 1 km depth and 14 km of length, it characterizes the location of all the major geological horizons of the Caucasus.

The northern border of the Property mainly goes along the Rocky ridge. The Rocky ridge begins at the Lagonaki Plateau and stretches to the East. Ridge throughout all of its structure has asymmetrical form, which is common for cuestas — long sloping Northern slope and steep Southern slope. The heights of the Rocky ridge are significantly below the Main and Front ridges and reach from 1,000 to 1,250 m. Separate peaks of the Rocky ridge exceed 2,000 m: Acheshbok, or the Devil's Gates (2,486 m), Afonka (2,036 m) and other. (Photo. 3).

In the **Sochi National Park** on the southern macroslope, parallel to the Main ridge, on the spurs of which lies the southern border of the Caucasus Natural reserve, is located the Southern Front ridge. It includes massifs of Aibga (2,396 m), Bzych (1,936.7 m), Amuko (1,918 m), Autl (1,855.7 m), and others.

The third chain of ridges unites the massifs with altitudes of about 1,000 m: Dzyhra (1,277.1 m), Akhtsu (1,124 m), Arocha (836 m) and others. It is less pronounced in relief than the previous one. The fourth chain of ridges includes the picks of Akhun (662.7 m), Mamayka (307 m) and Ashtyr (464 m), and stretches from the South-East, breaking abruptly in the direction of the sea. Mountain ranges and separating intermountain low areas are crossed by the valleys of numerous rivers and streams.

⊗ Hydrography

The territory of the Western Caucasus property is rich in deep valleys, on the bottom of which run lively streams with crystal clear water, numerous rapids, shoals, and riverbed sharp turns, full of fallen trunks of ancient trees. Those streams are formed by the waters of mountain glaciers and snowfields, mountain lakes and underground water.



Photo 3. Chertovy Vorota (The Devil's Gate) — the Mountains of Western Acheshbok (2,486 m) and Eastern Acheshbok (2,441.8 m). *Photo S. Trepet.*

In total there are about 60 glaciers with a total area of 18.2 km^2 (Anfimov et al., 1989) on the territory of the property. The size of the glaciers is pretty small (from 0.1 up to 1.8 km^2). The largest of them (1.8 km^2) is located on the slopes, in the town of Pseashkho. Moreover, there are more than 130 mountain lakes within the territory, the following lakes are especially well known for their beauty: Kardyvach (14 ha), Inpsi (13 ha) and Bezmolviya (20 ha). The lakes are of different origin, age and size. Most of them are glacier corrie lakes, formed as a result of ancient glacier melting. Age of such lakes can significantly vary depending on the time of glacier melting, from 40—50 up to 3000 years old.

Lakes (Photo 4) and glaciers give birth to numerous streams and hundreds of rivers. Those that originate from the Northern part of the Western Caucasus, belong to the basin of the river Kuban, which flows into the Azov sea, the rivers of the southern slope have relatively short length and just within 50—100 km from their heads flow directly into the Black Sea. Deepness of the rivers varies greatly throughout the year, as they consume water mostly from precipitation. Especially full the rivers can be in spring (May and early June, during intensive snow melting and after heavy rains). At this time, even small streams turn into flows of rushing water. For thousands of years, these water flows fought their way through the rocks, forming a deep, up to several tens of meters canyons (Photo 5) — Shahgireevskoe gorge of the Malaya Laba, completely impassable gorges of the river Urushten in its middle and lower areas. In some places the width of such gorges does not exceed the size of a human step. By the end of summer snow melts away and the water level in the rivers and streams, falls to a minimum. During extremely dry years, many riverbeds, especially on the southern slope, become completely dry.

The following rivers of the Western Caucasus Northern slope are considered to be the largest — Belaya river (with its tributaries Ches-Su, Kish, Pshekha and others), Malaya Laba river (with its tributaries Tshahvoa, Urushten), as well as the river Zakan and Damhurc (the basin of the Bolshaya Laba). And of the Southern slope — Mzymta river (with its tributaries Chvezhipse, Laura, Achipse, Pslukh, Tihaya and others), Hosta, Sochi, Shah (with its tributaries Bzych, Azhu, Buschij and others).

Hydrological system of the property has not experienced any changes. Water is suitable for drinking and even has the quality of spring water, so many of the adjacent localities (villages and towns) consume it without treatment, directly from the riverbeds. Sochi resort is supplied with water, the intake of which is carried out from river-beds of the largest rivers — the Shah, and the river Mzymta and Sochi. The water supply of Maikop, the capital of the Republic of Adygeya, comes from a stream, which waters come down from the territory of the property.

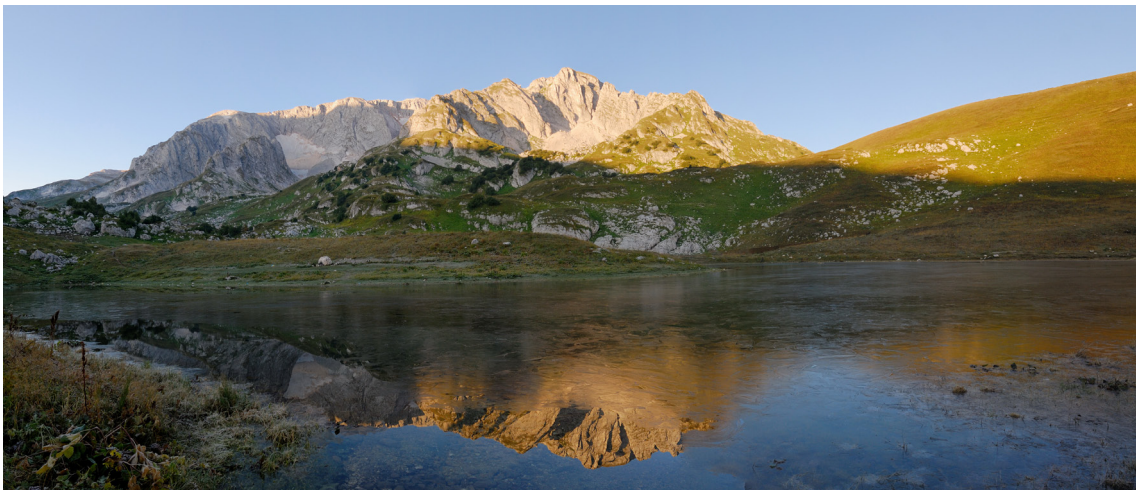


Photo 4. Psenodakh Lake. Photo S. Trepet.



Photo 5. The canyon of the Tsitsa River. *Photo S. Trepet.*

The territory of Sochi National Park (hereinafter — SNP) is covered by extensive hydrological network of rivers and streams. Here there are more than 60 rivers and streams with numerous tributaries. The longest and deepest river of the park is Mzymta. Shakhe, Psou, Sochi, Psezuapse, Ashe rivers are also important. All the rivers flow directly into the Black Sea. The length of the rivers within SNP varies from 7 to 89 *km*. They have primarily mixed nourishment: ground waters, rain and melting of snow. In addition, the Mzymta River has also glacial type of nourishment. Rivers flow in the forested gorges, which often go into inaccessible rocky ravines, and apart from the natural, they are of great aesthetic value. For example, at Udachny stream, a cascade of more than 100 waterfalls is located with the heights from 2 to 30 *m*.

There is no modern glaciation on the territory of SNP, directly near the park boundaries a tongue of Hymys-Aneke glacier lying on the slope of Mt. Agepsta in the Caucasus Reserve is located. Traces of ancient glaciers can be seen in many places in the highlands, but the most prominent of them are on the summits of Autl, Amuko, Achishkho, Turji mountains. In this region more than 10 mountain

lakes are located, Goluboe and Zerkalnoe lakes are best known for their beauty.

✕ Climate

Western Caucasus is located at the border of temperate and warm humid climatic zones. The relief of the property has a great influence on the climate of separate parts of its territory, many mountain ranges represent the boundaries of the climatic zones. The main Caucasian ridge prevents the passing of cold air masses from North to South. For example, warm and humid climate of the black sea coast and its low mountain area is close to subtropical, the average temperature in January is about 4.2°, in July and August — about 20—21°. In the Midlands annual temperatures fluctuate from 1 to 6°, average temperature in January is –4— –6°; winters are moderate and snowy. The snow cover does not melt for more than 5 months. Summer is moderately warm, average temperature of July is 16—22°. Annual precipitation is 700—1,200 *mm*, the maximum amount of rains falls on early summer. On the altitude of about 2,000 *m* the leading role belongs to the Western disturbance, that explains why the climate of the highlands is more humid and some features of its regime are similar to the marine climate conditions. However, winter here has long periods of intensely cold weather. So, at the height of about 2,000 *m* average temperature in January ranges from –6 to –8°, and at 3,000 *m* reaches –10 °C.

In the mountains of the Western Caucasus (if you move down) the temperature in average gets lower by 0.5 °C per each 100 *m*. The Black sea has a very significant impact on the climate of the area. Most of the time Mediterranean cyclones reign above the reserve determining the weather conditions and the amount of precipitation. Most of them gather on the windward South-Western slopes. Weather station Achishkho with precipitation level of 2,500—3,000 *mm* and more is defined as one of the particularly humid areas of Russia.

The snowline, due to the high humidity of the climate in the Western area of the reserve is lower than in the Eastern, 200—500 *m*. On the Northern macroslope the snowline

lies at the level of 2,750—3,200 *m* on the Southern — at 2,730—3,000 *m*. The thickness of the snow cover in the mountains is highly uneven: hurricane winds carry the huge masses of snow (the so-called snow storm transfer), covering the lower areas, exposing the windward slopes and creating snow cornices (Photo 6). Snow cover thickness at the flat mountains sites is about 2—4 *m*, and in the ravines and lower areas snow accumulates and its thickness reaches up to 10—16 *m*. In spring some of the snow layers melt and break down, forming a snow avalanche.

⊗ Soil

The soil cover of the Western Caucasus property has a clear vertical zoning. In this region, mountain-meadow, mountain-meadow-forest, mountain forest and alluvial soils of river valleys, azonic soil types are distinguished. Mountain-meadow soils were mainly developed in the Central and Eastern parts of the property. Mountain-meadow alpine soils are spread at the altitudes from 2,300—2,500 to 2,800—2,900 *m above sea level*, under the alpine vegetation. Mountain meadow and subalpine soils are confined to the subalpine zone and formed within the altitude range from 1,850—2,000 to 2,300—2,500 *m above sea level* under the subalpine vegetation. Mountain-meadow-forest soils are found as a narrow band in the places where subalpine vegetation contacts with the forest one, rhododendron thickets, in subalpine zone, as well as under the sparse birch, beech and maple woods with abundant herbaceous soil covering. Mountain-forest brown soils occupy more than half of Caucasus reserve territory at the altitudes between 600 and 1,850 *m above sea level*. Mountain-forest brown acid soils are confined to the upper part of the forest — pinery with dense canopy. Brown forest power unsaturated soils are formed under the fir, fir-beech, beech, oak and chestnut forests on soil-forming rocks, rich in bases. In the foothills of **Sochi National Park** there are mainly humus-carbonate leached soils. These soils are usually middle-thick and thin, in places with more developed dealluvial processes — thick.

⊗ Vegetation

The historical development of the Western Caucasus mountains and the unique geological, orographic and climatic features have led to the formation of the unique biological diversity and, especially, of a great variety of plants. The rich vegetation of the Property with many endemic and relict species once again proves the uniqueness of the area. Water- and heat-loving elements of late tertiary flora survived here the unfavorable climatic conditions of glacial and interglacial epochs.

The location of the Western Caucasus at the Northern and Southern macroslopes of the



Photo 6. Winter at the Lagonaki Plateau. Photo S. Trepet.

Greater Caucasus defines and explains the clear phytogeographical differentiation of the territory.

The part of the Property located on the Northern macroslope belongs to the West-Caucasian province of the Caucasus region (Fig. 4). It is represented by highlands of moderately warm zone with typical vertical change of orobioms. The following areas can be distinguished within that territory:

- area of beech and beech-fir forests (*Fagus orientalis* LIPSKY and *Abies nordmanniana* (STEVEN) SPACH — as the dominant tree species);
- zone of coniferous forest of fir trees (*Abies nordmanniana* (STEVEN) SPACH); at the upper border of the forest there are areas with the redwood maple (*Acer trautvetteri* MEDW.), and in some places one can find pine forests with crooked pines (*Pinus sylvestris hamata* (STEV.) SOSN.);
- subalpine zone with crooked forests of birch and willow trees (*Betula* L., *Salix* L.) or rhodorets of caucasian rhododendron (*Rhododendron caucasicum* PALL.) and tall herbage;
- alpine zone with shrub-grass vegetation and bedrock outcrops;
- subnival area with patchy vegetation on boulders and nival area with glaciers and snowfields.

Mainly beech forests of the oriental beech (*Fagus orientalis* LIPSKY) (Photo 7) are spread within 500—1,500 m above the sea level, their grass cover is not rich in composition and is represented mainly by shade enduring species (*Asperula odorata* L., *Corydalis caucasica* DC., *Rubus caucasicus* FOCKE and others). In the beech forests there are tangles of pontic rhododendron (*Rhododendron ponticum* L.), which is also widely spread also in the fir forests.

Fir and beech-fir formations occupy a large area of the forests. Separate fir trees (*Abies nordmanniana* (STEVEN) SPACH) remind the giants by their stunning size. Fir trees often reach 400—500 years of age, and sometimes even 700 years. Typical Northern plants grow under their canopy: *Oxalis acetosella* L., *Geranium robertianum* L., a well as the descendants of ancient colchica forms: *Ilex colchica* POJARK., *Paris incompleta* M. ВИБ. and others.

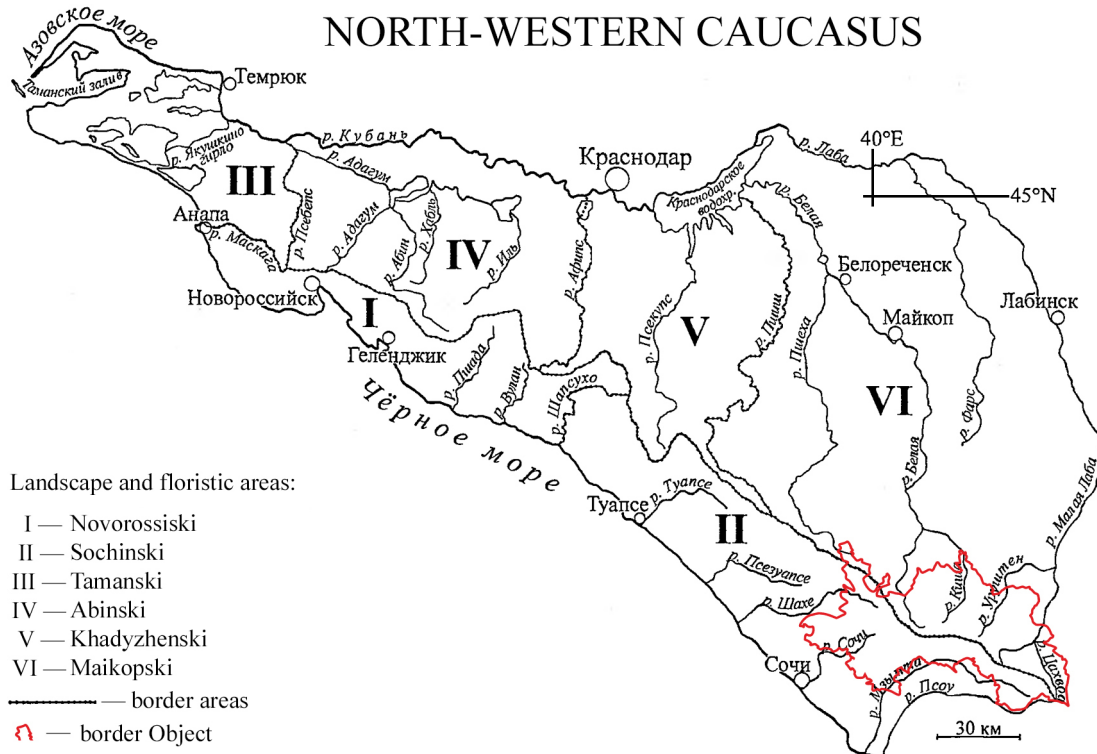


Fig. 4. Landscape and floristic zoning of the North-Western Caucasus (A. S. Zernov, 2006)



Photo 7. Mature beech forest consisting of the oriental beech (*Fagus orientalis* LIPSKY). Photo S. Trepet.

At the height of 1,500—1,700 *m above the sea level* beech-fir forests begin to change. The amount of beech trees becomes less, and the trees themselves look rough, low hanging. Fir trees become less powerful, there are more glades and clearings, filled in by tangles of the forest grasses, more often there can be seen separate trees of *Sorbus caucasigena* KOM. ex GATSCH. and *Acer trautvetteri* MEDW. Lush grass cover reaches a height of 1—1.5 *m*. Here you can find a broad-bell (*Campanula latifolia* L.), rocket night violet (*Hesperis matronalis* L.), lily monadelphum (*Lilium monadelphum* M. BIEB.) (Photo 8), the drop cap grandiflora (*Stachys macrantha* (K. KOCH) STEARN), rocket Lobel (*Veratrum lobelianum* BERNH.) and others.

In hollows, forest glades and edges of the upper forest border there are thickets of giant grasses, which received the name “subalpine tall grass”. Caucasian subalpine tall grass is famous for its exceptional species diversity — more than 90 species. The stems of some plants reach 3.5—5 *m* height. Among the tall grass species are the Genera Hogweed (*Heracleum* L.), Larkspur (*Delphinium* L.), Fighter (*Aconitum* L.) and hogweed Mantegazzi (*Heracleum mantegazzianum* SOMMIER & LEVIER), which can grow to especially large sizes. A considerable role in these formations belongs to *Dactylis glomerata* L., meadow grass-leaved (*Poa longifolia* TRIN.) and other tall cereals.

At a height of 1,800—1,900 *m above the sea level* fir trees give place to another kinds of plant communities of the upper limit of the forest zone, called sub-alpine wood-shrubby belt, which is divided into 3 groups of formations: woodland, mossy forests and elfin wood and shrubs. These three groups of plants usually make up three separate vertical stripes. Creating complexes with meadows, shrubs often come into the Alpine belt. There one can find redwood maple (*Acer trautvetteri* MEDW.), rowan (*Sorbus torminalis* (L.) CRANTZ), pine hamate (*Pinus sylvestris hamata* (STEV.) SOSN.). Litvinov birch (*Betula litwinowii* DOLUCH.) and goat willow (*Salix caprea* L.) form a crooked birch forest, which often includes caucasian rhododendron (*Rhododendron caucasicum* PALL.), Bush raspberry (*Rubus buschii* GROSSH. ex SINKOVA), stone bramble (*Rubus saxatilis* L.) and the Ferns — shield-ferns (*Dryopteris* ADANS.), *Thelypteris* SCHOTT, centipede common (*Polypodium vulgare* L.) and the other in its lower levels. On the Southern slopes the up-



Photo 8. *Lilium monadelphum* M. BIEB. Photo A. Ivanenko.

K. KOCH, *Bromus variegatus* M. BIEB. And a numerous group of herbs: *Stachys macrantha* (K. KOCH) STEARN, *Aconitum orientale* MILL., *Anemone fasciculata* L., *Polygonum carneum* C. KOCH., *Geranium sylvaticum* L., *Astrantia maxima* PALL. and others.

On the meadows of the Alpine belt the most common are the low-grass small sedge and small mixed-herb meadows with *Carex huetiana* BOISS., *Carex tristis* M. BIEB., *Colpodium versicolor* (STEVEN) SCHMALH., *Festuca ovina* L. and numerous species of *Primula* L., *Gentiana* L., *Campanula* L. and others.

The southern slopes steeply descending to the Black sea, is the North-Western part of the Transcaucasian province. It represents a unique way of ecosystems interchange, from the East Submediterranean Colchis to Alpine. Warm summer and mild winter climate, abundant precipitation, and high humidity have led to an abundant growth of broad-leaved forests with many lianas and epiphytes. Such forests, typical for a warm and humid climate of submeridional latitude (often incorrectly defined as subtropical), were previously present only in some areas of the World Heritage Western Caucasus property. In full as they are represented only on the territory of Sochi National Park, proposed to extend an existing World Heritage property, and can not be found anywhere else in Russia. They are mainly characterized by of Colchis and sub-Mediterranean flora, which often grows at the foot of the mountains, and their vegetation is very different from the



Photo 9. Bushes of the caucasian rhododendron (*Rhododendron caucasicum* PALL.). Photo S. Trepet.



Photo 10. *Staphylea colchica* L. Photo A. Ivanenko.

heavy-silty muddy alluvial soils. In some areas deciduous and evergreen shrubs create a thick undergrowth.

Tree stands in the middle mountain zone have large differences in species composition going from West to East. Most of the forests of this zone are composed of deciduous breeds (oak, beech, chestnut, hornbeam, maple and others) which have experienced a smaller human impact. In the Western part of SNP tree stands of this zone one can mostly see oaks, hornbeams and chestnuts, in the Central part the main role goes to beeches and maples, and the area to the East of the National Park (Aibginskoe and part Krasnopolyanskoe forestry) is dominated by fir trees.

Upper mountain forests in all their altitude range are presented mainly in the Eastern part of the SNP. They are composed of beech, beech-fir, some spruce-fir woods, with a mixture of beech trees, smoothly changing with increasing height above the sea level into the Alpine fir woods with interspersed maple forests on terraced ledges and in areas with higher humidification.

A small part of the territory of the SNP is located in the South-Eastern part of the North-Circassian district, and is represented by mesophyllic beech (*Fagus orientalis* LIPSKY) and chestnut (*Castanea sativa* MILL.) forests.

Another widespread biotic component of the National Park forest ecosystems mosaic is the meadow plant formations. The species diversity of SNP meadow plant formations includes more than 300 species of vascular plants of 44 families.

the elevation level corresponding to the Northern slope.

The main part of **Sochi National Park** (SNP), stretching from the river Psou to the river Ashe, is referred to the Circassian geobotanical district, which is divided into four forest districts with a well-expressed vertical zoning and the influence of the exposition of slopes:

- Coastal district of oak and oak-hornbeam forests;
- Middle-district chestnut, oak-hornbeam and beech-hornbeam forests;
- Mountainous area of beech forests;
- Upper mountain district of beech-fir and fir forests.

In the coastal and lower mountain zone, up to a height of 1,000 *m* above the sea level there are deciduous forests of oak, chestnut, hornbeam, maple, ash, alder and other tree breeds. It is necessary to point out the presence of *Pterocarya pterocarpa* (MICHX.) KUNTH ex ILJINSK. in flooded parts of river channels and beams of



Photo 11. *Erythronium caucasicum* WORONOW.
Photo S. Trepet.

✕ Flora

According to consolidated data, about 4,000 of plant, mushrooms and lichens species grow within the territory of the Western Caucasus property nowadays. The share of vascular plants is more than 2,000 species. It is equal to $\frac{2}{3}$ of the total number of species of the Greater Caucasus and $\frac{1}{2}$ of species inhabiting the whole Caucasus territory (approx. 6,000 species).

Vascular plants refer to types of habitats represented by various flora elements, namely:

- Eurasian boreal (e.g. coniferous forest plants);
- Eurasian and European moderate (sub)oceanic (e.g. nemoral deciduous forest plants);
- Eurasian and European meridional-submeridional (-moderately) continental (e.g. plants found in steppes and forest steppes);
- Submediterranean/ mountain central European (e.g. *Taxus baccata* L.);
- (Mediterranean/mountain)- submediterranean (e.g. *Castanea sativa* MILL.), and also eastern Mediterranean species (e.g. *Staphylea pinnata* L., *Fagus orientalis* LIPSKY), Euxine, Colchian or Western Caucasus species (e.g. *Staphylea colchica* L. (Photo 10), *Buxus colchica* POJARK., *Ruscus colchicus* YEO, *Dioscorea caucasica* LIPSKY, *Hedera colchica* (K. KOCH) K. KOCH) are spread and endemics of provinces or even local areas;
- (Submediterranean)- central European and (Mediterranean)- submediterranean oreophytes, plants typical for high mountain regions, besides, to this group belong numerous species found only in the Caucasus (e.g. *Rhododendron caucasicum* PALL., *Lilium monadelphum* M. BIEB.) or Western Caucasus (e.g. *Erythronium caucasicum* WORONOW (Photo 11), *Gentiana paradoxa* ALBOV, *Gentiana oschtenica* (KUSN.) WORONOW). In the Western Caucasus, the cases of local endemism are also observed (e.g. *Campanula autraniana* ALBOV).

