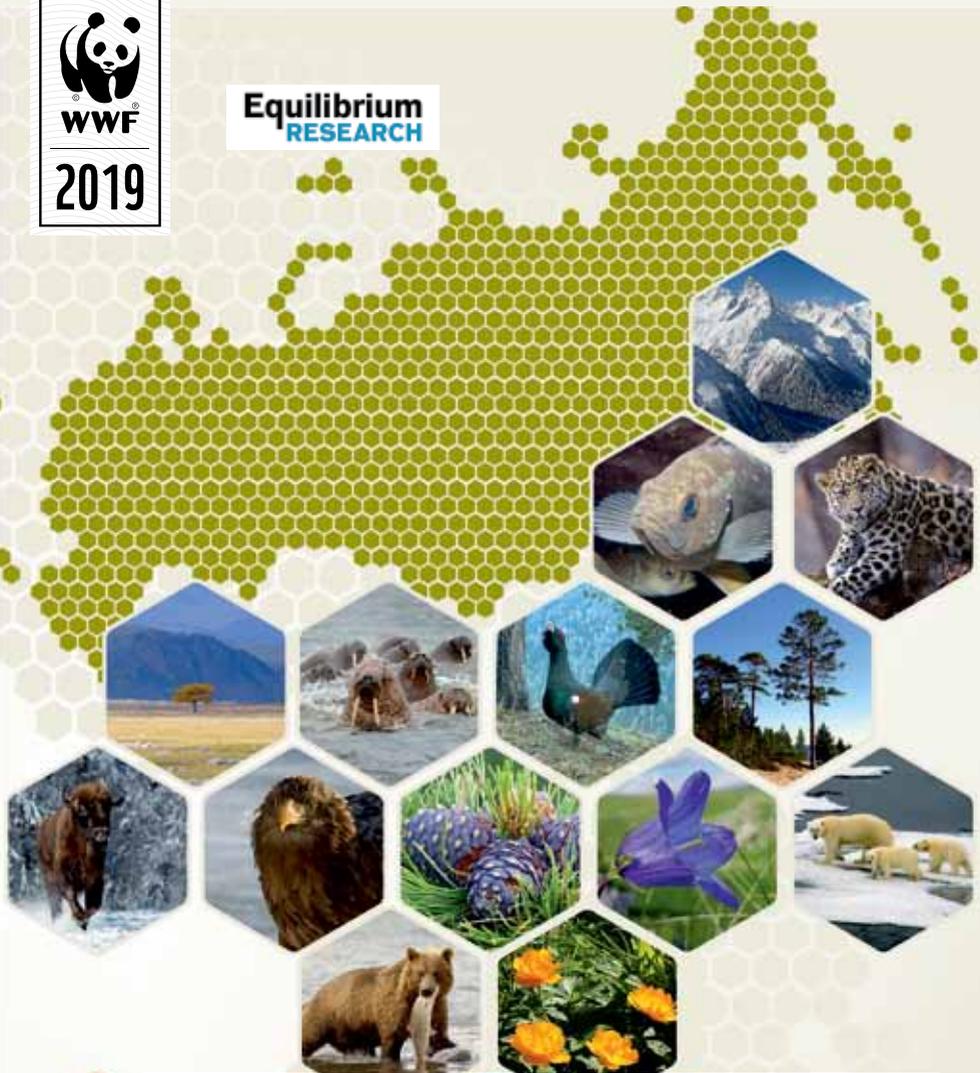




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Equilibrium
RESEARCH



Mikhail Stishov, Nigel Dudley

PROTECTED NATURAL AREAS OF THE RUSSIAN FEDERATION AND THEIR CATEGORIES



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C80 Protected Natural Areas of the Russian Federation and Their Categories,

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The book gives an overview of the current categories of the protected areas and restricted use areas of the Russian Federation. It assesses the existing categories for compliance with the categories of International Union for Conservation of Nature and Natural Resources (IUCN). The book contains the results of rough estimation of the protected areas and their certain categories according to IUCN classification for Russia in general and for its individual regions. It also includes the results of rough estimation of the sea areas of the Russian exclusive economic zone. The book is recommended for environment protection specialists, staff of existing protected areas, and students of corresponding fields.

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FOREWORD

Various forms of area-based conservation constitute one of the key mechanisms of biodiversity conservation in the world. In recognition of this fact, the 10th meeting of the Conference of the Parties of the UN Convention on Biological Diversity (2010) has put forward the following target: “By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.” It is important to understand in this regard that this wording does not imply equivalent values for national targets as they may be higher or lower than the aggregate target.¹

The target definition mentions two forms of area-based conservation – proper protected areas (PAs) and “other effective area-based conservation measures.” The 14th meeting of the CBD COP (2018) provided a more precise definition of the “other effective area-based conservation measure” as “a geographically defined area other than a Protected Area,² which is governed and managed in ways that achieve positive and sustained long-term outcomes for the *in situ*³ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values.”

Therefore, in order to position the country objectively in the global ranking of performance against this target, one would need not only to tally the total area of all PAs in the ‘classical’ understanding of this term in Russia,⁴ but also to determine the categories and areas of “other effective area-based conservation measures” in this country in line with the respective IUCN definitions. In this context, the relationship between the

¹ <https://www.cbd.int/doc/strategic-plan/targets/T11-quick-guide-en.pdf>

² In this context, “Protected Area” is a synonym of a “specially protected natural area” in the Russian national legislation.

³ In natural conditions.

⁴ This review uses the term “specially protected natural area” in compliance with the current version of the Federal Law dated 14 March 1995 No. 33-FZ “On specially protected natural areas.”

nationally legislated categories of Protected Areas and the IUCN PA classification is not important for the purpose of the Convention, while “other effective area-based conservation measures” are quite interesting and at the same time a rather complex subject of analysis. The Russian natural resource legislation (primarily, the Land, Forest and Water Codes) as well as the laws of the regions of the Russian Federation provide for a wide variety of forms of area-based regulation of natural resource management. The purpose of this review is to cross-refer all these measures to the international classification of protected areas.

The review has retained invaluable inputs from Nigel Dudley, the originator and author of the current IUCN classification of protected areas,⁵ to help resolve any potential controversies in the categorization of various forms of area-based conservation in Russia in line with the international classification.

This publication is the second installment⁶ in the series of assessments of Russia’s objective contribution to the implementation of the Strategic Plan for Biodiversity 2011-2020 of the Convention on Biological Diversity. An electronic version of this review is published at this site: <https://wwf.ru/resources/publications/booklets/okhranyaemye-prirodnyyeterritorii-rossiyskoy-federatsii-i-ikh-kategorii>.

Please send any comments on this review to russia@wwf.ru.

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WWF Russia

⁵ Dudley, N. (Editor) (2008). Guidelines for Applying Protected Area Management Categories. Gland, Switzerland: IUCN. x + 86pp. WITH Stolton, S., P. Shadie and N. Dudley (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, Best Practice Protected Area Guidelines Series No. 21, Gland, Switzerland: IUCN. xxpp.; Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & S. Wells, 2012. Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas. Gland, Switzerland: IUCN. 36pp.

⁶ The first review (Specially protected natural areas of Russia: current status and development outlook. Authors-editors: V.G. Krever, M.S. Stishov, I.A. Onufrenya, WWF Russia, 2009) focused on the representativeness of the system of federal PAs and the outlook for its development.

INTRODUCTION

The aim of this review is to estimate the size and distribution of protected areas in Russia that meet the definition of protected areas by the International Union for Conservation of Nature (IUCN). The Russian legislation establishes its own definition of protected areas, alongside with special purpose areas. Those will be assessed in comparison with IUCN's general definition of protected areas and their categories, which is essential in order to obtain statistics comparable with international data.

Several attempts have been undertaken to compare the IUCN definition of protected areas and their categories with the categories of protected areas and special purpose areas as per the legislation of the Russian Federation. This work is the latest of its kind and aims at bringing Russian statistical data to a commonly used international system of notions, i.e. the IUCN definition and system of categories of protected areas.

Similar work has been done before (Ochagov et al., 2001)⁷, however, since the time of its publication, the IUCN definition of protected areas has changed, along with the system of their categories and criteria for their identification. In addition, previous works attempted to equate the whole categories of PAs set by the Russian legislation with those of IUCN, while in fact different areas from one Russian category may meet the criteria of different IUCN categories. Therefore, several Russian categories of PAs were described as equivalent to two or three IUCN categories, however, without the necessary comments and definitions.

Finally, previous reviews were usually limited to the areas defined by the Russian legislation as «**Specially Protected Natural Areas (SPNA)**», whereas the list and system of their categories have undergone recent changes. This work covers all protected areas and special purpose areas that may play a role in the conservation of natural diversity and may potentially meet the IUCN definition of protected areas.

V.V. Dezhkin pointed out the need to include such areas without a legal SPNA status in the statistical data on the country's protected areas, however, no comprehensive review has been done, and no matching of the

⁷ Ochagov, D.M. (ed.) et al. 2001. Summarised list of protected areas of the Russian Federation. All-Russian Institute of Nature [in Russian], Moscow.

Russian categories of PAs with the IUCN ones. As a follow-up, this review attempts to systematize all different protected areas and special purpose areas that may contribute to the conservation of natural diversity in the Russian Federation.

1 PROTECTED AREAS (PAs) AS DEFINED BY IUCN⁸

IUCN Guidelines for Applying Protected Area Management Categories (Dudley, 2008) point out the main question regarding a general definition of **protected areas** is whether those should include all terrestrial and aquatic areas governed with different purposes, because they may present a value for conservation of landscapes and biodiversity, or limit this definition to the areas designed and governed with the purpose of conserving natural diversity.

This issue is resolved differently in different countries, and IUCN members eventually agreed that not all areas that have conservation value will be recognized as «protected areas». For instance, well managed forestry units, areas of sustainable use, military ranges and similar areas, although they can contribute to the conservation of natural diversity, will not be considered protected areas under the IUCN definition. The latter presently states that:

Protected area is a “clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.

Comments to this definition specify that:

«**Geographical space**» in the definition means that protected areas, including land, inland water bodies, marine and coastal areas or their combination, are defined in three dimensions and may include airspace above the area, water column and bottom in protected aquatic areas, and underground areas.

«**Clearly defined**» means that spatial certainty is a compulsory attribute of a PA — in other words, it has approved and marked boundaries.

⁸ All definitions, criteria and clarifications are per Dudley, N. (ed.). 2008. *Guidelines for Applying Protected Area Management Categories*. IUCN, Gland. and Stolton, S., Shadie, P., & Dudley, N. 2013. *IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types*, in *Best Practice Protected Area Guidelines Series No. 21*, IUCN, Gland.

«**Recognized**» means that protected areas can be established not only by governments, but also by individuals and public organisations. However, they must be «recognized», for example, by inclusion in the World Database on Protected Areas (WDPA).

«**Dedicated**» to the below tasks means the existence of certain long-term obligations relevant to this PA (ensuring it can fulfill its tasks) and reflected in the international conventions and agreements; national, regional and local legislation; NGO commitments; policies of private foundations, companies, etc.

«**Management**» in the context of this definition means specific actions to protect natural and other values that the PA is created to conserve. Management has a broad definition. For example, one of its forms can be the total prohibition of any activity within a PA if this is seen to be the best strategy for its preservation.

«**Long-term conservation**» means that protected areas must be permanent, not temporary or with an end date.

Management through «**legal or other effective means**» means that protected areas may be managed not only by governments (if those PAs are established by the current national legislation or recognised by international conventions and agreements), but also by traditional rules of local communities or policies of NGOs that manage them, etc. The latest version of the definition adds that PAs are managed specifically *to achieve* their goals, i.e. ensure conservation of the values they contain, which means that *PA should be sufficiently effective*. This criterion has not been used yet, however, methods for evaluating the effectiveness of PAs are improving, and with the introduction of appropriate methodology only those areas will be defined as PAs that have sufficiently high effectiveness and ensure accomplishment of the set tasks.

«**Conservation**» of nature in this definition means preservation of ecosystems, natural and semi-natural (natural mixed with man-made) habitats, and viable populations in their natural environment (if talking about conservation of agrobiodiversity, breeds of domestic animals in the environment where this breed was formed). «Nature» in this definition is understood as biodiversity at genetic, species (population) and ecosystem levels, as well as «geodiversity» – the diversity of geological and geomorphological complexes and objects. In other words, the aim of protected areas is the *preservation of natural diversity – natural and*

semi-natural complexes and objects of natural or mixed natural and man-made origin.

«**Associated ecosystem services**» in the definition refer to provisioning, regulating, supporting, and cultural functions of ecosystems, provided their use does not contradict the conservation goals of a PA.

«**Cultural values**» mentioned in the definition include those that do not contradict the conservation goals of a PA, in particular, those that contribute to the conservation of natural diversity (traditional practices of ecosystem exploitation) and those that need to be conserved as well.

All protected areas and special purpose areas in the Russian Federation that may potentially meet the IUCN definition of protected areas were established by federal or regional legal acts and are therefore officially recognized. There are governmental commitments in relation to each of these areas and the ways and mechanisms of their management are defined. All these areas have clearly defined boundaries and the goals and tasks set for them.

This leaves four criteria to make a judgment as to whether Russian protected areas and special purpose areas meet the IUCN definition of protected areas:

- duration (long-term or not);
- goals of establishment;
- degree and origin of degradation and transformation of the area;
- conservation effectiveness.

Conservation effectiveness is not yet used in practice as a criterion and remains an individual indicator for specific protected areas. Therefore, the first three criteria are sufficient to estimate how well the entire (Russian) categories of protected areas and special purpose areas and their main sub-categories match the IUCN categories of protected areas.

Speaking about the condition (degradation and transformation) of an area, the rule is that natural and mixed natural and cultural areas should cover at least 50% of a protected area. Therefore, areas predominantly covered by arable lands, plantations (including forest ones), stands of exotic tree species, planted grasslands, gardens, parks, settlements, artificial water bodies, etc. cannot be considered protected areas.

Certain questions arise in relation to the criterion referring to the goals and objectives of protected areas. If the IUCN definition is strictly followed, the areas aimed at the conservation and reproduction of game resources do not meet this criterion. Yet these resources (game species, fish, etc.) are the components of biodiversity in their own right, and their conservation and natural regeneration take place in the natural environment, and as a result, all natural diversity is conserved in its integrity. Thus, the differences between protected areas with different goals and objectives may not be obvious in practice.

In general terms, the following protected areas and special purpose areas in **the Russian Federation** can be considered IUCN **protected areas**: a) that are not limited in time; b) represented by native natural and mixed natural and cultural landscapes and ecosystems at 50% at least; c) created and managed with the aim of conserving natural diversity, its components and individual elements, or with other aims where such conservation is a necessary condition.

2 PROTECTED AREAS AND SPECIAL PURPOSE AREAS IN THE RUSSIAN FEDERATION

There are multiple categories of protected areas and special purpose areas in the Russian Federation that can meet IUCN criteria for categories of protected areas in full or in part, or serve as supporting elements of ecological networks (econets), such as ecological corridors, etc. They can be divided in three large groups that differ in the status of categories and level of legislation they are set at:

- Categories of specially protected natural areas (SPNAs) defined by the *Federal Law «On Specially Protected Natural Areas»*;
- Categories of protected areas and special purpose areas defined by the *federal legislation* that are not SPNAs;
- Categories of SPNAs defined by the *subnational legislation* (legislation of the entities of the Russian Federation).

Each of these categories is reviewed below, and conclusions are made about whether they meet IUCN criteria for protected area categories and about their possible role in the conservation of natural diversity.

2.1 CATEGORIES OF SPECIALLY PROTECTED NATURAL AREAS DEFINED BY THE FEDERAL LEGISLATION

In accordance with the Federal Law of the Russian Federation⁹, **pecially protected natural areas are parts of national heritage that are defined as parts of land, water surface and air space above them where natural complexes and objects are located that have special conservation, scientific, cultural, aesthetic, recreational and healthful significance, taken in full or in part out of economic use by decision of the government, and that have an established regime of special protection.**

The following factors are considered for the designation of specially protected natural areas:

- Significance of the area for conservation of biodiversity, including rare, endangered, and economically and scientifically valuable elements of flora and fauna and their habitats;
- Presence of natural and cultural landscapes of particular aesthetic, scientific and cultural value within the area;
- Presence of geological, mineralogical and paleontological objects of particular scientific, cultural and aesthetic significance within the area;
- Presence of unique natural complexes and objects, including single natural objects, of particular scientific, cultural and aesthetic value within the area.

Depending on the objectives and features of the protection regime, the following categories of specially protected natural areas are defined in the Federal Law:

- **state natural reserves**, including biosphere reserves;
- **national parks**;
- **nature parks**;
- **state natural sanctuaries**;
- **natural monuments**;
- **dendrological parks and botanic gardens**.

⁹ Federal Law dated 14.03.1995 No. 33-FZ (ed. 13.07.2015) «On Specially Protected Natural Areas» (with amendments and additions as of 24.07.2015).

Specially protected natural areas can have **federal, regional and local significance**, and be governed by:

- federal executive authorities;
- executive authorities of the entities of the Russian Federation;
- local government authorities;
- state scientific organisations;
- state educational organisations of higher education.

State *natural reserves* and *national parks* are specially protected natural areas of **federal significance**. *State natural sanctuaries, natural monuments, dendrological parks and botanic gardens* are specially protected natural areas that can have either **federal or regional significance**. *Nature parks* are specially protected natural areas of **regional significance**.

The legislation of entities of the Russian Federation may set other categories of specially protected natural areas of regional and local significance.

STATE NATURAL RESERVES¹⁰

State natural reserve is a specially protected natural area of federal significance, where natural environment is preserved intact within its boundaries and economic activity is fully prohibited as well as any other activity incompatible with its objectives and the regime of special protection, as defined in the statutory provision for this state natural reserve.

State natural reserves have the following objectives:

- protection of natural areas in order to conserve biological diversity and maintain protected natural complexes and objects in natural conditions;
- scientific research, including keeping the Chronicles of Nature;
- state environmental monitoring;
- environmental education and development of educational tourism;
- contribution to the training of scientific staff and professionals in the field of environmental protection.

¹⁰ Description of the categories is as per text of the Federal Law dated 14.03.1995 #33-FZ (ed. 13.07.2015) «On Specially Protected Natural Areas» (with amendments and additions as of 24.07.2015).

Events and activities are permitted within the state natural reserve if they are aimed at:

- conservation of natural complexes in natural condition, restoration and prevention of changes in natural complexes and their components due to human impact;
- maintaining conditions that ensure health and fire safety;
- prevention of conditions that may cause natural disasters threatening the lives of people and settlements;
- state environmental monitoring;
- achieving scientific and research objectives;
- development of environmental awareness and educational tourism;
- state oversight of the protection and use of specially protected natural areas.

The following areas may be present in state natural reserves:

Areas where any human intervention in the natural processes is excluded. Their size is defined depending on the need to preserve the whole natural complex in its natural condition;

Areas of partial economic use that do not include particularly valuable ecological systems and objects for conservation which the natural reserve was created for. Activities permitted in such areas are aimed at maintaining the functionality of the state natural reserve and the lives of people residing in it. They are carried out in accordance with the individual statutory provision for this state natural reserve, approved by the government.

All current state natural reserves can be divided into four groups depending on their actual regime:

- SPNAs whose regime fully meets the standard for state natural reserves;
- State natural reserves where *tourism and recreation are being actively developed* and the relevant infrastructure is present. Their regime and type of use of the territory are similar to those of national parks;
- State natural reserves that are partially used by indigenous population for *traditional activities*, also similar to national parks;
- Biosphere reserves, containing *biosphere polygons* within their boundaries.

In all cases, areas for the development of tourism and recreation or traditional activities do not exceed 25% of the whole SPNA area, i.e. the strict natural reserve regime is still predominant.

There are plans to transfer the reserves with highly developed tourism and recreational activities and (or) use of territory for traditional activities by indigenous peoples into the category of national parks.

Existing contiguous reserves and some clusters of clustered reserves differ in the representativeness of the related landscapes, degree of degradation of the territory, susceptibility to external human impacts, and needs in management actions to achieve their conservation objectives. On the representativeness criterion, i.e. completeness of representation of typical ecosystems, three main types of reserves can be identified:

- Relatively vast, mainly self-sustaining areas with more-or-less full set of ecosystems typical of the related landscapes;
- Small areas where isolated intact or slightly degraded ecosystems or their fragments are represented, often surrounded by anthropogenic landscapes;
- Significantly degraded areas where meaningful management actions are needed for their recovery.

Depending on the degree of degradation, susceptibility to human impacts and ability to recover, there are several main types of natural reserves, and transitional types between them are also represented:

- Areas dominated by intact native ecosystems, characterised by predominantly natural (uninterrupted) environmental processes; containing a full set of native species represented with an ecologically significant density; not impacted by significant, direct, and current impact from the humans; and not requiring significant continuous intervention (management actions) for the achievement of their conservation objectives;
- Significantly degraded areas that are not exposed to significant, direct, and current impact from the humans, and capable of restoring native ecosystems and a typical set of native species through natural processes or with minimal, limited in time management interventions;
- Areas dominated by native ecosystems, exposed to continuous or regular external human impact that significantly affects environmental processes;

- Areas where certain factors (in particular, the absence or low numbers of typical key species, disrupted hydrological regime, etc.) caused the need in continuous significant interventions (management actions) to support a quasi-natural outlook of ecosystems;
- Severely degraded areas requiring significant management interventions for their restoration.

Despite considerable diversity of natural reserve areas and differences in their actual regimes of protection, all state natural reserves fully meet IUCN criteria for protected areas in their objectives, management goals, general features of the areas and current regime.

NATIONAL PARKS

National parks are specially protected natural areas of federal significance, divided into zones. Some zones are for preservation of the environment in its natural condition, and any activity within such zones is prohibited, with the exceptions specified in the Federal Law (see below). Other zones only restrict economic and other activities in order to preserve the objects of natural and cultural heritage and use them for recreation and education.

National parks have the following objectives:

- conservation of natural complexes, unique and reference natural areas and objects;
- conservation of historic and cultural objects;
- environmental education of the public;
- creating conditions for regulated tourism and recreation;
- development of scientific methods of nature conservation and environmental education and their introduction into practice;
- state environmental monitoring;
- restoration of degraded natural, historic, and cultural complexes and objects.

In order to establish the national park regime, **functional zoning** of its area is implemented, with the establishment of the following zones:

- **strictly protected zone** dedicated to the preservation of the environment in its natural condition, within which any economic activity is fully prohibited;
- **specially protected zone** dedicated to the preservation of the environment in its natural condition, within which excursions and educational tourism are allowed;
- **recreation zone** dedicated to recreational activities, development of physical education and sports, as well as deployment of tourism industry facilities, museums, and information centres;
- **zone of protection of cultural heritage** (historic and cultural monuments) of the peoples of the Russian Federation dedicated to preservation of the aforementioned objects, within which activities needed for their preservation are allowed, along with recreational activities;
- **limited-use zones** where permitted activities are aimed at supporting the operations of the national park authority (federal state budgetary institution) that manages the national park and maintaining daily lives of the people residing within the national park;
- **zones of traditional extensive nature use** dedicated to maintaining the living activities of small-in-numbers indigenous peoples of the Russian Federation, within which traditional activities are permitted, along with the related types of sustainable nature use.

The activities prohibited within national parks are any activities that can damage the natural complexes and wildlife, cultural and historic objects and that contradict goals and objectives of the national park, including:

- exploration and exploitation of mineral resources;
- activities that cause damage to the soil cover and geological outcrops;
- activities that cause changes in the hydrological regime;
- designation of areas within national parks for gardens and cottages;
- construction of trunk roads, pipelines, electricity lines and other service lines, construction and exploitation of industrial and residential properties, excluding properties needed for the functioning of the national parks and settlements within their boundaries;
- logging and stockpiling of non-timber forest products (except for sourcing timber and non-timber resources for personal needs of the local people), extraction of turpentine, commercial hunting, commer-

cial fishery and coastal fishery, activities that cause the disruption of wildlife habitats, assemblage of biological collections, introduction of living organisms with the purpose of their acclimatisation;

- driving and parking motor vehicles that are not related to the functioning of national parks, cattle driving outside of public roads and waterways and outside of specially designated places, timber rafting down the waterways and water bodies;
- holding mass sports and entertainment events, camping and setting fire outside of specially designated places;
- removal of items of historic and cultural value.

Based on the features of the area and its use, the following types can be identified amongst the existing national parks:

- National parks dominated by undisturbed or slightly disturbed landscapes and ecosystems, where mass visits for educational tourism and recreation are typical or expected to be typical;
- National parks dominated by undisturbed ecosystems that have very low numbers of visitors (usually due to relatively difficult access and vastness), where development of mass tourism and recreation is not expected to happen (or is not possible due to objective factors);
- National parks dominated by native, undisturbed or slightly disturbed landscapes and ecosystems, where indigenous and local population perform their traditional activities that do not lead to the transformation of landscapes and ecosystems;
- National parks dominated by mixed natural and cultural landscapes that were formed under a long-term influence of humans, including agricultural lands of traditional type that have historic and cultural value.

All national parks fully or almost fully meet IUCN criteria for protected areas, in their objectives of creation and management, features of the area and current regime.

NATURE PARKS

Nature parks are specially protected natural areas of regional significance divided into zones. Each zone has ecological, cultural or recreational purpose and the prohibitions and restrictions of economic and other activities are set accordingly.

Different regimes of special protection and use are set within nature parks depending on the ecological and recreational value of the natural areas. Therefore, the following **functional zones** can be established within nature parks:

- *conservation,*
- *recreational,*
- *agricultural,*
- *zones of protection of historic and cultural complexes and objects and others.*

Activities prohibited within nature parks include those that cause changes in the historically formed natural landscape, decline or destruction of environmental, aesthetical, and recreational qualities of nature parks, interruptions of the regime of maintenance of historic and cultural monuments. Activities causing decline in environmental, aesthetical, cultural and recreational value of the area may be prohibited within nature parks.

General objectives of nature parks are not defined in the Federal Law, but they are in fact similar to those of national parks as well as the features of their regime of special protection and functional zoning. Specific features of the zoning and regime of each nature park are defined in the statutory provision for that nature park approved by the government.

Similar to national parks, the existing nature parks are divided into several categories depending on the features of their territory and its use:

- Nature parks dominated by native, undisturbed or slightly disturbed landscapes and ecosystems;
- Nature parks dominated by native, undisturbed or slightly disturbed landscapes and ecosystems where indigenous and local populations perform their traditional activities that do not lead to the transformation of landscapes and ecosystems;

- Nature parks dominated by landscapes that were formed under a long-term influence of humans, including agricultural lands of traditional type that have historic and cultural value.

All nature parks fully or almost fully meet IUCN criteria for protected areas, in their objectives of creation and management, features of the area and current regime.

STATE NATURAL SANCTUARIES

State natural sanctuaries that can be of federal or regional significance are the areas (land or water) of particular importance to the conservation or restoration of natural complexes or their components and the maintenance of environmental balance.

State natural sanctuaries may fit different profiles such as:

- *complex (landscape)* – dedicated to the conservation and restoration of natural complexes (natural landscapes);
- *biological (botanic and zoological)* – dedicated to the conservation and restoration of rare and endangered species of plants and animals, including species that are valuable economically, scientifically and culturally;
- *paleontological* – dedicated to the preservation of fossil objects;
- *hydrological* (swamp, lake, river, marine) – dedicated to the conservation and restoration of valuable water objects and ecological systems;
- *geological* – devoted to the conservation of valuable objects and complexes of mineral nature.

The activities permanently or temporarily prohibited within the state natural sanctuaries include those that contradict the goals of their establishment or harm the existing natural complexes and their components.

The objectives and features of the special protection regime of a specific state natural reserve are defined in its statutory provision that is approved by the relevant governmental authorities. In the state natural reserves where small-in-numbers ethnic communities reside, the use

of natural resources is allowed in the forms that protect the traditional environment of those ethnic communities and preserve their traditional lifestyle.

Apart from their specialization (profile) and related regime of special protection, the existing sanctuaries of federal and regional significance are diverse in the general features of their area and specific objectives. Based on these criteria, the following six main types can be identified:

- Complex (landscape) and vast hydrological and geological sanctuaries where different ecosystems are represented and there is no permanent population;
- Complex (landscape) sanctuaries where different ecosystems are represented and small-in-numbers ethnic communities reside and follow traditional lifestyle;
- Biological (botanic and zoological) and hydrological sanctuaries that protect specific habitats and are aimed at the conservation and restoration of rare and endangered species of plants and animals, including economically, scientifically and culturally valuable species;
- Paleontological, geological and hydrological sanctuaries that protect specific geological and geomorphological or hydrological objects of small size;
- Game and ichthyological sanctuaries that protect natural habitats and are aimed mainly at the reproduction of biological (in particular, game and fisheries) resources;
- Zoological sanctuaries, with the area represented mainly by anthropogenic habitats (agricultural lands).

Sanctuaries of the first five types from the list above definitely meet general IUCN criteria for protected areas. However, the sanctuaries where the area has a predominantly anthropogenic character cannot be referred to those even though their objective is the conservation of wild populations of animals that use agricultural lands within the sanctuary at certain stages of their lifecycle.

NATURAL MONUMENTS

Natural monuments are unique and irreplaceable natural complexes and objects of natural and artificial origin that are valuable from environmental, scientific, cultural, and aesthetic perspectives.

Natural monuments can be represented by parts of land and water areas, as well as individual natural objects, including:

- parts of picturesque localities;
- reference areas of intact nature;
- areas dominated by cultural landscapes (old parks, alleys, canals, ancient mines, etc.);
- habitats of valuable, relict, rare and endangered species of plants and animals, including those at the limits of their range;
- woodlands and forest areas that are highly valuable for their characteristics (species composition, productivity, genetic qualities, stand structure, etc.) and represent examples of outstanding achievements of the forest science and management;
- small dendrological parks;
- natural objects that are important for maintaining hydrological regime;
- unique forms of topography and associated landscapes (mountains, groups of rocks, gorges, canyons, glacial cirques and trough valleys, morainy-boulder ridges, dunes, barchans, limestone pavements, groups of caves, giant ice overflows, hydrolaccolithes, etc.);
- geological outcrops of scientific value (key sections; stratotypes; outcrops of rare minerals, rocks, and fossil resources known in very limited numbers);
- geological and geomorphological polygons, including classic areas with particularly significant marks of seismic events, as well as findings of fault and fold features in rock structures;
- locations of rare or particularly valuable paleontological objects;
- parts of rivers, lakes, wetlands, reservoirs, marine areas, small rivers with their flood plains, lakes, reservoirs and ponds;
- natural hydro-mineral complexes;
- thermal springs, deposits of therapeutic mud;
- coastal features (spits, isthmuses, peninsulas, islands, coves, lagoons, etc.);

- individual objects of animate and inanimate nature (breeding grounds of birds, very old trees and trees of historic and memorial significance, plants of very unusual shape, single specimens of exotic and relict species, volcanos, hills, glaciers, boulders, waterfalls, geysers, springs, river heads, siphoning springs, rocks, cliffs, residual outcrops, areas of karst erosion, caves, rock niches, etc.).

Natural monuments can be of federal and regional significance. Any activity that can lead to the degradation of natural monuments is prohibited within the areas where the natural monuments are located, as well as within their buffer zones.

Existing natural monuments of **natural or mixed natural and man-made origin** can be grouped in three types that differ in the features of protected objects:

- Natural monuments represented by individual objects of either animate or inanimate nature, including those of sacral significance, or their groups and complexes covering small areas;
- Natural monuments represented by individual habitats of valuable, relict, rare and endangered species of plants and animals or separate parts of particularly valuable communities and ecosystems;
- Natural monuments of significant size providing for the conservation of holistic self-sustaining natural ecosystems and landscapes.

Apart from this, a significant part of existing natural monuments of both federal and regional significance is represented by the objects of artificial origin — historic homesteads, gardens and parks, artificial ponds and reservoirs, canals, woodland belts, forest plantations, including plantations of exotic species, etc.

Natural monuments of natural and mixed natural and man-made origin fully meet IUCN criteria for protected areas. Natural monuments of artificial origin do not meet these criteria neither for their area features nor for their goals and objectives and cannot be considered protected areas.

DENDROLOGICAL PARKS AND BOTANIC GARDENS

Dendrological parks and botanic gardens are specially protected natural areas created for assembling special collections of plants in order to conserve the flora and its diversity.

The objectives, scientific profile, features of legal status, organisational management and structure, features of the regime of special protection of a particular dendrological park and botanic garden are defined in their statutory provisions approved by the relevant governmental authorities that took the decisions to establish these entities. Any activity unrelated to achieving the objectives and causing disturbances in the preservation of the objects of flora is prohibited within dendrological parks and botanic gardens.

The area of dendrological parks and botanic gardens can be divided into different **functional zones**, including: *expositional* – that can be visited in accordance with the procedures set by relevant authorities managing dendrological parks and botanic gardens; *scientific and experimental* – that can be accessed only by scientific staff of dendrological parks, botanic gardens, and other scientific and research organisations; and *administrative*.

Two types of botanic gardens and dendrological parks can be identified based on the features of their area:

- Botanic gardens and dendrological parks absolutely dominated by artificial plantations;
- Botanic gardens that include significant areas of natural plant communities and only insignificant area of anthropogenically modified communities.

Botanic gardens and dendrological parks with absolute dominance of artificial plantations do not meet IUCN criteria for protected areas and cannot be identified as such. At the same time, botanic gardens that include significant representative areas of intact or slightly disturbed natural plant communities can be considered protected areas in accordance with the criteria in question.

* * *

This review shows that almost all categories of SPNAs established by the Federal Law «On Specially Protected Natural Areas» include areas that can have significant differences in their specific goals and objectives, features of main protected objects and their diversity, size, degree of degradation and transformation of natural ecosystems and landscapes, presence of population and use of the area for traditional activities, etc. Therefore, each category can be divided into several types meeting IUCN criteria for different categories of protected areas (see Part 3).

A vast majority of specially protected natural areas in the Russian Federation of federal, regional or local significance meet IUCN criteria for protected areas. The only exceptions are:

- *Sanctuaries dominated by features of anthropogenic origin;*
- *Natural monuments of artificial origin;*
- *Botanic gardens and dendrological parks with absolute dominance of artificial plantations.*

2.2 CATEGORIES OF PROTECTED AREAS AND SPECIAL PURPOSE AREAS DEFINED BY THE FEDERAL LEGISLATION OTHER THAN SPECIALLY PROTECTED NATURAL AREAS

Apart from specially protected natural areas, the federal legislation of the Russian Federation establishes a range of categories of protected areas and special purpose areas with provisions for prohibition or restriction of certain types of activities. Many of them may include undisturbed or slightly disturbed natural complexes and objects and (or) play a role in the conservation of natural and in particular biological diversity and provision of ecosystem services. Some of them meet IUCN definition of protected areas, despite their not having the SPNA status under the Russian legislation.

BUFFER ZONES OF SPECIALLY PROTECTED NATURAL AREAS

In accordance with the Federal Law of the Russian Federation «On Specially Protected Natural Areas», **buffer zones** are established in terrestrial and water areas adjacent to state natural reserves, national parks, nature parks and natural monuments in order to prevent negative human impact on specially protected natural areas.

In accordance with the «Rules of establishment of buffer zones of certain categories of specially protected natural areas, definition of their boundaries, definition of the regime of protection and use of land areas and water objects within such zones» (approved by the Decree of the Government of the Russian Federation dated 19 February 2015 No. 138), the following aspects need to be considered when defining the width and configuration of the buffer zone:

- natural and climatic conditions and socio-economic development of the region of the Russian Federation where the buffer zone is planned to be established;
- categories of land within the area where the buffer zone is planned to be established and their authorised usage;

- features of functional zoning of the national park or nature park;
- presence of settlements; industrial, transport and other objects of economic use; deposits and occurrences of mineral fossils; linear infrastructure and service lines; parts of land provided for homesteads, gardens, allotments, construction of garages and houses; graveyards; cattle mortuaries; landfill facilities for production, consumption, chemical, combustible, toxic, poisonous and contaminating waste; radioactive waste deposits, in the area;
- information about the types and purpose of planned objects of federal, regional, and local significance within the proposed buffer zone; their main characteristics as per spatial planning documents and types of potential negative impact on the environment. This information should also specify whether such objects require establishment of special purpose areas and their characteristics;
- Configuration of river catchments and shoreline of the water objects within the area proposed for the establishment of the buffer zone;
- Condition of the natural complexes and objects within the area proposed for the establishment of the buffer zone and their value.

The minimum width of the buffer zone of a state natural reserve or national park is one kilometer.

The regime of a buffer zone is defined in the statutory provision for the buffer zone of a particular state natural reserve, national park, nature park, or natural monument. The statutory provision needs to be approved by the government authority that took the decision about the establishment of the buffer zone. The activities prohibited within the buffer zone are those that impact natural complexes of the state natural reserve, national park, nature park or natural monument in a negative way. Permitted activities are carried out in compliance with regulations for the corresponding buffer zone and requirements to the prevention of wildlife mortality during industrial processes as well as during the exploitation of traffic arteries, pipelines, communication and electricity lines. Those regulations get approved in accordance with the Federal Law of the RF «On wildlife ».

In accordance with the aforementioned legal acts, buffer zones of SPNAs are created for the protection of the SPNA from unfavourable human impact, not for the preservation of the natural complexes and objects within their boundaries. However, in accordance with the same acts, the presence, condition, and value of such complexes and objects within the pro-

posed buffer zones need to be considered when defining the width and configuration of the buffer zone. Individual statutory provisions for the buffer zones of many SPNAs directly state the objectives for the conservation of natural complexes and objects, populations of certain species of plants and animals, key seasonal locations for certain species of animals, etc., within their boundaries. Therefore, in practice, many buffer zones implement their own conservation functions, in addition to the protection of SPNA, thus ensuring the conservation of natural complexes and objects within their own boundaries.

Based on the features of the area and its functions (as defined in the individual statutory provisions), buffer zones of specially protected natural areas can be divided in five main types:

- Buffer zones represented mainly by anthropogenic or significantly transformed areas that have only protective functions to SPNA;
- Buffer zones represented mainly by cultural landscapes where limited economic activity co-exists with the protection of certain natural complexes, habitats, populations, seasonal locations of certain species of animals, etc.;
- Relatively small buffer zones, mainly of a natural type – undisturbed or slightly disturbed areas, within which certain natural complexes and objects are being conserved;
- Vast buffer zones containing intact and almost unused areas where permanent population is absent or extremely low;
- Vast slightly disturbed buffer zones, within which indigenous or local population resides and maintains traditional activities.

Buffer zones of specially protected natural areas that perform only the functions of SPNA protection and contain mainly anthropogenic areas do not meet IUCN criteria for protected areas and cannot be seen as such. Buffer zones of other four types (see above) that perform their own conservation functions, alongside with protective ones, meet these criteria and should be considered protected areas.

BIOSPHERE POLYGONS OF STATE NATURAL BIOSPHERE RESERVES

In accordance with the Law «On Specially Protected Natural Areas», state natural reserves that are included in the international system of biosphere reserves have a status of *state natural biosphere reserves*. *In order to conduct scientific research, state environmental monitoring, as well as test and implement methods of sustainable nature use that do not destroy the environment and do not exhaust biological resources, biosphere polygons* may be attached to such reserves. Biosphere polygons may have differential regime of special protection and usage. In accordance with the decrees of the Government of the Russian Federation, *biosphere polygons may also be created on a part of the area of biosphere reserves*.

Any other legal definition of a biosphere reserve is absent from the current legislation. There is almost no regulation of the creation and use of biosphere polygons of state natural biosphere reserves. Only the «Rules of establishment of biosphere polygons within the state natural biosphere reserves» have been drafted by the Ministry of Natural Resources and Environment, but not yet approved. These rules specify the following conditions (criteria) to enable the establishment of biosphere polygons within biosphere reserves as a part of their existing area:

- need to conduct scientific research and state environmental monitoring, as well as test and implement methods of sustainable nature use that have a priority for the socio-economic development of the region within the relevant area of the biosphere reserve;
- ensuring environmental safety during the establishment of a biosphere polygon; preservation of natural landscapes of particular ecological, aesthetical, scientific and cultural value; biological diversity (including rare, endangered and economically and scientifically valuable objects of flora and fauna); as well as conservation of animal migration routes and areas of their permanent or temporary concentration, including breeding and wintering areas;
- meeting the requirements and commitments of the Russian Federation under the international treaties and agreements in the sphere of environmental protection, as well as the international Man and the Biosphere Programme;
- meeting the requirements of Article 103 of the Forest Code of the Russian Federation, in the part referring to the legal regime of the forests located within specially protected natural areas, including compliance

with the prohibition of total logging in the forests located within state natural reserves.

The specific regime of special protection of a biosphere polygon is defined in accordance with the statutory provision for the state natural biosphere reserve and then approved by the governmental authorities that are in charge of state biosphere reserves.

Construction of permanent facilities and related infrastructure is permitted on specially allocated parts of a biosphere polygon of a state biosphere reserve if they are needed for the activities required by the statutory provision for this polygon. The list of such construction objects is defined by the Government of the Russian Federation for each biosphere polygon of a state natural biosphere reserve.

Within the biosphere polygons, it is usually prohibited to:

- change the hydrological regime of the lands;
- disturb topsoil, outcrops of minerals and rocks;
- explore and exploit fossil resources;
- construct and place industrial and agricultural enterprises and their individual objects, construct buildings, roads and crossovers (except for permanent facilities and related infrastructure, construction of which may be permitted by the Government of the Russian Federation for each particular polygon);
- use mineral fertilisers;
- introduce living organisms with the purpose of their acclimatisation;
- contaminate the area with household and industrial waste;
- impact the area in other negative ways that can lead to the disruption of natural development of environmental processes.

Individual statutory provisions for biosphere polygons of state natural biosphere reserves permit their limited economic use. The following types of activities may be permitted within their boundaries:

- scientific and experimental works related to the study of human impact, as well as development of methods of protection and sustainable use of natural resources;
- limited use of flora (collection of plants, mushrooms, fruits, and other raw medicinal products) with scientific, experimental and economic purpose to test methods of sustainable nature use;
- hunting;

- fishing;
- environmental tourism;
- intermediate felling;
- harvesting of minor forest products;
- other types of limited economic use.

Besides, according to individual statutory provisions of state natural biosphere reserves, it is allowed to provide service allotments within their biosphere polygons. Those allotments are provided for individual home-stead use by protected area staff and other purposes that may disturb the topsoil: service hayfields, pasture lands for working and private horses, cattle, sheep and goats, and honey farms.

The existing biosphere polygons of state natural biosphere reserves differ in the ways of their gazetting (attachment to the reserve area or allocation within its boundaries, as discussed above); degree of degradation or transformation of their area (from mostly undisturbed and slightly disturbed to mainly degraded or transformed); and predominant types of permitted and performed activities (tourism and recreation, agriculture, traditional nature use, etc.).

Even though the conservation of natural diversity is not explicitly stated amongst the tasks of biosphere polygons, all permitted types of activities are only allowed within them on the condition of non-degradation of the environment and non-exhaustion of biological resources. Therefore, the biosphere polygons where undisturbed or slightly disturbed landscapes and ecosystems dominate can be considered protected areas according to the IUCN definition.

TERRITORIES OF TRADITIONAL NATURE USE (TTNU)

Territories of traditional nature use are established by the Federal Law dated 07 May 2001 No. 49-FZ «On the Territories of Traditional Nature Use of Indigenous Small-in-Numbers Peoples of the North, Siberia, and the Far East of the Russian Federation» where they are defined as *specialty protected areas established for traditional nature use and traditional lifestyle of indigenous peoples of the North, Siberia, and the Russian Far East.*

Traditional nature use means *historically developed ways of the use of wildlife, along with other natural resources, by the indigenous peoples of the North, Siberia and the Far East of the Russian Federation that ensure non-exhaustible ecosystem exploitation. Folkways of indigenous peoples* of the North, Siberia, and the Far East of the Russian Federation mean *the rules of traditional nature use and traditional lifestyle that have been historically developed and are broadly used by them.*

Territories of traditional nature use can be of either federal or regional significance. Particular features of the regime of each of them and regulations of traditional activities are defined in their **individual statutory provisions**. TTNU may have a status of *specially protected natural areas* of regional and local significance in some regions of the Russian Federation (the Republic of Sakha (Yakutia), Krasnoyarsk Territory, Sakhalin Region).

In accordance with the regional legislation and individual Statutory Provisions for different TTNUs, the main goals and objectives of the territories of traditional nature use are:

- ensuring protection of the original environment, traditional nature use, and traditional lifestyle of indigenous peoples;
- preservation and development of the unique culture of indigenous peoples;
- conservation of the natural environment and biological diversity as the basis for living and traditional activities of indigenous peoples, as well as conservation of particularly valuable natural complexes, objects, and recreational resources.

Also, TTNU objectives may include epy restoration of disturbed landscapes and natural objects of cultural heritage and environmental and ethnographic education of the population.

Natural resources may be used within the territories of traditional nature use by representatives of indigenous peoples and their communities in order to maintain their traditional lifestyle in compliance with the legislation of the Russian Federation and their folkways. People who do not belong to indigenous peoples but permanently reside within the territories of traditional nature use may use natural resources for individual needs if this does not violate the legal regime of the territories of traditional nature use. The use of natural resources within the territories of traditional nature use by individuals and organisations is allowed if it complies with the legal regime of the territories of traditional nature use.

In order to enable reindeer driving, animal watering, passages, water supply, construction and exploitation of electricity lines, communication- and pipelines, and other needs, easements over the lands within the territories of traditional nature use may be granted under the existing legislation if they comply with the legal regime of the territories of traditional nature use. Individual representatives of indigenous peoples and their communities have the right to use common fossil resources from within the territories of traditional nature use for private needs, free of charge.

The following areas may be present within the territories of traditional nature use:

- 1) *settlements*, including temporary settlements with unstable composition of the population, stationary dwellings, herd camps, camp sites of reindeer herders, hunters, and fishermen;
 - 2) *areas of land and water space used for traditional nature use and traditional lifestyle*, including reindeer pastures, hunting and other areas, parts of marine areas for fishing, areas for collection of wild plants;
 - 3) *objects of historic and cultural heritage*, including places of worship, locations of ancient settlements and ancestral burial grounds and other objects of cultural, historic and religious significance;
- as well as other parts of the territories of traditional nature use provided for by the legislation of the Russian Federation and legislation of the regions of the Russian Federation.

In accordance with the Federal Law, territories of traditional nature use are established to maintain traditional nature use and traditional lifestyle of indigenous small-in-numbers peoples and do not formally meet the IUCN definition of protected areas. However, regional legislation and individual statutory provisions for the existing TTNUs include conservation of the natural environment and biodiversity as the basis for traditional activities, along with the conservation of particularly valuable natural complexes and ecosystems, into TTNU objectives, which provides all grounds to consider TTNUs protected areas as complying with the IUCN definition.