The flora of the Caucasus State Biosphere Reserve which occupies $\frac{3}{4}$ of the nominated property in new boundaries with its largest part located on the northern macroslope is studied to the utmost extent. Within the territory of the reserve 1,586 vascular plant species (503 genera, 121 families) are registered (Semagina, 1999). The most abundant families are Asteraceae, Poaceae and Fabaceae. 10 % of the total number of species is tertiary relicts. The flora of vascular plants in the reserve includes 416 endemic species or 26.2 % of the aggregate amount.

These are the endemics of Caucasus, the Greater Caucasus and even the ones of the Western Caucasus property (Semagina, 1999). Endemism among high mountain plants is generally more often and occurs in 35 % of cases. The largest group is represented by Caucasian endemics with their origin related to the Main Ridge, such as: *Oxytropis kubanensis* LESKOV, *Tulipa lipskyi* GROSSH., *Valeriana saxicola* C. A. MEY. etc. Some species are Colchian endemics, namely: *Briza marcowiczii* WORONOW, *Inula magnifica* LIPSKY, *Valeriana colchica* UTKIN, *Festuca sommieri* LITARD., *Gagea sulfurea* MISCZ. and *Crocus scharojanii* RUPR. (Photo. 12) are related to West Caucasian endemics.

Forest flora of the reserve includes 16 % of endemic species: *Lilium monadel-*

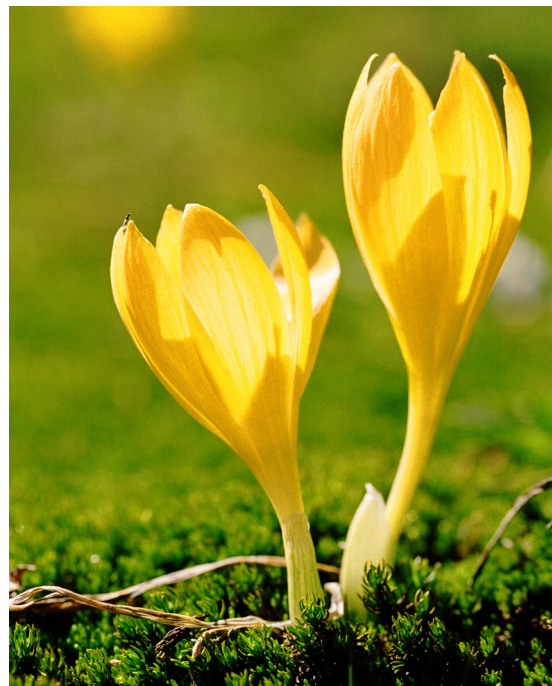


Photo 12. *Crocus scharojanii* RUPR. Photo S. Trepet.



Photo 13. *Aristolochia steupii* WORONOW. Photo A. Ivanenko.

park coincide with the ones growing in the reserve. At the same time, the flora of Sochi National Park is notable not only for its record high number of endemic, relict and rare species, but also due to their growing in typical conditions which makes them even more abundant. The unique and individual character of the national park flora is primarily dependent on its location. Being protected by the Main Caucasus Ridge and heated by the warm Black Sea, Sochi National Park (SNP) is the most important refugium of Colchian tertiary relict cenosis, one of the largest refugia in all northern hemisphere of the planet. The natural complex of SNP is a unique and an exclusive one in the Caucasus representative not only for all main ecosystems with many endemic, relict and rare species which preserved their original character, but also differentiated into Eastern Mediterranean, Colchian and Caucasian high altitude cenosis. Here submountain cenosis of the Colchis type (practically absent in the neighboring Caucasus State Biosphere Reserve) unique for Russia are concentrated with tertiary relict mixed broadleaf forests with evergreen underwood, including the largest arrays of buxus and rhododendron, some large arrays of *Castanopsis*, submediterranean and nemoral oak forests formed by 7 aboriginal oak species. Along marine terraces, a chain of eastern Mediterranean enclaves is located, and in the axial part of the Main Caucasus Ridge there is a full diversity of mountain meadow vegetation development from most western subalpine grassplots on

phum M. BIEB., *Galanthus caucasicus* (BAKER) GROSSH., *Hylotelephium caucasicum* (GROSSH.) H. OHBA, *Ribes biebersteinii* BERLAND. ex DC. etc. Forest flora comprises many ancient Caucasian endemics, e.g.: *Euphorbia macroceras* FISCH. & C. A. MEY., *Quercus iberica* STEVEN, *Aristolochia steupii* WORONOW (Photo 13), *Symphytum grandiflorum* DC., *Ilex colchica* POJARK., *Euonymus leiophloea* STEVEN.

The flora of the Fisht-Oshten massif in the Lagonaki Plateau area is the most unique one. Three local endemics of the region are found here, such as *Campanula woronowii* KHARADZE, *Euphorbia oschtenica* GALUSHKO and *Gentiana oschtenica* (KUSN.) WORONOW; 22 species are narrowly regional endems.

The flora of **Sochi National Park** is characterized with especially high species diversity and includes 2,026 vascular plant species, 164 of which are referred to trees, shrubs, sub-shrubs and lianas and all others — to herbaceous plants. Due to its close proximity to the Caucasus State Biosphere Reserve most species of the national



Photo 14. *Cyclamen coum* Mill. Photo S. Trepet.



Photo 15. *Paeonia caucasica* (SCHIPSZ.) SCHIPSZ.
Photo S. Trepet.

number of rare plants, animals and mushrooms inscribed in the Red Data books of the Russian Federation (2001; 2008) and the Krasnodarsky Krai (2007 a, b) (Fig. 5—10) is more than 70 species. In the forest belt on the rock shelves rare representatives of woody plants can be found (*Ostrya carpinifolia* SCOP.). Among rare herbaceous plants in the forest belt the following species are distinguished: *Aristolochia steupii* WORONOW, *Cyclamen coum* Mill. (Photo 14), *Colchicum speciosum* STEVEN, *Colchicum umbrosum* STEVEN, *Euphorbia amygdaloides* L., *Ornithogalum arcuatum* STEVEN, *Erythronium caucasicum* WORONOW, *Galanthus caucasicus* SOSN., *Lilium caucasicum* (MISCZ. ex GROSSH.) GROSSH., *Helleborus caucasicus* A. BROWN, *Paeonia caucasica* (SCHIPSZ.) SCHIPSZ. (Photo 15), *Cephalanthera longifolia* (L.) FRITSCH, *Dactylorhiza urvilleana* (STEUD.) H. BAUMANN & KUNKELE, *Neottia nidus-avis* (L.) RICH., *Orchis mascula* (L.) L., *Orchis purpurea* HUDS., *Platanthera chlorantha* (CUSTER) REICHENB. On rock shelves in the forest belt one can meet *Asplenium adiantum-nigrum* L., *Ceterach officinarum* WILLD., *Cystopteris fragilis* (L.) BERNH., *Woodsia fragilis* (TREV.) MOORE and very rare *Fritillaria lagodechiana* KHARKEV. As for high altitude plants, the following species *Astrantia maxima* PALL., *Chaerophyllum aureum* L., *Chaerophyllum angelicifolium* M. BIEB., *Chaerophyllum roseum* BIEB., *Seseli libanotis* (L.) W. D. J. KOCH, *Leontodon*

Mt. Lysaya (upper reaches of the Ashe river) to subnival belt in Turji mountains (upper reaches of the Psou river).

In the south eastern part of the nominated territory, Abkhazian floristic endemics are concentrated which distribution is restricted to Abkhazian floristic area (Mzymta and Codor interfluvium). Among 84 Abkhazian endemics, 35 species (*Anthemis zyghia* WORONOW, *Amphoricarpos elegans* ALBOV, *Arabis sachokiana* (N. BUSCH) N. BUSCH, *Cirsium fominii* PETR., *Corydalis vittae* KOLAK., *Genista kolakovskii* SACHOK., *Minuartia abchasica* SCHISCHK., *Minuartia rhodocalyx* (ALBOV) WORONOW, *Omphalodes kusnetzovii* KOLAK., *Ziziphora woronowii* MALEEV, *Acer sosnowskyi* DOLUCH., *Dioscorea caucasica* LIPSKY, *Muscari dolychanthum* WORONOW & TRON. etc.) are mentioned as growing within the nominated territory of SNP. Sochi National Park is a habitat for unique plant and animal species which range in the region is either restricted, or they are represented by narrowly endemic taxa. In addition, here the number



Photo 16. *Campanula latifolia* L. Photo
A. Ivanenko.

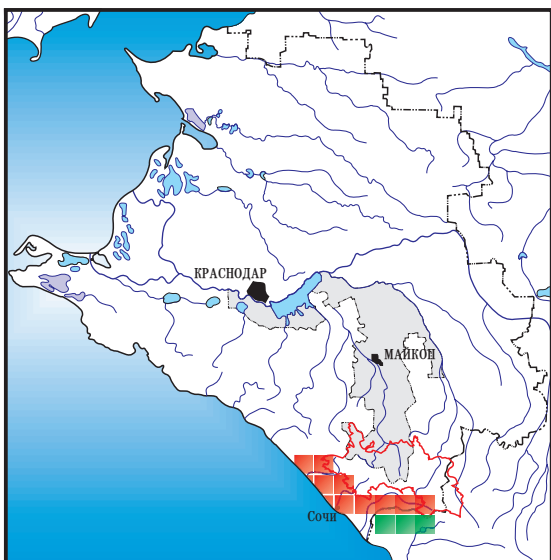


Fig. 5. The area *Paeonia wittmanniana* HARTWISS ex LINDL. (The Red Data Book of Krasnodarsky Krai, 2007):

Wittmann's peony (*Paeonia wittmanniana* Hartwiss ex Lindl.). It grows in mountain forests, forest edges and clearings, among bushes, as well in the forest and in the subalpine zone of SNP. It is found on the right bank of the Mzymta river (Akhtsu gorge), in the Dzykhrinskoe and Akhshtyrskoe gorges, on the Sakharnaya and Amuko mountains, in the mouth of the Dolgaya river. A Colchis endemic relict sporadically spread species with a limited number of sites of growth and a declining number of species. Species listed in the Red Data Book of Russia and in the Red Data Book of the USSR (1984).

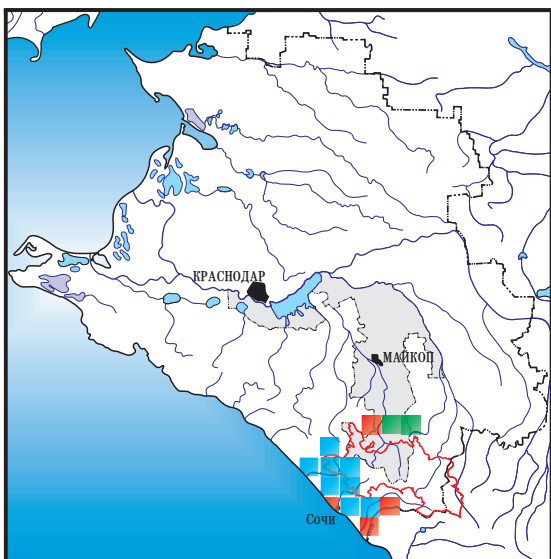


Fig. 6. The area *Buxus colchica* POJARK. (The Red Data Book of Krasnodarsky Krai, 2007):

Colchis or Caucasian box tree (*Buxus colchica* POJARK.). It grows from the Russian Black Sea coast of the Caucasus to Trebizond in north-eastern Turkey. Relict Colchis-Lazistansky species at the northern border of an area with a small number of sites of growth and with a declining number of species. In SNP it grows in valleys and gorges of the rivers of Sochi, Psou, Mzymta, Shah, Bzych, etc. Species listed in the Red Data Book of Russia, in the Red Data Book of the USSR (1984) and in the IUCN Red List.

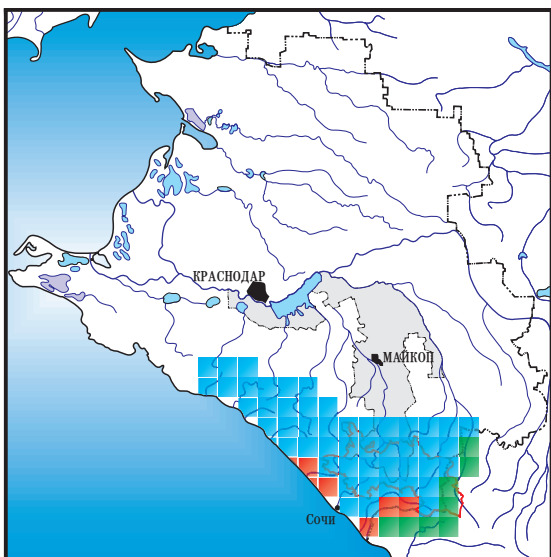


Fig. 7. The area *Ostrya carpinifolia* Scop. (The Red Data Book of Krasnodarsky Kray, 2007):

Hop-hornbeam (*Ostrya carpinifolia* Scop.). It grows on low and middle mountain zones and in SNP through gorges and cliffs up to a height of 1200 m above the sea: Ahun, Sakharnaya, Autl, Bzysh mountains, Shah river gorges. Relict sporadically spread species with a limited number of sites of growth and a declining number of species. Species listed in the Red Data Book of Russia, in the Red Data Book of the USSR (1984) and in the IUCN Red List.

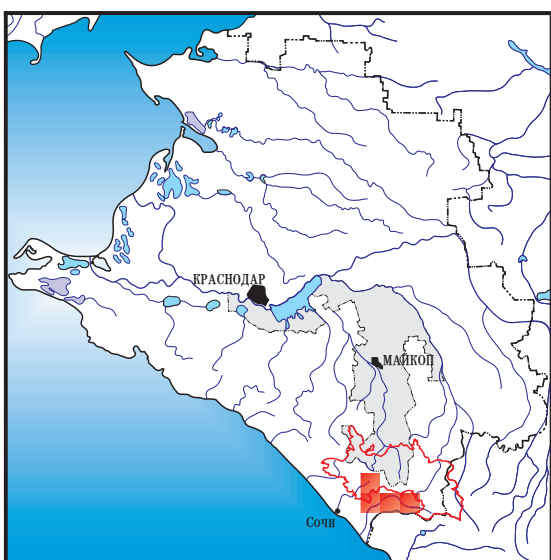


Fig. 8. The area *Corylus colurna* L. (The Red Data Book of Krasnodarsky Kray, 2007):

Turkish hazel (*Corylus colurna* L.) grows in mixed deciduous forests from nearly the sea level to an altitude of 1700 m above the sea but is mostly confined to the middle mountain belt. In SNP it is found in the interfluvium of Mzymta and Psou, on the Aibga mountain. Relict sporadically spread species with a limited number of sites of growth and a declining number of species. Species listed in the Red Data Book of Russia, in the Red Data Book of the USSR (1984) and in the IUCN Red List.

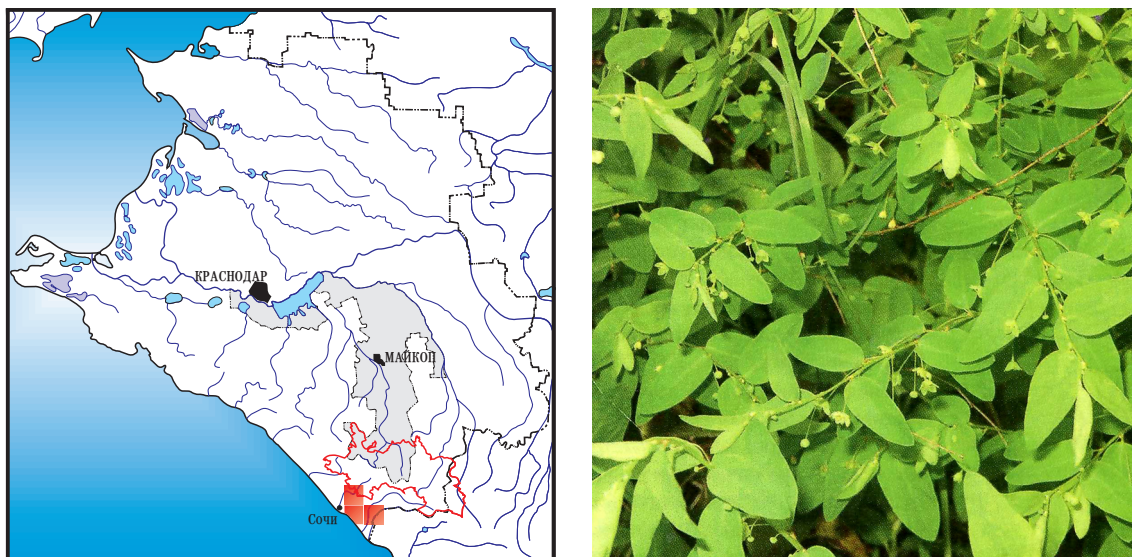


Fig. 9. The area *Leptopus colchicus* (FISCH. & MEY.) POJARK. (The Red Data Book of Krasnodarsky Kray, 2007):

Colchis leptopus (*Leptopus colchicus* (FISCH. & MEY.) POJARK.). It is found in SNP among bushes on rocky limestone slopes to medium-mountain zone: the Mzymta river, the Akhtsu gorge, Kudepstinsky and Akhshtyrsky canyons in the area between the Agva and Bezumenka rivers (the Sochi river basin). The endemic relict species, sporadically spread on the northern border area, with a small number of sites of growth and a declining number of species. Species listed in the Red Data Book of Russia, in the Red Data Book of the USSR (1984) and in the IUCN Red List.

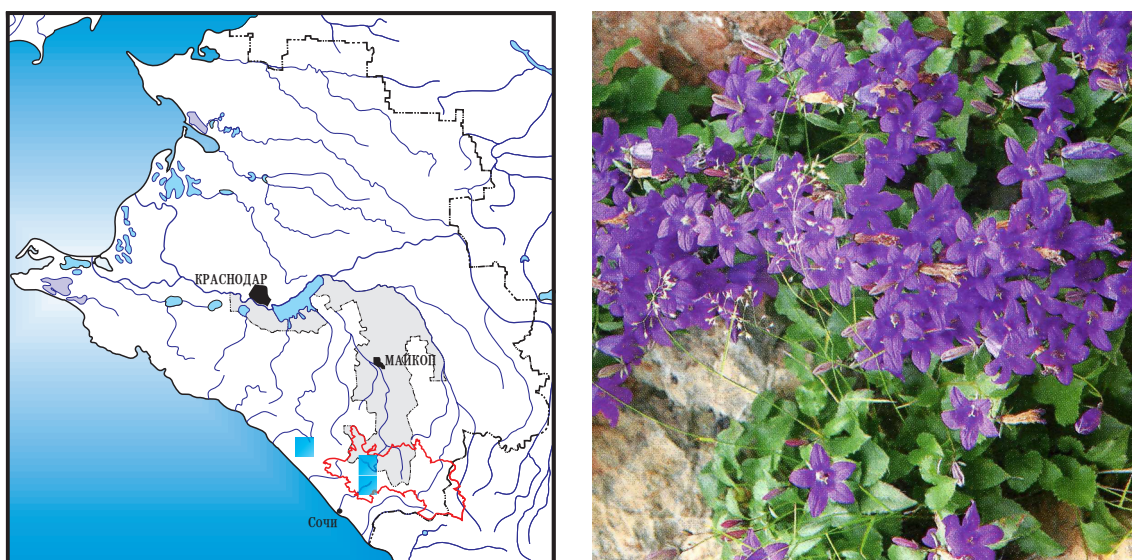


Fig. 10. The area *Campanula autraniana* ALBOV. (The Red Data Book of Krasnodarsky Kray, 2007):

Campanula autraniana Albov (*Campanula autraniana* Albov) in SNP is found in the gorge of the middle course of the river Bzych on the Sakharnaya mountain. In addition, it grows on the Fisht mountain, at the bottom of the Fisht mountain between Mavrikushkh and the Belorechensky pass. Rare western trans-Caucasian endemic alpine species. Species listed in the Red Data Book of Russia, in the Red Data Book of the USSR (1984) and in the IUCN Red List.



Photo 17. *Campanula glomerata* L. Photo S. Trepet.

caucasicum (M. BIEB.) FISCH., *Omalotheca sylvatica* (L.) SCH. BIP. & F. W. SCHULTZ, *Asyneuma campanuloides* (M. BIEB. ex SIMS) BORNM., *Campanula latifolia* L. (Photo 16), *Gadelia lactiflora* (M. BIEB.) SCHULKINA, *Hedysarum caucasicum* M. BIEB., *Lathyrus aureus* (STEVEN) D. BRANDZA, *Lotus caucasicus* KUPRIAN. ex JUZ., *Oxytropis cyanea* M. BIEB., *Trifolium canescens* WILLD., *Stachys macrantha* (C. KOCH) STEARN, *Euphrasia petiolaris* WETTST., *Rhynchocorys orientalis* (L.) BENTH., *Scrophularia nodosa* L., *Veronica gentianoides* VAHL, *Dactylorhiza euxina* (NEVSKI) CZEREP.; such plants as *Dianthus fragrans* ADAMS, *Silene saxatilis* SIMS, *Sempervivum caucasicum* RUPR. ex BOISS. refer to high altitude petrophytes. Meadow species are represented by *Achillea millefolium* L., *Anthemis cotula* L., *Anthemis tinctoria* L., *Echium vulgare* L., *Erysimum aureum* M. BIEB., *Campanula glomerata* L.) (Photo 17), *Agrostemma githago* L. Mediterranean and submediterranean flora representatives are mainly such petrophyte plants,

as: *Campanula alliariifolia* WILLD., *Helianthemum grandiflorum* (SCOP.) DC., *Sedum annuum* L., *Genista patula* M. BIEB., *Briza elatior* SIBTH. & SM., *Bromopsis variegata* (BIEB.) HOLUB. and many others.

One should specifically note a great number of rare Mediterranean species most of which are inscribed in the Red Data books of various levels, namely: *Muscari armeniacum* BAKER, *Dianthus acantholimonooides* SCHISCHK., *Scabiosa olgae* ALBOV, *Phlomis taurica* HARTWISS ex BUNGE, *Salvia ringens* SIBTH. & SM., *Campanula komarowii* MALEEV, *Iris pumila* L. (Photo 18), *Asphodeline lutea* (L.) RCHB., *Eremurus tauricus* STEV.

The flora of Shakhginskoe gorge of the Psou river is no less unique. This is the only habitat of *Potentilla camillae* KOLAK. on the RF territory and the one of two localities where *Bupleurum rischawii* ALBOV and *Campanula sclerophylla* (KOLAK.) CZER. grow in the Russian Federation. It is a unique fact that at this place rare species of vascular plants are gathered, including: *Cyclamen coum* MILL., *Buxus colchica* POJARK., *Staphylea colchica* L., *Helleborus caucasicus* A. BROWN, *Ficus carica* L., *Alnus barbata* C. A. MEY., *Tamus communis* L., *Dioscorea caucasica* LIPSKY, *Ruscus aculeatus* L., *Ruscus colchicus* P. F. YEO, *Epimedium colchicum* (BOISS.) TRAUTV., *Seseli petraeum* BIEB., *Swida koenigii* (SCHNEID.) POJARK. ex GROSSH., *Atropa caucasica* KREYER, *Scabiosa olgae* ALBOV, *Limodorum abortivum* (L.) SWARTZ, *Taxus baccata* L.) etc.