WETLANDS OF INTERNATIONAL IMPORTANCE

The status of **wetlands of international importance** is assigned to relevant wetlands primarily in order to preserve waterbirds and optimise their habitats in different seasons of the year, and also to conserve biodiversity of wetland ecosystems and ensure their rational use.

There is no separate category of protected areas for wetlands in the federal legislation. Boundaries of wetlands, their goals, objectives, regimes of protection, lists of permitted and prohibited activities are defined in the **individual statutory provisions**. Most of wetlands of international importance established in the Russian Federation are included in the boundaries of specially protected natural areas, at least in part.

The main tasks of wetlands of international importance are:

- management of the wetland in order to optimise the habitat of water- and semiaquatic birds during all biological periods of their year cycle;
- protection of inhabiting waterfowl and wading birds and other wildlife;
- maintenance of the natural hydrological regime, running biotechnical procedures to improve the habitat of waterfowl and wading birds;
- conservation of high biological diversity of ecosystems, high productivity of birds and other animals, optimal growth of aquatic and coastal vegetation that is a feeding base and protective habitat for birds and other animals; maintenance of natural nesting, feeding and resting spots for birds and creation of artificial ones if needed;
- promotion of biological and conservation knowledge, improvement of awareness of the protection and significance of wetlands and their inhabiting animals.

Activities prohibited within wetlands include those that lead to radical changes in the environmental conditions and habitats of the waterfowl and their mortality, including changes in breeding, molting, wintering and resting sites on their migration routes.

Some regions of the Russian Federation have established a category of specially protected natural areas in their regional legislation — the wetlands, which may include recognised wetlands of international importance as well as other wetlands that do not have such status and are of national or regional importance.

Wetlands of international importance, in their objectives, functions, and features of the area, fully meet the IUCN criteria for protected areas.

MARINE MAMMAL PROTECTION AREAS, NO-FISHING AREAS

Legal definitions of these categories of areas and zones with special conditions of use are missing from the current legislation. They are established by the Rules of protection and exploitation of marine mammals and Rules of fisheries for each fishery management basin approved by the orders of the Ministry of Agriculture of the Russian Federation.

Marine mammal protection areas are coastal areas 2 to 12 miles wide (up to 30 miles in certain cases). Their maritime boundaries are measured from the line of the lowest tide both on the continent and around islands.

As a rule, the following activities are prohibited within the established marine mammal protection areas:

- presence of vessels (except for special purpose ships and vessels),
- use of horns and other signals, shooting,
- fishing, hunting marine mammals, and other types of harvesting aquatic resources;
- other economic activity,
- visits to rookeries by persons un-related to marine mammal protection without permission from the fisheries authorities.

Fishery regulations may establish exceptions from the aforementioned rules related to the possibility of fishing certain species of aquatic biological resources by certain types of vessels.

Most of **no-fishing areas** are coastal zones 2 to 30 miles in width, although in the Northern fishery management basin (the Barents Sea), this status was assigned to parts of the high sea remote from the coast. Prohibitions and restrictions set for these areas differ in:

- permanence (permanent or seasonal);
- list of species of aquatic biological resources prohibited for harvesting (from their totality to individual species of sea plants and animals);

- list of prohibited fishing gear and methods.

A variation of no-fishing areas are **no-trawling areas**.

No-fishing areas do not meet IUCN criteria for protected areas because, as a rule, they only restrict catch of certain species of marine bioresources and (or) use of particular types of fishing gear in the absence of any other limitations to other types of economic activity.

Only those marine mammal protection areas may be considered IUCN protected areas, that exclude catch of biological resources and other economic activity in addition to the prohibition of exploitation and disturbance of marine mammals.

FISHERIES PROTECTION ZONES AND FISHERIES RESERVE ZONES

The category of **fisheries protection zones** was established by the Federal Law dated 20 December 2004 No. 166-FZ «On the Fisheries and Conservation of Aquatic Biological Resources» and the Rules of Establishment of Fisheries Protection Zones approved by the Decree of the Government of the Russian Federation dated 6 October 2008 No. 734, according to which:

Fisheries protection zones are established in order to preserve the conditions for the reproduction of aquatic biological resources. They are located in the aquatic areas adjacent to the water areas where fishing takes place and a specific regime of economic and other activity is introduced within their area, along with a number of restrictions.

The width of fisheries protection zones of rivers and springs is defined from their source to the mouth. For rivers and springs up to 10 kilometres in length, it is 50 metres, 10 to 50 kilometres in length — 100 metres, over 50 kilometres — 200 metres. The width of fisheries protection zones of lakes, reservoirs, except for reservoirs located on a river or lakes located within a swamp, is 50 metres. The width of the fisheries protection zone of a reservoir located on a river equals the width of the fisheries protection zone of this river. The width of the fisheries protection zone of a sea is 500 metres. The width of fisheries protection zones of rivers, springs, lakes, and reservoirs of high fisheries value (feeding, wintering, spawn-

ing, and breeding areas of aquatic biological resources) is 200 metres. The width of fisheries protection zones of ponds and flooded quarries that have hydraulic connection with rivers, lakes, water reservoirs, and seas, is 50 metres.

Fisheries protection zones and restrictions to economic and other activity within them are set considering the value and composition of aquatic biological resources, their importance for fisheries, including for the needs of the local population.

The category of **fisheries reserve zones** was established by the Federal Law dated 20 December 2004 No. 166-FZ «On the Fisheries and Conservation of Aquatic Biological Resources» and the Rules of Establishment of Fisheries Reserve Zones approved by the Decree of the Government of the Russian Federation dated 12 August 2008 No. 603, according to which:

Water bodies of fisheries significance or their parts that have high importance for the conservation of aquatic bioresources of valuable species may be declared **fisheries reserve zones**. A fisheries reserve zone is a water body or its part with adjacent area, where a special regime of economic and other activity is set in order to conserve aquatic bioresources and create conditions for the development of aquaculture and fisheries.

Fisheries reserve zones may be established within the internal waters of the Russian Federation, including the internal seas of the Russian Federation, as well as in the territorial waters of the Russian Federation, on the continental shelf of the Russian Federation, and within the exclusive economic zone of the Russian Federation. Fisheries reserve zones cannot be created within state natural reserves, national parks, and state natural sanctuaries of federal significance.

Economic and other activity may be prohibited in full or in part, permanently or temporarily, within the fisheries reserve zones. The size, boundaries and necessity to create a fisheries reserve zone of high fisheries value (feeding, wintering, spawning and breeding sites of aquatic biological resources), as well as a special regime of economic and other activity within them are defined considering the value and composition of the aquatic biological resources including for the provision of the needs of local population. Data from the state monitoring of aquatic biological resources and scientific research related to aquatic biological resources are also taken into account.

Fisheries protection zones perform protective functions and are created to ensure favourable environmental conditions in the adjacent water bodies they protect rather than to conserve any natural complexes and objects within them. Therefore, they do not meet the IUCN definition of protected areas.

Fisheries reserve zones are created primarily for the conservation and reproduction of aquatic biological resources and enabling fisheries conditions and therefore do not formally meet the IUCN definition of protected areas. However, given that their tasks include the conservation of aquatic biore-sources that are a component of biodiversity, alongside with which the related aquatic ecosystems are conserved and the only permitted type of use is non-exhaustible extraction of water resources, they may be regarded as protected areas according to the IUCN definition.

PROTECTIVE FORESTS, SPECIAL PROTECTIVE FOREST BLOCKS, RESERVED FORESTS

The Forest Code of the Russian Federation defines three categories of forest areas with special regime of protection and use, outside of production forests: **protection forests**, **specially protected forest blocks**, and **reserve forests**.

Protection forests, in accordance with the Forest Code of the Russian Federation, are subject for development for the purpose of preserving their habitat-forming, water-protection, protective, sanitary, health and other useful functions, alongside with their exploitation under the condition that this exploitation is compatible with the designated purpose of protection forests and their useful functions.

Considering the features of the legal regime of protection forests, the Forest Code established their following categories:

- 1) *forests located within the specially protected natural areas;*
- 2) *forests located within the water protection zones;*
- 3) *forests performing protective functions to natural and other objects;*
- 4) *valuable forests.*

The first two categories are fully associated with protected areas, categories of which are established by other legal acts (Federal Law «On Specially Protected Natural Areas» and the Water Code of the Russian Federation, respectively).

Forests performing protective functions to natural and other objects, in turn, include:

- ***forests located in sanitary protection belts of water sources of drinking and household water supply***;
- ***protective forest belts*** located along railways of general use, federal motorways of general use and motorways of general use owned by the regions of the Russian Federation;
- ***green zones*** established in order to protect the population from harmful natural and industrial impact, conserve and improve the environment;
- ***park belts*** established to enable recreation of the population, conserve sanitary, health and aesthetical values of natural landscapes;
- ***city forests*** – forests located on the lands of urban and rural settlements;
- ***forests located in the districts of sanitary (mountain-sanitary) protection*** of therapeutic areas and resorts.

Activities prohibited in all these forests are those incompatible with their purpose and useful functions. In particular, clear felling of forest stands is prohibited except for the cases when selective felling does not ensure preservation of the purpose and useful functions of protective forests. Another exception is clear felling in the areas with special conditions of use, where relevant forests are located, if the regime of these areas provides for felling trees, shrubs, and lianas.

Activities prohibited in the park belts and city forests include the use of toxic chemicals for conservation and protection of the forests, including with scientific purpose; game management and related activities; agriculture; exploitation of mineral deposits; placement of permanent constructions, except for hydraulic engineering structures. The same restrictions are valid for the green zones, however, haying and honey farming are not prohibited, as well as placement of communication and electricity lines and underground pipelines. It is not allowed to change boundaries of the park zones, green zones, and city forests in a way that may lead to a decrease in their area.

The first and last categories from the above list define the forests situated within protected areas and special purpose areas. Their categories are defined by other legal acts — the Law «On the Sanitary and Epidemiological Wellbeing of the Population» and the Law «On the Natural Therapeutic Resources, Therapeutic Areas and Resorts» — and will be reviewed below.

All types of forests performing protective functions to natural and other objects may have the status of specially protected natural areas (mostly of local significance) in different regions of the Russian Federation, except only for the forests located within the sanitary protection belts of the sources of drinking and household water supply. Relevant regional legal acts and regulations define their additional primary functions — environmental protection, climate regulation, hygienic, sanitary, recreational and therapeutic functions, however, none of them are directly linked to the conservation of natural, including biological, diversity.

A separate type within the category of forests performing protective functions to natural and other objects are park belts that have conservation of natural landscapes amongst their objectives. In accordance with the Statutory Provision for the Functional Zoning of Park Belts, Size and Boundaries of Park Belts and Green Zones (Decree of the Government of the Russian Federation No. 50 dated 4 February 2011), the following functional zones can be established in such forest areas: *active leisure zone* (in the areas of highest recreational pressure in order to improve and upgrade them and form aesthetically valuable natural landscapes of heightened resilience) and *stroll zone* (in less visited areas of the park belt for the organisation of walking and hiking trails, collection and stocking of food and non-timber forest resources). In individual cases, a *restoration zone* may be established (in the parts of a park belt where forest stands died or their resilience significantly declined and long-term reforestation measures are needed), as well as a *wildlife resting zone* for conservation of wildlife habitats and ensuring optimal conditions for the life and breeding of wild birds and animals.

Valuable forests, in accordance with the Forest Code of the Russian Federation, are divided into:

- *state protective forest belts;*
- *anti-erosion forests;*
- *restricted access forest belts situated along water bodies;*
- *protective forest belts of spawning areas;*

- *nut harvesting zones;*
- *forest horticultural stands;*
- *forests located in the desert, semi-desert, forest steppe, and forest tundra zones, steppes, and mountains (including subtundra forests);*
- *pine belts;*
- *forests of scientific or historic significance.*

Placement of permanent constructions is prohibited in all valuable forests, except for linear infrastructure and hydroengineering constructions. Clear felling is also prohibited, except for the cases when selective felling does not ensure preservation of the purpose and useful functions of valuable forests, and also when clear felling is necessary to enable needed conditions for exploitation or the objects located within them.

Most of the types of valuable forests mentioned above are included in this category because they perform protective and habitat-forming functions including climate regulation and water protection. Alongside with this: *nut harvesting zones* and *forest horticultural zones* ensure sustainable and non-exhaustible use of natural resources conserving undisturbed and slightly disturbed forest ecosystems that sometimes cover quite vast areas; *anti-erosion forests* implement their key function of resisting the development of erosion processes also through the conservation of forest ecosystems; *forests located in the desert, semi-desert, forest steppe, and forest tundra zones, steppes, and mountains* play an important role in the maintenance of natural diversity ensuring preservation of relevant forest ecosystems that represent ecotones or intra- and extrazonal ecosystems; undisturbed pine belts play a similar role in the conservation of specific intrazonal ecosystems; some types of *forests of scientific and historic significance* may substantially contribute to the conservation of natural diversity, provided they are aboriginal and undisturbed or slightly disturbed.

Specially protected forest blocks, in accordance with the Forest Code of the Russian Federation, are parts of the forests that perform protective and other valuable environmental and social functions, where a special relevant regulation of forestry is enabled, in order to preserve them.

Specially protected forest blocks include:

- *coastal protection and soil protection forest blocks* located along water bodies and ravine slopes;
- *forest edges bordering on treeless areas;*

- *forest seed plantations, permanent forest seed plots and other seed farming facilities;*
- *forest preserve blocks* (these are usually well-preserved parts of typical aboriginal native forest ecosystems and unique forest formations);
- *forest blocks with unique and endemic plants;*
- *habitats of rare and endangered wild animals.*

Besides, there are other types of specially protected forest blocks, in particular:

- *small forest blocks located within treeless areas;*
- *forest belts in the mountains near the tree line;*
- *forest blocks that have anti-erosion importance* (located on easily weathered grounds; along the edges of cliffs, rockslides, and landslides; along the courses of avalanches and mudstreams; on steep mountain slopes; along the crests and catchment boundaries; on karst areas and around karst formations; on stone runs; on recultivated quarries and waste dumps);
- *forest blocks that are important for the preservation and replenishment of game resources* (around wood grouse mating places, on the banks of water bodies inhabited by beavers, etc.);
- *forest blocks of special economic significance* (nut harvesting, honey production, etc.);
- *forest blocks around mineral water sources that are used for therapeutic and health purpose or have prospective significance;*
- *forest blocks around sanatoriums, rest houses, boarding houses, tourist camps, etc.;*
- *forest blocks around settlements.*

Specially protected forest blocks can be selected in either production and reserved forests. Activities incompatible with their purpose and useful functions are prohibited within them. The following activities are prohibited within **forest reserve plots**:

- felling of forest stands,
- use of toxic chemicals for forest fire protection and pest management, including with scientific purpose;
- agriculture (including haying and honey farming);
- exploitation of mineral deposits;
- placement of permanent constructions.

The same restrictions apply in other types of specially protected forest blocks, although in a softer form: haying, honey farming, and selective felling are not prohibited.

Most of the types of specially protected forest blocks primarily perform *protective functions* and are designated to protect the areas and objects that adjacent to them or enclosed by them. Apart from this, some categories of specially protected forest blocks are designated for the preservation and reproduction of biological resources (*forest seed plots, nut harvesting and honey production plots, and game resource replenishment areas*) that is implemented (except for artificial forest seed plantations) through the protection of relevant forest ecosystems or their fragments. Finally, several types of specially protected forest blocks have the conservation of biological diversity as their main function. These are the *plots where relict and endemic species are present and habitats of rare and endangered wild animals*, as well as *forest reserve plots* that have the strictest regime of protection.

Reserve forests are those where logging is not planned for the next twenty years.

Aerial forest fire and pest management can be carried out in reserve forests. If the forest area has a shared boundary with settlements and infrastructure, fire safety measures and fire fighting can take place. The use of reserve forests without logging is allowed, as well as logging for geological exploration and stockpiling of wood by people for personal needs.

The category of **reserve forests** definitely **does not meet the IUCN criteria for protected areas**, primarily due to its temporary character.

A significant part of the types of **protection forests** and **specially protected forest blocks** outside SPNAs and other protected areas and special purpose areas set by different (other than the Forest Code) federal legislation perform purely protective (with regard to the adjacent areas and objects) and sanitary or recreational and health functions, which, in conjunction with the features of their regime of protection (in particular, unrestricted access), also **does not meet the IUCN criteria for protected areas**.

However, such categories of protective forests as **park belts** and such types of valuable forests as **nut harvesting zones, forest**

horticultural stands, anti-erosion forests, forests located in deserts, semi-deserts, forest steppe, forest tundra zones, steppes, mountains, pine belts and forests of scientific significance of aboriginal type can be seen as protected areas meeting the IUCN definition because they are intended for the conservation of forest ecosystems and can significantly contribute to the preservation of their diversity.

IUCN criteria for protected areas are even better met by specially protected forest blocks that have conservation and replenishment of biological resources among their functions, as well as direct preservation of biodiversity: natural forest seed plots, nut harvesting and honey production plots, areas of reproduction of game resources, areas where relict and endemic plants are present, habitats of rare and endangered wild animals, and forest preserve blocks.

CULTURAL HERITAGE SITES, HISTORIC AND CULTURAL RESERVES, MEMORIAL ESTATES AND CULTURAL HERITAGE PROTECTIVE ZONES

In accordance with the Federal Law No. 73-FZ dated 25 June 2002 «On the Cultural Heritage (Historic and Cultural Monuments) of Peoples of the Russian Federation»:

Cultural heritage site is an area occupied by the **object of cultural heritage** and (or) historically and functionally linked to it, being its inseparable part.

In accordance with the aforementioned Law, objects of cultural heritage are divided into:

- **monuments** — individual buildings and structures with their historically formed areas; memorial apartments; mausoleums; individual burial sites; objects of monumental art; objects of science and technology, including military ones; objects of archeological heritage;
- **ensembles** — clearly localised groups of isolated or connected monuments and buildings within their historically formed territories that have fortification, palatial, residential, social, administrative, trade, production, scientific, educational purpose. They may also include monuments and places of worship, including parts of historic street and settlement layouts that may be included in architectural ensembles; works

of landscape architecture and horticulture (gardens, parks, boulevards), necropolises; objects of archeological heritage;

- **attractions** — creations of humans or co-creations of humans and nature, including traditional localities of folk arts and crafts; centres of historic settlements or fragments of city planning and development; memorial places, cultural and natural landscapes associated with the history of peoples and other ethnic communities of the Russian Federation, historic (including military) events, lives of outstanding historic personalities; objects of archeological heritage; worship sites; burial grounds of victims of mass repressions; religious and historic places. Monuments and (or) ensembles may be located within an attraction.

Objects of cultural heritage are divided into objects of cultural heritage of federal, regional, and local significance.

Economic activities that do not contradict the requirements of preservation of an object of cultural heritage and enable the functioning of the object of cultural heritage in modern conditions are allowed within its area. Prohibited activities include the construction of permanent structures and any enlargement of the existing ones within the area of the monument or ensemble; earthworks, construction, reclamation and other works, with the exception of works to preserve the object of cultural heritage or its individual parts, preserve historic and architectural or natural environment of the object of cultural heritage. Permitted activities within an attraction are those to preserve the monuments and ensembles within it; construction of permanent structures to reconstruct the lost architectural environment; limited construction, master overhaul and reconstruction of permanent structures provided that the features of the attraction are preserved.

Subjects of protection of an **attraction** are its architectural, geological, landscape, three-dimensional, planning, architectural and stylistic characteristics, valuable elements of the built environment and landscaping, co-creations of humans and nature, objects of interest from architectural, historic, archeological, ethnological and ecological perspectives; functional purpose and memorial significance of the attraction. In order to ensure preservation of the attraction by the relevant authority, requirements for activities within the attraction are set, as well as restrictions of forest use and requirements for city planning regulations within the area of an attraction, including the requirements for permitted types of land and forest use.

If an **attraction** is a holistic historic and cultural complex that needs a special maintenance regime, this attraction may be declared a **historic and cultural reserve**. This decision may be taken on the basis of a historic and cultural expert assessment.

Historic and cultural reserves can be of federal, regional and local significance, and the decisions about their establishment, boundaries and maintenance regime are taken by the Government of the Russian Federation, governmental authorities of the regions of the Russian Federation, or local government authorities respectively.

In turn, historic and cultural reserves may be declared memorial estates or included in the existing ones, in accordance with the Federal Law No. 54-FZ dated 26 May 1996 «On the Museum Collections and Museums in the Russian Federation», according to which:

Memorial estate is a museum that has accompanying lands with attractions that make up historic and cultural reserves or ensembles.

State memorial estates are cultural establishments created to ensure preservation, restoration, study and public presentation of holistic historic and cultural and natural complexes, material and spiritual values in their historic, cultural and natural environments with scientific and explorative, cultural and educational, and touristic and recreational purposes.

State memorial estates differ in:

- *dominant museum function* — historic (historic and military), memorial, architectural and artistic, ethnographic, and archeological;
- *legal status of the area* — having defined boundaries of the area of the memorial estate; having defined boundaries of the area of historic and cultural monuments managed by the memorial estate, and defined boundaries of buffer zones of the monuments;
- *relation to complexes and objects of cultural and natural heritage* — including historic and cultural and natural complexes and objects or just historic and natural complexes and objects.

Alongside the activities performed by museums, a memorial estate ensures the preservation of the objects of cultural heritage under its responsibility and public access to them, as well as keeps, studies, and promotes those objects. A memorial estate also has the right to:

- undertake measures aimed at the conservation of historically formed types of activities within the boundaries of memorial estate (including maintenance of traditional lifestyle and nature use) performed in traditional ways that are typical for this area, folk trades and crafts;
- provide tour and information services, enable conditions for touristic activities;
- run nature conservation events.

A differentiated regime of special protection is established for the area of a state memorial estate that includes regulations of and restrictions on economic and other activities taking into account historic and cultural, natural and other features of the area of a state memorial estate. Any activity that may damage objects of cultural and natural heritage, historic, cultural, and natural environment and that is not aligned with the goals and objectives of the memorial estate is prohibited within its area.

Federal Law No. 73-FZ dated 25 June 2002 «On the Objects of Cultural Heritage (Historic and Cultural Monuments)» also specifies that:

In order to ensure preservation of the objects of cultural heritage in their historic environment, **cultural heritage protective zones** are established in adjacent areas.

The aforementioned law defines three types of cultural heritage buffer zones:

- **buffer zone** — area where a special regime of land use is established in order to ensure the preservation of cultural heritage in its historic landscape surrounding. This regime restricts economic activity and prohibits construction works, except for special measures aimed at the preservation and restoration of historic and architectural or natural environment of the cultural heritage.
- **zone of restricted real estate and economic activity** — area where a special regime of land use is established that restricts construction and economic activities and sets requirements for reconstruction of existing buildings and structures.
- **zone of protected natural landscape** — area where a land use regime is established that prohibits or restricts economic activity, construction and reconstruction of existing buildings and structures in order to preserve (restore) the natural landscape, including river valleys, water bodies, forests, and open spaces linked aesthetically with the objects of cultural heritage.

In order to ensure simultaneous preservation of several objects of cultural heritage in their historic environment, it is allowed to establish a common buffer zone for these objects of cultural heritage, a common zone of restricted real estate and economic activity, and a common zone of protected natural landscape (**joint cultural heritage protection zone**).

As a whole, the categories of **cultural heritage sites** and **cultural heritage protective zones** cannot be seen as **IUCN protected areas** because their main task is the preservation of cultural, not natural, heritage, and the area in most cases has a cultural (man-made) profile. At the same time, **historic and cultural reserves and memorial estates that include sufficiently representative natural and (or) mixed natural and cultural areas**, conservation of which is one of their tasks, **mainly meet the IUCN criteria for protected areas**. The same is true of the **zones of protected natural landscape and cultural heritage buffer zones that include representative natural or mixed natural and cultural areas**.

DISTRICTS OF SANITARY (MOUNTAIN-SANITARY) PROTECTION OF THERAPEUTIC AREAS AND RESORTS

In accordance with the Federal Law No. 26-FZ dated 23 February 1995 «On Natural Therapeutic Resources, Therapeutic Areas and Resorts»:

District of sanitary (mountain-sanitary) protection is a specially protected area with an established regime of economic activities, residency, ecosystem exploitation that ensures the protection and preservation of natural therapeutic resources and the therapeutic area with its adjacent areas from pollution and premature depletion.

Districts of mountain-sanitary protection are set for therapeutic areas and resorts where natural therapeutic resources are subsoil (mineral water, therapeutic mud and others), in other cases these are districts of sanitary protection. Outer boundary of a district of sanitary (mountain-sanitary) protection is a boundary of a therapeutic area, resort, resort region. The Law provides the following definitions:

- **therapeutic area** — an area that has natural therapeutic resources and is suitable for treatment and prophylaxis of diseases, as well as for public recreation;

- **resort** — a developed and specially protected area used for therapy and prophylaxis that contains natural therapeutic resources as well as buildings and structures needed for their exploitation including objects of infrastructure;
- **resort region** — an area that includes several closely located resorts united in a common district of sanitary (mountain-sanitary) protection.

Resorts can be of federal, regional and local significance and governed by federal, regional and local authorities respectively.

There are up to three zones within a district of sanitary (mountain-sanitary) protection:

- Residences and all types of economic activities are prohibited within the *first zone*, except for works related to research and use of natural therapeutic resources with therapeutic or healthful purpose, on the condition of use of clean and rational technologies;
- Within the *second zone*, it is prohibited to construct buildings and structures unrelated directly to the establishment and development of resort therapies and recreation, as well as carry out any works that pollute the environment and natural therapeutic resources and lead to their depletion.
- Within the *third zone*, there are restrictions on the placement of industrial and agricultural enterprises and constructions, as well as on economic activities that lead to the pollution of the environment and natural therapeutic resources and their depletion.

Therapeutic areas and resorts used to be a category of specially protected natural areas under the Federal Law «On Specially Protected Natural Areas». At present, they have a status of specially protected natural areas of regional and local significance in some regions of the Russian Federation.

The purpose of the **districts of sanitary (mountain-sanitary) protection** is the preservation of natural therapeutic resources, including those related to subsoil (mineral water, mud) rather than natural diversity as such. Therefore, following the IUCN definition, they **cannot be considered protected areas**, although in some cases they may play a significant role in the conservation of certain natural and mixed natural and cultural complexes and their individual components.

GAME AREAS AND GAME RESOURCE PROTECTION AREAS

Game areas are the *lands whose legal regime allows activities in the field of game management*. They are divided in **general access game areas**, where individuals are allowed to hunt, and **private access game areas** used by organisations and solo traders on the grounds specified in the Federal Law No. 209-FZ dated 24 July 2009 «On Hunting and Preservation of Game Resources and on Amendments to Individual Legal Acts of the Russian Federation».

In accordance with the same law, the Forest Code of the Russian Federation and other federal laws, specially protected forest blocks and other **game resource protection areas** are established within both general and private access game areas. They are dedicated to the conservation and reproduction of game resources and their habitats and restrictions on hunting are set within their boundaries.

In general, a **game resource protection area** is a part of a game area with a special regime that is needed for lifecycles of game resources (feeding, rest, breeding, growing offsprings) and is of **local significance**.

Statutory provisions for game resource protection areas are approved by decrees of the governments of the regions of the Russian Federation.

The standards, periods and ways of hunting are regulated within the game resource protection areas. Certain types of hunting and economic activities may be prohibited. The main objectives of game resource protection areas are:

- protection of the habitat, migration routes and areas of seasonal concentration, conservation and reproduction of game resources;
- mitigation of negative human impact on the fauna through increasing protective features of their habitat;
- conservation of the diversity of species of game resources;
- increase in productivity of game resources;
- conservation and restoration of natural habitat of game resources.

Prohibited activities within the game resource protection areas are:

- economic, amateur and sports hunting;

- presence and movement of snowmobiles in the winter season, except for snowmobiles needed for area protection and biotechnical works;
- vegetation burns;
- dog training;
- storage and use of pesticides, fertilisers, chemicals, lubricants, fuel and other substances that are dangerous to game resources and their habitat.

Activities that are allowed within game resource protection areas include:

- biotechnical, protective, counting and other works aimed at conservation and increase in numbers of game resources and improvement of their habitat;
- scientific and research works in protection, reproduction, rational use and census of game resources;
- works aimed at forest fire and pest protection and forest reproduction;
- hunting in order to regulate the numbers of game resources;
- hunting for scientific, research and educational activities;
- hunting in order to acclimatise, relocate and hybridise game resources;
- hunting in order to keep and breed game resources in open enclosures or in artificially created habitats.

In several regions of the Russian Federation game resource protection areas are often called *reproduction areas* or *reproduction zones*. In accordance with their legislation, **non-disturbance zones** can be established within such areas where additional restrictions apply on visitation, industrial activities, use of roads, pipelines, communication and electricity lines. These zones are dedicated to the preservation of favourable environment for game resources and are established in their breeding, feeding and nursing areas.

In general, both public and restricted-access **game areas** and **hunting estates** established within them do not meet IUCN criteria for protected areas. Even though the area is predominantly natural or mixed natural and cultural and has obvious significance for conservation of natural complexes and populations of different species, they are created for the exploitation of game resources. However, game resource protection areas created within game areas **may be considered protected areas** according to the

IUCN definition because their objectives include the conservation of game species diversity that is components of biodiversity and conservation and restoration of their habitats, while the exploitation of game resources is prohibited within them.

NATURAL PASTURES

Natural pastures are areas on agricultural lands where natural vegetation is suitable for year-round or seasonal grazing. These areas are assigned to particular land users.

The largest portion of this type of lands in the Russian Federation is covered by **reindeer pastures**, while the size of **high-altitude seasonal pastures** is also significant. Both are natural areas used for traditional types of land use. Users of natural pastures are obliged to utilise them in accordance with the main purpose and in the ways that will not damage them as a natural object. They must not allow the number of grazing animals to exceed pasture capacity and cause the related decrease and destruction of vegetation cover.

Natural pastures may be important for the conservation of natural diversity of tundra, forest-tundra and high-altitude regions and have little factual difference from territories of traditional nature use. However, their main objective is an economic activity based on the use of natural resources, while the conservation of natural diversity (except for forage resources) is not among their objectives. These pastures are also not protected from exploration and exploitation of mineral resources, development of transport infrastructure, etc., therefore, they **cannot be considered IUCN protected areas**. At the same time, they can be valuable elements of an econet.

WATER PROTECTION ZONES AND COASTAL PROTECTION BELTS, SPECIALLY PROTECTED WATER BODIES, FLOODED AND FLOODING AREAS

There are several categories of protected areas and special purpose areas defined by the Water Code of the Russian Federation:

Water protection zones are areas adjacent to the coastline of seas, rivers, springs, canals, lakes, reservoirs where a special regime of economic and other activities is established in order to prevent pollution, clogging and muddying of the aforementioned water bodies and depletion of their waters, as well as to conserve habitats of aquatic biological resources and other objects of fauna and flora.

Coastal protection belts are established within the water protection zones, and additional restrictions on economic and other activities are introduced within them.

Outside of cities and other settlements the width of water protection zones and coastal protection belts of rivers, springs, canals, lakes and reservoirs is defined from the corresponding shoreline, the width of water protection zone and coastal protection belt of seas is defined from the line of high tide.

The width of *water protection zones of rivers or springs* is set from their source. For rivers and springs up to 10 kilometres long, it is 50 metres; 10 to 50 kilometres — 100 metres; over 50 kilometres — 200 metres. For rivers and springs less than 10 kilometres from source to mouth the water protection zone coincides with the coastal protection belt. The radius of a water protection zone at the sources of a river or a spring is set at 50 metres.

The width of *water protection zones of lakes and reservoirs* (except for lakes located within swamps and lakes and reservoirs with surface area less than 0.5 square kilometres) is 50 metres. The width of the water protection zone of a lake situated on a river equals the width of the water protection zone of this river. The boundaries of the *Lake Baikal water protection zone* are set in accordance with the Federal Law No. 94-FZ dated 1 May 1999 «On protection of Lake Baikal». The width of the water protection zone of a sea is 500 metres.

The width of the coastal protection belt depends on the slope of the water body and is 30 metres for reverse or zero slope, 40 metres for a slope of up to three degrees and 50 metres for a slope of three and more degrees. For lakes within swamps and related water streams the width of the coastal protection belt is 50 metres. The width of the coastal protection belt of a river, lake or reservoir of *special fisheries value* (spawning, feeding and wintering sites of fish and other aquatic biological resources) is 200 metres regardless of the slope of the adjacent land.

The following activities are prohibited within the water protection zones:

- use of sewage waters to regulate fertility of soils;
- placement of graveyards, cattle burial sites, dump points for industrial and domestic waste, chemical, explosive, toxic, poisoning and harmful substances, radioactive waste burial facilities;
- aerial pest control activities;
- operation and parking of motor vehicles (except for special vehicles);
- placement of fuel stations, lubricant and fuel warehouses, service stations and car washes;
- placement of specialised storages of pesticides and agricultural chemicals, use of pesticides and agricultural chemicals;
- discharge of sewage waters, including drainage;
- exploration and exploitation of general mineral deposits.

It is allowed within water protection areas to design, construct, reconstruct, start and exploit industrial and other objects on the condition of equipping such objects with structures ensuring protection of water bodies from pollution, clogging, muddying and water depletion in accordance with the water legislation and the legislation in the sphere of environmental protection.

Alongside with the aforementioned restrictions, the following are prohibited within coastal protection belts:

- ploughing;
- dumping of eroded topsoil;
- grazing farm animals and organising summer campsites and baths for cattle.

In some regions of the Russian Federation water protection zones have a status of *specially protected natural areas* of local significance.

Apart from water protection zones, in accordance with the Water Code of the Russian Federation, **flooding areas can be established**, where the following are prohibited: use of sewage waters to regulate fertility of soils; placement of graveyards, cattle burial sites, dump points for industrial and domestic waste, chemical, explosive, toxic, poisoning and harmful substances, radioactive waste burial sites; aerial pest control activities.

Moreover, in accordance with the Water Code of the Russian Federation, water bodies or their parts of particular conservational, scientific, cultural,

aesthetical, recreational and healthful significance may be recognised as **specially protected water bodies**. However, their status, regime of special protection and boundaries are set in accordance with the legislation of the Russian Federation on specially protected natural areas and cultural heritage. In other words, specially protected water bodies actually do not represent a separate category of protected areas.

Specially protected water bodies are not a special category of protected areas, and their relation to protected areas according to the IUCN definition is defined by the exact status granted to an individual specially protected water body.

Flooding areas also do not meet IUCN criteria for protected areas, neither in objectives, nor in their established regime.

Water protection zones are created for the protection of water bodies, on the shores of which they are located, not for the protection of their own area where natural communities and ecosystems may be represented and where the species in need of protection live, therefore, they **are not protected areas** according to the IUCN definition. However, there can be exceptions for some water protection zones in certain regions of the Russian Federation that have an SPNA status and whose objectives, according to the regional legislation, include the conservation of biological diversity within their boundaries (see below).

ZONES OF SANITARY PROTECTION OF DRINKING AND HOUSEHOLD WATER SOURCES AND SANITARY BUFFER ZONES

In accordance with the Federal Law #52-FZ of 30/03/1999 «On Sanitary and Epidemiological Wellbeing of the Population», **zones of sanitary protection** are established for water bodies used for drinking and household water supply where activities and allocation of lands for construction of residential, industrial and agricultural properties are prohibited or restricted.

In order to ensure public safety and in compliance with the same law, **buffer zones**, special areas with a particular regime of use, are established around sites and industrial enterprises affecting the environment and human health. The size of this zone enables to decrease the impact

of air pollution (chemical, biological, physical) to the limits set by sanitary regulations. For the enterprises of the 1st and 2nd danger classes this decrease can be either to the limits set by sanitary regulations or to the acceptable levels of human health risk. By its functional purpose, a buffer zone is a protective barrier that ensures certain level of public safety when the enterprise is operated in a normal regime.

Buffer zones do not meet IUCN criteria for protected areas in their tasks and performed functions and, in many cases, in the type and condition of the area.

Zones of sanitary protection of drinking and household water sources are established for the protection of water bodies and their tasks do not include preservation of any natural objects within their boundaries. Thus, they also **do not meet the IUCN definition of protected areas** even though they may play certain roles in the conservation of natural diversity.

NO-GO MARINE AREAS AND AREAS TEMPORARILY DANGEROUS FOR NAVIGATION

In accordance with Federal Law No. 155-FZ dated 31 July 1998 «On Internal Waters, Territorial Waters and Contiguous Zone of the Russian Federation», in order to ensure safety of navigation, protect national interests of the Russian Federation and **protect the environment, no-go marine areas and areas temporarily dangerous for navigation** can be established within the internal and territorial waters where the following activities are either fully prohibited or temporarily restricted:

- navigation and anchoring,
- hunting marine mammals,
- fishing with bottom fishing gear,
- underwater or dredging works,
- sampling of the ground, underwater explosions,
- navigation with anchor chain veered away,
- overflies, hovering and water landing of aircrafts,
- other activities.

Movement of any vessels, warships, other government ships and any other floating devices is forbidden in the **no-go marine areas**. Decisions about establishment of no-go marine areas and their opening for navigation as well as the rules for such areas are taken by a federal state authority authorised by the Government of the Russian Federation upon request from the interested federal state authority.

Areas temporarily closed for navigation are established for a certain period. Decisions on the establishment of areas temporarily dangerous for navigation and the rules for such areas are taken by the federal executive defense authority.

Due to their objectives and temporary nature, **areas temporarily dangerous for navigation** are obviously **not IUCN protected areas**.

Whether the **no-go marine areas** are protected areas is defined by the aims of their establishment and the prohibitions and restrictions set for them. In the cases when such areas are established to conserve biological resources, marine ecosystems, etc., and there are restrictions to the main types of activities that may negatively impact marine ecosystems, they may be recognised as **meeting the IUCN criteria for protected areas**.

BUFFER ZONES OF INDUSTRIAL AND TRANSPORT FACILITIES

Such zones are established to ensure safe functioning of industrial and transport facilities, prevent damage to the lives and health of the public, the assets of organisations and individuals and environmental damage. Prohibitions and restrictions on different types of activities may be imposed within buffer zones if such activities can disrupt safe operation of the protected facilities, including lead to their damage or destruction. They include several categories established by different legal acts:

Buffer zones of power grid facilities are defined by the Decree of the Government of the Russian Federation No. 160 dated 24 February 2009 «On the Order of Establishment of Buffer Zones of Power Line Facilities and Special Conditions of Use of Lands Located within Such Zones» and are established:

- a) along air power lines (from 2 to 55 metres on each side of the line depending on its rated voltage class);
- b) along underground power lines — as a part of land surface and subsoil under it (1 metre both sides);
- c) along underwater power lines (100 metres both sides);
- d) along crossings of air power lines over water bodies (100 metres both sides for navigable water bodies);
- e) around power substations (from 2 to 55 metres from the fence).

It is prohibited to carry out any activities within buffer zones of power grid facilities which can disrupt safe operation of the facilities, including those that may lead to their damage or destruction and (or) harm the lives and health of the public and the assets of individuals and organisations, as well as lead to environmental damage and cause fires.

Buffer zones of electric power production facilities are defined by the Decree of the Government of the Russian Federation No. 1033 dated 18 November 2013 «On the Order of Establishment of Buffer Zones of Electric Power Production Facilities and Special Conditions of Use of Lands Located within Such Zones». They are established along the border of the land area allocated for placement of the electric power production facility:

- at 50 metres — for facilities of high category of danger,
- at 30 metres — for facilities of medium category of danger,
- at 10 metres — for facilities of low category of danger and those that do not have a defined category of danger under the existing legislation.

Buffer zones are also established along underground linear hydroengineering structures (diversion tunnels, etc.) at 30 metres from the outer edge of the hydroengineering structure.

Prohibitions on actions that may disrupt safe operation of the facilities are imposed within the buffer zone, including those actions that may lead to their damage and destruction and (or) cause harm to lives and health of the public and the assets of individuals and organisations, as well as cause environmental damage, fires and emergencies.

Buffer zones of trunk pipelines are defined by the Rules of protection of trunk pipelines, approved by the Ministry of Energy on 29 April 1992, and the Decree of the State Mining and Technical Supervision Authority of Russia No. 9 dated 22 April 1992, according to which buffer

zones are established to exclude a possibility of damage to a pipeline (in any form of its placement):

- a) along pipelines transporting oil, natural gas, oil products, oil and artificial hydrocarbon gases — as a part of land restricted by notional lines located at 25 metres from the centre of the pipeline on each side;
- b) along pipelines transporting liquid hydrocarbon gases, unstable petrol and condensate — as a part of land restricted by notional lines located at 100 metres from the centre of the pipeline on each side;
- c) along multiline pipelines — as a part of land restricted by notional lines located at the aforementioned distances from the centres of the outer pipelines;
- d) along underwater crossings — as a part of water column from water surface to the bottom, restricted by parallel planes located at 100 metres from the centres of the outer pipelines from each side;
- e) around containers for retaining and degassing of condensate, earth storages for emergency discharge of the product — as a part of land restricted by a closed line located at 50 metres away from all sides from the boundaries of the area of the aforementioned facilities;
- f) around technological facilities to prepare products for transportation, head and transitional conveying and loading pump stations, reservoir parks, compressor and gas-distributing stations, nodes of product measurement, loading and unloading trestles, stations of underground storage of gas, sites of oil and oil product warming — as a part of land restricted by a closed line located at 100 metres away from all sides from the boundaries of the aforementioned facilities.

Any activity that may disrupt normal exploitation of the pipelines or lead to their damage is prohibited within the buffer zones of trunk pipelines.

Buffer zones of gas distribution networks are established in accordance with the Rules of protection of gas distribution networks approved by the Decree of the Government of the Russian Federation dated 20 November 2000:

- a) along surface gas pipelines — as an area restricted by notional lines at 2 metres from each side of the gas pipeline;
- b) along underground gas pipelines made of polyethylene pipes with the use of copper wire to indicate the gas pipeline route — as an area restricted by notional lines located at 3 metres from the wire side and 2 metres from the opposite side;

- c) along surface gas pipelines on permafrost grounds regardless of the pipe material — as an area restricted by notional lines located at 10 metres from the boundaries of these structures;
- d) around detached gas regulation sites — as an area restricted by a closed line located at 10 metres from the boundaries of these structures;
- e) along underwater crossings of gas pipelines over navigable and rafting rivers, lakes, reservoirs, canals — as a part of the water column from the water surface to the bottom enclosed between two parallel planes located at 100 metres each side of the gas pipeline;
- f) along inter-town gas pipelines running through forests and woodland — as clearings 6 metres wide, 3 metres on each side of the gas pipeline.

All activities that may disrupt normal exploitation of gas pipelines or cause their damage are prohibited within buffer zones of gas distribution networks.

Railway buffer zones are established in accordance with the Federal Law «On Railway Transport in the Russian Federation» in order to ensure safe exploitation of railways and other objects of railroad transport, as well as safety of the public, railroad transport workers and passengers in the places susceptible to landslides, rockslides, washouts, mudflows and other negative impacts, and on speed train routes. Railway buffer zones are the areas that adjoin both sides of the railroad where a special regime of use of lands is established to ensure preservation, strength and stability of the objects of railroad transport, including those in the areas with movable soil and in the areas susceptible to snow and sand drifts and other negative impacts. Boundaries of railway buffer zones may be established if rail tracks are located in:

- a) places susceptible to avalanches, landslides, washaways, mudflows, gullying, karstification and other dangerous geological impacts;
- b) areas of shifting sand;
- c) forests that function as protective forest cover, including in river floodplains and along surface water bodies;
- d) forests where clear felling may impact the stability of mountain and hill slopes and cause landslides, rockslides, gullying, mudflows and avalanches, or affect preservation, strength and stability of rail tracks.

The following restrictions may be imposed within railway buffer zones to ensure safety of movement and operation of railroad transport: con-

struction of capital buildings and structures, establishment of temporary roads, felling of tree and bush vegetation, removal of top soil, land tilling, grazing, discharge of surface and household waters.

Buffer zones of communication and radio lines and constructions are defined by the Rules of Protection of Communication Lines and Constructions approved by the Decree of the Government of the Russian Federation No. 578 dated 9 June 1995, according to which buffer zones with special conditions of use are established for cable and aerial lines and radio lines:

- a) for underground cable and aerial connection and radio lines located outside of settlements in treeless areas — as parts of land along these lines, defined by parallel straight lines, located at least 2 metres from each side of underground cable route or outer wires of aerial communication and radio lines;
- b) for sea cable communication lines and connection cable at crossings over navigable and rafting rivers, lakes, reservoirs and canals (aqueducts) — as parts of the water column from the water surface to the bottom defined by parallel planes located at least 0.25 nautical mile from each side of sea cable routes or 100 metres from each side from cable routes crossing rivers, lakes, reservoirs and canals (aqueducts);
- c) for ground and underground autonomous amplification and regeneration points on cable communication lines — as parts of land defined by a closed line located at least 3 metres from the centre of the amplification and regeneration points or from the boundaries of their rigging, or at least 2 metres from their earth circuits.

Buffer zones of hydroengineering structures are created to ensure safe and accident-free functioning and safe exploitation of hydroengineering structures, including dams, buildings of hydroelectric stations, spillway, drain and outlet constructions, shipping locks and shiplifts and other hydroengineering constructions as parts of hydroelectric complexes in accordance with the Rules of establishment of buffer zones for hydroengineering structures approved by the Decree of the Government of the Russian Federation No. 884 dated 6 September 2012.

Buffer zones are established in relation to operational hydroengineering structures, and those under construction, in the water bodies adjoining hydroengineering complexes, including parts of water bodies in the top and bottom pools of hydroelectric complexes, on parts of the shoreline (including on parts that adjoin hydroelectric complexes), parts of the floodway.

Buffer zones are created along the dam of the hydroengineering structure in the water column from the water surface to the bottom between shorelines with normal backup water level in the top pool and multiyear average water level in the ice-free period, – in the bottom pool, restricted by vertical planes set at the following distances from the axis of the water-retaining construction: a) for objects of high category of danger – 500 metres in the top and bottom pools of the hydroelectric complex; b) for objects of medium category of danger – 350 metres in the top and bottom pools of the hydroelectric complex; c) for objects of low category of danger – 200 metres in the top and bottom pools of the hydroelectric complex.

Any use of water bodies (water use) in the buffer zones is subject to compulsory approval by the operator of the hydroengineering structure.

Objectives of **buffer zones of industrial and transport facilities** do not include conservation of any natural objects and processes within their boundaries, and their size and configuration hinder this. Therefore, they also **do not meet IUCN criteria for protected areas**, although such categories of them as buffer zones of railways, trunk pipelines, etc., considering mainly natural profile of their area, may play a certain role in the conservation of biodiversity, acting as ecological corridors, especially in the regions dominated by anthropogenically transformed landscapes.