Photo 18. *Iris pumila* L. Photo S. Trepet.

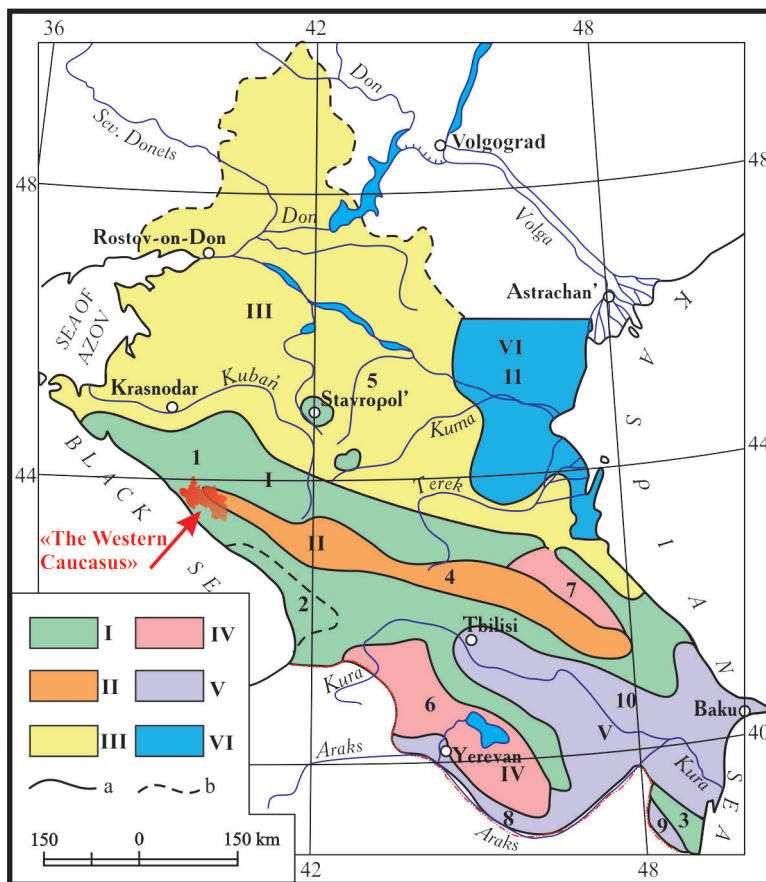
✕ Fauna

The Western Caucasus property is included in the Holarctic zoogeographical region and according to faunistic zoning of Caucasus it is referred to two large zoogeographical sub-regions: Circumboreal and Central Asian. In its Circumboreal sub-region, the property is represented by the forest district of the European forest province, its fauna features widely occurring forest species, often being near their area limits at this territory or far from the main habitat. The fauna of the Central Asian sub-region is represented by the Caucasus mountain meadow district occupying subalpine, alpine and subnival belts and included in the Mountain Asian Province (Fig. 11).

The fauna of the Western Caucasus property is extremely diverse due to its latitudinal, longitudinal and altitudinal position. Each altitudinal belt is characterized by a definite complex of animals and set of species. Among the animals inhabiting the territory, there are a lot of endemic and protected species.

Within the territory of the Western Caucasus property, the invertebrate fauna is studied the best. It amounts to approximately 400 species, 60 of which (Kovalev, Tilba, 1999) are endangered in Russia and around the globe or rare, therefore they are inscribed on the Red Data books of Russia and IUCN. Many of them are common for the whole territory of the Western Caucasus property, while at a greater part of the rest area their number is quickly reduced and the habitats not only decrease, but also completely disappear. The number of such species is drastically increasing around the globe, among all invertebrates inhabiting the Western Caucasus property, 39 species have already been inscribed on the Red Data Book of IUCN.

As compared to invertebrates, other groups of animals have remained insufficiently studied. The insects and mollusks are the best-studied classes of invertebrate animals.



Circumboreal Subregion: European Forest Province: I — Caucasus Forest District: 1 — Caucasus Forest District; 2 — Colchian Area; 3 — Hirkan Area; *Central Asian Subregion:* Upland Asian Province: II — Caucasus Mountain Meadow District: 4 — Caucasus Mountain Meadow Area; *Kazakhstan-Mongolia Province:* III — European Steppe District: 5 — Fore-Caucasus Area; *Mediterranean Subregion:* Mediterranean Province: IV — Asia Minor Mountain Meadow District: 6 — Armenian Area; 7 — Dagestan Area; *Iran-Turan Province:* V — Iran Desert and Dry Steppe District: 8 — Araks Area; 9 — Zuvant Area; 10 — Kura Area; VI — North Turan Desert District: 11 — North-West Caspian Area; a — borders of districts; b — borders of areas.

Fig. 11. The Caucasus Faunal Zoning Plan.

✕ Insects

The data on entomofauna of the region is insufficient, at present over 2,500 species have been fixed on the territory (projected number is about 15 *thous.*). The insect fauna is studied the best within the territory of the Caucasus State Biosphere Reserve. At the property, it is represented by more than 20 orders. 98 insect species are inscribed on the Red Data Book of Russia and regional Red Data books. The Coleoptera order of insects is the most abundant in number of species.

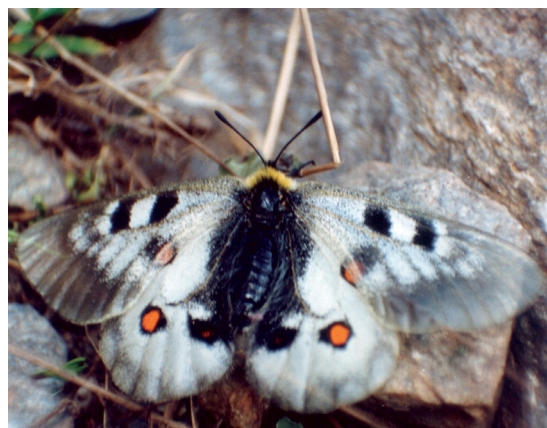


Photo 19. *Parnassius nordmanni*. Photo V. Kovalev.

Approximately 5 thousand species, being representatives of the order, from more than 70 families inhabit all biotopes in all altitudinal belts. Among them, the following families are abundant: Carabidae, Staphylinidae, Scarabaeidae, Cerambycidae, Elateridae, Chrysomelidae, Curculionidae, Scolytidae and some others. Within the territory of the Caucasus State Biosphere Reserve the following longhorn beetle is found, which is the largest in Europe: *Rhaesus (Rhesus) serricollis*. A rare species of Cerambycidae family — *Cerambyx cerdo* — has been inscribed on the IUCN Red List. About 12 % of beetles are Caucasus endemics. The order is also abundant in tertiary relicts

The species composition of Lepidoptera order is abundant and diversified. The rarest species are *Parnassius nordmanni* (Photo 19) (the Caucasus endemic) and *Zerynthia polyxena*. Within the territory of the reserve, 31 species of butterflies are protected, being inscribed on the Red Data Book of Russia and similar regional books, three of them — *Parnassius apollo*, *Zerynthia caucasica* and *Maculinea alcon* — are under protection of the IUCN Red List. Among other typical representatives of the Lepidoptera fauna in the reserve the following species can be listed: *Nymphalis antiopa*, *Vanessa atalanta*, *Aporia crataegi* and some others. Such families as Noctuidae, Lycaenidae, Nymphalidae, Sphingidae are also numerous

The Hymenoptera order is very diverse. In spruce-fir forests, the most abundant species are horntails (*Urocerus argonautorum* and *Xeris spectrum*); *Arge ustulata*, and Tentredinidae etc. are common. *Scolia hirta* and *Scolia maculate*, the largest wasp in Russia being up to 6 cm in size, can also be encountered. Among the representatives of Syrphidae family, about 200 species have been fixed; 137 species of Dolichopodidae have been found, over 20 species of which are endemics.

✕ Mollusks

The mollusk fauna of the Caucasus State Biosphere Reserve combined with the territory of Sochi National Park includes no less than 128 species. This list should be considered incomplete. The prevailing species are Mollusca, Gastropoda. An overwhelming majority of mollusks are species included in the Caucasus group (80 species) — 70 %, among them Colchian species (29) — 25 %, Western Caucasus (27) — 24 % and common Caucasus (24) — 21 %. Other groups in the aggregate make less than 30 % of the total number of species: boreal (21) — 18.4 % and Eastern Mediterranean (12) — 11.4 %.

✕ Fish

The rivers of the **Western Caucasus** property are inhabited by 28 fish species, 5 of which are inscribed on the IUCN Red List. *Salmo trutta morpha fario* is the most abundant



Photo 20. *Salmo trutta labrax*. Photo A. Ivanenko.

tenella; Gobiidae family — by *Neogobius rhodioni*; Gasterosteidae family — by *Gasterosteus aculeatus*.

☒ Amphibians and reptiles

The fauna of amphibians and reptiles of the **Western Caucasus** property is distinguished by its unique character; many species are represented by several subspecies.



Photo 21. *Pelodytes caucasicus*. Photo A. Ivanenko.

Each second amphibian or reptile species inhabiting this territory is near its main area limits or totally separated from it. Within the territory of the property 4 area types (Tuniev, 1994) of these groups' representatives intersect: European, Eastern Mediterranean, Colchian and Caucasus. **Sochi National Park** is considered to be one of the most interesting regions of the Caucasus isthmus in terms of herpetology. Among 86 amphibian and reptile species inhabiting the Caucasus, 29 species (32.6 %) have been registered within the limits of SNP. The overwhelming majority of species is represented by endemic and relict forms (amphibians — 66 %, reptiles — 47.7 %). 9 amphibian and 20 reptile species are fixed on the territory of SNP. Notwithstanding the official status, some rare species can be rather common and abundant in SNP (*Pelodytes caucasicus*, *Bufo verrucosissimus verrucosissimus*) (Photos 21, 22), while the species considered as common can be rare within the territory of SNP (*Natrix natrix*, *Pseudepidalea viridis* etc.).

☒ Avifauna

Avifauna of the property includes 246 species; half of the total number is breeding, 23 — inscribed on the Red Data Book of Russia and 11 — on the IUCN Red List. Apart from such common species as *Oriolus oriolus* and *Serinus pusillus* (Photo 23), regular in-

species in the upper and middle reaches of most rivers within the property. The piscifauna of **Sochi National Park** is the most diverse, being represented by 27 species and subspecies referred to 24 genera, 8 families and 7 orders. In low reaches of the rivers flowing into the Black Sea 10 species and subspecies of 4 fish families are typical. Salmonidae family is represented by *Salmo trutta labrax* (Photo 20) and its resident form *Salmo trutta morpha fario*; Cyprinidae one — by *Alburnoides bipunctatus fasciatus*, *Leuciscus cephalus orientalis*, *Barbus tauricus escherichii*, *Chondrostoma colchicum*, *Gobio gobio lepidolaemus*, *Phoxinus phoxinus colchicus*, *Vimba vimba*



Photo 22. *Bufo verrucosissimus verrucosissimus*. Photo A. Ivanenko.



Photo 23. *Serinus pusillus*. Photo S. Trepet.

habitants of the forest zone within the Western Caucasus property are the following species rare in Russia and inscribed on the Red Data Book: *Sitta krueperi*, *Certhia brachydactyla* and *Regulus ignicapillus*. In lowmountain forests along the river valleys at least 8 pairs of *Ciconia nigra* inscribed on the Red Data Book of Russia as globally endangered species are nesting.

The high mountain avifauna is specific and diverse; among the trees of krumholtz formation and rhododendron shrubs *Prunella modularis* and *Erithacus rubecula*, *Phylloscopus lorenzii*, *Eremophila alpestris* and *Crex crex*, *Tetraogallus caucasicus*, *Lyrurus mlokosiewiczzi* (Photo 24) can be encountered.

Sochi National Park is a Globally Important Bird Area according to three key criteria. Within this territory, a considerable number of species with endemic or restricted area are recorded, as well as the ones being restricted to one biotope.

Avifauna of the national park includes 234 species representing 16 orders (Podicipediformes, Pelecaniformes, Ciconiiformes, Anseriformes, Falconiformes, Galliformes, Gruiformes, Charadriiformes, Columbiformes, Strigiformes, Caprimulgiformes, Apodiformes, Caraciiformes, Upuiformes, Piciformes, Passeriformes). Among these, 99 are breeding (including 11 potentially breeding species), 87 — transit migrants, 36 — migrating for the winter period, 12 — vagrant species.

The avifauna of SNP includes such bird species of high mountain biome, as: *Lyrurus mlokosiewiczzi*, *Tetraogallus caucasicus* (Photo 25), *Pyrrhocorax graculus*, *Prunella collaris*, *Phylloscopus lorenzii*, *Tichodroma muraria*. However, due to the height reduction of the Main Caucasus Ridge in this part and decreasing of areas with regard to some high mountain landscape elements, such typical inhabitants of the Greater Caucasus uplands, as *Pyrrhocorax pyrrhocorax*, *Phoenicurus erythrogaster*, *Montifringilla nivalis*, *Petronia petronia* cannot be encountered within the territory.



Photo 25. *Tetraogallus caucasicus*. Photo S. Trepet.

Sochi National Park is a Globally Important

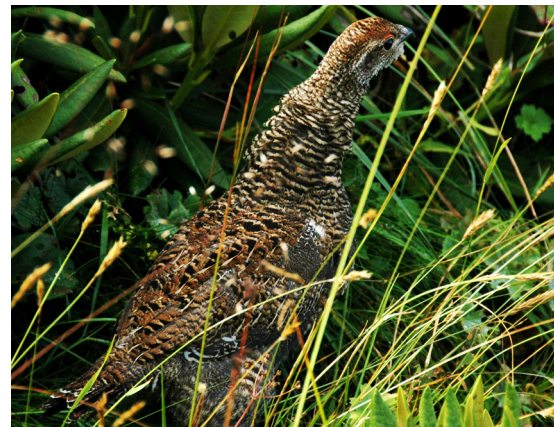


Photo 24. Young *Lyrurus mlokosiewiczzi*. Photo S. Trepet.

On the other part, the region is inhabited by birds which distribution on the territory of the Caucasus isthmus is limited (*Hippolais pallida*, *Certhia brachydactyla*, *Dendrocopos leucotos*).

The avifauna of the region has a specific feature: there are endemic species and subspecies of birds. Such endemism manifests itself the greatest on the subspecies level. Endemic species are less, among them *Tetraogallus caucasicus*, *Lyrurus mlokosiewiczzi*, *Phylloscopus lorenzii*.

Unique bird migration routes pass over SNP ter-

ritory. One of them goes along the Black Sea coast. Smaller migration routes are laid in mountain river valleys.

Specific environment conditions of the region determine the diversity and abundance of birds staying here every winter. The region includes some typical survival reservations for many species migrating to the Black Sea coast in winter time.

⊗ Mammal fauna

The mammal fauna of the **Western Caucasus** includes 81 species, 11 of which are inscribed on the Red Data Book of Russia and 17 — on the IUCN Red List. About 60 % of species diversity is accounted for small animals.

The smallest mammals refer to the order Insectivora; *Sorex* is the most abundant species occurring in all altitudinal belts, except for nival. The order comprises 11 species, among them there are such endemics as *Sorex raddei*, *Crocidura leucodon lasia* and *Crocidura dinniki*.



Photo 26. *Apodemus uralensis*. Photo S. Trepet.



Photo 27. *Canis lupus cubanensis*. Photo S. Trepet.

to 26) — occurs in all altitudinal belts, having spread over the entire territory. In high mountain regions, *Prometheomys schaposchnikovi*, a unique relict species representing underground rodents, widely occurs. After the postglacial period the species habitat has significantly reduced, only its western part falls within the territory of the property.

17 predator species are recorded within the territory of the property. *Canis aureus* and *Vulpes vulpes caucasica*, *Mustela erminea teberdina* and *Mustela nivalis dinniki*, *Mustela nivalis caucasica*, *Mustela lutreola turovi* and *Meles meles caucasicus* are animals typical for this region. *Canis lupus cubanensis* (Photo 27) are also abundant species, 80 animals permanently inhabiting

In the Western Caucasus, bat species alone make the number of 22; each third species is inscribed on the Red Data Book of Russia. *Rhinolophus hipposideros* and *Rhinolophus ferrumequinum*, rare in Russia, roost primarily in karst caves of the Western Caucasus. In hollow trees, the smallest Chiroptera find shelter: *Pipistrellus*, *Eptesicus*, *Nyctalus*.

Rodentia — the most abundant mammal order — comprises 23 species, half of which is represented either by relict or endemic forms, e.g.: *Chionomys roberti*, *Chionomys gud nenjukovi*, *Microtus majori*, *Sicista caucasica* etc. The most common species — *Apodemus uralensis* (Photo



Photo 28. *Ursus arctos meridionalis*. Photo S. Trepet.



Photo 29. The herd of aurochs (*Bison bonasus* × *Bison bison*). Photo S. Trepet.

the property have been recorded. *Lutra lutra meridionalis* is a rare species inscribed on the Red Data Book of Russia. Such globally endangered species as *Panthera pardus ciscaucasicus* is also included in this Book. In the Western Caucasus, it was commonly found up to 1960, last encounters were registered in 1968 and 1983. At present a government program on leopard re-acclimatization in the North Western Caucasus is being implemented. Reproduction in specialized Breeding and Rehabilitation Center in Sochi National Park, subsequent reintroduction and restoration of free-living wild *Panthera pardus ciscaucasicus* population in number (no less than 30 species) can be treated as one of the most important challenges facing the nominated property. Nowadays the territory of the Western Caucasus including the nominated part of SNP is the only prospective place to restore the natural leopard population in Caucasus, due to the fact that an overwhelming majority of leopard encounters in the twentieth century were recorded in Shakhe river basin and the one of its Bzuch affluent.

Felis silvestris caucasica is a common predator preferring broadleaf forests, less frequently it occurs in dark coniferous forests, sometimes climbing up to 1,500—2,000 m. Throughout the territory, from broadleaf forests to high rocky mountain areas, *Lynx lynx dinniki* is found preferring forests with thick and almost impassable undergrowth. In the upper part of the forest belt the largest predator animals of the Caucasus mountains — *Ursus arctos meridionalis* (Photo 28) — are concentrated in summer.

The Western Caucasus property is inhabited by 7 species of ungulate mammals. *Rupicapra rupicapra caucasica* and *Capra caucasica* are common and abundant representatives of Ungulates on the territory. *Bison bonasus* × *Bison bison* (Photo 29) is a unique representative of mammal fauna in the Western Caucasus property.

✕ 2b. History and development

The Western Caucasus property is located at the border between Europe and Asia which influenced both natural processes dynamics, and occupation of the territory. The development of the North Western Caucasus region started from Transcaucasia approximately 300 thousand years ago (Anfimov et al., 1989). Archaeologists have fixed over 150 early man sites in this region. Primitive man did not construct any permanent dwellings, but used natural shelters — overhanging cliffs, grottos, caves — where he lived only in the part close to the entrance. In the vicinity of the nominated property there are many places convenient for such settlements. Archaeologists studied the caves in the neighborhood of Dakhovskaya stanitsa, Mezmai settlement, the upper reaches of Khodz River and its affluent Gubs. Only in Barakaevskaya cave over 20 thousand of items and 80 thousand of bones were found.

Gathering and hunting were major sources of livelihood for early man. They practiced

collective hunting almost solely end exclusively for even-toed ungulates, namely: red deer (*Cervus elaphus*), *Megaloceros*, *Bison bison*, *Bison bonasus*, and sometimes even mammoths (*Mammuthus*). At the end of the Paleolithic Age, the tools became more advanced, spearheads and harpoons appeared.

As the Ice Age (Pleistocene) approached, climate and vegetation, as well as fauna became extremely close to present day ones, the lifestyle pattern of early man also changed. Due to the changes in fauna composition many large animals (mammoth, cave bear, *Megaloceros*) became extinct, hunting methods were modified, new hunting weapons appeared. The bow and arrows, being widely applied, made it possible to hunt individually for middle-sized and small animals and birds.

In the first half of 6000 BC (Anfimov, Dzhimov, Emyl, 1993), alongside with tribal migration from Transcaucasia and Anatolia, constant transmigration of peoples began through the territory of modern Republic of Adygeya and the Krasnodarsky Kray. With the development of agriculture and cattle breeding, mountain tribes descend to river valleys beyond the limits of the nominated territory. They start to develop fertile forest soils, get closer together to make larger settlements and are more deeply involved in agriculture. Since then high-mountain regions of the Western Caucasus property have become uninhabited. In the mountains primarily up to 1,000 m small settlements of the dolmen culture are organized. Between the middle of 3000 and 2000 BC megalithic structures — dolmens (Photo 30) — are erected on this territory. They have partially preserved till our days.

A new wave of migrants (late 4000 BC) from Western Asia occupies sub-mountain region and lays a foundation for the Kurgan culture. Main part of tribes travel further from the mountains occupying Kuban valley. In this region, highlanders: Atykhs, Hatti, Indo-Europeans and Asians get assimilated and join efforts to create a high Maykop culture which existed up to 1000 BC. After many unique pieces of golden jewelry, metal and clay items were discovered in kurgans (tumuli), the culture became internationally known. Non-ferrous industry and metal processing were the main achievements of Maykop tribes. The Maykop culture did not extend higher to mountain regions at the same time inhabited by 'dolmen' culture tribes which occupied northern and southern slopes of the Western Caucasus. At present only a single place simultaneously inhabited by the tribes of two mentioned cultures is known: on the periphery of Khamyshki settlement at the bottom of Mt. Monakh.

For many centuries the main territory of the Western Caucasus property is not affected by human economic activities. At this time sub-mountain regions, steppes and the Black Sea coast are exposed to constant nomad raids, many historical events occurring on the territory are accompanied with natural complexes destruction.

Between the 16th and early 19th centuries the Black Sea region is owned by the Turks continuing to devastate both the population and the nature. During the Caucasian War the forests of the Black Sea coast are unmercifully cut down, areas occupied by chestnut and oak trees reduce in number, buxus shrubs face extinction. In their natural condition, forests with such species of wood have preserved only within the property.

Strengthening its new southern border in early 19th century, the tsarist government carries out a large-scale resettlement of the Ukrainian peasants to Kuban and the Black Sea coast. New fortresses and settlements are made instead of relocated or expatriated Adyge



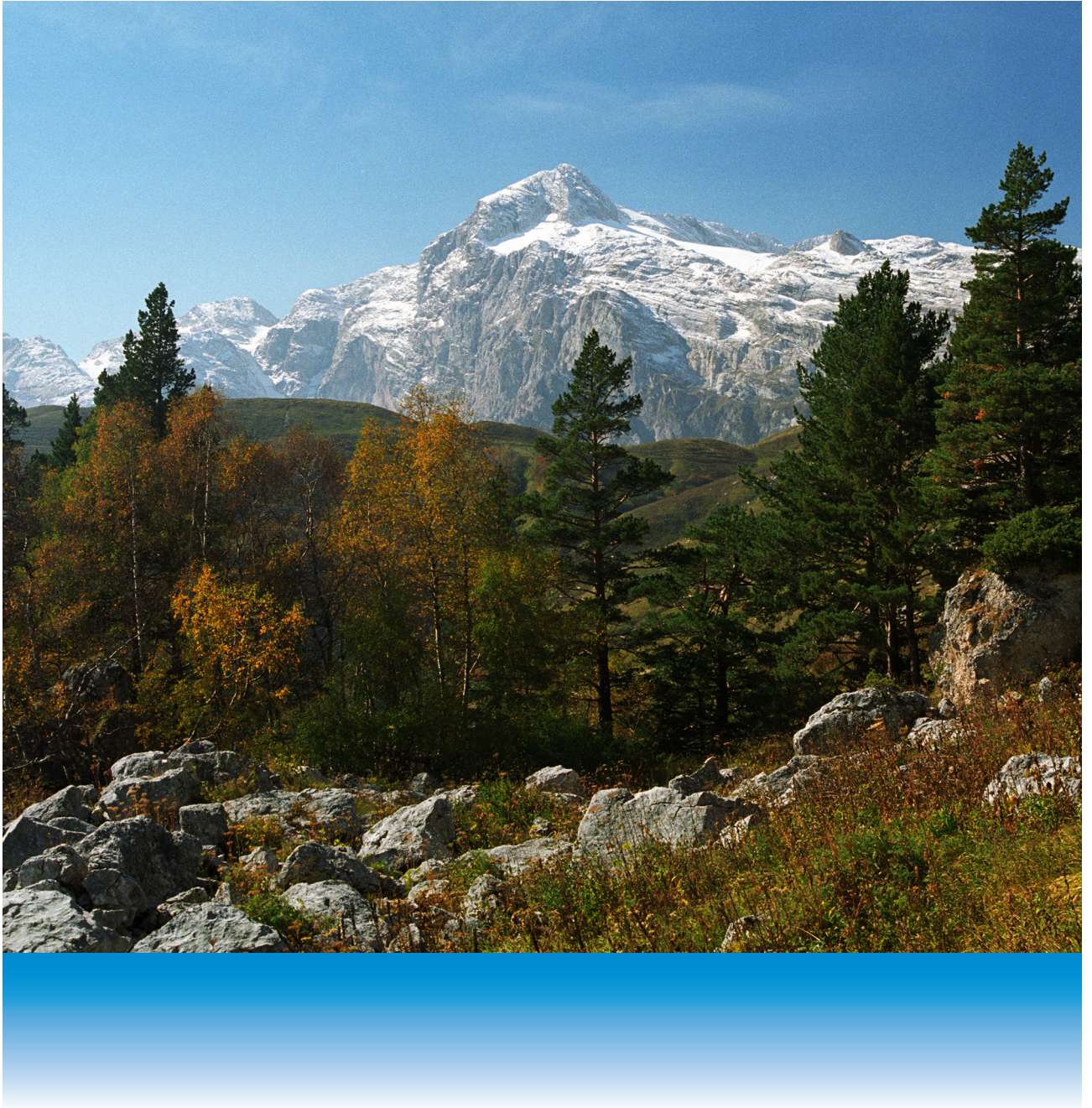
Photo 30. Dolmen. Photo S. Trepet.

tribes. At this time, agriculture and cattle breeding expand throughout fertile black soils, forest steps back further and further to foothills, for the last two centuries its border has shifted for almost 100 *km*.

Natural ecosystems, having completely disappeared in the valleys and sub-mountain regions, remained unchanged in mountain areas. Having remained untouched from invasions and people occupation, this amazingly beautiful region, abundant in game, attracted the attention of the Russian Emperor. In 1888, Grand Duke Sergei Mikhailovich of Russia created the Kuban Hunting Reserve at an area of 522,000 *ha* and organized its protection (Kipiani, 1993). Unique deciduous, mixed and coniferous forests, as well as subalpine and alpine meadows receive a new protection from human economic activities.

In 1909, the Kuban Okhota Territory was returned to the Kuban Cossack Troops. On losing its protected status, there had been unlimited hunting exercised there and cattle pastured in its peripheral part during 15 years, this finished after creating the Caucasus Reserve in 1924.

Before the war and after it, some parts of the nominated territory were used for wood harvesting with selection fellings predominantly. In 1951, the area of the Caucasus Reserve decreased. Intensive pasturing started, especially over the Lagonaki Plateau. In the 60-s of the last century, there were settlements of loggers founded in the places adjoining the Property. Later, due to intensive felling stopped, the settlements decreased and some like Kamyshanov disappeared.



3 JUSTIFICATION FOR INSCRIPTION

✕ 3.1a. Brief synthesis

The site chosen to be included into the Western Caucasus property has a direct connection with the main territory of the World Heritage property. On the southern macroslope of the Main Caucasus Ridge the existing World Heritage property has the border with Sochi National Park conservation and protected zones (area 62 152 *ha*), as well as with Sochi State Wildlife Sanctuary (area 6 202 *ha*); and on the northern macroslope the Property is adjacent to Buxus Colchica Plantings — the Natural Monument in the Republic of Adygeya (area 1 474 *ha*).

The nominated territory can sufficiently increase the Outstanding Universal Value of the Western Caucasus property according to **ix** and **x** criteria by adding a wide range of important features. For example, narrowly regional endemics found within the flora and fauna of the nominated territory is one of the reasons for its potential inscription on the World Heritage List.

The Outstanding Universal Value of the nominated area is defined by its location within the system of the Western Caucasus southern macroslope:

- The Outstanding Universal Value of the nominated area is defined by its location within the system of the Western Caucasus southern macroslope;
- The territory is located on the jointing edge of the East-Mediterranean and Persian centers of genetic diversity, — many initial and original forms of cultivated plants can be found within this site;
- The territory is comprised of a wide variety of biomes: from semiarid biomes in the west to warm and humid biomes in the central area and in the eastern part;
- All biomes found within this area are characterized by a high species diversity and record-high amount of endemic, relict and unique species, including local endemics.

Simultaneously with expanding of existing World Heritage property territory, it is proposed to take out some of the Lagonaki Plateau area (6 550 *ha*), which fails to meet the criteria of the Outstanding Universal Value and integrity due to the sufficient anthropogenic displacement of this territory caused by an immense cattle grazing during the second part of the 20th century and high tourist activity.

✕ 3.1b. Criteria under which inscription is proposed (and justification for inscription under these criteria)

- ☒ **(ix) The territory has outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals**

All of the various ecosystems of the Western Caucasus forming the unified natural-territorial complex of the Western Caucasus southern macroslope are preserved on the selected property in the original and pristine stage. The evolution and development processes which take place on this territory are of an outstanding value not only as an example of natural development, but also for regeneration and preserving of such ecosystems in Eurasia.

The historical development of our planet, different physical and geographical conditions, unique complex of ecological factors have led to formation of a great variety of species with a rich representation of relicts (mainly of tertiary period) and endemics

(most of the Western Caucasus endemics can be found within the property. There are several local evolution genetic form- and species formation centers on the territory of the selected property. Low-mountain and piedmont areas of SNP (especially calciferous blocks) show the widest variety of unique plants. To preserve the unique endemic flora forms found in the Russian Federation only on the territory of SNP special attention should be paid to the calciferous blocks of Ahtsu ridge, Achishkho mountain, Aibga ridge and Autl mountain (Photo. 31).

High genetic diversity of the species found here and living at the border or out of their main range as well as the isolated biomes populations have a huge evolutionary potential.

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

The nominated territory significantly enriches the variety of biomes and species of the Western Caucasus property. Sochi National Park has unique biological diversity with no analogues on the territory of the Russian Federation, and at the same time the Park includes the main groups of organisms, as well as the ecosystems of the Main Caucasus. The selected property can expand the amount of natural territorial complexes, which are not at all found or found just in some small areas of the Caucasus State Biosphere Reserve and other territories included into the Western Caucasus property.

The vascular plants flora of SNP officially includes more than 2,000 native, invasive and introduced plants. Flora has many ancient Caucasian endemics and relicts. Endemic species form about 16 % of the forest flora, relict species — 17 %. High moun-



Photo. 31. The mountain forests of the object of the «Western Caucasus» and the views of the limestone massifs of Fisht-Oshten mountain site. *Photo S. Trepet.*

tain flora includes about 950 species of vascular plants. Caucasian endemics — about 36.6 %.

Fauna is represented by 335 species of vertebrate animals, including: mammals — 74 species (42 % — endemics, 45 % — relicts), birds — 234, reptiles — 20 (45 % endemics and relicts), amphibians — 9 (80 %), fishes — 26 (37.5 %), jawless animals — 1 (100 %).

Sozological importance of the SNP territory is extremely high. 26 species of plants and 75 species of animals, registered in the IUCN Red List, are found on the territory of the property. 54 species of plants, 15 species of mushrooms and lichens and 54 species of animals populating the property are listed in the Red Data Book of the Russian Federation.

Sochi National Park (Photo. 32) is a home for dozens of endemic species and species found within the territory of the Russian Federation only in that Park. For example, the following 40 vascular plant species, including 11 limited endemics, are found only within SNP: *Daphne woronowii* KOLAK., *Potentilla camillae* KOLAK., *Woronowia speciosa* (ALBOV) JUZ., *Genista abchasica* SACHOKIA, *Acer sosnowskyi* DOLUCH., *Scabiosa olgae* ALBOV, *Kemulariella abchasica* (KEM.-NATH.) TAMAMSCH., *Dolichorrhiza correvoniana* (ALBOV) GALUSHKO, *Centaurea barbeyi* (ALBOV) SOSN., *Allium circassicum* KOLAK., *Muscari dolychanthum* WORONOW & TRON.

Among the animal species there are 31 species of local and limited endemics and all of them are represented by non-vertebrates, namely: *Eisenia transcaucasica*, *Belgrandiella caucasica*, *Geyeria valvataeformis*, *Paladilhopsia orientalis*, *Euxinolauria vitrea*, *Micropontica closta*, *Acrotoma tunievi*, *Khostalestes kochetkovi*, *Troglolestes sokolovi*, *Monacha claussi*, *Kokotschashvilia tanta*, *Circassina bojenae*, *Pisidium cavaticum*, *Isophya kalishevskii*, *Mycterodus aspernatus*, *Caucasophaenops molchanovi*, *Caucasorites kovali*, *Caucasorites shchurovi*, *Caucasorites victori*, *Duvalius miroshnikovii*, *Cimmerites grandis*, *Porocimmerites mirabilis*, *Porocimmerites reticulates*, *Bembidion circassicum*, *Deltomerus kovali*, *Deltomerus sergeii*, *Deltomerus fischten-*



Фото. 32. Forest of *Buxus colchica* POJARK. on the territory of SNP. Photo N. Eskin.

sis, *Seracamaurops komarovi*, *Otiorhynchus solodovnikovi*, *Otiorhynchus inaliparum*, *Otiorhynchus galinae*.

✕ 3.1c. Statement of integrity

The nominated territory of the Western Caucasus southern macroslope can be harmoniously inscribed into the existing World Heritage property, as it directly borders with it in the south (Photo. 33). At the same time the selected property can be viewed as a separate and unified natural complex, main components of which are closely tied together by the common origin, historical past, and natural development dynamics. Also the property has all necessary features to be found valuable for the world.

Occupying the territory of 68 354 *ha*, the nominated property is considered satisfactory to support the functioning of the Western Caucasus southern macroslope natural complexes and to fully represent the features and processes showing its high value. The territory is hard to access and thus it has not experienced significant human impact and has been bearing the high natural protection status of the State National Natural Park (its conservation and protected zones) and State Wildlife Sanctuary for more than 30 years (and some separate areas for more than 50 years already). Nominated areas border with the existing World Heritage property and are in fact surrounded by strictly protected areas, and that actually guarantees the abovementioned integrity.

Biophysical processes and features of the natural landscape of the nominated property have not been interrupted or changed. The property includes the non-populated and non-developed parts of the mountain ridges of the Western Caucasus southern macroslope. Except for the ancient cult graveyards there are no traces of human presence. This complex natural territory has no analogues judging by its size and preservation state, and is representative for all of the Western Caucasus (Colchis).

The nominated territory forms a unique center of evolutionary species development,



Photo. 33. Valley of the Shakhe river — typical middle-mountain forests nominated part of the Sochi National Park. *Photo V. Akatov.*

and one of the reasons for it is the intercrossing of several biogeographical high range chorions. The territory includes most of the mountain-forest and mountain-meadow ecosystems, including the ecosystem of east-submediterranean, colchian and high mountain-Abkhasian calciferous types, not found within the territory of the existing World Heritage property.

A large amount of relict species and their communities, which represent the past of the European and West Asian biota, are found within the borders of the new property. Among the uniquely preserved species are: unique lapine groves, large yew and box wood stands of trees, pitsundskaya pine relict groves, relict subalpine voronovniks and etc.

Ecosystems of the nominated property are an important habitat for many protected, endemic and relict species; conditions and features of the property guarantee a long-term dynamic ecosystem and natural process development, self-regulation of the whole West Transcaucasus ecosystem specter.

✕ 3.1.d. Protection and management requirements

All areas selected for the expansion of the Western Caucasus property have high conservation status, which guarantees long-term protection and preserving of the nominated territory.

The main (in terms of size) plots, located on the southern macroslope have the status of SNP Natural conservation zone (which equals to Ia IUCN) and Sochi State Wildlife Sanctuary (IV IUCN). The plot which borders the property on the north-west has the status of Natural Monument of regional importance. All business and economical activities are strictly forbidden within the borders of these Special Protected Areas (SPAs), as they can harm the reserve and lessen its universal value.

At present all listed SPA are being used according to the Regulations of the National Park and Wildlife Sanctuary as well as the Nature Monument «Passport», which allow the following activities: protection, ecological education, monitoring, scientific and tourist research. There are also several Federal and Regional legal documents, which regulate and restrict SPAs activities.

National Park, Wildlife Sanctuary and Nature Monument has the necessary amount of personnel, material and financial support to preserve the outstanding universal value of the property. It is important to note that the Nature Monument has fewer resources than National Park and Wildlife Sanctuary, which is controlled by the Caucasus State Biosphere Reserve.

The main active plan for the existing property is “Management plan for the World Heritage property — Western Caucasus — for the years of 2010—2014”, which has provisions for research and monitoring activities for the Property complexes, legal and regulatory measures for its functioning, institutional support, protective and promotional activities for the Property.

The new management plan for the re-nominated Western Caucasus property will have been ready by the end of 2014.

Please, refer to Section 5 for details.

✕ 3.2. Comparative analysis

The nominated area is a great addition to the already existing World Heritage property Western Caucasus, which can increase its value and uniqueness in comparison with the other forest-mountain reserves of the world. The property value can be sufficiently increased due to the following positions:

- Enriching the diversity of the ecosystems due to the expansion of the territories and inclusion of the Main Caucasus southern macroslope;
- Including the Colchian forests, Chestnut forests and other types of forests;
- Enlarging the amount of relicts, endemics, unique and endangered species.

1. Enriching the diversity of the ecosystems due to the expansion of the territories and inclusion of the Main Caucasus southern macroslope.

The proposed expansion of the territories on the one hand leads to a wider possession of the Western Caucasus high mountain zone (means that most of the highest picks of the mountains — 1,5—3,0 thousand meters and higher — will be included into the World Heritage property territory). On the other hand, in that case the World Heritage property territory will spread to the Main Caucasus southern macroslope (most of the current World Heritage property territory lies within the northern macroslope and at the water-parting line). Thus, the Western Caucasus property will go down to the sea, spreading along the river beds down to 200—300 meters, taking in the low-mountain areas with mild and humid climate, which shall definitely enrich the diversity of ecosystems, forest types, geologic and geomorphologic phenomena and etc. Ecosystems and biota representation of the Western Caucasus will significantly increase. Within the present borders this World Heritage property has the representation high enough for all Caucasus (taking into consideration the local ecosystems and main organism groups — about 60—70 %); and with the proposed additional areas it will go up to 100 % (for some groups of organisms).

Generally, among the various mountain-forest massifs, which already have the World Heritage status and can be viewed as potential analogues to the Western Caucasus Property — prevail the massifs, which include only separate picks with their surroundings, where, as a rule, one can find mountain meadows, permanent snow and icebergs (Jungfrau, Pyreneans); or, on the contrary low mountain areas (Sirakami, Central Sikhote-Alin). Also those can be the serial (cluster) objects — separate, widely spread, small in size mountain massifs, surrounded by high developed territories (Carpathian first growth beech forests).

The situation when the territory is wide enough to take in different macroslopes of large mountain massifs, ridges of different heights and expositions is very rare. But this is what will happen with the expansion of the Western Caucasus property territories. Also such an example is represented by the Great Smoky Mountains Park, which due to its large territory (more than 200 000 ha) includes both the northern macroslope of the main ridge and the southern macroslope, and almost from the feet of the mountains up to its picks.

2. Inscription of the Colchian forests, Chestnut forests and other types of forests.

The nominated territory is the only one in Russia where one can find piedmont cenosis of Colchian type (only a few of



Photo. 34. The border of the forest. Photo V. Kovalev.

those exist within the neighboring Caucasus State Biosphere Reserve) with tertiary relict species of mixed broad-leaved forests with evergreen underwood; large massifs of chestnut forests, sub-Mediterranean and Nemoral oak forests, which are formed by 7 types of native oak trees. The full development specter of mountain-meadow plants is spread along the axial region of the Main Caucasus ridge: from the far eastern subalpine meadows on the Lysaya mountain (Ashe riverhead) to the subnival belt of the Tury mountains (Psou riverhead).

Colchian nature province includes the valuable low mountain Black sea regions of Georgia, and comes to the Russian Sochi area (Photo. 34), to the southern macroslope of the Main Caucasus (Colchian range does also spread to some parts of Northern Turkey). Such flora is generally famous for its unique diversity of plants (common yew (*Taxus baccata* L.), buxus colchica (*Buxus colchica* POJARK.), ilex colchica (*Ilex colchica* POJARK.) etc.), large amounts of liana trees and epiphytes, evergreen subtropical plants (Photo. 35).

In the Caucasus State Biosphere Reserve Reserve, which includes the territories located mostly on the northern macroslope, the colchian flora is represented only by some separate segments. The territory of the Park, including its SPAs, is included into the Colchian province, and thus has a wide range of colchian plants. This is also a great motivation for inscription in the proposed southern area into the existing Western Caucasus property.

Colchian plants are very unique — the subtropical relict Colchis ecosystem is not present within any other properties and sites from UNESCO list. It can neither be found in Russia nor in Georgia and Turkey, the countries which could potentially have such type of landscapes. However there is one property in Georgia, which is also being prepared for future nomination and has the name of “Swamps and forests of Colchis” on the Preliminary List (since 2007), its area has 75 000 *ha*.

Officially it is considered to be the part of the Colchian province, but it has a very specific landscape — mostly represented by swamps, located in the lower parts of the Black Sea coast near the town of Poti. Also this area is being actively developed and thus in constant danger. So it cannot be viewed as an analogue to the nominated area. Moreover, Sochi National Park has a much larger amounts of broad-leaved forests (natural chestnut forests), which is also a good reason to include the area into the World Heritage property.

3. Enlarging the amount of relicts, endemics, unique and endangered species.

The investigated territory is included into the “Main Caucasus corridor” which is comprised of 233 WWF ecoregions, importance of which lies in their biological diversity. The territory is important to preserve the critical herpetological ecosystems (CEPF), including Dinnik (*Vipera dinniki*) and Kaznakov (*Vipera kaznakovi*) vipers, Karelin (*Triturus karelinii karelinii*) and southern banded (*Ommatotriton ophryticus ophryticus*) newts, colchian toad (*Bufo verrucosissimus verrucosissimus*), long-legged wood frog (*Rana macrocnemis*) and caucasian parsley frog (*Pelodytes caucasicus*).

Due to some paleohistorical and modern reasons and particularities, the selected territory represents the main endemism center in Caucasus. In total 400 Caucasian endemic species of flora have been registered within its borders (Helena’s crowfoot (*Ranunculus helenae* ALBOV), Correvon groundsel (*Dolichorrhiza correvoniana* (ALBOV) GALUSHKO), Kesselring lily (*Lilium kesselringianum* MISCZ.), cherkess daphne (*Daphne circassica* WORONOW ex POBED.), special gentian (*Gentiana paradoxa* ALBOV) and etc.), which forms about 20 % of all the species diversity of the area.

Also the animal species endemic for Caucasus are found on the nominated territory (species and subspecies). 22 % — among mammals (eastcaucasian tur (*Capra caucasica*), Prometei field mouse (*Prometheomys schaposchnikovi*), Radde red-tooth shrew (*Sorex raddei*), caucasian otter (*Lutra lutra meridionalis*), caucasian mink (*Mustela*



Photo. 35. Colchis woods of subtropical nature on the territory of SNP. Photo V. Akatov.

lutreola turovi), caucasian forest cat (*Felis silvestris caucasica*), caucasian lynx (*Lynx lynx dinniki*), caucasian red deer (*Cervus elaphus maral*), caucasian gemza (*Rupicapra rupicapra caucasica*) and many other), 18 % — among birds (caucasian snowcock (*Tetraogallus causicus*), caucasian black-cock (*Lyrurus mlokosiewiczzi*), caucasian chiffchaff (*Phylloscopus lorenzii*), caucasian peregrin (*Falco peregrinus causicus*), etc.), 34 % — among reptiles (eastcaucasian lizard (*Darevskia alpina*), artvine lizard (*Darevskia derjugini*), Brauner lizard (*Darevskia brauneri*), cholchian water snake (*Natrix megalcephala*), Dinnik (*Vipera dinniki*) and Kaznakov (*Vipera kaznakovi*) vipers, etc.), 67 % — among amphibians (caucasian parsley frog (*Pelodytes caucasica*), colchian toad (*Bufo verrucosissimus verrucosissimus*), Lanz (*Lissotriton vulgaris lantzi*) and Karelin (*Triturus karelinii karelinii*) newts, long-legged wood frog (*Rana macrocnemis*) and etc.), more than 50 % among the fish (colchian bitterling (*Rhodeus colchicus*), colchian sneep (*Chondrostoma colchicum*), caucasian chub (*Leuciscus cephalus orientalis*), Batumi shemaya (*Alburnus derjugini*), etc.), among the bugs (caucasian ground beetle (*Carabus (Procerus) causicus*) and Stark (*Carabus starcki*), caucasian barbell (*Xylosteus causicola*) and barbell (*Rhaesus (Rhesus) serricollis*), and many others), among the butterflies (Nordmann appolon (*Parnassius nordmanni*), caucasian alancastria (*Allanacastria caucasica*), caucasian alfalfa butterfly (*Colias caucasica*), Shamil ghost moth (*Phassus schamyl*) and etc.).

54 species of plants, 15 species of mushrooms and lichens and 54 species of animals populating the property are listed in the Red Data Book of the Russian Federation. All representatives of the Orchidaceae family and the coss cyclamen (*Cyclamen coum* MILL.) are included into the CITES list. Also 44 species are registered in the IUCN Red list (common yew (*Taxus baccata* L.), pitsundskaya pine (*Pinus brutia* var. *pityusa* (STEVEN) SILBA), pyramidal anacamptis (*Anacamptis pyramidalis* (L.) RICH.), southern banded newt (*Ommatotriton ophryticus ophryticus*), caucasian parsley frog (*Pelodytes causicus*), Dinnik (*Vipera dinniki*) and Kaznakov (*Vipera kaznakovi*) vipers and others).

The conservation zone of Sochi National Park and Sochi State Wildlife Sanctuary

has a determining value for the protection and conservation of such species as caucasian adder's fern (*Erythronium caucasicum* WORONOW), Kesselring lily (*Lilium kesselringianum* MISCZ.), pale orchis (*Orchis pallens* L.), colchian ruscus (*Ruscus colchicus* YEO), caucasian belladonna (*Atropa caucasica* KREYER), yew (*Taxus baccata* L.), Black Sea bulltrout (*Salmo trutta labrax*), southern banded newt (*Ommatotriton ophryticus ophryticus*), Lanz newt (*Lissotriton vulgaris lantzi*), caucasian parsley frog (*Pelodytes caucasicus*), colchian toad (*Bufo verrucosissimus verrucosissimus*), long-legged wood frog (*Rana macrocnemis*), westcaucasian lizard (*Darevskia alpina*), colchian water snake (*Natrix megalcephala*), Dinnik viper (*Vipera dinniki*), carpenter bee (*Xylocopa valga*), caucasian peregrine (*Falco peregrinus caucasicus*) and others. The list of species which survival depends on the state of this zone is much longer.

It is known that at present within the territories of the Caucasus State Biosphere Reserve there are about 3,000 species of plants, including 1,500 species of vascular plants, hardy-shrub species — more than 150 types. Among the local plants, one can find a lot of endemic and relict species, and several hundreds of those are under the special protection at different levels — from local to global. Such Western Caucasian floral richness, and such huge amount of vascular plants, as well as the percent of relicts and endemics, can only be compared with the Central Sikhote-Alin property. Sochi National Park has high species diversity (refer to Table 3.1). For example, the amount of vascular plants is more than 2,000 species, and in the neighboring Caucasian reserve there are about 1,600 species of vascular plants in total. As for the separate groups of organisms — the representation varies from 60 up to 100 %.