BUFFER ZONES OF STATIONARY POINTS OF ENVIRONMENTAL MONITORING

In accordance with the Federal Law «On Hydrometeorological Service», in order to receive reliable information about the conditions of the environment and its pollution around stationary points of environmental monitoring, **buffer zones** are created, where restrictions on economic activity are imposed.

A stationary point of environmental monitoring is a complex that includes a part of land or water body with instruments and equipment to measure characteristics of the natural environment and its pollution set within them.

Buffer zones are parts of land or water bodies delineated by a notional closed line located at 200 metres in all directions from the boundaries

of these points. The size and boundaries of stationary points of environmental monitoring are defined depending on the location's topography and other conditions.

Restrictions within buffer zones are imposed on economic activities that may affect reliability of information about conditions of the environment and its pollution.

In their objectives and functions **buffer zones of stationary points of environmental monitoring do not meet IUCN definition of protected areas.**

BUFFER ZONES OF GEODETIC CONTROL POINTS

In accordance with the Decree of the Government of the Russian Federation No. 1170 dated 7 October 1996 «On Approval of the Statutory Provisions for Buffer Zones and Protection of Geodetic Control Points in the Russian Federation», a buffer zone of a geodetic control point is a part of land where a geodetic control point is located and a land belt 1 metre wide adjoining outer boundary of the point. A boundary of a geodetic control point is its external shaping, such as a trench or a bar, in case there is none, it is a base of the external sign.

Activities prohibited within a buffer zone of a geodetic control point without a permission from territorial branches of the Federal Service of Geodesy and Cartography of Russia are those that may cause damage or destruction of the external sign, change location of a special centre or create obstacles to use the geodetic control point for its purpose and disrupt access to it.

Organisations that use geodetic control points in their work provide information about the condition of these points to the territorial branches of the Federal Service of Geodesy and Cartography of Russia.

In their objectives and functions **buffer zones of geodetic control points do not meet the IUCN definition of protected areas** and cannot play a noticeable role in conservation of natural diversity due to their very limited size.

BUFFER ZONES OF RADIOACTIVE AND CHEMICALLY POLLUTED LANDS

In accordance with the Land Code of the Russian Federation, lands that were radioactive and chemically polluted and where products meeting legally set requirements are not produced are subject to restrictions in use, exclusion from the category of agricultural lands and may be converted into the category of reserve lands for their full decommissioning. Production and distribution of agricultural products are prohibited on such lands.

Buffer zones are established on polluted lands that are set for transition into reserve lands for decommissioning, or on polluted lands used for original purpose with establishment of certain restrictions on their use and regime of economic and other activity, in order to prevent any impacts of negative factors on human health and the environment and protect capital assets.

The goals of establishment of **buffer zones of radioactive and chemically polluted lands** are to prevent the impacts of negative factors on the public and are not in any way linked to the conservation of natural diversity, therefore, these zones **do not meet the definition of protected areas**.

ZONES OF RESTRICTED FACILITIES

In accordance with the Rules of Defining Boundaries of Zones of Restricted Facilities and Approval of Construction Regulations for such Zones approved by the Decree of the Government of the Russian Federation No. 384 dated 20 June 2006, a zone of restricted facilities is a land or water area where in accordance with the federal legislation special conditions of its use are introduced. Restricted facilities are buildings, structures, adjoining land and water parcels, land territories and water bodies, the protection of which is carried out by the state protection authorities in order to ensure security of the objects of state protection; buildings, structures operated by the state protection authorities and land parcels in permanent (indefinite) use of the state protection authorities.

The goals of creation of zones of restricted facilities are to ensure security of the objects of state protection and carry out their protection. The size of

the zone of restricted facilities and its boundaries are defined considering the size of land area where the restricted facilities are located, patterns of construction of the land area and around it, the location's topography and other conditions ensuring security of the restricted facilities. The distance from the boundaries of the land area where restricted facilities are located to the boundaries of the said zone should not exceed 1 kilometre.

In separate cases, **zones of restricted facilities** may play a role in the preservation of natural diversity, but they are established with totally different goals and **do not meet the IUCN definition of protected areas**.

NEAR-AERODROME AREAS

According to the Federal Rules of the Use of Airspace of the Russian Federation approved by the Decree of the Government of the Russian Federation No.138 dated 11 March 2010, near-aerodrome areas are a part of land or water area adjacent to the aerodrome where a zone with special conditions of use is established (to ensure safety of flights and exclude harmful effects on human health and activities of organisations).

Designing, construction and development of urban and rural settlements, construction and reconstruction of industrial and agricultural structures, residential properties and other objects are prohibited within near-aerodrome areas unless approved by the Chief Aviation Officer of the aerodrome.

Приаэродромные территории, безусловно, могут играть ту или иную роль в поддержании природного разнообразия, но это не входит в круг их задач, и в целом они **не отвечают определению охраняемых природных территорий МСОП**.

MILITARY GROUNDS

Pursuant to the Order of the Minister of Defense of the Russian Federation No. 353 dated 27 September 1996 «On Military Grounds in the Russian Federation», a **military ground** is a specially designated and

equipped area of land or sea with airspace above it dedicated to testing weapons military equipment, combat training of troops (forces), and research in the field of military art.

Military grounds are land or aquatic areas, dozens to thousands of km² in size, where economic activities are restricted. As a rule, a restricted flight zone is established over the military ground area. Military grounds can be divided by their main purpose in **training grounds** (areas for combat drills) and **testing grounds** (areas to test weapons and military equipment).

Training grounds, in particular large ones, hundreds and thousands of km² in size, may play a noticeable role in the conservation of natural diversity and be important elements of an econet. However, their purpose and type of use **does not allow them to be referred to as protected areas according to the IUCN definition.**

* * *

Out of all the reviewed categories of protected areas and special purpose areas established by the federal legislation, the following meet IUCN criteria for protected areas in full or under certain conditions:

- **Buffer zones of specially protected natural areas**, except for those represented mainly by man-made or significantly transformed areas and performing protective functions to SPNA;
- **Biosphere polygons** (attached to the area of biosphere reserves);
- **Territories of traditional nature use**;
- **Wetlands of international importance**;
- **Marine mammal protection areas**;
- **Fisheries reserve zones**;
- **Game resource protection areas** within game areas;
- **Park belts**;
- Undisturbed and slightly disturbed aboriginal **valuable forests** that ensure conservation and reproduction of biological resources and (or) preservation of diversity of forest ecosystems:
 - nut harvesting plots,
 - forest horticultural stands,

- anti-erosion forests,
- protective forest belts of spawning areas,
- forests located in the desert, semi-desert, forest steppe, and forest tundra zones, steppes, and mountains (including subtundra forests),
- pine belts,
- forests of scientific significance.
- ***Specially protected forest blocks*** that have conservation and reproduction of biological resources as their functions, as well as conservation of biodiversity:
 - natural forest seed plots,
 - nut harvesting and honey production plots,
 - game resource replenishment areas,
 - plots where relict and endemic plants are present,
 - habitats of rare and endangered wild animals,
 - forest reserve plots.
- ***Historic and cultural reserves and memorial estates***, including ***zones of protected natural landscape of cultural heritage***, that have sufficiently representative natural and (or) mixed natural and cultural areas, conservation of which is included in their objectives;
- ***No-go marine areas*** established for the conservation of biological resources, biodiversity, marine ecosystems, etc., with restrictions on the main types of activities that can negatively impact marine ecosystems.

Most of other categories reviewed above that do not meet IUCN criteria for protected areas can play certain roles in the conservation of biodiversity as elements of an ecological network if their area has a mainly natural or mixed natural and cultural profile and is not fully transformed.

2.3 CATEGORIES OF SPECIALLY PROTECTED NATURAL AREAS DEFINED BY REGIONAL LEGISLATION

Fifty-five regions of the Russian Federation have established other categories of SPNAs of regional and local significance that are different from those set by the Federal Law «On Specially Protected Natural Areas»¹¹. Regional legislation established about 80 such categories, many of which are very similar or almost identical in their purpose, objectives and defined regimes of special protection, although they have different (often very similar) names in different regions of the Russian Federation. All these categories of SPNAs established by regional legislation are divided into three groups based on the degree of their functional similarity to the protected areas and special use areas established by the federal legislation:

- 1) Categories functionally identical or very similar to the SPNA categories established by the Federal Law;
- 2) Categories other than SPNAs that correspond to the categories defined by the federal legislation and their regional analogs;
- 3) Categories that do not have direct analogs in the federal legislation as protected areas or special purpose areas according to their goals and objectives.

¹¹ Additional categories of regional and local SPNAs are introduced by current regional laws on specially protected natural areas in 44 entities of the Russian Federation and by other legal acts, including laws on the environment, in 11 entities of the Russian Federation; in total, regional laws on specially protected natural areas are active in 59 entities of the Russian Federation, but in 15 of them categories of specially protected natural areas either are not mentioned at all, or the law refers to the list of categories defined by the Federal Law.

REGIONAL CATEGORIES OF SPNAs SIMILAR TO THOSE DEFINED BY THE FEDERAL LAW

PRESERVED ECOSITES, SPECIALLY PROTECTED ECOSITES

Preserved or specially protected ecosites are forest, steppe, swamp and other isolated holistic landscapes of high scientific, conservation and aesthetical significance taken under protection in order to conserve them in their natural condition.

Any activity that disrupts natural processes in natural complexes within the ecosite is prohibited within this area, in accordance with the requirements to state natural reserves.

Preserved and specially protected ecosites definitely meet the IUCN criteria for protected areas. In their objectives and regime of special protection, they are similar to state natural reserves.

PROTECTED SITES

Protected sites are areas of natural complexes of particular scientific, cultural and aesthetical significance that are used to conserve the natural environment in its natural (unchanged) condition, with a designated regime of special protection whose main objective is exclusion of human intervention into natural processes.

Dedicated to the use with scientific purposes as an object of biological monitoring or an area permanently or temporarily inhabited by rare or endangered animals or plants. Can be divided in *forest, meadow, ornithological, entomological* and other.

Temporary protected sites may be established for the sites temporarily inhabited by rare and endangered species of animals for the period they are inhabited by these species.

Protected sites definitely meet IUCN criteria for protected areas. In their objectives and regime of special protection **perma-**

nent protected sites are similar to **state natural reserves** and **protected sites of seasonal nature** are similar to **state natural sanctuaries**.

NATURAL MICRORESERVES, STATE NATURAL MICRORESERVES

Natural microreserves (state natural microreserves) are small in size (usually no more than 50 hectares) land or aquatic areas of particular significance for conservation and restoration of individual species and communities of plants and animals dedicated mainly to the protection of compact areas of habitat and breeding of rare and endangered species of plants and animals and recovery of their numbers.

Microreserves are created primarily for the preservation of local («point») habitats of rare, endemic, relict and endangered species of animals and plants, as well as areas of seasonal concentration of wild animals on limited areas that play a vital role in their life cycles (wood-grouse mating sites, breeding sites, migration sites, sites of mass crossings of ungulates over rivers, etc.), more rarely — for the conservation of particularly valuable objects of geological heritage and sacred natural sites.

Economic and other activity incompatible with special protection regime of the microreserve is prohibited within the natural microreserve, including ploughing of soil, use of agrochemicals and chemical agents for forest pest control, geological exploration, actions changing hydrological regime, as well as introduction of living organisms for their acclimatization.

Microreserves fully meet IUCN criteria for protected areas. In their objectives and regime of special protection they are most similar to **state natural sanctuaries** or **natural monuments** when they are particularly compact areas protecting individual particularly valuable or unique objects (colonies, rare plant communities, etc.).

NATURAL RESERVATIONS

Natural reservations are areas with representation of typical or unique natural complexes in their natural condition or those of importance as habitats of rare and vulnerable species of flora and fauna, or other environmental importance, established to preserve these areas in their natural condition, conserve biological diversity and maintain environmental balance.

As a rule, natural reservations are dedicated to conservation, reproduction or restoration of certain species of natural objects and natural resources, possibly co-existing with restricted, regulated and rational use of others. They can be *complex (landscape)*, *biological (botanic, zoological)*, *paleontological*, *hydrological*, *geological* and others.

Any activity that may cause deterioration of conditions of natural reservations and weakening of their protection is prohibited within them. Functional zones, as a rule, are not established within natural reservations.

Natural reservations mainly meet **IUCN criteria for protected areas**, and the aims of their creation and performed tasks are similar to those of **state natural reserves**.

GENETIC RESERVATIONS

Genetic reservations are specially protected natural areas represented by parcels of natural or planted forest stands that are unique or typical in their silvicultural and genetic characteristics.

They are created to conserve and maintain genetic capacity of the most important species, subspecies, ecotypes and individual populations of tree species in order to obtain high-quality genetic material to increase productivity of forests in the future. Any activity that an affect conservation of genetic reservations or disrupt natural development of forest ecosystems is prohibited within them.

Genetic reservations that are represented fully or mainly by artificial plantations do not meet IUCN criteria for protected areas and cannot be included in their list, while **genetic reservations represented by areas of natural plantations** (aboriginal forest ecosystems) meet PA criteria, being similar to **state natural sanctuaries**.

AREAS OF PARTICULAR SIGNIFICANCE FOR CONSERVATION OF ANIMALS AND PLANTS LISTED IN THE RED DATA BOOK

Protected areas (terrestrial or aquatic) represented by key habitats of the species of plants and animals listed in the subnational Red Data Books.

Any types of economic activity capable of damaging animals and plants listed in the Red Data Book may be prohibited or restricted within areas of particular significance for the conservation of such animals and plants.

Areas of particular significance for the conservation of animals and plants listed in the Red Data Book as a category of protected areas meet IUCN criteria for protected areas, and in their goals and objectives they are similar to **state natural sanctuaries**.

NON-DISTURBANCE AREAS

Non-disturbance areas are terrestrial or aquatic areas of particular significance for conservation or restoration of natural complexes or their components within which certain types and forms of economic activity are prohibited or regulated. The main tasks of non-disturbance areas are the preservation of unique and reference natural complexes for this region in their natural condition, conservation and reproduction of natural resources, including the increase in the number of animals and maintenance of environmental balance.

Depending on specific objectives, non-disturbance areas can be: *complex*, dedicated to conservation and restoration of particularly valuable or typical landscapes and their parts; *biological* (zoological and botanic), dedicated to protection, reproduction (in some cases — acclimatization) of valuable resources of flora and fauna, including fish stocks.

Within non-disturbance areas, there can be one regime of nature use for the whole area or established **functional zones**: zone of *conservation, touristic and recreational*, zone of *nature use* and others.

Forms of economic and recreational activities contradicting aims of establishment of a non-disturbance area or damaging its environment may be fully or partially prohibited or restricted, permanently or temporarily (including in a certain time of the year).

The category of **non-disturbance areas** generally meets the IUCN criteria for protected areas. Non-disturbance areas with one regime of nature use for the whole area are most similar to **state natural sanctuaries**, and those with established touristic and recreational zones — to **nature parks**.

PROTECTED NATURAL COMPLEXES

Protected natural complexes are specially protected natural areas of regional or local significance that are valuable in ecological, recreational, aesthetical and cultural senses and established in order to preserve the natural landscape in its original condition and maintain the environmental balance in the adjoining lands, preserve landscape, geological and biological diversity, conserve and restore terrestrial and aquatic ecosystems, preserve historic and cultural heritage, geological, archeological and historic monuments, as well as carefully use natural resources and organize regulated recreation.

Protected natural complexes may be dedicated to the conservation and restoration of certain types of natural resources (objects) alongside with the restricted, regulated and rational use of others. Any economic activity capable of damaging or causing destruction to the protected natural complexes is prohibited within their boundaries. There may be established functional zones, including recreational ones.

In some regions, certain types of protected natural complexes are defined as individual categories of SPNAs — **coastal natural complexes, lagoon and reed bed complexes, swamp complexes** and others. Sometimes a category of protected natural complexes includes different

subcategories, such as ***protected coastlines, protected river systems, protected natural landscapes.***

Objectives of **protected natural complexes** defined by legislation of the regions of the Russian Federation (in particular — conservation of biological, landscape and geological diversity) and regime of their special protection in general **allow to consider them protected natural areas in the IUCN definition**, except for the cases when cultural areas are predominant within their boundaries. Protected natural complexes dominated by aboriginal natural complexes, in presence of cultural heritage and established recreational and other visitation zones are similar to nature parks, and in other cases, when the functional zoning is absent and the main objective is conservation of natural complexes and objects as such — to **state natural sanctuaries**.

PROTECTED WETLANDS

Protected wetlands are terrestrial and aquatic areas of particular significance for conservation, restoration and maintenance of waterfowl and wading birds as well as their habitats. All types of nature use that cause degradation of habitats of waterfowl and wading birds are prohibited within a protected wetland.

Protected wetlands, as a category of protected areas, **fully meet IUCN criteria for protected areas**, and in their goals and objectives they are similar to **state natural sanctuaries**.

PROTECTED WATER BODIES, SPECIALLY PROTECTED WATER BODIES

Specially protected water bodies are water bodies or their parts (sources and parts of river beds, lakes, ponds, mineral springs, springs, swamps, spawning areas of valuable species of fish) of particular habitat-shaping, conservation, scientific, aesthetical, recreational and healthful significance dedicated to the conservation and restoration of certain species of water-dwelling organisms, biohydrocoenoses and species biodiversity, as well enabling their recreational use.

Any activity that may damage protected natural complexes or living conditions of certain valuable species and populations of plants and animals is prohibited within protected water bodies.

Being dedicated to conservation and restoration of water-dwelling organisms, as well as biohydrocoenoses and species biodiversity of water bodies in general, **protected water bodies** are definitely **IUCN protected areas, with the exception of artificial water bodies**. Natural protected water bodies of significant size may be identical or similar to **state natural sanctuaries** or, if they have significant cultural, aesthetical, recreational and health significance and there is a provision for development of recreational activities within them, **nature parks**. Protected water bodies of small size, in particular individual springs, sources, small lakes, etc. are more similar to the **natural monuments** category.

PROTECTED LANDSCAPES, PROTECTED NATURAL LANDSCAPES, SPECIALLY PROTECTED NATURAL LANDSCAPES, LANDSCAPE MONUMENTS, TERRITORIES OF PROTECTED LANDSCAPES, PROTECTED NATURAL AND LANDSCAPE TERRITORIES

Protected (natural) landscapes and similar categories with slightly different names are relatively large terrestrial (aquatic) areas of particular conservation, scientific, cultural, aesthetical and recreational significance dedicated to the conservation or restoration of natural complexes or their components (including rare and endangered objects of flora and fauna and their habitats as well as unique natural complexes) and maintenance of environmental balance, while preserving the region's economic capacity and the lifestyle of its population, with regulated traditional nature use.

Economic activities that lead to the destruction of individual unique or typical components and natural complexes, disruption of functions of natural landscapes that ensure maintenance of environmental balance and contribute to harmonious interaction between the humans and nature are regulated within protected landscapes (they can be permanently or temporarily prohibited or restricted). Any activity that leads to a significant disruption of the structure of conservation complexes is prohib-

ited or restricted (including clear felling of forest stands with subsequent ploughing of lands or construction works on them, or creation of forest monocultures, land reclamation and swamp drainage, other works that lead to a major change in the hydrological regime).

Functional zones may be established within the protected landscapes, including for conserving the biological diversity that had been formed under the conditions of traditional nature use and is now contributing to the stable development of natural processes. **Specially protected plots** may be selected within a protected landscape that are characterized by a stricter regime of protection than in the whole area of protected landscape.

In the different features that characterize the objectives of protected landscapes and landscape monuments, their functions, features of their area and protection regime, of all SPNA categories defined by the federal legislation they are most similar to *nature parks*.

Objectives of **protected landscapes** and similar categories including those directly associated with the conservation of biological and other natural diversity allow to **consider them IUCN protected areas**. In their functions, features of area use and special protection regime they are similar to **nature parks**.

LANDSCAPE PARKS, LANDSCAPE NATURE PARKS

Landscape parks (landscape nature parks) are specially protected natural areas of local significance of high environmental, aesthetic, historic and cultural value, that are devoted to being used for conservation, educational and recreational purposes.

The objectives of landscape parks include the preservation of the natural environment and natural landscapes, creation of conditions for recreation and conservation of recreational resources as well as development and introduction of effective methods of nature protection and maintenance of environmental balance under the condition of recreational use of the areas.

Activities leading to changes in historically formed natural landscape, decrease or destruction of its environmental, aesthetic and recreational qualities are prohibited within landscape parks.

Landscape and landscape natural parks, as protected areas categories, **meet the IUCN criteria for protected areas**, and are similar to **nature parks** in the goals of their creation and performed tasks.

ECOTOURISM AREAS

Ecotourism areas are specially protected natural areas created to develop environmental and educational tourism, study, conserve and restore the environment. Conservation, recreational, historic and cultural and other functional zones with relevant regimes of protection may be established within the boundaries of ecotourism areas.

If aboriginal natural or mixed natural and cultural landscapes and ecosystems dominate within the area, **ecotourism areas meet the IUCN criteria for protected areas**, and they are most similar to **nature parks** in their tasks, features of the regime of special protection and use of the area.

NATURAL AND HISTORIC COMPLEXES AND PARKS, NATURAL AND CULTURAL LOCALITIES, HISTORIC AND NATURAL COMPLEXES AND TERRITORIES, HISTORIC AND LANDSCAPE COMPLEXES

Natural and historic complexes and similar categories that have different names in different regions are unified complexes comprising natural landscapes, areas and historic and cultural monuments transformed by the human activities and bearing conservation, scientific, educational, cultural, aesthetical, memorial and recreational significance. They are established to preserve natural complex areas of particular environmental and historic and cultural significance, historic and cultural monuments and, in some cases, to enable traditional lifestyles of indigenous and local populations, including small-in-numbers peoples and ethnic groups in the areas of their compact residence, preservation of their spiritual and material culture, historically formed lifestyle and traditions of nature use.

If aboriginal natural or mixed natural and cultural landscapes and ecosystems dominate in the area, **natural and historic complexes meet the IUCN criteria for protected areas** and are similar to **nature parks**.

PROTECTED NATURAL OBJECTS, SPECIALLY PROTECTED NATURAL OBJECTS

Protected natural objects are unique or particularly valuable individual natural objects or unique and particularly valuable areas of small size (usually no more than 100 ha) of natural or mixed natural and man-made origin that represent scientific, conservation, educational, cultural and aesthetic value.

Protected natural objects can be waterfalls, springs, mineral springs, river sources, rocks, cliffs, buttes, karst, caves, notable hills, boulders, long-living trees of historic and memorial significance, plants of sophisticated shapes, bird nesting sites, marine mammal shelters and other individual valuable zoological objects, parts of a forest, swamp, horticultural masterpieces, etc.

Any economic activity that may damage or cause destruction of protected natural objects may be prohibited within protected natural objects.

In some regions ***specially protected geological objects*** are established as separate categories of SPNAs that include parts of subsoil of particular scientific, cultural, aesthetic, sanitary, health and other significance, including rare geological and mineralogical formations, meteorites, paleontological and archeological objects of interest to science and culture, as well as ***protected territories occupied by special trees*** – territories occupied by trees of historic and memorial, cultural, aesthetic significance and (or) long-living trees. Besides, there is such category of SPNAs as ***protected objects of a natural complex of settlements*** that includes natural and mixed natural and man-made objects and complexes that represent forest and forest-parks, river and ravine systems and other parts of the natural environment located within urban and rural settlements that have recreational, aesthetic, habitat-forming and therapeutic significance.

Considering that **protected natural objects** can only be of purely natural or mixed natural and man-made origin, this category **meets IUCN criteria for protected areas** and is similar to **natural monuments**.