Table 3.1

Floral biological diversity — SPAs (of Russia) vascular plants

Protected territory	Types of vascular plants
Sochi National Park	2 026
Caucasian reserve	1 600
North-Osetian reserve	1 376
Kabardino-Balkarian reserve	1 000
Teberdinsky reserve	1 260
Hingansky reserve	700
“Kedrovaya pad” reserve	817
Bolshehehtsirsky reserve	755
Sikhote-Alin reserve	940
Lazovsky reserve	1 271
Kronotsky reserve	700
Altaisky reserve	1 270
Astrakhansky reserve	290
Central Black Earth reserve	876
Hopersky reserve	900
Voronezhsky reserve	973
Barguzinsky reserve	600
Zeisky reserve	637
Ussuriysky reserve	700

Without any doubt, inclusion of the high mountain, mid mountain and low mountain areas of Sochi National Park and Sochi State Wildlife Sanctuary into the territory of

the existing World Heritage property will lead to enrichment of the amount of relicts, endemic species and rare and endangered species, especially within the flora of the area. And if the Colchian forests spread on a larger territory that will add a variety of new valuable species to the floral species protection list. This will make the nomination of Western Caucasus stand out from the other analogues in other regions of the world.

General conclusion

Located to the south of the Caucasus State Biosphere Reserve, on the Main Caucasus southern macroslope, Sochi National Park reserve areas and Sochi State Wildlife Sanctuary, having the total area of about 70 *thous. ha*, — could be the best option for the expansion of the existing and already nominated World Heritage property — Western Caucasus, being registered in the UNESCO list since 1999.

The abovementioned sites have direct borders with the main territory of the World Heritage property, have similar features, and demonstrate similar natural landscapes. Also, they significantly increase the value of the territory according to **ix** and **x** criteria, adding a range of important features. The presence of limited endemics among the animal and plant species, which cannot be found in the other parts of the planet, is a potential reason for this territory to be inscribed on the World Heritage List. Thus, in case the Caucasian property is expanded, its uniqueness and individuality will stand out even more in comparison with the other objects from the UNESCO List.

It is necessary to point out that since 1999 (when the nomination of the Western Caucasus took place) no new World Heritage natural properties have been introduced within the Caucasian region. So, this subdivision according to the known scheme of biogeographical demarcation Udwardi (Caucaso-Iranian Highlands province) is still represented by the only UNESCO natural property — the Western Caucasus property.

✕ 3.3. Proposed Statement of Outstanding Universal Value

a) Brief synthesis

The site chosen to be included into the Western Caucasus property has a direct connection with the main territory of the existing World Heritage property. It can significantly enlarge the variety of its ecosystems by taking in the Western Caucasus southern macroslope (area 68 354 *ha*). The nominated territory can sufficiently raise the outstanding universal value of the Western Caucasus property adding a wide range of important features according to **ix** and **x** criteria. This territory has not experienced severe human impact, and is full of rare endemic and relict species of animals and plants, some of which are registered as endangered.

Simultaneously with expanding of existing World Heritage property territory, it is proposed to take out some of the Lagonaki Plateau area, which fails to meet the criteria of the Outstanding Universal Value and integrity due to the sufficient anthropogenic displacement.

b) Justification for Criteria

Criteria (ix):

All of the various ecosystems of the Western Caucasus forming the unified natural-territorial complex of the Western Caucasus southern macroslope are preserved on the selected property in the original and pristine stage. The nominated territory forms a unique center of evolutionary species development, and one of the reasons for it is the intercrossing of several biogeographical high range chorions.

The evolution and development processes which take place on this territory are of a great importance not only as an example of natural development, but also as an example for regeneration and preserving of such ecosystems in Eurasia.

Criteria (x):

The nominated territory has a unique biological diversity.

Here are concentrated the foothill communities of Colchis type with tertiary-relic mixed deciduous forests with evergreen undergrowth, including large arrays of boxwood and tree rhododendrons; the largest arrays of chestnuts; submediterranean immoral and oak forests. The axis of the Main Caucasus Ridge is a full range of mountain-meadow vegetation from the most western subalpine lawns to subnival zone.

As well as the flora, fauna is very diverse, incorporating a variety of eco-geographical groups, including east mediterranean, colchis, european and caucasian. The nominated territory is not only the area where some rare and endangered endemic and relict species can be found, but also a non-modified environment for the most vulnerable big-size mammals, including caucasian red deer (*Cervus elaphus maral*), caucasian gemza (*Rupicapra rupicapra caucasica*), wolf (*Canis lupus cubanensis*), caucasian bear (*Ursus arctos meridianalis*), caucasian lynx (*Lynx lynx dinniki*) and many others.

The area has a great value for the natural protection, as there are 26 species of plants and 75 species of animals, which have been registered in the IUCN Red List.

c) Statement of Integrity

The territory is hard to access and thus it has not experienced significant human impact and has been bearing the high natural protection status of the State National Natural Park (its conservation and protected zones) and State Wildlife Sanctuary for more than 30 years (and some separate areas for more than 50 years already). Nominated areas border with the existing World Heritage property and are in fact surrounded by strictly protected areas, and that actually guarantees the abovementioned integrity.

Occupying the territory of 68 354 *ha*, the nominated property is considered satisfactory to support the functioning of the Western Caucasus southern macroslope natural complexes and to fully represent the features and processes showing its high value. Biophysical processes and features of the natural landscape of the nominated property have not been interrupted or changed. The property includes the non-populated and non-developed parts of the mountain ridges of the Western Caucasus southern macroslope, there are no traces of human presence. This complex natural territory has no analogues judging by its size and preservation state, and is representative for all of the Western Caucasus (Colchis).

e) Requirements for protection and management

All areas selected for the expansion of the Western Caucasus property have high conservation status, which guarantees long-term protection and preserving of the nominated territory. All business and economical activities are strictly forbidden within the borders of these Special Protected Areas (SPAs), as they can harm the reserve and lessen its Outstanding Universal Value.

At present all listed SPA are being used according to the Regulations, which allow the following activities: protection, ecological education, monitoring, scientific and tourist research. There are also several Federal and Regional legal documents, which regulate and restrict SPAs activities.

National Park, Wildlife Sanctuary and Nature Monument has the necessary amount of personnel, material and financial support to preserve the outstanding universal value of the property.

The main active plan for the existing property is “Management plan for the World Heritage property — Western Caucasus — for the years of 2010—2014”, which has provisions for research and monitoring activities for the Property complexes, legal

and regulatory measures for its functioning, institutional support, protective and promotional activities for the Property.
The new management plan for the re-nominated Western Caucasus property will have been ready by the end of 2014.



4 STATE OF CONSERVATION AND FACTORS AFFECTING THE PROPERTY

✕ 4a. Present state of conservation

Since the Western Caucasus property has been inscribed on the World Heritage List, the condition of its natural complexes on most part of the territory did not become worse and was stable in general. Landscape diversity and condition remained practically unchanged. Landscapes recovery in the Bolshoi Tkhach Nature Park has been determined by termination and restriction of economic activities (end of pasture, reduction in forest use) during recent 14 years. The Buinyi Ridge Natural Monument has been totally excluded from the economic use.

The Upper Pshekha and Pshekhaskha Rivers and the Upper Tsitsa River Natural Monuments have been to some extent exposed to economic activities. Mismanagement of these territories resulted in felling and widening of road in one of them (namely, Pshekha and Pshekhaskha). That was mentioned in the UNESCO mission report of 2008 and in the decision of the 32nd session of the World Heritage Committee. The area of the Upper Tsitsa River was also exposed to felling. At present, the felling has been forbidden within these SPAs.

The landscapes of the Lagonaki Plateau at the Caucasus Natural Reserve suffer from the cattle pastures. Though the current amount of head does not exceed 1 *thous.* versus more than 10 *thous.* during mid-1980s, some agricultural pasturing remains.

At the border between the Caucasus Reserve and the Upper Pshekha and Pshekhaskha Rivers natural monument, a site for the Biosphera research centre is being built since 2002 at the square of 100 *ha*. The site (so called Lunnaya Polyana (Moonlight Field)) has no conservation status at present, which is why it is planned for inclusion in the Caucasus Reserve Protected (buffer) zone to be kept as a part of the World Heritage property. Before, the site was used for the economy purpose. In 1960—1990s, the meadow slope under the western wall of the Fisht Mountain, between the Vodopadisty Creak and the Cherkessky Pass was used as a distant pasture by local population, thus affecting the natural environment of the Biosphera research centre site. Before 1990, the territory was used for the organized tourism, as it had been a part of the Soviet tourist route No. 825. The kettle of the Vodopadny district housed the Vodopadny shelter that each season, between early June and late September, could accommodate not less than 50 persons. Marked tourist path still runs through the site of the Biosphera research centre, from the Vodopadny district towards the Cherkessy Pass and from there either to the Fisht tourist shelter or to the Dagomys.

In late 1980s, a small rescue station was established in the Chigursan district, and its location was named Lunnaya Polyana. In its immediate neighborhood, simple surface lift was made to carry small amount of tourists skiing at the slopes of the Fisht Mountain. Lunnaya Polyana existed till 2002, and its tourism and activities were not an important affect for the nature in the area.

Since 2002, the place is a site for the Biosphera research centre, and its construction is still in progress. The area is managed by the limited liability company Poligon Nauchnogo Tsentra Biosphera (Site of the Biosphera Research Centre) whose stationary goals are studying and monitoring of the environment of the region exposed to limited man-made impact.

At present, the property of the Biosphera Research Centre is completed and functioning. It occupies not more of 1 *ha* in the dense built-up, a part of the territory is allocated for chair and surface lifts.

1999 Nomination Errors of Fact

In 1999, the protective zone of the Caucasus Reserve at the Republic of Adygeya was erroneously included in the Western Caucasus Property, as it had been abolished by the

Directive of the Adygeya Cabinet of Ministers No. 147 of 08.06.1998 and was deprived of its conservation status.

According to the Directive of the Adygeya Cabinet of Ministers No. 467 of 09.12.1996 On Republican Natural Monument Status for Buinyi Ridge, this natural monument has an area of 1480 hectares. In the Directive, there is no exact description of its borders, and the total area of the forest compartments used for its foundation makes 1983 hectares (as mentioned in the 1999 nomination). However, the borders of the forest compartments are not the borders of the natural monument.

Thus, the documents presented for the Western Caucasus nomination of 1999, contain grave errors and contradictions in terms of the content of the nomination, the borders of the Western Caucasus Property in general, and the borders of its components in particular. At the moment the nomination was presented, only some ownership and management-related issues had been settled, and SPNRs that formed the Western Caucasus Property missed any distinctive borders. The scale and the quality of the cartographic documents was not good enough to provide an unambiguous and precise information on the borders of the Property. The text of the nomination contradicts its cartographic documents. As a result, the 1999 nomination offers 3 different versions of the borders: at the general topographic map, in the text of the nomination and in the documents attached.

The Appendix contains the survey of the borders discrepancies (Section 7. Documents).

Ownership and management-related issues of the Western Caucasus Property later found their solutions, and the drawing of their exact borders according to the legislation of the Russian Federation was completed in 2013. Between 2008 and 2013, the Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve was fixing the territories and putting them in the State cadastral registration. In 2008, the Natural Monuments Buinyi Ridge, Upper Tsitsa River, Upper Pshekha and Pshekhashkha Rivers and Buxus Colchica Plantings had their certificates prepared and approved. In December 2010, the Republic of Adygeya established its state public enterprise Bolshoi Tkhach Natural Reserve, and in 2012 the Forest Stewardship of the Republic of Adygeya has approved the state enterprise to be a general leaser of the forest fund lands.

Areas Offered to Expand the Existing Property

A part of Sochi National Park and Sochi State Wildlife Sanctuary proposed as expansion of the Western Caucasus Property includes unsettled and undeveloped mountain ridges at the southern macro-slope of the Western Caucasus. They were not exposed to any important economic activities and now their condition is close to natural. The 1983 establishment of Sochi National Park minimized the antropogenic load to the natural environment of the territory nominated. Any economic activity involving the use of the natural resources, hunting, logging any kind of mining and developing is forbidden in the specially protected and reserved areas of the SNR. Since 2013, only limited ecological tourism is permitted in the specially protected zone.

The Buxus Colchica Plantings Natural Monument is presented by unique natural beech and fir tree forests having thick boxtree undergrowth. Before the natural monument was established in 2004, a shelterwood cutting of boxtrees was made at a small site in the valley of the Kuzhetka River. Approximately 1.5 km of the water duct line goes along the north-western outskirts of the natural monument (the 11th forest compartment), which is why the 11th compartment was not included in the nomination. At present, all kinds of economic activities are forbidden at the territory of the Buxus Colchica Plantings, except of the sanitary and fire protection of persons, animals, natural complexes and sites.

Territories Suggested for Exclusion from the Western Caucasus Property

The Lagonaki Upland, the Fisht-Oshten Massif inclusive, is a unique natural complex with landscapes and biology of high diversity, specific biota and many indications that make it unrivaled in Russia. However, biology diversity is distributed extremely unevenly throughout the Lagonaki Upland. Some unimportant areas exist alongside with the areas of the Outstanding World Value. This may be explained both by natural peculiarities of the area and, mostly, by continuous and intensive practical use.

Since 1951, the most of the Lagonaki Upland was excluded from the Caucasus Reserve and intensely used. Unstructured and uncontrollable use of highland pastures resulted in heavy disbalance of ecosystems.

20 years of protection and regulation of economic and recreational activity at the Lagonaki Upland have contributed to partial restoration of degraded ecosystems: growing of barren and trampled areas of pastures, recovery of species and increasing of the grass efficiency, forming of coastal and water vegetation of the water basins, better quality of their waters, reforestation; positive dynamics was reported for the number of the caucasian chamois (*Rupicapra rupicapra caucasica*).

Relying on the results of the long-term research, the Kh. G. Shaposhnikov State Natural Biosphere Reserve and the NABU-Caucasus Non-Governmental Conservation Centre made suggestions about the areas of the Lagonaki Plateau without Outstanding World Value to be excluded from the Western Caucasus World Heritage (hereinafter the Basis). In the process, the expeditions collected materials on the biological diversity of natural complexes existing at the Kamennoye More, the Nagoi-Chuk, the Lagonaki Ridges and the Oshten Mountain. In addition, the existing data on the Lagonaki Plateau were used; published materials and documents were reviewed. The following was performed while preparing the basis (see the Appendix in the Section 7: Documentation):

- review of current status and borders of the Western Caucasus World Heritage Property;
- review and correction of information on the SPNR included into the Property and at the Lagonaki Upland;
- making maps of vegetation, zoological value and zoning based on the biological diversity level;
- suggestions on the territory zoning in relation to the biological diversity and value of the natural complexes.

As some areas of the Lagonaki Plateau are still degraded, they need urgent measures of the restoration and landscape care. Implementation of these measures should be combined with extensive economic use of the territory. Alongside with limited and controllable pasturing, tourism and recreation may be developed there. At the same time, all types of economic use must comply with the legislation both of the Republic of Adygeya and the Russian Federation and be safe for the Western Caucasus World Heritage Property.

x 4b. Factors affecting the property

(i) *Development Pressures (encroachment, adaptation, agriculture, mining)*

Neither enterprises nor mining exist both at **the newly nominated areas** and at the neighboring territories. Their natural protection status and vast area afford long-term preservation of plants and animal populations existing there. In the next few years, no important economical affect on the areas nominated is expected.

Negative affects the Western Caucasus Property is exposed to are reviewed in the Table 4.1. Prevention of affects and survey of the environmental mode is a duty of the personnel (mostly inspectors) of the Caucasus State Natural Biosphere Reserve and the Environmental Protection, Natural Reserves and Emergency Agency of the Republic of Adygeya. All the affects are monitored by non-governmental environment organiza-

Таблица 4.1

Existing Factors That Negatively Influence Natural Complexes of the Western Caucasus Property

Factors	Influence Source	Character and Effect of Influence	Influence Force	Volume of Exposure	Dynamics of Strength and Scale	Natural Restoration Time
Anthropogenic:						
- People visiting the property with different purposes;	External	Direct and indirect	Insignificant	Wide	Increases	Middle
- Hunting and fishing;	External	Direct	Insignificant	Local	Stable	Middle
- Catching amphibians and reptiles;	External	Direct	Insignificant	Local	Decreases	Middle
- Gathering collections;	Internal	Direct	Insignificant	Wide	Stable	Short
- Forests felling;	External	Direct	Significant	Local	Stable	Long
- Other kinds of forest use	External and internal	Direct	Insignificant	Wide	Increases	Middle and long
- Deliberate introduction of foreign plant and animal species;	Absent	Absent	Absent	Absent	Absent	Absent
- Agricultural activity (cattle pasturing, haying);	External and internal	Direct and indirect	Insignificant	Local	Stable	Long
- Water management activity;	Absent	Absent	Absent	Absent	Absent	Absent
- Use of mineral resources;	Absent	Absent	Absent	Absent	Absent	Absent
- Construction and operation of linear communication lines;	External	Direct	Significant	Local	Increases	Long
- Enlargement of settlements;	Absent	Absent	Absent	Absent	Absent	Absent
- Activities of industrial enterprises and objects of housing and utilities sector.	Absent	Absent	Absent	Absent	Absent	Absent
- Construction and activities of tourist companies	External	Direct and indirect	Significant	Local	Increases	Long

Table 4.2

Existing Threats That Negatively Influence Natural Complexes of the Western Caucasus Property

Factors	Influence Source	Character and Effect of Influence	Influence Force	Volume of Exposure	Dynamics of Strength and Scale	Natural Restoration Time
Natural:						
- Direct influence of climatic changes (warming);	External	Direct and indirect	Insignificant	Everywhere	Increases	Not observed
- Noncatastrophic geomorphological and hydrologic processes;	Internal	Natural processes of rock weathering and denudation processes	Insignificant	Wide	Stable	Not observed
- Biocenotic processes:						
✓ Carnivorism	Internal	Direct and indirect	Insignificant	Everywhere	Stable	Short
✓ Adventivisation and invasiveness of species	External and internal		Insignificant	Sporadic	Increases	Short
- Natural catastrophes:						
✓ Avalanches	Internal	Direct	Insignificant	Sporadic	Stable	Long
✓ Forest fires	Internal	Direct	Insignificant	Local	Stable	Long
✓ Landslides	Internal	Direct	Insignificant	Local	Stable	Middle
✓ Floods	Internal	Direct	Insignificant	Sporadic	Stable	Middle

tions and are reported to appropriate governmental and international structures.

Affects of forestry (felling), agriculture (cattle pasture), growing flow of tourists and developing tourist infrastructure are important for the peripheries of the Western Caucasus Property.

The north-western periphery of the Upper Pshekha and Upper Pshekhaskha Rivers Natural Monument is since 1982 a place of water intake for the Maikop water duct that supplies Maikop and 14 settlements of the Maikop District (the Republic of Adygeya) and the Apsheronsk District (Krasnodarsky Kray) consuming 100,000 m³ of water daily. Reconstruction and expansion of water intakes, water duct, access road and power line is planned for the next years.

(ii) Environmental pressures (pollution, climate change, desertification)

Natural factors affecting the natural complexes both of the Western Caucasus and newly nominated territories are reviewed in the Table 4.2. Among them, global climate change is negative.

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

At the territory of the Western Caucasus World Heritage Property and the newly nominated territories fires present a seldom, but regular phenomenon in the plant climate conditions of the Western Caucasus northern macroslope, they are quite localised in terms of area. Repetition and intensity of fires depend on the sanitary situation in forests. In the last hundred years, forest fires happened every 30—35 years over the territory of the Caucasus Reserve. Last fires happened in 1998/2000, as a result, the area of dark coniferous and pine forests decreased by 2 %. Forest fires are the main mechanism for second growth small-leaved forests to form on large areas from the low to upper limit of the forest belt. In addition to fires, other potential hazards of limited effect are windfalls, mud flows, avalanches and rockfalls. At the Western Caucasus Property and at the newly nominated territories their manifestations are few, local and cannot affect natural processes.

(iv) Responsible visitation at World Heritage sites

Recreational influence on the Western Caucasus Property is rather nonuniform. The sites and the routes of the **Caucasus Reserve** are the most popular with the tourists. The reserve offers 14 excursion and tourist routes, as well as the reserve museum at the Guzeripl cordon and open-air cages at the Laura cordon. Recreational areas at the Laura and the Pslukh cordons are allocated for the visitors. In addition, the Caucasus Reserve visit center works in Sochi (Adler). The territory of **Sochi Sanctuary** may be visited along one route only in the snowless season. The Table 4.3 shows the statistics of visits.

Table 4.3

Visiting of Main Clusters of the Ecological Tourism Sites: Dynamics

Ecological Tourism Sites	The number of visitors per year			
	2010	2011	2012	2013
Open-Air Cages	18722	15645	20680	21340
Guzeripl Museum	14334	13280	25985	31012
Tourist routes of the Southern sector	1390	1490	1493	1567
Tourist routes of the Lagonaki	6480	6550	6577	7921
Tourist routes along the Malaya Laba	770	1321	826	120
Total in the Reserve (nominated part)	41696	38286	55561	61960
Sochi State Wildlife Sanctuary	327	460	491	605

Some areas of the Lagonaki Plateau since 1930s were the part of the former USSR tourist route No. 30, popular up to now, them being mostly exposed to tourists.

Recreationally, **Sochi State Wildlife Sanctuary** is developing only in the direction of the Krasnaya Polyana — the Engelmann Fields — Kardyvach Lake, along the existing horse path. An earth forest road between the Krasnaya Polyana and the Engelmann Fields is used by the Caucasus Reserve only. The Reserve plans further improvement of the road to adapt for the nature-friendly horseback and pedestrian tourism, which means complete reconstruction of existing permanent shelter at the Engelmann Field.

Nominated territories of **Sochi National Park** and **Buxus Colchica Plantings** are hard to reach and are not popular with the tourists.

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

The property is not populated and has no settlements. However, 7 cordons of the Caucasus Reserve, an element of the conservation infrastructure, are located on its periphery. Not more than 20 employees of the Caucasus Reserve and their family members stay at these cordons. Natural agriculture is being kept at the allocated plots (vegetable growing, haymaking, brushwood picking, keeping and pasturing of cattle, keeping hives and apiaries, keeping horses). Fishing is allowed. The reserve employees who live at the cordons run the farming for their own use.

The property territory holds a site of the Biosphera research centre with 30—35 staff members who live there permanently and approximately the same amount of hired persons who complete the construction. No agriculture is being kept at the territory.

Adjacent (neighboring) to the Western Caucasus nominated property are:

- the northern border — Guzeripl, population not more than 240 persons (the mouth of the Malchepa River, near the Guzeripl cordon), Kirovsky, population not more than 100 persons (the mouth of the Urushten River, near the Chernorechye cordon);
- the eastern border — none;
- the southern border — Esto-Sadok and Krasnaya Polyana, population up to 15 000 persons (the mouth of the Laura River, near the Laura cordon), Bzogu, population not more than 100 persons (the Bzych River, near the Babuk-Aul cordon).
- the western border — none.

Estimated population located within:

Area of nominated property: none.

Buffer zone: not created.

Total: none.

Year: 2014.



5 PROTECTION AND MANAGEMENT OF THE PROPERTY

X 5a. Ownership

The territories included into the Western Caucasus Property belong to the Russian Federation and subjects of the Russian Federation.

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve:

The owner — the Russian Federation. Lands and natural resources — the federal property, property of the federal importance. The property is managed by the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.

Bolshoi Tkhach Nature Park of the Republic of Adygeya:

The owner — the Republic of Adygeya. Lands and natural resources — the federal property with the separate competencies to manage it being transferred to the Republic of Adygeya by act of the law of the Russian Federation. The property of the regional importance. The property is managed by the state government institution of the Republic of Adygeya the Bolshoi Tkhach Nature Park of the Republic of Adygeya.

Natural Monuments: The Buinyi Ridge, The upper reaches of Tsitsa River, The upper reaches of Pshekha and Pshekhashkha rivers

The owner — the Republic of Adygeya. Lands and natural resources — the federal property with the separate competencies to manage it being transferred to the Republic of Adygeya by act of the law of the Russian Federation. The properties of the regional importance. Their protection is made by the Forest Department of the Republic of Adygeya.

Protected (Buffer) zone of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve in the Republic of Adygeya:

The owner — the Russian Federation. Lands and natural resources — the federal property with the separate competencies to manage it being transferred to the Republic of Adygeya by act of the law of the Russian Federation. The property of the regional importance.

New Territories Nominated:

Sochi National Park:

The owner — the Russian Federation. Lands and natural resources are the federal property. The property of the federal importance. The property is managed by the state federal budgetary institution Sochi National Park.

Sochi State Wildlife Sanctuary:

The owner — the Russian Federation. Lands and natural resources are the federal property. The property of the federal importance. The property is managed by the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.

The Natural Monument of the Republic of Adygeya Buxus Colchica Plantings:

The owner — the Republic of Adygeya. Lands and natural resources — the federal property with the separate competencies to manage it being transferred to the Republic of Adygeya by act of the law of the Russian Federation. The property of the regional importance. Their protection is made by the Forest Department of the Republic of Adygeya.

✕ 5b. Protective Designation

The protective designation is defined by the state and republican legislative acts for each component of the Western Caucasus nomination.

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Decree of the Council of RSFSR People's Commissars as of May 12, 1924 On Caucasian State Aurochs Reserve;
3. The Regulation on the state institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve approved by the Deputy Minister on Natural Resources of the Russian Federation as of July 19, 2002 (as edited by the Orders of the Ministry of Natural Resources of the Russian Federation No. 66 as of March 17, 2005; No. 338 as of December 20, 2007; No. 48 as of February 27, 2009; the Order of the Ministry of Ecology and Natural Resources of the Russian Federation No. 71 as of March 27, 2009).
4. The Charter of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve approved by the Orders of the Ministry of Ecology and Natural Resources of the Russian Federation No. 410 of May 24, 2011, No. 103 of April 11, 2012.

Bolshoi Tkhach Nature Park of the Republic of Adygeya:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Order of the President of the Republic of Adygeya No. 244 as of October 08, 1997 On Creating Nature Park of the Republic of Adygeya on the Territory of Mt. Bolshoi Tkhach;
3. The Directive of the Cabinet of Ministers of the Republic of Adygeya No. 246 as of December 13, 2010 On Creating State Institution of the Republic of Adygeya Bolshoi Tkhach Nature Park of the Republic of Adygeya;
4. The Regulation on the Bolshoi Tkhach Nature Park of the Republic of Adygeya approved by the Directive of the Cabinet of Ministers of the Republic of Adygeya No. 21 as of January 19, 1998 On Approving Regulation on Bolshoi Tkhach Nature Park of the Republic of Adygeya;
5. The Charter of the state government institution of the Republic of Adygeya the Bolshoi Tkhach Nature Park of the Republic of Adygeya approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 37-pr as of 09 November 2011 On Approving Charter State Government Institution of the Republic of Adygeya Bolshoi Tkhach National Park of the Republic of Adygeya.

The Buinyi Ridge Natural Monument of Republican Importance:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Directive of the Cabinet of Ministers of the Republic of Adygeya No. 467 as of December 09, 1996 On Declaring Buinyi Ridge Natural Monument of Republican Importance;
3. The order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 41-pr as of November 17, 2008 On Approving Certificate of Buinyi Ridge Natural Monument of Republican Importance;
4. The Certificate of the Buinyi Ridge Natural Monument of the republican importance approved by the order of the Department of Natural Resources and Environmental

Protection of the Republic of Adygeya No. 35-pr as of October 27, 2011 On Making Changes in Order of Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 41-pr as of November 17, 2008 On Approving Certificate of Buinyi Ridge Natural Monument of Republican Importance.

The Upper Reaches of Tsitsa River Natural Monument of Republican Importance:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Order of the President of the Republic of Adygeya No. 274 as of December 23, 1997 On Declaring the upper reaches of Tsitsa River, as well as the ones of Pshekha and Pshekhashkha Rivers Natural Monuments of Republican Importance;
3. The order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 31-pr/1 as of October 09, 2008 On Approving Certificate of the upper reaches of Tsitsa River Natural Monument of Republican Importance;
4. The Certificate of the upper reaches of Tsitsa River Natural Monument of the regional importance approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 34-pr as of October 27, 2011 On Making Changes in Order of Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 31-pr as of October 09, 2008 On Approving Certificate of the upper reaches of Tsitsa River Natural Monument of Republican Importance.

The upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of Republican Importance:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Order of the President of the Republic of Adygeya No. 274 as of December 23, 1997 On Declaring the upper reaches of Tsitsa River, as well as the ones of Pshekha and Pshekhashkha Rivers Natural Monuments of Republican Importance;
3. The order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 7-pr as of April 11, 2008 On Approving Certificate of the upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of Republican Importance;
4. The Certificate of the upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of the republican importance approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 111-k as of June 29, 2009 On Making Changes in Order of Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 7-pr as of April 11, 2008 On Approving Certificate of the upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of Republican Importance approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 49-k as of February 19, 2010 On Making Changes in Order of Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 7-pr as of April 11, 2008 On Approving Certificate of the upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of Republican Importance approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 33-pr as of October 27, 2011 On Making Changes in Order of Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 7-pr as of April 11, 2008 On Approving Certificate of the upper reaches of Pshekha and Pshekhashkha Rivers Natural Monument of Republican Importance.

Protected (Buffer) Zone of the Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve in the Republic of Adygeya:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The letter of the Ministry of Natural Resources and Ecology of the Russian Federation.

New Territories Nominated:

Sochi National Park (Krasnodarsky Krai):

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Directive of the Council of Ministers of RSFSR No. 214 as of May 05, 1983 On Creating Sochi National Park;
3. The Regulation on Sochi National Park approved by the Order of the Ministry of Natural Resources and Ecology of the Russian Federation No. 411 as of September 27, 2013 (registered in the Ministry of Justice of the Russian Federation No. 30124 as of October 08, 2013).
4. The charter of the state budgetary institution Sochi National Park approved by the Orders of the Ministry of Natural Resources and Ecology of the Russian Federation No. 380 as of May 23, 2011 and No. 103 as of April 11, 2012.

Sochi State Wildlife Sanctuary (Krasnodarsky Krai):

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Order of the President of the Russian Federation No. 2091 as of December 03, 2003 On Creating Sochi State Wildlife Sanctuary;
3. The Directive of the Government of the Russian Federation No. 571 as of September 15, 2003 On Sochi State Wildlife Sanctuary;
4. The Order of the Ministry of Natural Resources and Ecology of the Russian Federation No. 26 as of February 09, 2012 On Reorganising Lower State Institutions within the Ministry of Natural Resources and Ecology of the Russian Federation.

Natural Monument of the Republic of Adygeya Buxus Colchica Plantings:

1. The Federal Law of the Russian Federation On Special Protected Natural Areas as of March 14, 1995;
2. The Directive of the Cabinet of Ministers of the Republic of Adygeya No. 191 as of October 25, 2004 On Giving Status of Natural Monument of Republican Importance to Unique Natural Sites;
3. The certificate of the Buxus Colchica Plantings natural monument of the republican importance approved by the order of the Department of Natural Resources and Environmental Protection of the Republic of Adygeya No. 40-pr as of November 17, 2008 On Approving Certificate of Buxus Colchica Plantings Natural Monument of Republican Importance.

x 5c. Means of implementing protective measures

Legal instruments protecting separate special protected natural areas included into the Western Caucasus property are defined by the legal documents listed in Item 5b.

The regulation on special protected natural areas set the mode of their special protection. In charters of special protected natural areas, main kinds of activities for protecting natural sites and properties of the special protected natural areas in their natural condition, for controlling and complying with the mode of protecting and monitoring the status of natural sites are defined.

Legal instruments protecting natural monuments of the Republic of Adygeya are defined in their certificates and fixed by the federal legislation and legislation of the Republic of Adygeya.

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve:

Complying with the mode of protection of the Caucasus Reserve is controlled by the special state staff inspectorate of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve. The control is exercised by means of foot, horse or aviation patrolling of the territory of the reserve for which purpose there is a widely developed network of protective paths, forest houses and booths.

Measures for protecting and monitoring the status of natural sites and properties of the reserve are also taken by staff employees and scientific officers of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve. Fire protection of forests is organised. The study and monitoring of natural sites and separated natural properties of the reserve is made according to scientific procedures.

Sochi National Park:

Complying with the mode of protection of Sochi National Park is controlled by the special state staff inspectorate of the state federal budgetary institution Sochi National Park. The control is exercised by means of foot, horse, motor and aviation patrolling of the territory of the reserve for which purpose there is a widely developed network of protective paths and buildings (forest protection infrastructure).

Measures for protecting and monitoring the status of natural sites and properties of the national park are also taken by staff employees and scientific officers of the state federal budgetary institution Sochi National Park. Fire protection of forests, protection, guarding and use of forests in accordance with the protection mode of the national park is organised. The study and monitoring of natural sites and separated natural properties of the national park is made according to scientific procedures.

Sochi State Wildlife Sanctuary:

By the Order of the Ministry of Natural Resources and Ecology of the Russian Federation No. 26 as of February 09, 2012 On Reorganising Lower State Institutions within the Ministry of Natural Resources and Ecology of the Russian Federation, all functions on managing and protecting of Sochi Sanctuary are given to the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve. Due to this, legal instruments protecting the territory of Sochi Sanctuary are defined in the Regulation on Sochi Sanctuary, Charter of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve and fixed by the federal legislation. Complying with the mode of protection of Sochi Sanctuary is controlled by the special state staff inspectorate of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve. The control is exercised by means of foot, horse or aviation patrolling of the territory of the preserve for which purpose there is a network of protective paths, forest houses and booths (forest protection infrastructure). Measures for protecting and monitoring the status of natural sites and properties of the sanctuary are also taken by staff employees and scientific officers of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve. Fire protection of forests is organised. The study and monitoring of natural sites and separated natural properties of the preserve is made according to scientific procedures.

Bolshoi Tkhach Nature Park of the Republic of Adygeya:

Controlling the compliance with the mode of protection of the nature park and monitoring the status of its natural sites and properties is laid on the state government institution of the Republic of Adygeya Bolshoi Tkhach Nature Park of the Republic of Adygeya.

The control is exercised by staff employees of the state government institution of the Republic of Adygeya Bolshoi Tkhach Nature Park of the Republic of Adygeya by means of patrolling of the territory of the nature park. Monitoring is exercised according to accepted scientific procedures.

Natural Monuments of the Republic of Adygeya: the upper reaches of Tsitsa River, the upper reaches of Pshekha and Pshekhashkha Rivers, Buinyi Ridge, Buxus Colchica Plantings:

Controlling the compliance with the mode of protection of the natural monuments is laid on the Forest Department of the Republic of Adygeya. Control is exercised simultaneously with the measures on protection, guarding and use of forests by means of patrolling of the territory of the natural monuments.

Protected Area of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve on the territory of the Republic of Adygeya:

Legal instruments protecting the territory of the planned protected area of the Caucasus Reserve are defined in the draft of the regulation on the protected area of the Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve and fixed by the federal legislation. In the draft of the regulation, there is the mode of the Caucasus Reserve protected area set and it is defined that protection of natural sites and properties over the protected area shall be made by the special state inspection on protecting the territory of the state natural reserve which employees are on the staff of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.

Staff employees and scientific officers the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve can also make scientific research and ecological monitoring within the protected area.

x 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)

The Western Caucasus property is located in three subjects of the Russian Federation: the Republic of Adygeya, Krasnodarsky Krai and Republic of Karachay-Cherkessia. The most important acting regional documents on the territory planning which contain concept perspective solutions concerning protection and use of land and natural resources of the region, environmental protection, tourism development are:

- Territory Planning Scheme of the Republic of Adygeya approved by the Directive of the Cabinet of Ministers of the Republic of Adygeya No. 183 of November 10, 2008;
- Territory Planning Scheme of Krasnodarsky Krai approved by the directive of the head of the administration of the Krasnodarsky Krai No. 438 of May 10, 2011;
- Urban District Master Plan of the City of Sochi approved by the decision of the City Council of the resort city Sochi of July 14, 2009;
- Territory Planning Scheme of the Karachay-Cherkess Republic approved by the Directive of the Government of Karachay-Cherkessia Republic No. 382 of September 20, 2012.

In all documents listed, the use of the nominated territories exclusively for nature protection and insignificant nonindustrial form of holding tourism and recreation activities is presupposed.

✕ 5e. Property management plan or other document related to property management

The main acting plan is Western Caucasus World Heritage Property Management Plan for 2010—2014.

The management plan is of directive nature, it contains main measures the Russian Federation consider necessary to exercise. The management plan in particular provides for:

- studying, controlling the status of the Property natural sites;
- legal normative provision of the Property operation;
- Property institutional provision;
- Property guarding provision;
- Property popularization provision.

A new management plan of the renominate Western Caucasus Property is planned to be drawn up till the end of 2014.

✕ 5f. Sources and levels of finance

Sources and levels of finance in average per year during 2011—2013:

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.

The Russian Federation federal budgetary funds — 35,200 *thous.* ₺ (1,173.3 *thous.* \$).

Funds received from own activity — 12,100 *thous.* ₺ (403.3 *thous.* \$).

Funds from sponsors and donations — 46,100 *thous.* ₺ (1536.7 *thous.* \$).

Sochi National Park.

The Russian Federation federal budgetary funds — 52,500 *thous.* ₺ (1,750 *thous.* \$).

Funds received from the own activity — 8,200 *thous.* ₺ (273.3 *thous.* \$).

Sochi State Wildlife Sanctuary.

The Russian Federation federal budgetary funds — 14,200 *thous.* ₺ (473.3 *thous.* \$).

Bolshoi Tkhach Nature Park of the Republic of Adygeya.

The republican budgetary funds of the Republic of Adygeya — 2,900 *thous.* ₺ (96.7 *thous.* \$).

Natural Monuments of the Republic of Adygeya: the upper reaches of Tsitsa River, the upper reaches of Pshekha and Pshekhashkha Rivers, Buinyi Ridge Buxus Colchica Plantings.

The republican budgetary funds of the Republic of Adygeya — 2,500 *thous.* ₺ (83.3 *thous.* \$).

The Protected Area of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve on the territory of the Republic of Adygeya.

Is not foreseen. The losses shall be covered by the Shaposhnikov Caucasus State Natural Biosphere Reserve out of the funds foreseen for its maintenance and operation.

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

Training in conservation and management techniques shall be permanently made by the following specialised organisations:

1. Specialised secondary educational establishments of the Russian Federation specialising in nature protection, management, ecology and reserve management;

2. Higher educational establishments of the Russian Federation specialising in nature protection, management, ecology and reserve management;
3. Research institutes of the Russian Federation specialising in ecology and nature protection;
4. Academy of Sciences of the Russian Federation.

✕ 5h. Visitor facilities and infrastructure

Visitor facilities and infrastructure over the Western Caucasus property is foreseen by the normative legal documents for the following components:

- **at the premises of the Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve** (the Lagonaki biosphere proving ground, 14 ecological tourist and excursion routes set, 1 nature museum, 1 enclosure site at the Laura border, recreation tourist place at the Laura border, recreation tourist place at the Pslukh border). Visitors accepted totally:
 - 2011 — 87 *thous.*;
 - 2012 — 101 *thous.*;
 - 2013 — 98 *thous.*
- **at the premises of Sochi National Park** (recreation facilities arranged). Visitors accepted totally:
 - 2011 — 38 *thous.*;
 - 2012 — 41 *thous.*;
 - 2013 — 33 *thous.*
- **at the premises of Sochi State Wildlife Sanctuary** (ecological route to Lake Kardyvach set). Visitors accepted totally:
 - 2011 — 0.3 *thous.*;
 - 2012 — 0.4 *thous.*;
 - 2013 — 0.3 *thous.*
- **at the premises of the Bolshoi Tkhach Natural Park of the Republic of Adygeya** (tourist route set). Visitors accepted totally:
 - 2011 — 0.1 *thous.*;
 - 2012 — 0.2 *thous.*;
 - 2013 — 0.2 *thous.*
- **at the premises of the following natural monuments: upper reaches of Tsitsa River, upper reaches of Pshekha and Pshekhashkha Rivers, Buinyi Ridge, Buxus Colchica Plantings** — no services for visitors are foreseen.
- **at the premises of the protected area of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve in the Republic of Adygeya** — no services for visitors are foreseen.

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

The activities of the Western Caucasus nominated property shall be supported by the following political programme documents:

- the development concept of special protected natural areas of the federal importance for the period till 2020 (together with action plan to realise the development concept of special protected natural areas of the federal importance for the period till 2020) approved by the Instruction of the Government of the Russian Federation No. 2322-p of December 22, 2011;
- the action plan for restoration of the Mzymta river ecosystem, complex ecological monitoring and compensatory measures preparation within the ecological support

the XXII Winter Olympic Games and the XI Winter Paralympic Games in 2014 in Sochi (approved by the Minister of Natural Resources and Ecology of the Russian Federation S. Donskoi on October 01, 2012 and the Russian Federation and set for execution by the instruction of the Government of the Russian Federation No. DK-P9-6417 of October 23, 2012).

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

Separate components of the nomination are maintained by the following staff (as of January 01, 2014):

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve:

Director — 1;
 Deputy directors — 4;
 Financial division — 10;
 Human resources and project work — 3;
 Scientific division — 24;
 Territory protection — 93;
 with 80 state inspectors on protecting the territories of the Caucasian Reserve and Sochi Preserve included;
 Ecological educating — 15;
 Tourism and recreation division — 2.

Sochi National Park:

Director — 1;
 Deputy directors — 8;
 Administrative staff — 27;
 Scientific division — 41;
 Territory protection — 254;
 Tourism, ecological education and recreation division — 11.

Sochi State Wildlife Sanctuary:

is managed, protected and maintained by the Caucasian Reserve staff.

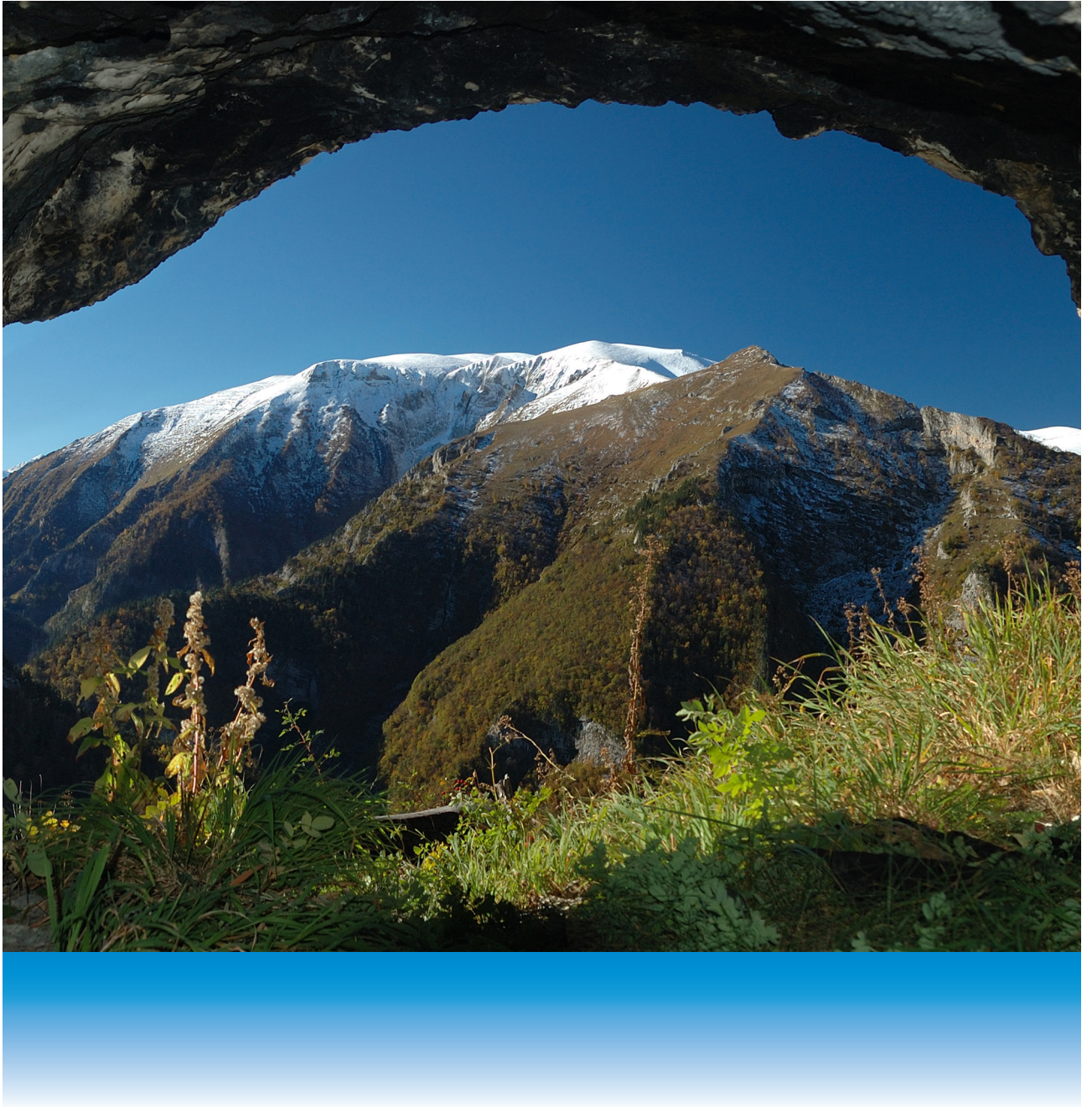
Bolshoi Tkhach Nature Park of the Republic of Adygeya:

Head — 1;
 Senior inspector — 2;
 Inspector — 1.

The upper reaches of Tsitsa River, upper reaches of Pshekha and Pshehashkha Rivers, Buinyi Ridge Natural Monuments of the Republic of Adygeya, the Buxus Colchica Plantings Natural Monument of Republican Importance (Republic of Adygeya):
 no staff is foreseen.

The Protected Area of Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve on the territory of the Republic of Adygeya:

is protected by Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.



6 MONITORING

X 6a. Key indicators for measuring state of conservation

Table 6.1

Indicator	Frequency	Records storage location
The basic climate data	Annually	KSNBR; SNP; BTNP
State of conservation of water bodies (rivers, lakes), major landscape types (montane forest, subalpine, alpine, subnival landscapes) over the entire area of the property	Annually	KSNBR; SNP; BTNP
State of conservation of ungulate populations (european bison, caucasian red deer, eastcaucasian tur, caucasian chamois, european roe deer, and the wild boar)	Annually	KSNBR; SNP; BTNP
State of conservation of predator populations (wolf, brown bear, lynx)	Annually	KSNBR; SNP; BTNP
State of conservation of rare bird species populations (caucasian snowcock, caucasian grouse, lammergeier, eurasian griffon)	Annually	KSNBR; SNP; BTNP
State of conservation of forest plant communities	Annually	KSNBR; SNP; BTNP
State of conservation of montane meadow plant communities	Annually	KSNBR; SNP; BTNP
Indicators of recreation load and the number of visitors	Annually	KSNBR; SNP; BTNP

X 6b. Administrative arrangements for property monitoring

The main area of the nominated the Western Caucasus nominated property (over 95 %) is occupied by the Caucasus State Natural Biosphere Reserve, its buffer zone, Sochi National Park, and Sochi State Wildlife Sanctuary. These territories are administered by the Federal State Budgetary Institutions Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve and Sochi National Park. Their main task ensured by the federal laws and statutes of these institutions is to perform monitoring of the state of conservation of the protected natural properties and sites (see Section 5). The institutions have the qualified personnel, financial and material facilities to perform monitoring. Monitoring of the natural complexes within the Caucasus State Natural Biosphere Reserve has been performed since 1924; of Sochi National Park — since 2000; and of Sochi State Wildlife Sanctuary — since 2003.