MONUMENTS OF LIVING NATURE

Monuments of living nature are local unique or particularly valuable natural objects of particular conservation, scientific and aesthetic significance.

Monuments of living nature can be colonies of birds or bats, individual nests of large birds, shelters of mammals, other individual valuable zoological objects, areas of mass growth of rare species of plants, long-living trees, single specimens of exotic and relict plants, springs with their ecosystems, other local unique or particularly valuable natural objects.

Monuments of living nature fully meet IUCN definition of protected areas and are identical to **natural monuments**.

NATURAL SIGHTSEEING ATTRACTIONS

Natural attractions are unique complexes and objects of natural and mixed natural and man-made origin, including individual objects of particular scientific, cultural and aesthetic value.

Natural attractions fully meet the IUCN definition of protected areas and are identical to **natural monuments**.

UNIQUE LAKES

Unique lakes are water bodies or their parts that are unique in their origin and carry a particular conservation, scientific, cultural, aesthetic, recreation and health significance as they represent particular economic, social and historic values for the present and future generations.

Unique lakes, as a category, meet the IUCN definition of protected areas and are identical to **natural monuments**.

REGIONAL CATEGORIES OF SPNAs THAT MATCH NON-SPNA CATEGORIES OF PROTECTED AREAS ESTABLISHED BY THE FEDERAL LEGISLATION

TERRITORIES OF TRADITIONAL NATURE USE

Territories of traditional nature use are established for traditional nature use and traditional lifestyle of indigenous peoples of the North, Siberia and the Far East of the Russian Federation. They are defined in the Federal Law «On Territories of Traditional Nature Use of Indigenous Small-in-Numbers Peoples of the North, Siberia and the Far East of the Russian Federation» and are not seen as specially protected natural areas in the federal legislation, but have the status of SPNAs of regional and local significance in some entities of Siberia and the Far East.

Laws of the entities of the Russian Federation impose conservation of the natural environment and biodiversity as the basis for traditional nature use in the territories of traditional nature use.

Territories of traditional nature use meet the IUCN criteria for protected areas, because the conservation of the natural environment and natural biodiversity is among their objectives and is a necessary condition of the implementation of their main goal.

ETHNIC-ECOLOGICAL PROTECTED NATURAL AREAS, ECOLOGICAL-ETHNIC ZONES

Ethnic-ecological protected natural areas and **ecological-ethnic zones** are areas of residence of indigenous and traditional population that require a special regime of nature use in order to conserve and restore biological natural resources, the environment and traditional lifestyle of this population.

Ethnic-ecological areas (ecological-ethnic zones) are created with the goals of:

- 1) conservation and rational use of natural resources that are the basis of long-term traditional nature use of indigenous and traditional population, maintenance of lifestyle of local peoples (ethnic groups) in harmony with nature;

- 2) preservation of historic and cultural heritage, spiritual and material culture, historically formed lifestyle and traditions of nature use of indigenous and traditional population;
- 3) development of traditional forms of nature use;
- 4) environmental, historic and cultural education of the public, promotion of importance of natural historic and natural cultural heritage;
- 5) conservation of natural heritage, including reference and unique natural areas, as well as objects that are important to the maintenance of biological diversity.

Functional zones with different regimes of protection and use can be established within ethnic-ecological areas depending on the environmental, historic and cultural values of individual areas and objects, as well as opportunities for traditional nature use. Types of economic activity that do not belong to traditional nature use are prohibited. Along with traditional nature use, development of tourism is allowed in ethnic-ecological areas.

Ethnic-ecological protected natural areas and **ecological-ethnic zones** are identical to territories of traditional nature use created in the areas of residence of peoples that do not represent indigenous small-in-numbers peoples of the North, Siberia and the Russian Far East, thus they also **meet the IUCN criteria for protected areas**.

FOREST PARKS (FOREST PARK ZONES) AND CITY FORESTS

Forest park zones and **city forests** are areas located within settlements that are covered with forest vegetation of natural or cultural origin and established in order to organize public recreation, preserve sanitary, health and aesthetic value of natural landscapes. They perform environmental protection, climate regulation and recreation functions.

Any activity that harms, worsens the condition and hinders protection of the specially protected natural area is prohibited within forest park zones and city forests, including: all construction works unrelated to enabling the functioning of forest park zones; felling of forest stands,

excluding the felling of dead and damaged forest vegetation; operation and parking of motor vehicles outside of specialized areas; ploughing of lands, resin collecting, grazing of farm animals; storage and burying of industrial and domestic waste; organization of touristic camps outside of specialized areas.

Categories of forest park zones and city forests are established by the Forest Code of the Russian Federation (see next section), in accordance with which they are types of *forests performing protective functions to natural and other objects* that are included in the group of protection forests. In some regions of Russia they can have the status of specially protected natural areas, mainly of local significance.

In accordance with the Provisions for defining functional zones in forest park zones, size and boundaries of forest part zones, green zones (Decree of the Government of the Russian Federation dated 4 February 2011 No. 50), functional zones may be established within forest park zones — a *zone of active recreation* (in areas with the highest recreational pressure so as to landscape them and form aesthetically valuable natural landscapes with increased resilience) and a *stroll zone* (in the less visited areas of forest park zones so as to organize hiking and touristic trails, collect and stockpile food and non-timber forest resources in a regulated manner), in some cases also — a *restoration zone* (in the areas of forest park zones where forest vegetation died or its resilience is being significantly reduced and there is a need for long-term measures to restore the forest) and a **zone of animal non-disturbance** to conserve habitats of fauna and ensure optimal conditions of life and breeding of wild animals and birds.

Forest park zones and city forests perform sanitary, recreational and health functions, which, alongside with the features of their regime of protection (in particular, unrestricted visiting) and often predominantly cultural type of territories does not allow to include them in the **IUCN protected areas**. The only exceptions are **forest park belts with designated restoration zones and animal non-disturbance zones** that are dominated by natural or mixed natural and cultural ecosystems. These territories are similar to nature parks and meet the **IUCN criteria for protected areas**.

GREEN ZONES, PROTECTED GREEN ZONES, PROTECTED GREEN AND FOREST TERRITORIES

Protected green zones and their analogs are territories covered with forests, forest parks and other green plantations located outside of settlements that are established in order to ensure protection of people from harmful natural and technogenic impacts, conserve and improve the environment and that perform protective, hygiene, recreational and health functions.

The category of green zones is established by the Forest Code of the Russian Federation as one of the types of *forests performing protection functions to natural and other objects* and included in the group of **protection forests**. In some regions, green zones may have the status of SPNAs of local significance.

A restricted regime of nature use is established within protected green zones, and economic activities that negatively affect their functions are prohibited, including:

- use of toxic chemicals for forest fire and pest protection;
- game management activities;
- development of fossil deposits;
- agriculture, excluding haymaking and honey farming;
- placement of capital buildings, excluding hydroengineering structures, communication lines, electricity lines and underground pipelines.

Depending on the functional purpose, green zones can be divided in two parts — *forest park* devoted to mass visiting and public recreation, and *forest management (sanitary)* devoted to individual recreation (tourism, walks, picking mushrooms, berries, herbs) that serves as a reserve pool for enlargement of the forest park part, cleans air over the settlements and their surroundings and enables satisfying local needs in non-timber forest products.

Green zones, protected green zones, protected green and forest territories as types of protective forests perform first of all protective, sanitary, recreational and health functions and their direct objectives do not include the conservation of natural diversity,

therefore, this category in general does not meet the IUCN definition of protected areas. However, territories that have the status of SPNAs of regional or local significance in different regions of the Russian Federation and are characterized by predominantly natural or mixed natural and cultural landscape can be seen as protected areas. In their regime of special protection and use, they are similar to **nature parks**.

PROTECTIVE FOREST BELTS ALONG MOTORWAYS

The category of protective forest belts along railroads of general use, federal motorways of general use, motorways of general use owned by regions of the Russian Federation is established by the Forest Code of the Russian Federation, according to which they are one of the types of *forests performing protection functions to natural and other objects* and included in the group of **protection forests**. In some regions such protective belts have the SPNA status.

The main function of **protective forest belts** is the protection of railroads and motorways, which is not related to the conservation of biodiversity and, therefore, also considering their regime of protection, they **are not protected areas according to the IUCN definition, although they may play a role in the conservation of biodiversity serving as ecological corridors**.

THERAPEUTIC AREAS AND RESORTS

Therapeutic areas and resorts are terrestrial (aquatic) areas that are suitable for organizing treatments, prophylaxis of diseases and recreation of the public that have natural therapeutic resources and where a specific regime of economic, residential and nature use activities is introduced to ensure the protection and preservation of natural therapeutic resources and the therapeutic area with its adjacent areas from pollution and premature depletion.

Therapeutic areas and resorts are established by the Federal Law «On Natural Therapeutic Resources, Therapeutic Areas and Resorts», in accordance with which their protection is implemented through the crea-

tion of *districts of sanitary (mountain-sanitary) protection* (see previous section). In some regions of the Russian Federation therapeutic areas and resorts have the status of specially protected natural areas of regional and local significance.

The objective of **therapeutic areas and resorts** is the conservation of natural therapeutic resources, including those linked to subsoil (mineral waters, muds) rather than natural diversity as such and, therefore, they **cannot be seen as protected areas according to the IUCN definition**.

WATER PROTECTION ZONES

Water protection zone is a protected area established along the rivers and on the shores of other water bodies in order to prevent pollution, clogging and depletion of surface waters, maintain water bodies in an environmentally healthy condition and conserve the habitats of aquatic biological resources and other objects of fauna and flora. **Coastal belts** are delineated within the water protection zones to serve as areas of strict limitation of economic activity.

The category of water protection zones is established by the Water Code of the Russian Federation (see previous section), but is present as one of the SPNA categories of regional and local significance in the legislation of several regions of the Russian Federation.

Water protection zones established by the Water Code of the Russian Federation are created to protect not their own territory where natural communities and ecosystems may be represented and species deserving protection may live, but the water bodies on the shores of which they are established, and therefore they **are not protected areas according to the IUCN definition**. However, **water protection zones that have the SPNA status** in certain regions of Russia and that have the conservation of objects of fauna and flora among their objectives within their own boundaries **may be included in protected areas according to the IUCN definition** if they are represented by natural and mixed natural and cultural habitats. In such cases, based on the totality of the main features, they are similar to **state natural sanctuaries**.

MONUMENTS (MONUMENT PARKS) OF HORTICULTURAL ART

Monuments (monument-parks) of horticultural art are green areas of common use artificially created by humans and devoted to recreation and preservation of historic approaches and principles of horticulture.

Monuments of horticultural art are the most remarkable and valuable examples of horticultural works designated to protect them and use with aesthetic, educational, scientific, conservation and therapeutic purposes. Any activity unrelated to achieving their objectives and threatening their preservation is prohibited within monument-parks of horticultural art, excursions and mass recreation of the public are enabled and plantations are maintained.

Parks (monument-parks) of horticultural art are historic and cultural monuments included in the category “masterpieces of landscape architecture and horticulture” of the cultural heritage of the peoples of the Russian Federation in accordance with the Federal Law «On Cultural Heritage (Historic and Cultural Monuments) of the Peoples of the Russian Federation» and are protected through the establishment of areas of cultural heritage. In some regions of the Russian Federation they may have the status of specially protected natural areas.

In both type of the area (artificially created) and main objectives **parks and monument-parks of horticultural art do not meet the IUCN criteria of protected areas.**

REGIONAL CATEGORIES OF SPNAs THAT DO NOT HAVE DIRECT ANALOGS IN THE FEDERAL LEGISLATION

RESOURCE RESERVATIONS

Resource reservations are protected natural areas in an intact or slightly disturbed condition that are established in order to conserve natural resources for future generations; ensure protection of fauna and flora, conserve natural habitats of indigenous small-in-numbers peoples and create optimal conditions for the development of their culture, preservation of traditional types of activities and lifestyle.

Any activity that contradicts the goals and objectives of the creation of resource reservations or damages natural complexes and their components is permanently or temporarily prohibited within them.

Resource reservations, as a rule, consist of a single *zone of traditional nature use*. In the areas of concentration of wild animals and growth of rare, endangered and needing protection plants there can be selected *zones of absolute non-disturbance*.

Resource reservations, in the type and use of their area and regime of special protection, fully **meet the IUCN criteria for protected areas** and are similar in their functions to **territories of traditional nature use** (if permanent indigenous population is present whose existence is based on traditional nature use) or **state natural sanctuaries** (in case of insignificant or episodic use and predominant absence of permanent population). The difference between resource reservations and all other categories is that their first objective is the **conservation of natural resources for future generations**, which seems to point at the temporary character of their regime of special protection, while end dates of their effective periods are not anyhow specified.

ECOLOGICAL CORRIDORS

Ecological corridors are specially protected natural areas that link different categories of specially protected natural areas and are characterized by a complex of landscape, protective, foraging and other favorable conditions for migration, feeding and breeding of animals and plants, in order to conserve spatial-genetic connections and integrity of their populations.

Ecological corridors have the following objectives:

- prevention of reduction and fragmentation of ranges of animals and plants, including those of economic significance or having different categories of rarity;
- preservation of the main landscape, silvicultural, protective and other conditions, ensuring that ecological corridors perform their functions for an indefinitely long period of time;
- maintenance of spatial-genetic integrity of ecosystems of the key elements of the natural reserve system ;
- stabilizing the numbers of wild animals;
- creation of extra opportunities for ecological corridors to preserve their role by regulating economic activity, undertaking recultivation and other biotechnical measures.

Restrictions regarding the scale, timeframe, amount of natural resources to be extracted and changes in habitats for all types of natural resource use, as well as for geologic exploration and forest management, are imposed within ecological corridors. Preferred types of natural resource use within the ecological corridors are non-exhaustive forest use on the condition of a long-term lease, recreational activities, traditional crafts of representatives of indigenous peoples.

In their objectives and area use, **ecological corridors meet general definition of protected areas by IUCN** and are similar in the established regime (in particular, allowing biotechnical works and limited forest exploitation) to **state natural sanctuaries**, whilst representing a special category of protected areas created to ensure the connectivity of their system.

SPATIAL ECOLOGICAL COMPLEXES

Spatial ecological complexes are protected territories that have importance for unobstructed movement of wild animals and perform an ecosystem function of connection of individual valuable natural areas, including other specially protected natural areas, with each other.

Spatial ecological complexes are established to conserve and restore the conditions that ensure unobstructed movement of wild animals and conservation of their populations through enabling their transit pass and migration activity, sustainable connection of populations of wild animals with related habitats sufficient to maintain their livability, opportunities for free genetic exchange between populations, access for migratory species of wild animals to their wintering and breeding areas.

Any activity that contradicts the goals of establishment of spatial ecological complexes and the regime of special protection of their area is prohibited or restricted within such complexes. Practical measures to restore spatial ecological complexes are undertaken in their parts that may be under the risk of losing their function of enabling unobstructed movement of wild animals.

In their purpose, regime of protection and area use, **spatial ecological complexes** as a category of protected areas are similar to ecological corridors and thus also **meet the IUCN definition of protected areas**. They represent, however, a special category of protected areas created to enable connectivity of their system.

ECOLOGICAL PARKS

Ecological park is a specialised specially protected natural area that combines urbanised and highly productive landscapes with high environmental, touristic, educational, recreational and health potential.

The objectives of an ecological park, in addition to general objectives of SPNA, include:

- Development and testing of the methods of conservation and restoration of biological diversity in urbanized areas,
- Recovery of species of plants and animals that disappeared from urbanized areas,
- Development of environment-oriented methods and ways of maintenance and use of urban lands of different functional purposes,
- Development and implementation of environment-oriented methods and ways of operation of motorways, engineering and technical infrastructure and other industrial objects;
- Environmental education and improvement of environmental public awareness, as well as environmental education of city managers.

Ecological parks dominated by natural and mixed natural and cultural complexes **may be considered IUCN protected areas**. In the type of regime and area use they have a lot in common with **nature parks** on the one hand and **biosphere polygons** on the other, thus creating a specific category that has among its main objectives the conservation and restoration of biodiversity in urban areas and development of relevant methods.

NATURAL RECREATIONAL ZONES, NATURAL RECREATIONAL COMPLEXES, RECREATIONAL LOCALITIES, RECREATIONAL TERRITORIES, TOURISTIC AND RECREATIONAL LOCALITIES, LANDSCAPE AND RECREATIONAL PARKS

Natural recreational zones and similar categories are land or water areas that have natural resources suitable for tourism and recreation, are used or potentially suitable for recreation and need a special regime of protection of the environment and regulation of anthropogenic pressure.

The goals of establishment of natural recreational zones and similar categories of protected areas are:

- conservation of natural environment and restoration of disturbed natural communities;
- ensuring integrity of landscapes, geological objects, flora and fauna, natural, historic and cultural monuments;

- recreational landscaping and enabling full recreation, familiarization with nature and culture of the region;
- public environmental education, promotion of environmental and local knowledge.

Different functional zones may be established within these SPNAs, including the **zone of ecological non-disturbance**. All types of economic activity unrelated to its objectives, disturbing natural complexes or leading to a decrease in the natural and cultural value and recreational attractiveness of the area are prohibited.

In some regions of the Russian Federation there are other distinct categories of SPNAs — **coastal recreational zones** and **urban recreational zones** — areas covered with trees, bushes and grass vegetation, shores of water bodies that perform hygienic and recreational functions.

In the cases when natural and mixed natural and cultural landscapes and ecosystems are well represented within the boundaries of natural recreational zones and similar to them protected areas, they may be considered **meeting the IUCN definition of protected areas**. They represent, however, a particular category of protected areas that is created to ensure the connectivity of their system. In general, these areas are similar to nature parks as to the features of their protection and use, but they form a separate category of protected territories whose main objective is enabling recreation.

SCIENTIFIC STATIONS, EDUCATIONAL AND SCIENTIFIC STATIONS, BIOSTATIONS, ECOLOGICAL POLYGONS

Scientific stations and similar categories are the areas used for long-term scientific research and environmental monitoring by conservation, scientific and educational organisations.

Any activity that contradicts the objectives of establishment of scientific, educational and scientific stations, biostations and ecological polygons or damages the natural complexes and objects that serve as the subjects of long-term scientific research and environmental monitoring is permanently or temporarily prohibited within them.

Scientific stations and similar categories of protected areas are created to preserve natural complexes in their most natural condition in order to conduct long-term scientific research and environmental monitoring, therefore, they **meet the IUCN criteria for protected areas**. In their regime they are similar to **state natural sanctuaries** and in their purpose and use — to **state natural reserves**, thereby forming a separate category of protected areas dedicated to **scientific research and environmental monitoring**.

URBAN PARKS, PUBLIC GARDENS, PROTECTED GARDEN AND PARK TERRITORIES, PROTECTED GARDEN AND PARK LANDSCAPES

Urban parks, public gardens and protected garden and park territories (landscapes) are green areas of general use with a developed system of landscaping located within the boundaries of settlements and devoted to public recreation.

Urban parks, public gardens and protected garden and park territories do not meet the IUCN criteria for protected areas either in the type of the area (artificially created, landscaped), or in the main objectives (public recreation).

ECOLOGICAL PLANTATIONS AND ZOOLOGICAL NURSERIES

Ecological plantations and nurseries are specially protected natural areas dedicated to breeding, growing and spreading rare species of animals, plants and mushrooms, acclimatization and reproduction of valuable biological objects (from their resource perspective), creation of gene banks.

While ecological plantations somewhat resemble dendrological gardens and botanic gardens, and nurseries somewhat resemble zoos, similar analogs are absent from the categories of protected areas established by the Russian legislation.

Both **ecological plantations** and **zoological nurseries** do not meet the IUCN definition of protected areas because rare and valuable species are protected and reproduced outside of their natural habitats.

ZOOS

Zoos, in accordance with the «Typical Statutory Provision for State Zoos», are created to exhibit and study animals in artificial conditions, solve scientific, educational and conservation tasks and are museums of living nature.

The main tasks of zoos are: conservation of wild animal collections in artificial conditions (in particular, rare and endangered species of native and foreign fauna), broad demonstration of collections of species of wild animals to the public; scientific research; educational work and science communication in the fields of zoology and nature conservation, animal production, game management, environmental knowledge.

Zoos cannot be considered protected areas in the IUCN definition due to the artificial conditions of life of the animal species represented in them.

* * *

Apart from the aforementioned, some regions of the Russian Federation have established specially protected natural areas of regional and local significance that have an individual name, but are not included in any category of SPNA established for the corresponding entity. By their area features and protected objects, as well as by their objectives and functions, they are mostly similar to *specially protected natural objects* and *natural monuments*, and more rarely — to *natural sanctuaries* and *nature parks*.

Therefore, **most regional SPNA categories are identical or very similar to the categories established by the Federal Law «On Specially Protected Natural Areas» in their objectives and functions and mostly meet the IUCN criteria for protected areas**, with the same restrictions as in the categories established by the Federal Law.

Apart from this, **a range of categories established by the federal legislation, defined as SPNAs in the legislation of some regions of the Russian Federation (but not in the federal legislation), meet the IUCN definition of protected areas**. These are territories of traditional nature use and similar ethnic-ecological protected natural areas and ecological-ethnic zones, as well as forest park zones, green zones and their analogs (protected green zones, protected green plantations and forest territories) and water protection zones, if their area is predominantly natural or mixed natural and cultural and the relevant regional legal acts specify the conservation of natural diversity among their objectives. Areas of the same categories that do not satisfy the last two conditions do not meet the IUCN criteria for protected areas. Neither do protective forest belts along motorways, therapeutic areas and resorts and monuments (park-monuments) of horticultural art.

Finally, regional legislation includes **several categories of SPNAs that are similar to the aforementioned categories in their protection regime and area use, but do not have analogs among them in terms of their main goals and objectives**. The following of them fully meet IUCN criteria for protected areas:

- *resource reservations,*
- *ecological corridors and similar spatial ecological complexes,*
- *natural recreational zones and their analogs that differ mainly in names;*
- *scientific stations, biostations, ecological corridors.*

Other regional categories of SPNAs that do not have analogues in the federal legislation as protected areas — *city parks and public gardens, protected garden and park territories and landscapes, ecological plantations, nurseries and zoos* do not meet the IUCN definition of protected areas.

2.4 PROTECTED AREAS MEETING IUCN DEFINITION IN THE RUSSIAN FEDERATION

This review shows that not all categories of specially protected natural areas established by the federal and regional legislation of the Russian Federation fully meet the IUCN criteria for protected areas. At the same time, a whole range of categories of protected areas and special purpose areas established by the federal legislation that do not have an SPNA status meet the IUCN definition of protected areas in full or in part.

All types of protected areas and zones and special purpose areas in the Russian Federation that meet the IUCN criteria for protected areas in their main goals and objectives, as well as in their features of protection regime and area use, can be combined into **10 functional groups**, each of which includes a «core» – the most typical category and a number of more or less similar categories.

Most of the categories shown in Table 1 fully meet the IUCN definition of protected areas. However, a whole range of categories may include areas dominated by disturbed and transformed landscapes and ecosystems or objects of artificial origin. Such areas do not meet the IUCN criteria for protected areas and thus not the entire category belongs to IUCN protected areas, but only the areas dominated by natural and mixed natural and cultural landscapes and ecosystems or objects of natural or mixed natural and cultural origin.

There are also cases when the categories established by the federal legislation (*water protection zones* and *green zones* from the group of protection forests) that are not SPNAs and generally do not meet the IUCN criteria for protected areas, are defined as SPNAs by the regional legislation, and a regime established for them allows to include them in PAs.

The full list of these groups and categories belonging to them is provided in Table 1.

In total, **89 categories** of protected areas and special purpose areas in the Russian Federation **meet the IUCN criteria for protected areas** (55 in full and 34 in part). Twenty-two of them do not have the status of specially protected natural areas at all, 4 have it only in individual regions and are thus not counted in the statistics on protected natural areas of the Russian Federation.

Table 1.

Protected areas and special purpose areas in the Russian Federation that meet the IUCN criteria for protected areas

(Coloured font shows categories that may include areas and objects not meeting PA criteria; Categories established by the federal legislation that have SPNA status only in the regions of the Russian Federation are shown together with the federal categories that are not SPNAs because they have SPNA status only in individual regions)

Functional groups of PAs and their main objectives		Categories of SPNAs established by the Federal Law	Categories of SPNAs established by regional legislation	Categories established by the federal legislation that do not have SPNA status
Reserves and their analogs	Preservation of the natural environment with its typical set of species and ecosystems in natural condition, with prohibition of any activity excluding scientific research and restricted educational tourism	<ul style="list-style-type: none"> State natural reserves; 	<ul style="list-style-type: none"> Protected ecotopes; Specially protected ecotites; Reserved plots (permanent); 	<ul style="list-style-type: none"> Specially protected forest plots (preserved forest plots);
National and nature parks and their analogs	Conservation of natural and cultural heritage, with simultaneous development of tourism and recreation	<ul style="list-style-type: none"> National parks; Nature parks; Dendrological parks and botanic gardens; 	<ul style="list-style-type: none"> Landscape parks; Landscape nature parks; Protected landscapes; Protected natural landscapes; Specially protected natural landscapes; Landscape monuments; Territories of protected landscapes; Protected natural and landscape territories; Ecotourism areas; 	<ul style="list-style-type: none"> Forest park zones; Green zones (that have SPNA status in the regions); Historic and cultural reserves and memorial estates; Cultural heritage buffer zones;

Table 1 Continued (1).

Functional groups of PAs and their main objectives	Categories of SPNAs established by the Federal Law	Categories of SPNAs established by regional legislation	Categories established by the federal legislation that do not have SPNA status
<p>Natural sanctuaries and their analogs</p> <p>Conservation of natural complexes and their individual components, maintenance of environmental balance, with possible restricted economic activity and allowed biotechnical measures</p>	<ul style="list-style-type: none"> State natural sanctuaries 	<ul style="list-style-type: none"> Natural and historic complexes and parks; Natural and cultural localities; Historic and natural complexes and territories; Historic and landscape complexes; Protected green and forest areas; Natural reservations; Genetic reservations; Non-disturbance areas; Preserved plots (seasonal); Natural microreserves (ecosystems or their fragments); Natural microsanctuaries (ecosystems or their fragments); Areas of particular value for conservation of animals and plants listed in the Red Data Book; Protected natural complexes (including coastal natural complexes, lagoon and reed bed complexes, swamp complexes, etc.); Protected shorelines; Protected river systems; Protected natural landscapes; Protected wetlands; Protected water bodies (large); 	<ul style="list-style-type: none"> SPNA buffer zones; Wetlands of international importance; Marine mammal protection zones; Fisheries reserve zones; Game resource protection areas within game areas; Zones of protected natural landscape of cultural heritage; Valuable forests (anti-erosion); Valuable forests (of desert, semi-desert and steppe zones); Valuable forests (pine belts); Special protective forest blocks (with relict and endemic plants); Special protective forest blocks (habitats of rare and endangered wild animals); Special protective forest blocks (forest seed plots); Special protective forest blocks (nut harvesting and honey production plots);

Table 1 Continued (2).

Functional groups of PAs and their main objectives	Categories of SPNAs established by the Federal Law	Categories of SPNAs established by regional legislation	Categories established by the federal legislation that do not have SPNA status
Natural monuments	<ul style="list-style-type: none"> Natural monuments 	<ul style="list-style-type: none"> Natural microreserves (individual objects); Natural microsanctuaries (individual objects); Protected natural objects; Specially protected natural objects; Specially protected geological objects; Protected territories occupied by special trees; Protected objects of a natural complex of settlements; Monuments of living nature; Natural attractions; Protected water bodies (small); Unique lakes; 	<ul style="list-style-type: none"> Specially protected forest blocks (forest areas of reproduction of game resources); No-go marine areas established for conservation of biological resources, biodiversity, marine ecosystems; Water protection zones (that have SPNA status in the Russian regions);
Territories of traditional nature use	<ul style="list-style-type: none"> Natural monuments 	<ul style="list-style-type: none"> Ethnic-ecological protected natural areas; Ecological-ethnic zones 	<ul style="list-style-type: none"> Territories of traditional nature use (TTNU); Valuable forests (nut harvesting zones and forest horticultural stands); Valuable forests (forests located in sub-tundra zone and mountains)

Table 1 Continued (3).

Functional groups of PAs and their main objectives		Categories of SPNAs established by the Federal Law	Categories of SPNAs established by regional legislation	Categories established by the federal legislation that do not have SPNA status
Biosphere polygons	Developing, testing and implementation of methods of rational ecosystem management that do not damage the environment and do not exhaust biological resources		<ul style="list-style-type: none"> Ecological parks 	<ul style="list-style-type: none"> Biosphere polygons of state natural biosphere reserves (attached)
Resource reservations	Preservation of natural resources for future generations and natural environment of indigenous peoples		<ul style="list-style-type: none"> Resource reservations 	
Natural recreational zones	Enabling recreation in undisturbed natural environment		<ul style="list-style-type: none"> Natural recreational zones, Natural recreational complexes, Recreational localities, Recreational areas, Touristic and recreational localities, Landscape and recreational parks 	
Ecological corridors	Ensuring connectivity of protected natural areas		<ul style="list-style-type: none"> Ecological corridors, Spatial ecological complexes 	
Scientific stations and their analogs	Scientific research and environmental monitoring		<ul style="list-style-type: none"> Scientific stations, Scientific and research stations, Biostations, Ecological polygons 	<ul style="list-style-type: none"> Valuable forests (forests that have scientific value);

2.5 PROTECTED AREAS AND SPECIAL PURPOSE AREAS IN THE RUSSIAN FEDERATION THAT DO NOT MEET THE IUCN DEFINITION OF PROTECTED AREAS

Most categories of protected areas and special purpose areas that do not meet IUCN criteria for protected areas may, however, in many cases play significant roles in maintaining environmental balance, conserving different components of biodiversity, as well as serving as elements of ecological networks (econets) — buffer zones, ecological corridors, encompassing landscapes. Such areas and zones can be combined into 8 groups by the main goals and objectives of their establishment:

- **Environment protection areas** established to maintain environmental balance and the environment favourable for living and certain economic activities, protect natural objects, settlements and agricultural lands from harmful impacts;
- **Resource preserving areas** established for temporary or permanent preservation and reproduction of biological resources;
- **Areas of economic use of natural ecosystems** – areas where economic activities are carried out in natural conditions, without disturbance and transformation of natural ecosystems;
- **Areas of historic and cultural significance** established for the conservation of cultural heritage and areas and objects of historic significance;
- **Nurseries and museums of living nature;**
- **Buffer zones of industrial and infrastructure objects** established to preserve industrial, transportation and other similar objects and protect them from negative impacts;
- **Areas of sanitary protection** established around the objects that are capable of negatively affecting the environment;
- **Other areas with special conditions of use** established for the needs of armed forces, safety of navigation, etc.

The lists of categories of protected areas and special purpose areas, both with and without the SPNA status per federal or regional legislation, that are included in the aforementioned groups are provided in Table 2.

Table 2.

Specially protected natural areas and other protected areas and special purpose areas (zones) in the Russian Federation that may play a significant role in the conservation of natural diversity but do not meet the IUCN definition of protected areas

Functional groups of the categories	Specially protected natural areas (SPNAs)	Other protected areas and special purpose areas (zones)
Environment protection areas	<ul style="list-style-type: none"> • Natural monuments and their regional analogs of artificial origin performing environmental protection functions; • Protected water bodies of artificial origin; • Urban parks and public gardens that do not have historic and cultural significance; • Protected green and forest areas. 	<ul style="list-style-type: none"> • Buffer zones of specially protected natural areas (predominantly anthropogenic; perform only protective functions); • Water protection zones and coastal protection belts that do not have SPNA status; • Fisheries protection zones; • Buffer zones of cultural heritage (predominantly anthropogenic); • Areas of regulated construction works and limited economic activity; • Areas of sanitary protection of drinking and household water sources; • Forest park zones (without zoning, mainly cultural area); • Green zones (without SPNA status); • City forests; • State protective forest belts; • Protective forest belts located along water bodies; • Spawning protection forest belts;
		<ul style="list-style-type: none"> • Coastal protection and soil protection forest areas located along water bodies and ravine slopes; • Forest edges bordering treeless areas; • Small forest areas located within treeless areas; • Forest belts in the mountains, near the tree line with treeless areas; • Forest areas of anti-erosion importance; • Forest areas around sanatoriums, rest houses, boarding houses, tourist camps, etc.; • Forest areas around settlements; • Buffer zones of stationary points of environmental monitoring;

2.5. Protected areas and special purpose areas in the Russian Federation that do not meet the IUCN definition of protected areas

Table 2 Continued (1).

Functional groups of the categories	Specially protected natural areas (SPNAs)	Other protected areas and special purpose areas (zones)
Resource preserving areas	<ul style="list-style-type: none"> • State natural reserves and their regional analogs with predominantly anthropogenic type of the area; • Therapeutic areas and resorts; 	<ul style="list-style-type: none"> • Reserve forests; • Districts of sanitary (mountain-sanitary) protection of therapeutic areas and resorts; • Forest areas around mineral springs used for therapeutic purposes or potentially suitable for use; • No-fishing areas
Areas of economic use of natural ecosystems		<ul style="list-style-type: none"> • Restricted-access game areas, hunting farms; • Natural pastures
Areas of historic and cultural significance	<ul style="list-style-type: none"> • Natural monuments and their regional analogs of artificial origin that have historic and cultural value; • Natural and historic parks and complexes (without representative natural areas); • Natural and cultural localities (without representative natural areas); • Historic and natural complexes and territories (without representative natural areas); • Historic and landscape complexes (without representative natural areas); • Urban parks and public gardens of historic and cultural value; • Protected horticultural areas and landscapes; • Monuments and park-monuments of horticultural art; 	<ul style="list-style-type: none"> • Cultural heritage areas, predominantly anthropogenic; • State memorial estates (without representative natural areas); • Forests of historic significance
Nurseries and museums of living nature	<ul style="list-style-type: none"> • Ecological plantations; • Genetic reservations conserving artificial plantations; 	<ul style="list-style-type: none"> • Dendrological parks and botanic gardens without significant areas of natural vegetation; • Nurseries; • Forest seed plantations, permanent forest seed plots and other forest seed facilities;
Buffer zones of industrial and infrastructure objects		<ul style="list-style-type: none"> • Buffer zones of industrial and transport facilities; • Protective forest belts along railways and motorways; • Near-aerodrome areas;

Table 2 Continued (2).

Functional groups of the categories	Specially protected natural areas (SPNAs)	Other protected areas and special purpose areas (zones)
Areas of sanitary protection		<ul style="list-style-type: none"> • Zones of sanitary protection; • Buffer zones of radioactive and chemically polluted lands;
Other areas		<ul style="list-style-type: none"> • Military grounds; • No-go marine areas (established to ensure safety of navigation and protect national interests);

Vocabulary

Protected ecosites — Заповедные урочища

Protected sites — Заповедные участки

Natural reservations — Природные резерваты

Genetic reservations — Генетические резерваты

Non-disturbance areas — Зоны покоя

Resource reservations — Ресурсные резерваты

3 PROTECTED AREAS OF THE RUSSIAN FEDERATION IN ACCORDANCE WITH IUCN CATEGORIES OF PAs

The International Union for Conservation of Nature has established 7 well known categories of protected areas that are different in the goals of their establishment and management:

CATEGORY Ia: STRICT NATURAL RESERVE

Strictly protected areas established to conserve biodiversity and possibly geological and geomorphological objects, where the presence, use and impact from humans are strictly controlled and strictly limited to ensure conservation of protected natural values. Such PAs may serve as the needed references for scientific research and environmental monitoring.

CATEGORY Ib: WILDERNESS AREA

As a rule, these are vast undisturbed or slightly disturbed areas without permanent population that maintain their natural outlook and are protected and managed to preserve their natural conditions.

CATEGORY II: NATIONAL PARK

Large undisturbed or slightly disturbed areas established to conserve large-scale ecological processes with the totality of typical species and ecosystems, providing opportunities for visiting with spiritual, research, educational, recreational goals compatible with the ecological and cultural environment.

CATEGORY III: NATURAL MONUMENT OR FEATURE

Established to protect individual natural monuments that may be represented by inanimate (for example, geologic and geomorphologic) and living (such as ancient groves etc.) objects; as a rule, they are characterised by limited size and often have high attractiveness for visitors.

CATEGORY IV HABITAT/SPECIES MANAGEMENT AREA

Established to conserve individual species and habitats and managed in accordance with these priorities. Many areas of this category need constant management interventions (biotechnical works) aimed at maintenance of populations of protected species or habitats, although this is not a necessary feature of the category.

CATEGORY V: PROTECTED LANDSCAPE/SEASCAPE

Protected areas where long-term interaction between nature and human formed specific landscapes of significant ecological, biological, cultural and aesthetic value, for which preservation of such interactions is vitally important in order to conserve and maintain the areas and associated conservation and other values.

CATEGORY VI: PROTECTED AREA WITH SUSTAINABLE USE OF NATURAL RESOURCES

Protected areas conserving ecosystems and habitats together with associated cultural values and traditional systems of natural resource management; as a rule, these are large areas, mostly in a natural condition. The main priorities for preservation are parts of these ecosystems along with sustainable management of natural resources and their moderate non-industrial use.

Detailed definitions of objectives, criteria and clarifications of PA categories as well their differences from each other are given by Dudley (2008)¹² and Stolton, Shadie & Dudley (2013)¹³.

This system of categories of protected areas does not envisage a clear hierarchy, neither in their quality, nor significance or any other parameter, such as the degree of natural content or intensity of management interventions. One of the principles arising from the definition of protected natural areas states that **«all categories contribute to the conservation of natural diversity, but their objectives should be defined with consideration of a specific situation; not all categories are equally suitable in all situations»**.

It is often believed that this system of categories shows a gradient of natural content of areas that decreases from category Ia to category VI. In fact, the whole picture is more complicated. Areas of categories Ia and Ib are indeed characterised by the biggest natural content (absence of disturbance), categories II and III follow, then IV and VI, and category V areas are the ones that have undergone the biggest impact from human activities.

The choice (or identification) of a suitable category is often a complex issue and should be guided by the needs and level of urgency of biodiversity conservation, possibilities of supply of ecosystems services, needs, requests and views of local communities, existing system of land ownership (land use), government power, density of population in the area and other circumstances.

As a general rule, a management category of a protected area is defined by its main objectives, in accordance with which no less than ¾ of its area should be managed (**«rule of 75%»**). It is allowed to change the category after some time, as well as assign different management categories to different functional zones of the same protected area.

In practice, it is not always easy to refer a particular protected natural area to a certain management category, and sometimes even impossible. For

¹² Dudley, N (ed) 2008, Guidelines for Applying Protected Area Management Categories, IUCN, Gland.

¹³ Stolton, S, Shadie, P, & Dudley, N 2013, IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types, in Best Practice Protected Area Guidelines Series No. 21, IUCN, Gland.

this reason, a special tool was introduced to enable evaluation of a protected area in relation to management categories (*Nigel Dudley and Grazia Borrini-Feyerabend. A tool to help selecting the appropriate IUCN categories and governance types for protected areas, 2nd version, Gland, Switzerland: IUCN, December 2005*). It is based on testing protected areas against a range of criteria, each of which is characterized by different compatibility with different categories

-  – particularly compatible with this category (which does not necessarily mean its significance for this category or form)
-  – not incompatible with this category, ie acceptable for this category or form
-  – not very suitable for this category
-  – completely incompatible with this category

The evaluation procedure starts with assessing how the features of a PA correspond with the listed criteria. This is done with the use of matrixes similar to the one in Table 3 where relevant criteria are marked. After this, the number of criteria relevant for a PA that are particularly compatible, not very suitable and completely incompatible is calculated. Relevance of at least one of the latter means absolute incompatibility of a PA with the corresponding category. For other categories, the number of not very suitable criteria is subtracted from the number of particularly compatible criteria and, as a result, the indicator of compatibility of a PA is obtained. The most suitable management category for a PA is defined by the maximum value of this indicator.

The list of criteria in use and their compatibility with management categories of PAs are shown in table 3.

Table 3.

Compatibility of IUCN categories of protected areas with criteria used for their identification

Groups of criteria	Criteria	PA categories						
		Ia	Ib	II	III	IV	V	VI
Natural content	All PA is in a more or less natural condition							
	Most of the PA is in a more or less natural condition							
	Less than 50% of the PA is in a more or less natural condition							
	All PA has been impacted by active interaction between the humans and nature over a long time							
	PA needs management interventions for biodiversity conservation							
Scale	The size of the PA is large enough for the preservation of the whole ecosystems							
	The size of the PA is not large enough for the preservation of the whole ecosystems							
	The area is selected for the preservation of an individual natural object or feature							
Connectivity	The PA is (spatially) connected with other protected areas or areas with similar habitats							
	The PA is not (spatially) connected with other protected areas or areas with similar habitats							
Biodiversity	A large number of species needs natural habitats							
	Most species are able to dwell in the human-modified environment							
	Active intervention is needed to preserve the key species (for example, burning, grazing, etc.)							
	Some species are subject to traditional hunting							
Resilience	The PA provides ecosystem services (water, soil, etc.)							
	The PA does not provide ecosystem services							
Ecosystem services	The PA provides ecosystem services (water, soil, etc.)							
	The PA does not provide ecosystem services							

Table 3 Continued (1).

Groups of criteria	Criteria	PA categories						
		Ia	Ib	II	III	IV	V	VI
Social values (life support, industry, etc.)	The PA has insignificant social and economic value	Green	Green	Green	Yellow	Yellow	Orange	Orange
	The PA has social-economic value from non-extractive industries perspective (for example, tourism)	Yellow	Yellow	Green	Green	Yellow	Yellow	Yellow
	The PA has renewable resources	Red	Yellow	Orange	Yellow	Yellow	Green	Green
	The PA has mineral resources available for extraction	Red	Red	Orange	Orange	Orange	Yellow	Yellow
Traditional settlements	There are traditional settlements / migratory routes within the PA	Orange	Orange	Orange	Orange	Yellow	Green	Green
	There are no traditional settlements / migratory routes within the PA	Green	Green	Green	Yellow	Yellow	Yellow	Yellow
Needs and requests of the user	The users wish to extract resources within the PA	Orange	Orange	Yellow	Yellow	Yellow	Green	Green
	There are no users willing to extract resources within the PA	Green	Green	Yellow	Yellow	Yellow	Orange	Red
Tourism	Large volume of tourists is expected within the PA	Red	Red	Green	Yellow	Yellow	Green	Yellow
	Insignificant number or complete absence of tourists is expected within the PA	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Religious and cultural values	Religious or cultural objects located within the PA are rarely visited and attract little attention	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
	Religious or cultural objects located within the PA are regularly visited	Orange	Orange	Yellow	Green	Yellow	Yellow	Yellow
	There are no religious or cultural objects within the PA	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Interaction between the humans and nature	Historically present	Orange	Orange	Yellow	Green	Yellow	Green	Yellow
	Historically absent	Green	Green	Green	Yellow	Yellow	Orange	Orange
	Mainly has negative consequences for achieving desired biodiversity	Green	Green	Green	Yellow	Yellow	Red	Orange
	There are both positive and negative consequences for achieving desired biodiversity	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
	Mainly has positive consequences for achieving desired biodiversity	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green
	Has very positive consequences for achieving desired biodiversity	Orange	Orange	Orange	Orange	Green	Green	Green

Due to objective factors, the use of this tool for the definition of categories does not guarantee that each PA can be clearly identified with one or another management category. There may be situations when the PA has identical indicators for two or even three categories. In any case, calculation of indicators of compatibility with different categories enables estimation of the different PAs' relative proximity to them, and the existence of transitional options is natural and unavoidable.

It should also be remembered that:

In accordance with the IUCN definition, some areas with particular restrictions of use may well meet the criteria for one of the categories of protected areas, but not meet their general definition. The most frequent case like this is when the area contributes to the conservation of natural diversity, but does not have any goals and objectives associated with it. Thus, before deciding whether an area belongs to a certain category of protected areas, it should be determined whether it meets their general definition.

As for the option of including different functional zones in different management categories, it should be noted that this is unlikely to be reasonable for monolithic PAs, because functional zoning on its own is one of the features of certain categories. However, in the cases when **isolated areas that are parts of the same PA differ in their management objectives, features of protective regime and type of the area, they should be clearly included in different management categories.**

Table 4 presents a suggested matrix of correspondence between types of protected areas and special purpose areas in the Russian Federation that meet the IUCN definition of protected areas and the respective IUCN management categories of protected areas. As this discussion is only about PAs under the IUCN definition, this table contains ***only areas without end date, with the dominance of natural or mixed natural and cultural complexes and objects, one of the goals of which is the preservation of natural diversity or if this is a necessary condition to achieve their goals.***

Table 4.

Correspondence between the categories of protected areas and special purpose areas established by the federal and regional legislation of the Russian Federation and meeting the IUCN criteria for protected areas and the IUCN categories of protected areas

Russian categories of protected areas that meet the IUCN criteria for protected areas		IUCN categories of protected areas					
		Ia	Ib	II	III	IV	V
		Specially protected natural areas (SPNAs)					
State natural reserves	If tourism and traditional nature use are absent or occur at less than 25% of the area	If indigenous population is present and follows traditional lifestyle, using more than 25% of the area	If tourism and tourism infrastructure develop in more than 25% of the area		If constant interventions are needed to maintain natural outlook or significant actions for restoration take place in more than 25% of the area		
National parks	If aboriginal landscapes dominate, volume of visitors is low without prospects for its significant increase, and permanent population and traditional use of natural resources are absent.	If aboriginal landscapes dominate and volume of visitors is low without its significant increase, indigenous population is present and follows traditional lifestyle, using more than 25% of the area.	If aboriginal landscapes dominate and volume of visitors is high (including prospective one)			If mixed natural and cultural landscapes dominate	

Table 4 Continued (1).

Russian categories of protected areas that meet the IUCN criteria for protected areas		IUCN categories of protected areas						
		Ia	Ib	II	III	IV	V	VI
Nature parks and their analogs established by regional legislation		If aboriginal landscapes dominate and volume of visitors is low without prospects for its significant increase, indigenous population is absent or low-numbered	If aboriginal landscapes dominate and volume of visitors is high (including prospective one)				If mixed natural and cultural landscapes dominate	If aboriginal natural landscapes dominate and indigenous population is present and uses most part of the area for traditional nature use
	State natural sanctuaries and their analogs established by regional legislation	If the area is large and protects a complex of communities and ecosystems, in the absence of biotechnical works and economic activity (with exception for traditional nature use)			If the area is small and protects individual paleontological, geological and hydrological objects	If the area protects certain habitats and (or) populations of plants and (or) animals, with possibility of limited economic activity and biotechnical works		If the area is large and indigenous or long-term local population is present and uses significant part of the area for traditional activities
Natural monuments and their analogs established by regional legislation					If protects individual objects of natural or mixed natural and cultural origin	If protects individual habitats and (or) populations		
Dendrological parks and botanical gardens			In presence of representative areas of aboriginal flora					

Table 4 Continued (2).