Institutions responsible for monitoring:

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve.

Address: Karla Marksa (Karl Marx) str., 8 Sochi,

354340, Krasnodarsky Kray,

Russian Federation.

Tel.: +7 (862) 240-51-36.

Fax: +7 (862) 240-52-65.

E-mail: kzles@mail.ru

<http://www.kgpbz.ru>

Sochi National Park.

Address: Moskovskaya str. 21, Sochi,
354340, Krasnodarsky Kray,
Russian Federation.
Tel./Fax: +7 (862) 262-18-42.
E-mail: forest_sochi@mail.ru
<http://www.sochinp.ru>

No monitoring of the specially protected areas of regional importance in the Republic of Adygeya (Bolshoi Tkhach Nature Park and natural monuments Upper Reaches of the Tsitsa River, Upper Reaches of the Pshekha and Pshekhaskha Rivers, Buiniy Ridge, and Buxus Colchica Plantings) have been performed earlier. However, the monitoring is intended to be performed by the Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve and other field-specific research institutions.

X 6c. Results of previous monitoring reports

Monitoring surveys within the territory of the Caucasus State Natural Biosphere Reserve and its buffer zone, Sochi State Wildlife Sanctuary

1. Long-term climate monitoring.

The objective of monitoring is to determine the trends in climate dynamics under conditions of montane forest landscapes of the Western Caucasus.

Observations have been carried out since 1929 at Guzeripl and Krasnaya Polyana weather stations. Since 1986, observations have also been carried out at Dzhuga and Laura weather stations.

Results. A clear trend towards an increase in the average air temperature both in the areas of medium- and high-altitude mountains of the Western Caucasus has been detected. Along with the total increase in the average air temperature, the processes characterizing the upper and lower parameters of the climatic conditions (minimum and maximum temperatures) of the montane regions of the Western Caucasus do not correlate with each other and sometimes are oppositely directed. The minimum air temperatures have considerably decreased under the conditions of the high-altitude northern macroslope of the Main Caucasus Ridge, resulting in a significant decrease in temperature during winter, spring, and late autumn.

Under the conditions of medium-altitude southern macroslope, there is a clear trend towards an increase in minimum and maximum air temperatures, while the total precipitation amount decreases. In other words, general warming is observed against the background of increasing aridity and climatic parameters of the southern macroslope of the Main Caucasus Ridge.

2. Long-term monitoring of the phenological indicators related to the key phytocenoses of the reserve.

The surveys were aimed at obtaining a series of monitoring data related to seasonal dynamics of the most typical forest and high-altitude montane meadow phytocenoses of the northern macroslope of the reserve.

The phenological surveys are conducted along the route in the most typical forest and meadow phytocenoses of the Pshekish-Bambak geobotanical region of the reserve (Golgofskaya, 1967). The total length of the route is 22 km; the starting point of the route lies at 684 m above sea level; the final point lies at 2,350 m above sea level; thus, the total elevation change is 1,635 m. There are six phenological study sites along the route; their coordinates are determined using the GPSMAP 60C navigation system. A total of 62 plant species were found at all the study sites.

Results. According to the survey results, a series of monitoring data on seasonal dynamics of the most typical forest and high-altitude montane meadow phytocenoses of the northern macroslope of the reserve were obtained. A few tentative conclusions can be drawn using these data:

- dynamics of the vegetative and generative cycles of phytocenoses development reveals a clear dependence on their altitude above sea level;
- spring and summer periods related to the development of vegetative and generative cycles in phytocenoses are characterized by a clear inverse dependency on altitude. The higher a phytocenosis is located, the later its seasonal development starts;
- autumn period related to the development of vegetative and generative cycles in phytocenoses is characterized by a direct dependency on altitude. The higher a phytocenosis is located, the earlier its vegetation ends;
- preliminary analysis related to the year-by-year phenovariance of vegetative and generative cycles in phytocenoses has shown a certain difference in the rates of seasonal development of phytocenoses in this period. The surveys have demonstrated that the development rates of forest phytocenoses are on the average characterized by a uniform and smooth course of both the vegetative and generative cycles. Over the period of 1999—2008, the most rapid development rate was observed in 2008, in particular during the early vegetation stages; the year-by-year variance in the vegetative cycle was over 1.0 points;
- contrariwise, the development rates of high-altitude montane meadow phytocenoses are characterized by a late start, relative rapidness of development, and shorter vegetation periods.

3. Long-term monitoring of the main properties and regimes of montane forest and montane meadow soils.

Monitoring has been performed at the Malchepa station since 1970. The surveys were repeated in 2001 and 2008. Montane meadow soils are studied at the soil cross-section localized in the transverse profile across the Malchepa River valley along its southern slope, starting from the upper forest limit in the altitude range of 690—1 800 *m above sea level*.

Results. Negligible changes have occurred in the soils under study, which is indicative of stability of the soil forming processes. The main changes have occurred in the soils of the upper forest boundary, which can presumably be attributed to a decreased effect of subalpine herbaceous vegetation on the soil forming process. Tree growth at the upper forest boundary causes thinning of the grass cover, which in turn changes the type and amount of organic matter supplied to the soil.

4. Long-term monitoring of vegetation of forest openings.

The studies were aimed at determining the trends in the dynamics of forest openings vegetation.

Monitoring has been performed since 1955. Repeated description of the vegetation and plans of the forest openings were made in 1999—2006. The species composition and cartographic materials obtained in different years were compared.

Results. The total area of forest openings and their number have gradually decreased. The rates of overgrowth vary significantly; the average rate is 32 ± 23 % of the area per 50 years. They have accelerated 3—5-fold over the past 20 years as compared to the 1950—1980ss (0.3 and 1.4 % of the area per year, respectively). The possible reasons include the climate change and reduction of the population size of ungulates. Anthropogenic forest openings (up to 5 ha in size) located near the cordon and in the areas with a long-term history of mass tourism turn out to be stable over time. There have been virtually no changes in the forest openings regularly used for haying and grazing over the 50-year-long period; the area of forest openings used for recreation has increased by 20 ± 13 %.

5. Long-term monitoring of the vegetation of high-altitude lakes and wetlands.

The surveys are aimed at determining the trends in the dynamics of aquatic and wetland vegetation.

The surveys have been carried out since 1982. Over the period of 1982—1985, the vegetation of the lakes and wetlands of the reserve was described and mapped. The results were compared to the cartographic and photo materials obtained in the 1930—1950s and aerial photos taken in different years.

Results. A considerable stability of the area and configuration of aquatic and wetland vegetation was revealed.

6. Long-term monitoring of the vegetation of high-altitude meadows and heathlands using the selective statistical approach.

The objective of the surveys is to analyze the trends in changes related to the composition and structure of meadows and heathlands in the reserve.

The surveys have been carried out since 1987. A network of permanent sample plots (50) with homogeneous vegetation (area of 0.1—0.5 ha) was established in various types of high-altitude meadows and heathlands of the Caucasus Reserve; 25 smaller plots (16 and 0.5 m²) inside a larger study area were established on a regular basis.

Results. Qualitative data on species diversity of plant communities and frequency of plant species have been obtained. No dynamics of the species diversity and frequency indicators have been observed. It was suggested that plots should be described every 20—25 years.

7. Long-term soil and botanical surveys (at permanent sample plots) aimed at the recovery of soil cover and phytocenoses of high-altitude meadows after grazing was stopped (Lagonaki biosphere polygon).

The surveys are aimed at detecting the trends related to any changes in composition and structure of meadow communities on the meadows transformed after grazing had been stopped. The direct method based on immediate monitoring over the course of succession stages at permanent sample plots was selected to study the restorative successions in meadows transformed by long-term overgrazing. The soil and vegetation cover is monitored at six 10×10 m permanent sample plots established in 2001 at subalpine meadow plots characterized by different digression stages. Annual surveys were performed during the first 4 years; the period between the repeated descriptions has increased to 5 years since 2005 due to the low intensity of restorative successions. The total species diversity, the intensity of the directed changes in the species composition of the communities, the number and total abundance of weed plant species; morphological, physical, and chemical properties of montane meadow soils were selected as the main parameters under analysis.

Results. No unidirectional changes have been revealed, which can be most typically attributed to the short survey period.

8. Long-term monitoring of the species composition regarding the vascular plant, moss and lichen flora.

The surveys of the species composition of vascular plant flora have been carried out since 1928; moss and lichen flora — since 1935. The annotated lists of vascular plant, moss and lichen species have been obtained. The list of vascular plant flora of the reserve has been supplemented using the results of floristic and geobotanical surveys performed in 2001—2005.

Results. The list of vascular plant flora of the reserve has recently been supplemented with 125 species, making 1,700 species today. According to the most recent data, the species diversity of the liverwort flora is 120 species; the Bryopsida — 365 species; and lichens — 575 species.

9. Long-term monitoring of adventitious plant species distribution.

The survey is aimed at performing a permanent evaluation of the adventitization degree of plant communities in the reserve and the adjacent areas.

The surveys have been carried out since 1999. The data on current distribution of the adventitious plants over the reserve and the adjacent areas have been obtained and will be used for long-term monitoring of this process.

Results. A total of 68 adventitious plant species (38 herbaceous plants, 30 tree, shrubs, and woody vine species) have been found in the reserve; ten of these species have recently been expanding their habitats.

10. Long-term monitoring of processes related to the natural renewal of forest vegetation due to succession.

The surveys are aimed at revealing the nature and direction of natural renewal processes due to the effect of natural and anthropogenic factors on forest biocenoses.

The surveys were started in 2005. Studying the processes of natural renewal is based on monitoring of the course of restorative succession at sample plots (50×50 m) established at sites where the forest vegetation underwent catastrophic (pyrogenic, climatogenic, or geomorphogenic) elimination. The description is intended to be made every 5 years.

Results. No data on the dynamics of renewal processes have been obtained due to the insufficiency of the survey period. The surveys allow one to trace the early stages of natural restoration of montane forests in the absence of the anthropogenic factor. Their results can be used to optimize the artificial reforestation methods in the territories of the state forest resource.

11. Long-term monitoring related to the state of conservation involving major types of climax forest communities in the Caucasus Reserve.

The surveys are aimed at studying the direction of the dynamic processes occurring in climax forest communities in the nature reserve.

The monitoring surveys were started in 1975 and resumed since 2000; they are carried out at permanent sample plots

Results. The data have been obtained, indicating that the processes are directed towards the formation of the most stable uneven-aged beech-silver fir forest communities. The survey area in the Caucasus Reserve can be further used as reference plots to assess the economic activity in this type of forests within the region.

12. Monitoring of the state of conservation of ungulate populations (eastcaucasian tur and caucasian chamois) in high-altitude montane regions.

The surveys are aimed at studying the population dynamics, sex ratio and age structure of ungulate populations in high-altitude montane regions.

Results. Regular population censuses of high-mountain ungulates according to the procedure proposed by A. A. Nasimovich have been carried out at the Caucasus Reserve since 1939. In the 1940—1950s, the estimated average population size of the eastcaucasian tur was 3,500. In the late 1950s, the population size started to increase, reaching its maximum (5,620 species) in 1963. In 1980—2002, the population size of the eastcauca-

sian tur decreased almost fourfold: from 4–5 thousand to 1–1.5 thousand species. The population size of the caucasian chamois significantly decreased during the World War II; in the 1950s when the area of the reserve was reduced almost thrice; and in the period between the mid-1980s and 2002. Stabilization and the onset of population size growth of both high mountain ungulate species have recently been observed in the Caucasus reserve (Tables 6.2, 6.3) due to the decrease in anthropogenic pressure. Studying the sex ratio of the eastcaucasian tur population and the age structure of the eastcaucasian tur and caucasian chamois populations has shown that despite the catastrophic drop in population size before 1999, the sex ratio and the age structure of these populations remained within the range of long-term observations and is optimal now. In 2002–2008, the population size of the eastcaucasian tur increased almost 1.5-fold; the population size of the caucasian chamois remains at the level of 1,000 species. The average number of yearlings during this period was 15 and 20 % for the eastcaucasian tur and the caucasian chamois, respectively. The sex ratio in the eastcaucasian tur population is 1 : 1.

Table 6.2

Results of population census of the eastcaucasian tur in 2002–2013

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population size	760	1073	1205	1573	1488	1882	1975	1878	1734	1750	1800	1835

Table 6.3

Results of population census of the caucasian chamois in 2002–2013

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population size	754	880	815	1167	988	1133	875	837	1100	780	900	920

13. Monitoring of the state of conservation of the caucasian red deer population.

The surveys are aimed at elucidating the population size dynamics and population structure of the species.

Annual population censuses have been performed since the 1940s. The same procedure for deer population census, which is based on counting the rutting vocalizations of males, is used over the entire survey period.

Results. The dynamics of caucasian red deer population is affected by a number of factors with anthropogenic effect being the key one. This factor plays the greatest role in the northern part of the red deer habitat, including the upper part of the Belaya River basin: the Armyansky, Abago, Abago Pasture, Pshekish, Sosnyaki and Solontsovy mountain ridges. The highest population size of the caucasian red deer is observed in the central areas of the reserve, in the middle part of the Urushten River basin: at the Buryanisty ridge, Alous-Khadzhibey Massif, Aspidny ridge, Mastakan valley, and Tryu-Yatyrgvarta Massif. At some of these areas, the population size of the caucasian red deer is presumably close to the environmental capacity (Table 6.4).

Таблица 6.4

Data on population size of the caucasian red deer in 2001–2013

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population size	595	678	673	759	1001	1115	1248	1288	1263	1233	1240	1567	1590

14. Monitoring of the state of conservation of the highland bison population (*Bison bonasus montanus*).

The surveys are aimed at elucidating the population size dynamics and population structure of the species.

Annual population censuses have been performed since the 1940s. The same procedure for bison population census, which is based on visual counting of animals in mating aggregates, is used over the entire survey period.

Results. The population size of the highland bison in the reserve has recently increased (10 % per year on the average) (Table 6.5). There are positive changes in the sex ratio (with females predominating) and survival of bison calves. There are some changes in spatial distribution of animals in winter period (some animals spend the winter at open areas of high-montane meadows on the Solontsovy, Buryanisty and Skirda ridges) (Photo 36), as well as changes in the summer spatial distribution of the highland bison population. In particular, the highland bison continues to form large mating aggregates on the Aspidny ridge. No mating aggregates have been observed over the past few years in the typical area near lake Alous and on the slopes of Mt. Khadzhibey.

Table 6.5

Data on population size of the highland bison (*Bison bonasus montanus*) in 2001—2009

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Population size	135	120	160	190	220	250	300	340	390	480	540	620	650

Results of the previous monitoring reports related to the state of conservation of natural complexes and individual sites in Sochi National Park (SNP).

1. Silver fir and beech-silver fir forests.

Silver fir forests of SNP are highly productive forest systems; 90 % of them are classified as I and II quality classes. The silver fir and beech-silver fir forests of SNP are characterized by typological diversity. In the region described, pure silver fir forests are confined to the areas lying higher than 1,500 m above sea level.

2. Beech forests.

Beech forests are mostly represented by pure stands. The share of other tree species is negligible and is usually less than 0.1 of the composition of the first tree layer. Hornbeam (*Carpinus betulus* L.), sycamore maple (*Acer pseudoplatanus* L.), and elm (*Ulmus glabra* HUDSON) are the most typical foreign species in beech forests. Field maple (*Acer campestre* L.), Norway maple (*Acer platanoides* L.), and ash (*Fraxinus excelsior* L. s. l.) occur less frequently. No mixed beech-oak forests are usually found.



Photo. 36. Bisons on wintering. Photo S. Trepet.

3. Meadow vegetation.

The meadow vegetation can be subdivided into two major groups in terms of its origin: secondary (that has replaced the forest community due to some external factors) and primary areas of meadow vegetation, where there have never been any forests. Almost all the authors who have been studying the flora and vegetation of the West Caucasus attribute the origin, formation, and development of large openings localized along the altitude profile to anthropogenic activity over a long historical period.

Over the past century, there have been three periods of active forest invasion into the upper-boundary forest openings and high-montane meadows: the late XIX century, the 1930–1960s, and the period since the 1980s. The latter period still goes on. Climatic changes are the most probable reason behind the stagewise forest invasion. These features are typical of the southeastern high-altitude mountain ranges of Sochi National Park (the upper reaches of the Mzymta River) and have not been observed in its central part (the Achishkho ridge), where the forest openings on the northern slopes and the axial part of the ridges are a component of the naturally cold six months in this area (caused by an appreciably stable high level of precipitation) and ecotone of the upper forest boundary.

4. Monitoring of the state of conservation of ungulates and predatory animals.

The studies were aimed at elucidating the dynamics of the number and structure of species population (Table 6.6).

Таблица 6.6

Dynamics of the number of ungulates and predatory animals SNP (2008–2012)

Species	Years of observations				
	2008	2009	2010	2011	2012
Wild boar	1976	2050	526	130	65
Deer	482	518	490	491	431
Roe deer	809	846	862	1114	954
Chamois	903	909	892	856	838
Tur	59	61	64	57	59
Wolf	54	49	42	56	39
Caucasian wildcat	275	256	195	220	172
Fox	108	117	91	123	93
Jackal	173	123	117	178	94
Brown bear	265	328	257	287	198
Otter	NA	NA	NA	NA	19
Mink	NA	NA	NA	NA	11
Marten	358	344	374	455	308



7 DOCUMENTATION

✕ 7a. Photographs, slides, inventory of visual appendixes; the authorization form for photo and audiovisual materials

INVENTORY OF VISUAL APPENDIXES
AUTHORIZATION FORM FOR PHOTO AND AUDIOVISUAL MATERIALS

№	Format (slide / photo / video)	Name	Date (month, year)	Photographer / Movie Director	Owner (if different from the photographer / Movie Director)	Contact details of the owner (name, address, tel./fax, e-mail)	Not exclusive transmission of rights
1	Photo	The mountain peaks of Fisht (2,868 m) and Oshten (2,804 m) add an astonishing view to the areas of the Western Caucasus — remains of ancient coral reefs	07.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
2	Photo	Petrified ammonite shell found in the vicinity of the Belaya River	05.2005	S. Trepet	S. Trepet	Tel. +7(861)244-22-97 E-mail: vozhd@kubannet.ru	yes
3	Photo	Chertovy Vorota (The Devil's Gate) — the Mountains of Western Acheshbok (2,486 m) and Eastern Acheshbok (2,441.8 m).	04.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
4	Photo	Psenodakh Lake	08.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
5	Photo	The canyon of the Tsitsa River	09.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
6	Photo	Winter at the Lagonaki Plateau	12.2006	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
7	Photo	Mature beech forest consisting of the oriental beech (<i>Fagus orientalis</i> LIPSKY)	08.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
8	Photo	<i>Lilium monadelphum</i> M. BIEB.	06.2011	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mail: vozhd@kubannet.ru	yes
9	Photo	Bushes of the caucasian rhododendron (<i>Rhododendron caucasicum</i> PALL.)	04.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
10	Photo	<i>Staphylea colchica</i> L.	04.2009	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mail: vozhd@kubannet.ru	yes
11	Photo	<i>Erythronium caucasicum</i> WORONOW	03.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes

№	Format (slide / photo / video)	Name	Date (month, year)	Photographer / Movie Director	Owner (if different from the photographer / Movie Director)	Contact details of the owner (name, address, tel./fax, e-mail)	Not exclusive transmission of rights
12	Photo	<i>Crocus scharojanii</i> RUPR.	09.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
13	Photo	<i>Aristolochia steupii</i> WORONOW	04.2009	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mai: vozhd@kubannet.ru	yes
14	Photo	<i>Cyclamen coum</i> MILL.	03.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
15	Photo	<i>Paeonia caucasica</i> (SCHIPSZ.) SCHIPSZ.	06.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
16	Photo	<i>Campanula latifolia</i> L.	07.2004	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mai: vozhd@kubannet.ru	yes
17	Photo	<i>Campanula glomerata</i> L.	07.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
18	Photo	<i>Iris pumila</i> L.	05.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
19	Photo	Caucasus endemic <i>Parnassius nordmanni</i>	05.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
20	Photo	<i>Salmo trutta labrax</i>	10.2004	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mai: vozhd@kubannet.ru	yes
21	Photo	<i>Pelodytes caucasicus</i>	07.2005	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mai: vozhd@kubannet.ru	yes
22	Photo	<i>Bufo verrucosissimus verrucosissimus</i>	07.2005	A. Ivanenko	A. Ivanenko	Tel. +7(861)244-22-97 E-mai: vozhd@kubannet.ru	yes
23	Photo	<i>Serinus pusillus</i>	06.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
24	Photo	<i>Young Lyrurus mlosiewiczi</i>	08.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
25	Photo	<i>Tetraogallus caucasicus</i>	08.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
26	Photo	<i>Apodemus uralensis</i>	06.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
27	Photo	<i>Canis lupus cubanensis</i>	04.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
28	Photo	<i>Ursus arctos meridionalis</i>	05.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
29	Photo	The herd of aurochs (<i>Bison bonasus</i> × <i>Bison bison</i>)	08.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes

№	Format (slide / photo / video)	Name	Date (month, year)	Photographer / Movie Director	Owner (if different from the photographer / Movie Director)	Contact details of the owner (name, address, tel./fax, e-mail)	Not exclusive transmission of rights
30	Photo	Dolmen	11.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
31	Photo	The mountain forests of the object of the «Western Caucasus» and the views of the limestone massifs of Fisht-Oshten mountain site	06.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
32	Photo	Forest of <i>Buxus colchica</i> POJARK. on the territory of SNP	08.2009	N. Eskin	N. Eskin	Tel. +7(928)467-00-70 E-mail: Nicholas.Yeskin@gmail.ru	yes
33	Photo	Valley of the Shakhe river — typical middle-mountain forests nominated part of the Sochi National Park	07.2009	V. Akatov	V. Akatov	Tel. 8(918)422-52-14 E-mail: akatovmgtu@mail.ru	yes
34	Photo	The border of the forest	05.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
35	Photo	Colchis woods of subtropical nature on the territory of SNP	11.2009	V. Akatov	V. Arfnjd	Tel. 8(918)422-52-14 E-mail: akatovmgtu@mail.ru	yes
36	Photo	Bisons on wintering	01.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
37	Photo	<i>Capra caucasica</i>	08.2007	N. Eskin	N. Eskin	Tel. +7(928)467-00-70 E-mail: Nicholas.Yeskin@gmail.ru	yes
38	Photo	Horses in the pasture	07.2012	A. Bibin	A. Bibin	Tel. +7(906)438-82-79 E-mail: bibin@inbox.ru	yes
39	Photo	Pasture on the plateau Lagonaki	09.2012	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
40	Photo	Lagonakski ridge	07.2012	A. Bibin	A. Bibin	Tel. +7(906)438-82-79 E-mail: bibin@inbox.ru	yes
41	Photo	<i>Heracleum mantegazzianum</i> SOMMIER & LEVIER	08.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
42	Photo	Blueberry fields on the upper edge of the forest, Lagonaki plateau	10.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
43	Photo	A group of tourists	03.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes

№	Format (slide / photo / video)	Name	Date (month, year)	Photographer / Movie Director	Owner (if different from the photographer / Movie Director)	Contact details of the owner (name, address, tel./fax, e-mail)	Not exclusive transmission of rights
44	Photo	<i>Rhododendron ponticum</i> L.	06.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
45	Photo	Subalpine vegetation	08.2007	V. Kovalev	V. Kovalev	Tel. +49-172-917-08-78 E-mail: Vitalij.Kovalev@NABU.de	yes
46	Photo	Beech forest with Azalea yellow (<i>Rhododendron luteum</i> SWEET)	05.2007	N. Eskin	N. Eskin	Tel. +7(928)467-00-70 E-mail: Nicholas.Yeskin@gmail.ru	yes
47	Photo	The Mzymta River	03.2007	N. Eskin	N. Eskin	Tel. +7(928)467-00-70 E-mail: Nicholas.Yeskin@gmail.ru	yes
48	Photo	<i>Vipera dinniki</i>	06.2007	A. Bibin	A. Bibin	Tel. +7(906)438-82-79 E-mail: bibin@inbox.ru	yes
49	Photo	<i>Testudo graeca nikolskii</i>	05.2007	A. Bibin	A. Bibin	Tel. +7(906)438-82-79 E-mail: bibin@inbox.ru	yes
50	Photo	<i>Ursus arctos meridionalis</i>	08.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
51	Photo	The slopes of the mountain Nagoi-Chuk	10.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
52	Photo	Lake Kardyvach	06.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
53	Photo	The slopes of the mountain Fisht	03.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
54	Photo	Upper reaches of Urushten River	06.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
55	Photo	Psenodakh Lake	09.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
56	Photo	The slopes of the mountain Nagoi-Chuk	10.2007	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
57	Photo	The slopes of the mountain Fisht	10.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
58	Photo	The slopes of the mountain Dzhuga	07.2009	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes
59	Photo	Upper reaches of Mzymta River	09.2008	S. Trepet	S. Trepet	Tel. +7(928)467-60-94 E-mail: Trepet71@mail.ru	yes

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

The documents are given in Annex B.

- B1.** The certificate on giving «West Caucasus» status of world natural heritage.
- B2.** Letter of Head of Republic of Adygea , No. G-50/14-0 dated 20.01.2014.
- B3.** Letter of Head of the Karachaevo-Circassian Republic, No. 01-13/154 dated 21.01.2014.
- B4.** Extract from the Federal Law of the Russian Federation “On specially protected natural areas“ dated March 14, 1995. No. 199.
- B5.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated September 27, 2013. No. 411 “On approval of policy on the Sochi National Park”.
- B7.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated May 23, 2011. No. 380 “On approval of the Articles of Association of the Federal State Budget-Financed Institution “Sochi National Park”.
- B8.** Articles of Association of the Federal State Budget-financed Institution “Sochi National Park” (with amendments approved by Decrees of the Ministry of Natural Resources and Ecology of the Russian Federation of November 30, 2011 No. 929 and of April 11, 2012. No. 103).
- B9.** Resolution of Russian Federation Government dated November 23, 2011. No. 968 “On borders of the Sochi Republican State Natural Sanctuary”.
- B10.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated Feb. 09, 2012 No. 26 “On reorganization of state institutions subordinate to the Ministry of Natural Resources and Ecology of the Russian Federation”.
- B11.** Policy on the Sochi Republican State Natural Sanctuary (Annex to Decree of the Russian Federation Agriculture Ministry of December 24,2003. No. 1571).
- B12.** Certificate of State Registration of the Federal State Budget-financed Institution “Sochi National Park”.
- B13.** Cadastral extract on land plot (extract from state cadastre of immovable property) dated 24.06.2011. No. 2343/12/11-241031.
- B14.** Policy on Administration for Environment Protection, Natural Resources and Emergency Situations of the Republic of Adygea (Annex No. 1 to resolution of the Cabinet of Ministers of the Republic of Adygea dated May 22, 2012. No. 122).
- B15.** Extract from Resolution of the Cabinet of Ministers of the Republic of Adygea dated December 07, 2010. No. 241. This resolution makes amendments to Resolution of the Cabinet of Ministers of the Republic of Adygea dated October 25, 1994. No 191 “On giving the status of natural landmark of republican significance to unique natural complexes”.
- B16.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated November 17, 2008. No. 40-pr “On approval of certificate of the “Massif of Buxus colchica” natural park of republican significance”.
- B17.** Certificate of the “Massif of buxus colchica” Natural Landmark of Republican Significance.

- B18.** Letter of the forest Administration of the Republic of Adygeya dated 15.01.2014, № 88.
- B19.** Extract from Directive of the Council of People' Commissars RSFSR on State Caucasus Bison Reserve, dated May,12, 1924.
- B20.** Provision on Federal State Institution "Caucasus State Natural Biosphere Reserve Named Kh.G. Shaposhnikova" (in the version of orders of the Russian Ministry of Natural Resources of 17.03.2005. No. 66 and of 20.12.2007 No. 338; orders of the Russian Ministry of Natural Resources of 27.02.2009 No. 48 and of 26.03.2009 No. 71).
- B21.** Articles of Association of the Federal State Budget-Financed Institution "Shaposhnikov Caucasian Natural Biosphere Reserve", approved by Decree of the Russian Federation Ministry of Natural Resources and Ecology dated May 24, 2011. No. 410.
- B22.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated April 11, 2012. No. 103 "On making amendments to articles of association of individual federal state budget-financed institutions being under supervision of the Ministry of Natural Resources and Ecology of the Russian Federation".
- B23.** Certificate about inclusion of the Caucasian reserve in the international network of biosphere reserves.
- B24.** Decree of the President of the Republic of Adygea dated October 08, 1997. No. 244 "On creation of a Natural Park of the Republic of Adygea on the territory of massif of mount Bolshoy Tkhach".
- B25.** Resolution of Cabinet of Ministers of the Republic of Adygea dated January 19, 1998. No. 21 "On approval of policy on the "Bolshoy Tkach" Natural Park of the Republic of Adygea" (new version).
- B26.** Resolution of the Cabinet of Ministers of the Republic of Adygea dated December 13, 2010. No. 246 "On creation of the state institution of the Republic of Adygea — the "Bolshoy Tkhach" natural park of the Republic of Adygea".
- B27.** Decree of Ministry of Natural Resources and Ecology of Russian Federation dated November 9, 2011. No. 37-pr "On approval of the Articles of Association of the state public institution of the Republic of Adygea — the "Bolshoy Tkhach" natural park of the Republic of Adygea".
- B28.** Articles of Association of State Public Institution of the Republic of Adygea — the "Bolshoy Tkhach" natural park of the Republic of Adygea.
- B29.** Certificate of State Registration of Title Administration of the Federal Service of State Registration, Cadastre and Cartography for the Republic of Adygea.
- B30.** Cadastral extract on land plot (extract from state cadastre of immovable property) dated 26.09.2012 №0100/401/2012-57142.
- B31.** Resolution of the Cabinet of Ministers of the Republic of Adygea dated December 09, 1996. No. 467 "On declaration of the Buyniy Range a natural landmark of republican significance".
- B32.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated November 17, 2008. No. 41-pr "On approval of certificate of the "Buyniy Range" natural landmark of republican significance".
- B33.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated October 27, 2011. No. 35-pr "On introduction of amendments in the decree of the Natural Resources and Environment

Protection Administration of the Republic of Adygea dated November 17, 2008. No. 41-pr “On approval of certificate of the “Buyniy Range” natural landmark of republican significance”.

- B34.** Certificate of the “Buyniy Range” natural landmark of republican significance.
- B35.** Letter of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated January 14, 2014. No. 43.
- B36.** Decree of President of the Republic of Adygea dated December 23, 1997. No. 247 “On declaring the upper reach of the river Tsitsa, the upper reaches of the rivers Pshekha and Pshekhaskha as natural landmarks of republican significance”.
- B37.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated April 11, 2008. No. 7-pr “On approval of certificate of the “Upper Reaches of the Rivers Pshekha and Pshekhaskha” natural landmark of republican significance”.
- B38.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated June 29, 2009. No 111-pr “On making amendments to Decree of the Natural Resources and Environment Protection Administration of the Republic of Adygea dated April 11, 2008. No. 7-pr “On approval of certificate of the “Upper Reaches of the Rivers Pshekha and Pshekhaskha” natural park of republican significance”.
- B39.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated February 19, 2010. No. 49-k “On making amendments to Decree of the Natural Resources and Environment Protection Administration of the Republic of Adygea dated April 11, 2008. No. 7-pr “On approval of certificate of the “Upper Reaches of the Rivers Pshekha and Pshekhaskha” natural park of republican significance”.
- B40.** Decree of Natural resources and environment protection administration of the Republic of Adygea, dated October 27, 2001. № 33-pr “On introduction of amendments in the decree of the natural resources and environment protection administration of the republic of adygea dated april 11, 2008. No. 7-pr “On approval of certificate of the “Upper reaches of the rivers Pshekha and Pshekhaskha” natural landmark of republican significance”.
- B41.** Certificate of the “Upper reaches of the rivers Pshekha and Pshekhaskha” natural landmark of republican significance.
- B42.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated October 09,2010. No. 31-pr/1 “On approval of certificate of the “Upper Reach of the River Tsitsa” natural landmark of republican significance”.
- B43.** Decree of Natural Resources Management and Environment Protection Administration of the Republic of Adygea dated October 27, 2011. No. 34-pr “On introduction of amendments in the decree of the Natural Resources and Environment Protection Administration of the Republic of Adygea dated October 9, 2008. No. 31-pr/1 “On approval of certificate of the “Upper Reach of the River Tsitsa” natural landmark of republican significance”.
- B44.** Certificate of the “Upper reach of the river Tsitsa” natural landmark of republican significance.
- B45.** Resolution of the Cabinet of Ministers of the Republic of the Adygea dated August 26, 1996. No. 322 “On arrangement of protective (buffer) zone of Caucasus State Biosphere Natural Reserve in the territory of the Republic of Adygea”.

- B46.** Extract from Resolution of the Cabinet of Ministers of the Republic of Adygea dated June 08, 1998. No. 174 “On declaring some of the Resolution of the Cabinet of Ministers of the Republic of Adygea adopted in 1992—1997”.
- B47.** Letter, certification of the Ministry of Natural Resources of Russia “On creation of buffer zone of the Caucasian State Natural Biosphere Reserve” dated.
- B48.** Analysis of current status of the boundaries of «the Western Caucasus» WNH site and recommendations for their optimization (from «NABU-Kavkaz»).
- B49.** Rationale for the change of borders Lagonaki part of the object of WHS “Western Caucasus” (from CSNBR them. H. G. Shaposhnikova and «NABU-Kavkaz»).

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

Nature chronicle of the Caucasus Reserve. Findings of the 2006—2010 research on the structure and dynamics of the Caucasus Reserve ecosystems and adjoining territories, their protection issues. Presented to the Ministry of Natural Resources of Russia in June 2011.

Report of the director of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve for 2010. Presented to the Ministry of Natural Resources of Russia in February 2011.

Nature chronicle of the Caucasus Reserve. Findings of the 2011 research on the structure and dynamics of the Caucasus Reserve ecosystems and adjoining territories, their protection issues. Presented to the Ministry of Natural Resources of Russia in June 2012.

Report of the director of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve for 2011. Presented to the Ministry of Natural Resources of Russia in February 2012.

Report on the preservation of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve, World Natural Heritage Property included into the Western Caucasus nomination in 2011. Presented to the Ministry of Natural Resources of Russia in January 2012.

Report on the research of the state federal budgetary institution Sochi National Park for 2012.

Nature chronicle of the Caucasus Reserve. Results of the 2012 research on the structure and dynamics of the Caucasus Reserve ecosystems and adjoining territories, their protection issues. Presented to the Ministry of Natural Resources of Russia in June 2013.

Report of the director of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve for 2012. Presented to the Ministry of Natural Resources of Russia in February 2013.

Report on the preservation of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve, World Natural Heritage Property included into the Western Caucasus nomination in 2012. Presented to the Ministry of Natural Resources of Russia in January 2013.

Report on the research of the state federal budgetary institution Sochi National Park for 2013.

Report on the preservation of the state federal budgetary institution Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve, World Natural Heritage Property included into the Western Caucasus nomination in 2013. Presented to the Ministry of Natural Resources of Russia in January 2014.

Studies and Subject Collections:

T. Akatova, V. Akatov, A. Bibin, N. Eskin, T. Eskina, S. Trepet, B. Tuniev. Special protected animal, plant and mushroom species in the Caucasus Reserve. — Maykop: Kachestvo LLC, 2009. — 250 p.

T. Akatova, A. Bibin, K. Gongalskiy, P. Kiyashko, O. Leontyeva, S. Litvinskaya, G. Ogureeva, A. Perevozov, E. Suslova, P. Tilba, I. Timukhin, S. Trepet, B. Tuniev, S. Tuniev. SPAs in the Krasnodarsky Krai // Emerald book of the Russian Federation: SPAs in the European Russia. — M.: V. Skorokhodov's Publishing House, 2011.

T. Akatova, Yu. Zagurnaya, A. Motorin, A. Perevozov, O. Rezchikova. SPAs in the Republic of Adygeya // Emerald book of the Russian Federation: SPAs in the European Russia. — M.: V. Skorokhodov's Publishing House, 2011.

T. Akatova, V. Akatov, A. Bibin, Yu. Zagurnaya, T. Eskina, O. Rezchikova, A. Perevozov and others. Red Data Book of the Republic of Adygeya (2nd Ed.) — Maykop: Kachestvo LLC, 2012. — 340 p.

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve / **O. Loktionova, Yu. Chumachenko** and others. // Soils in the reserves and national parks of the Russian Federation. — M.: Infosfera Fund. — NIA-Priroda, 2012. — 476 p.

Sochi National Park / Inventory of the main taxonomic groups and communities, zoological research of Sochi National Park — first results of the first national park in Russia // Study / ed. by B. Tuniev. — M.: Prestizh, 2006. — 304 p.

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

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve

Address:

Karla Marksa (Karl Marx) Str., 8 Sochi, 354340,
Krasnodarsky Krai,
Russian Federation
Phone: +7862240.51.36
Fax: +7862240.52.65
E-mail: kzles@mail.ru
www.kgpbz.ru

Sochi National Park

Address:

Moskovskaya Str. 21, Sochi, 354340,
Krasnodarsky Krai,
Russian Federation
Phone/fax: +7862262.18.42
E-mail: forest_sochi@mail.ru
www.sochinp.ru

SPAs of the Republic of Adygeya

Department on environmental protection, natural resources and emergencies of
the Republic of Adygeya

Address:

Krestyanskaya Str. 236, Maykop, 385000,
Republic of Adygeya,
Russian Federation
Phone/fax: +7877257.09.24
www.adygheya.ru/government/commit/resurs

7e. Bibliography

In Annex D, there are over 100 most significant scientific works given which are dedicated to the Properties of the Western Caucasus World Natural Heritage and new territories nominated.



8 CONTACT INFORMATION OF RESPONSIBLE AUTHORITIES

X 8a. Preparer

1. Nikolai Eskin

Position: Deputy Director of the Caucasus State Natural Biosphere Reserve on the scientific work

Address:

Karla Marksa Str. 8, Sochi, 354340,
Krasnodarsky Krai,
Russian Federation
Phone: +7862240.51.36
Fax: +7862240.52.65
E-mail: kgpbz@mail.ru

2. Vitaliy Kovalev

Position: Deputy Director of the international department, Director of the Caucasus programs of the Nature Protection Union of Germany (NABU)

Address:

Charite Strasse 3, Berlin, 10117
Germany
Phone: +49 30 284 984 1701
Fax: +49 30 284 984 2700
E-mail: Vitalij.Kovalev@NABU.de

3. Svetlana Derziyan

Position: Director of the NABU Kavkaz Non-Government Conservation Center

Address:

Khakurate Str. 161,
Maykop, 385001, Russia
Phone: +7 8772 540 230
Fax: +7 8772 540 230
E-mail: derziyan@nabu-kavkaz.ru

4. Marina Avdienko

Position: Assistant to the director of NABU Kavkaz Non-Government Conservation Center

Address:

Khakurate Str. 161,
Maykop, 385001, Russia
Phone: +7 8772 540 230
Fax: +7 8772 540 230
E-mail: office@nabu-kavkaz.ru

5. Mikhail Zashibayev

Position: Database administrator of the NABU Kavkaz Non-Government Conservation Center

Address:

Khakurate Str. 161,
Maykop, 385001, Russia
Phone: +7 8772 540 230
Fax: +7 8772 540 230
E-mail: office@nabu-kavkaz.ru

6. Victor Kashuba

Position: Director of Caucasus Institute for Applied Ecology

Address:

Starokubanskaya Str. 118, Office 405,

Krasnodar, 3520040, Russia

Phone: +7 8612 44 22 97

Fax: +7 8612 44 22 97

E-mail: kashuba_v@mail.ru

7. Alexander Ivanenko

Position: Scientific officer at Caucasus Institute for Applied Ecology

Address:

Starokubanskaya Str. 118, Office 405,

Krasnodar, 3520040, Russia

Phone: +7 8612 44 22 97

Fax: +7 8612 44 22 97

E-mail: vozhd@kubannet.ru

8. Alexei Butorin

Position: President of the Natural Heritage Protection Fund

Address:

1st Khvostov Lane, 13A,

Moscow, 109017, Russia

Phone: +7 499 238 03 60

Fax: +7 495 159 83 20

E-mail: butorin@nhpfund.ru

x 8b. Official Local Institution/Agency

Sochi National Park is a federal state budgetary institution under the Ministry of Natural Resources and Ecology of the Russian Federation.

Address:

Moskovskaya Str. 21, Sochi, 354340,

Krasnodarsky Krai,

Russian Federation

Phone/fax: +7862262.18.42

E-mail: forest_sochi@mail.ru

www.sochinp.ru

Kh. G. Shaposhnikov Caucasus State Natural Biosphere Reserve is a federal state budgetary institution under the Ministry of Natural Resources and Ecology of the Russian Federation.

Address:

Karla Marksa Str. 8, Sochi, 354340,

Krasnodarsky Krai,

Russian Federation

Phone: +7862240.51.36

Fax: +7862240.52.65

E-mail: kzles@mail.ru

www.kgpbz.ru

Department of environmental protection, natural resources and emergencies of the Republic of Adygeya

Address:

Krestyanskaya Str. 236, Maykop, 385000,
Republic of Adygeya,
Russian Federation
Phone/fax: +7877257.09.24
www.adygheya.ru/government/commit/resurs

8c. Other Local Institutions

1. Non-state nature protection center «NABU-Kavkaz».
385001, Russia, Maikop, str. Khakurate, 161.
Phone: +7 (8772) 54-02-30.
2. Institute of regional biological research.
385060, Russia, Maikop, stanitsa Khanskaya, str. Polevaya, 50.
Phone: +7 (918) 425-84-35.
3. Limited liability company «Endemic».
385750, Russia, Maikop district, poselok Kamennomostskiy, str. Shosseynaya, 1.
Phone: +7 (918) 425-09-25
4. Maikop State Technology Institute.
385000, Russia, Maikop, str. Pervomayskaya, 191.
Phone/Fax: +7 (8772) 57-00-21; 57-00-11; 57-06-16.
5. Kuban State University.
350040, Russia, Krasnodarsky Kray, Krasnodar, str. Stavropolskaya, 149.
Phone: +7 (861) 219-95-30.
Fax: +7 (861) 219-95-17.
6. The Russian geographical society, Sochi Department.
354024, Russia, Sochi, Kurortny Prospekt, 133.
Phone/Fax: +7 (8622) 61-98-57.
7. Limited liability company «Ecocenter-Profi».
354008, Russia, Sochi, str. Vinogradnaya, 2/3.
Phone/Fax: +7 (8622) 39-35-84, 53-80-42.
8. Limited liability company «Spline».
354008, Russia, Sochi, str. Plastunskaya, 135, off. 19.
Phone: +7 (918) 401-42-04.

8d. Official Web address

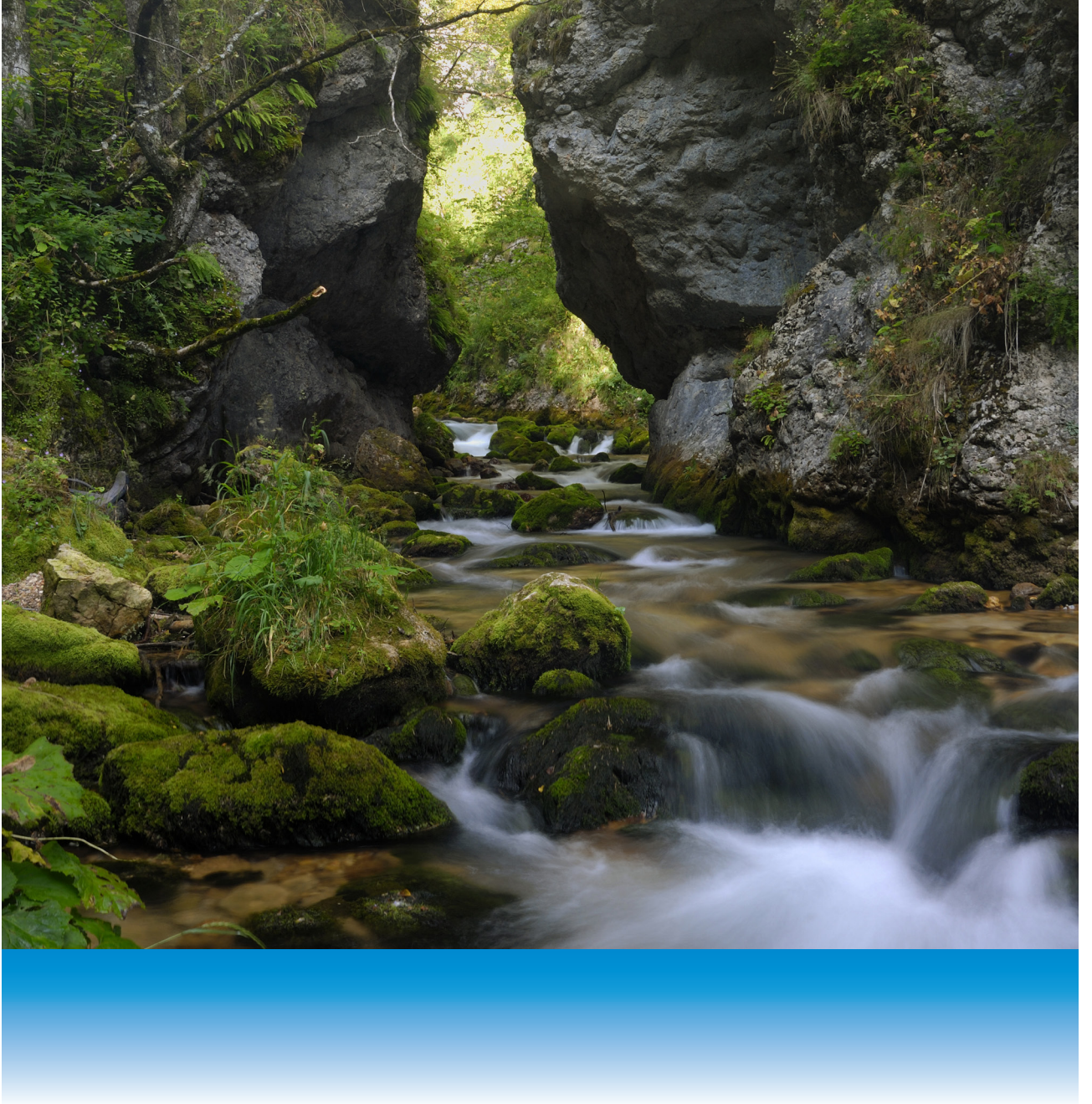
<http://www.sochinp.ru>
Contact person: Turischeva Olga Grigorievna.
Phone: +7 (8622) 40-51-36; тел. сот.: +7 (918) 10-37-007.
E-mail: kgpbz@mail.ru

<http://www.kgpbz.ru>

Contact person: Turischeva Olga Grigorievna.

Phone: +7 (8622) 40-51-36; +7 (918) 10-37-007.

E-mail: kgpbz@mail.ru



9 SIGNATURE ON BEHALF OF THE STATE PARTY

X SIGNATURE ON BEHALF OF THE STATE PARTY

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

R. R. Gizatulin