Russian categories of protected areas that meet the IUCN criteria for protected areas	IUCN categories of protected areas						
	Ia	Ib	II	III	IV	V	VI
Protected ecosystems, specially protected ecosystems, permanent reserved plots	If interventions to maintain or restore natural outlook are not needed				If constant or regular interventions to maintain natural outlook or significant restoration works are needed		
Resource reservations		If there is no permanent population and ecosystem exploitation is insignificant					If there is permanent indigenous or long-term local population who perform traditional economic activities
Natural recreational zones and their analogs			All				
Ecological corridors and their analogs					All		
Scientific stations, biostations, ecological polygons	All						
Protected areas and special purpose areas without the SPNA status							
Buffer zones of SPNAs		If the area of natural landscapes is large and there is no significant population			If protects individual habitats and (or) populations of plants and animals	If mixed natural and cultural landscapes dominate	If aboriginal natural landscapes dominate and indigenous population is present and perform traditional economic activities

Table 4 Continued (3).

Russian categories of protected areas that meet the IUCN criteria for protected areas	IUCN categories of protected areas						
	Ia	Ib	II	III	IV	V	VI
Biosphere polygons of state natural biosphere reserves			If tourism and recreation dominate among types of economic activities			If agriculture and (or) forestry dominate among types of economic activities	If traditional nature use dominates among types of economic activities
Territories of traditional nature use and their analogs							All
Wetlands of international importance					All		
Marine mammal protection areas					All		
Fisheries reserve zones					If aquaculture is absent or insignificantly developed	If aquaculture is significantly developed	
Game resource protection areas within game areas					All		
Historic and cultural reserves, memorial estates			If there are representative areas of natural landscapes	If there are natural objects and size is insignificant		If mixed natural and cultural landscapes formed under influence of human dominate	

Table 4 Continued (4).

Russian categories of protected areas that meet the IUCN criteria for protected areas	IUCN categories of protected areas						
	Ia	Ib	II	III	IV	V	VI
Buffer zones and zones of protected natural landscape of cultural heritage			If natural landscapes dominate			If mixed natural and cultural landscapes dominate	
Forest park zones			All				
Anti-erosion forests					All		
Forests located in desert, semi-desert and subundra zones, steppes, mountains					In desert, semi-desert and steppe areas		In subundra areas
Pine belts					If natural condition is dominant	If changed natural and cultural condition is dominant	All
Nut harvesting zones and forest horticultural stands							
Forests of scientific significance					All		
Valuable forests							

Table 4 Continued (5).

Russian categories of protected areas that meet the IUCN criteria for protected areas	IUCN categories of protected areas						
	Ia	Ib	II	III	IV	V	VI
Forest preserve blocks	All						
Forest seed plots					All		
Nut harvesting and honey production plots					All		
Areas where relict and endemic plants are present					All		
Habitats of rare and endangered wild animals					All		
Game resource reproduction areas					All		
No-go marine areas established for preservation of biological resources and marine ecosystems	If all types of activities are fully prohibited				If human activities are partially restricted		

4 ESTIMATION OF THE SIZE OF PROTECTED AREAS (IN THE IUCN DEFINITION) IN THE RUSSIAN FEDERATION

The previous sections of the review show that protected areas in the IUCN definition may include not only specially protected natural areas, but also other categories of protected areas and special purpose areas established by the Russian legislation. While some of them clearly meet the IUCN criteria for PA (territories of traditional nature use, wetlands of international importance, some types of specially protective forest blocks, etc.), whether the other meet these criteria is a subject of discussion, although formally they meet the relevant criteria (protective forests, reproduction areas and non-disturbance areas in hunting estates, etc.).

Considering these circumstances, the incompleteness of available materials and multiple discrepancies in the data from different sources, an attempt has been made to estimate the total size of all areas that meet the IUCN criteria for PAs and their individual categories, in all regions of the Russian Federation and the country as a whole, as well as in marine areas under the national jurisdiction.

To estimate the size of the existing **SPNA**, as well as their **buffer zones** and **biosphere polygons**, the data were taken from the State Report «On the current state and protection of the environment in the Russian Federation in 2016» and the Revised annual report on the implementation and evaluation of effectiveness of the State Programme «Environmental Protection» for 2012 — 2020 as of 2016, with additions and verifications by **A.A. Troitsky** and **M.P. Fedotov**, that were based on additional sources, including the charter documents for individual SPNA and the reports from the regions of the Russian Federation. Based on the matrix of correspondence between the categories of SPNAs and other protected areas in Russia and the IUCN categories provided in previous chapter, **A.A. Troitsky** conducted an evaluation of this correspondence for all SPNAs in the Russian Federation, their buffer zones and biosphere polygons. To complete this, additional data were used from the *List of specially protected natural areas of the Russian Federation* (reference

book), *Parts I – II* (ed. by D.M. Ochagov – Moscow: All-Russian Institute of Nature, 2006).

The data on the presence of operational **territories of traditional nature use** in the different regions of the Russian Federation were provided by the Association of indigenous peoples of the North, Siberia and the Far East of the Russian Federation, and their sizes were verified by checking relevant regional registers and individual publications (Potravny, I.M., Gassy, V.V., Afanasyev, S.M., 2017. Territories of traditional nature use: limitations to development or factors of economic growth? – Arctic: ecology and economy #2 (26) etc.).

The sizes of **wetlands of international importance** within the country (inland and within the marine areas under the national jurisdiction) are from: *Wetlands of international importance of Russia/ Ed. A.A. Sirin. – Moscow: Russian Programme Wetlands International, 2012.*

The data on operational **memorial estates** in Russia that enabled evaluating them against the IUCN criteria for PAs and their categories, as well as their sizes, were taken from the portal «Museums of Russia», internet version of «Russian encyclopedia of museums» and a range of similar online sources.

To estimate the area of **protection forests** and **specialty protected forest blocks** meeting the IUCN criteria for PAs, the data were taken from the State Forest Register with amendments and clarifications made by **E.A. Pillipenko** based on the forest management plans and forestry regulations of the Russian regions for the recent years.

To estimate the size of hunting estates and **reproduction areas** within them, the data were taken from the publication by Y.A.Kozlov and S.P.Matveychuck (Game management statistics: game areas with private access, 2000 – 2014. Humanitarian aspects of hunting and game management, 3, 2016) and the data of the Federal State Statistics Service of Russia on the total size of hunting estates in the regions of Russia.

The size of **marine mammal protection areas** was calculated by **A. Redkozubov** based on the coordinates and descriptions provided in the Rules of protection and exploitation of marine mammals (with amendments as of 1 August 2007).

The calculation of the total size of all areas that meet the IUCN criteria for PAs is significantly complicated by the fact that some of them may

overlap, and in most cases, these are only partial overlaps. These overlaps may occur not only between two categories, but also between several categories. Thus, even when the data are available about the size of individual categories, such as SPNAs, TTNUs, protection forests, etc., in order to identify the areas of their overlaps, complete forest management, game management and other cartographic materials are needed, as well as their processing, for the whole country, which makes this task not feasible. Therefore, we limited the scope of our evaluation to simplified estimations of the total size of PAs (see below). They are not precise indicators, however, they provide a rather realistic estimation of the size of PAs and their individual categories in the different regions of Russia.

4.1 SIZE AND CATEGORIES OF TERRESTRIAL PAs IN RUSSIA

As reported in the previous chapters, out of all categories of protected areas and special purpose areas located **in the Russian Federation, including its inner waters**, the following generally meet the IUCN criteria for protected areas:

- 1) most of specially protected natural areas;
- 2) some buffer zones of SPNAs;
- 3) biosphere polygons of biosphere reserves;
- 4) territories of traditional nature use;
- 5) wetlands of international importance;
- 6) some historic and cultural memorial estates;
- 7) some categories of protection forests;
- 8) some categories of specially protected forest blocks (SPFB);
- 9) reproduction areas and non-disturbance areas in hunting estates.

Almost all these categories of protected areas may overlap to some extent in different combinations, thus, some areas may simultaneously belong to two, three and more such categories.

SPECIALLY PROTECTED NATURAL AREAS (SPNA)

At the beginning of 2018, the total area of specially protected natural areas in the Russian Federation (without marine areas) exceeded 200 million ha (including federal and regional SPNAs created in 2017 and early 2018), which is approximately 11.7% of the size of the country (Table 5). However, not all SPNAs meet the IUCN criteria for protected areas. The size of SPNAs meeting these criteria is approximately 197.5 million ha, which is about 11.5% of the area of the country.

Ten Russian regions lead in the relative area of SPNAs meeting the IUCN criteria, exceeding 15%: *Sevastopol, Republics of Adygea, Sakha (Yakutia), Kabardino-Balkaria, Altay, Ingushetia and Karachayevo-Cherkessia, Primorsky Territory, Republics of North Ossetia-Alania and Kalmykia* (Table 5, Fig.3). Small regions are most common among these leaders, more than half of them being located in the North-Caucasus Fed-

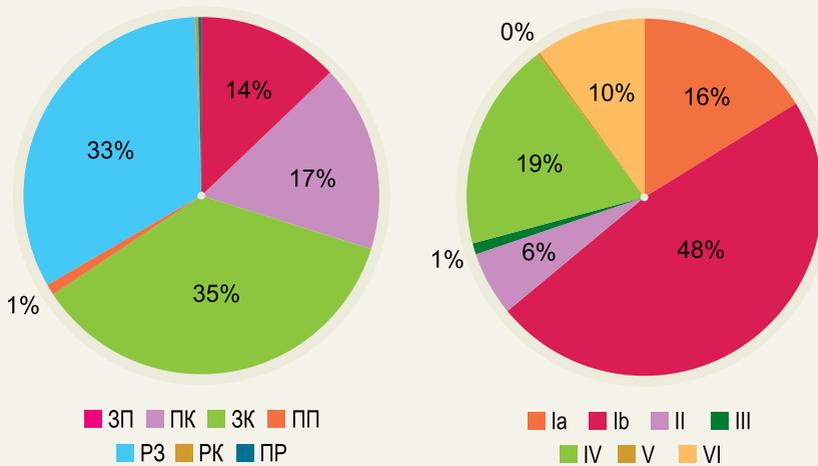


Fig.1. Correspondence between the size of SPNAs of different categories established by the Russian legislation (left) and the IUCN categories of PAs (right). 3П – strict natural reserves and their analogs, ПК – national parks, nature parks and their analogs, 3К – natural sanctuaries and their analogs, ПП – natural monuments and their analogs, P3 – resource reservations, PK – recreational zones and similar SPNAs, Other – other categories. Ia -VI – IUCN categories of PAs.

eral District. In sharp contrast to them is Sakha (Yakutia) – the largest region of the Russian Federation that ranks third in the country by the relative area of its SPNAs and is a top leader by their absolute size. The smallest relative area of SPNAs is observed in the Republic of Mordovia, Kirov and Penza Oblasts, Republic of Tatarstan, Ivanovo, Kostroma, Belgorod, Saratov, Orenburg, Rostov, Tula and Kursk Oblasts, as well as Stavropol Territory, where it does not exceed 3%, and in the latter three is just a fraction of a percent of their area.

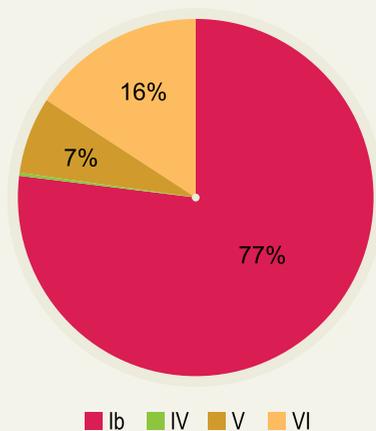
Out of all SPNA categories established by the Russian legislation, *natural sanctuaries* and their various analogs that differ only by name are the largest in the total size and are represented in almost all Russian regions, as well as *resource reservations* located in Sakha (Yakutia). Together, these two categories cover 2/3 of the total area of SPNAs in Russia (Fig. 1). The remaining one third of the total area is divided more or less equally between *strict natural reserves* and *national and nature parks* and SPNAs similar to them. The size of other categories is insignificant and constitutes decimal points of a percent.

According to the IUCN criteria for PAs, almost half of SPNAs in Russia belong to **category Ib: Wilderness area** (Table 6, Fig. 1). They are followed, with a significant gap, by the following categories (in the diminishing order of total size) that also constitute significant portions of the total size of SPNAs: **category IV: Habitat/species management area**, **category Ia: Strict nature reserve** and **category VI: Protected area with sustainable use of natural resources**, that significantly exceed **category II: National park**. **Category III: Natural monument or feature** and **category V: Protected landscape/Seascape** have the smallest SPNA size.

BUFFER ZONES OF SPECIALLY PROTECTED NATURAL AREAS

The total area of buffer zones of SPNA in the Russian Federation (except for marine areas) that meet the IUCN criteria for protected areas is almost 9 million ha (Table 7), i.e. approximately 0.52% of the country. Over $\frac{3}{4}$ of this area are buffer zones meeting the criteria of **category Ib: Wilderness area**, while buffer zones of **categories VI: Protected area with sustainable use of natural resources** and **V: Protected landscape/Seascape** cover also significant, but much smaller areas. There are also buffer zones meeting the criteria of **category IV: Habitat/species management area**, but their size is very insignificant (Fig. 2, Table 7).

Fig.2. Ratio between the sizes of SPNA buffer zones of different IUCN PA categories



BIOSPHERE POLYGONS

Out of all existing biosphere polygons adjacent to the state natural biosphere reserves, four meet the IUCN criteria for PAs (table 7), with their total area being 173,300 ha, i.e. just about 0.01% of the area of the country. Two of them, with the combined area of 138,500 ha (almost 80% of the total area of the biosphere polygons in question), meet the criteria of **category II – National park**, and the other two – **category V – Protected landscape**.



Fig.3. Relative area of specially protected natural areas (SPNAs) in the regions of the Russian Federation, %. (Moscow, Saint Petersburg and Sevastopol are not shown)

Table 5.

**Sizes of specially protected natural areas (SPNA) of the Russian Federation
(excluding marine area)**

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs									
	Thousands ha	%	Total		SPNA categories established by Russian legislation							
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA	Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA	Other categories of SPNA	
Republic of Adygea	304,2	39,0	304,2	39,0	35,70	0,47	0,84	2,03	0,00	0,00	0,00	0,00
Altai Republic	2443,3	26,3	2345,4	25,2	11,01	8,56	5,40	0,27	0,00	0,00	0,00	0,00
Republic of Bashkortostan	1029,2	7,2	839,1	5,9	2,11	1,45	2,08	0,22	0,00	0,00	0,00	0,00
Republic of Buryatia	3232,3	9,2	3015,9	8,6	1,88	4,14	2,48	0,08	0,00	0,00	0,00	0,00
Republic of Dagestan	603,2	12,0	534,4	10,6	0,01	0,14	10,27	0,21	0,00	0,00	0,00	0,00
Republic of Ingushetia	86,7	23,9	86,7	23,9	9,73	0,00	14,17	0,00	0,00	0,00	0,00	0,00
Kabardino-Balkar Republic	336,4	27,0	336,4	27,0	6,63	8,10	11,98	0,26	0,00	0,00	0,00	0,00
Republic of Kalmykia	1185,3	15,9	1185,3	15,9	1,62	0,00	14,21	0,03	0,00	0,00	0,00	0,00
Karachay-Cherkess Republic	371,2	26,0	315,3	22,1	6,86	0,00	15,23	0,00	0,00	0,00	0,00	0,00
Republic of Karelia	985,7	5,5	985,7	5,5	0,34	2,51	2,36	0,24	0,00	0,00	0,00	0,00
Komi Republic	5459,7	13,1	5423,4	13,0	1,73	4,54	6,72	0,02	0,00	0,00	0,00	0,00
Republic of Crimea	219,1	8,4	146,3	5,6	2,12	1,29	1,36	0,10	0,00	0,00	0,75	0,00
Mari El Republic	105,1	4,5	105,1	4,5	0,92	1,58	1,35	0,66	0,00	0,00	0,00	0,00

Table 5 Continued (1).

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs									
	Thousands ha	%	Total		SPNA categories established by Russian legislation							
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA	Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA	Other categories of SPNA	
Republic of Mordovia	76,5	2,9	76,5	2,9	1,23	1,39	0,00	0,30	0,00	0,00	0,00	0,00
Sakha (Yakutia) Republic	91889,0	29,8	91889,0	29,8	0,74	2,67	5,09	0,04	21,26	0,00	0,00	0,00
Republic of North Ossetia-Alania	158,1	19,8	151,8	19,0	3,70	6,88	8,42	0,01	0,00	0,00	0,00	0,00
Republic of Tatarstan	169,6	2,5	166,0	2,4	0,17	0,39	1,57	0,32	0,00	0,00	0,00	0,00
Tuva Republic	1958,8	11,6	1958,8	11,6	3,90	3,35	4,17	0,20	0,00	0,00	0,00	0,00
Udmurt Republic	391,9	9,3	391,9	9,3	0,00	1,00	7,95	0,36	0,00	0,00	0,00	0,00
Republic of Khakassia	903,2	14,7	903,2	14,7	4,35	2,64	7,59	0,08	0,00	0,00	0,00	0,00
Chechen Republic	317,6	20,3	223,2	14,3	0,00	0,00	14,14	0,12	0,00	0,00	0,00	0,00
Chuvash Republic	86,2	4,7	75,9	4,1	0,50	1,37	1,85	0,03	0,00	0,00	0,00	0,38
Altai Krai	890,6	5,3	890,6	5,3	0,25	0,25	4,53	0,27	0,00	0,00	0,00	0,00
Zabaykalsky Krai	3259,0	7,5	3259,0	7,5	0,60	3,50	3,42	0,02	0,00	0,00	0,00	0,00
Kamchatka Krai	5153,5	11,1	4873,8	10,5	3,11	5,34	1,90	0,15	0,00	0,00	0,00	0,00
Krasnodar Krai	996,4	13,2	778,1	10,3	2,44	2,77	4,66	0,44	0,00	0,00	0,00	0,00
Krasnoyarsk Krai	13490,7	5,7	13485,7	5,7	3,62	0,16	1,89	0,02	0,00	0,00	0,00	0,00
Perm Krai	1649,2	10,3	1649,2	10,3	1,74	5,11	3,40	0,04	0,00	0,00	0,00	0,00
Primorsky Krai	3458,1	21,0	3352,2	20,4	3,76	9,67	6,79	0,13	0,00	0,00	0,00	0,00

Table 5 Continued (2).

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs						Other categories of SPNA		
	Thousands ha	%	Total		SPNA categories established by Russian legislation						
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA		Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA
Stavropol Krai	105,9	1,6	11,4	0,2	0,00	0,01	0,16	0,00	0,00	0,00	0,00
Khabarovsk Krai	6358,0	8,1	6358,0	8,1	2,09	0,75	0,23	4,62	0,00	0,00	0,38
Amur Oblast	4015,5	11,1	4015,5	11,1	1,13	0,36	0,09	9,52	0,00	0,00	0,00
Arkhangelsk Oblast	4642,1	11,2	4642,1	11,2	0,13	7,02	0,01	4,08	0,00	0,00	0,00
Astrakhan Oblast	867,7	17,7	503,9	10,3	1,53	4,78	0,70	3,26	0,00	0,00	0,00
Belgorod Oblast	312,0	11,5	44,4	1,6	0,08	1,36	0,01	0,19	0,00	0,00	0,00
Bryansk Oblast	191,7	5,5	190,8	5,5	0,35	0,00	1,40	3,73	0,00	0,00	0,00
Vladimir Oblast	349,0	12,0	342,5	11,8	0,00	4,09	0,31	7,38	0,00	0,00	0,00
Volograd Oblast	1000,2	8,9	1000,2	8,9	0,00	6,32	0,04	2,50	0,00	0,00	0,00
Vologda Oblast	910,5	6,3	890,0	6,2	0,45	1,02	0,05	4,63	0,00	0,00	0,00
Voronezh Oblast	215,3	4,1	215,3	4,1	0,65	0,03	0,31	3,13	0,00	0,00	0,00
Ivanovo Oblast	53,6	2,5	50,1	2,3	0,00	0,00	1,41	0,92	0,00	0,00	0,00
Irkutsk Oblast	2677,1	3,5	2677,1	3,5	1,61	0,54	0,02	1,29	0,00	0,00	0,00
Kaliningrad Oblast	65,0	4,3	64,2	4,2	0,00	1,95	0,01	2,28	0,00	0,00	0,00
Kaluga Oblast	273,9	9,2	273,1	9,2	0,62	3,31	1,58	3,66	0,00	0,00	0,00
Kemerovo Oblast	1321,0	13,8	1306,2	13,6	4,20	4,32	0,12	5,01	0,00	0,00	0,00

Table 5 Continued (3).

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs									
	Thousands ha	%	Total		SPNA categories established by Russian legislation							
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA	Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA	Other categories of SPNA	
Kirov Oblast	397,2	3,3	347,0	2,9	0,19	0,00	0,73	0,50	0,00	0,00	1,45	0,00
Kostroma Oblast	129,2	2,1	129,2	2,1	0,98	0,09	1,07	0,00	0,00	0,00	0,00	0,00
Kurgan Oblast	471,8	6,6	436,8	6,1	0,00	0,00	5,79	0,32	0,00	0,00	0,00	0,00
Kursk Oblast	6,9	0,2	6,9	0,2	0,18	0,00	0,00	0,06	0,00	0,00	0,00	0,00
Leningrad Oblast	577,2	6,9	577,2	6,9	0,51	2,25	4,02	0,09	0,00	0,00	0,00	0,00
Lipetsk Oblast	132,3	5,5	109,8	4,6	0,56	0,00	3,42	0,59	0,00	0,00	0,00	0,00
Magadan Oblast	2127,3	4,6	2075,3	4,5	1,91	0,00	2,57	0,00	0,00	0,00	0,00	0,00
Moscow Oblast	248,7	5,6	248,7	5,6	0,11	1,54	3,80	0,12	0,00	0,00	0,03	0,00
Murmansk Oblast	1909,5	13,2	1909,5	13,2	2,16	1,22	9,68	0,12	0,00	0,00	0,00	0,00
Nizhny Novgorod Oblast	478,5	6,2	478,5	6,2	0,61	0,46	3,23	1,95	0,00	0,00	0,00	0,00
Novgorod Oblast	397,0	7,3	397,0	7,3	0,68	2,92	2,75	0,94	0,00	0,00	0,00	0,00
Novosibirsk Oblast	1726,1	9,7	1726,1	9,7	1,42	0,00	8,04	0,25	0,00	0,00	0,00	0,00
Omsk Oblast	847,9	6,0	847,9	6,0	0,00	0,00	6,01	0,00	0,00	0,00	0,00	0,00
Orenburg Oblast	173,2	1,4	159,6	1,3	0,36	0,45	0,07	0,40	0,00	0,00	0,00	0,00
Oryol Oblast	234,2	9,5	224,4	9,1	0,00	3,15	5,92	0,03	0,00	0,00	0,00	0,00
Penza Oblast	124,5	2,9	124,5	2,9	0,19	0,00	0,00	1,34	0,00	1,34	0,00	0,00

Table 5 Continued (4).

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs						Other categories of SPNA		
	Thousands ha	%	Total		SPNA categories established by Russian legislation						
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA		Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA
Pskov Oblast	415,5	7,5	396,3	7,2	0,68	0,92	5,00	0,54	0,00	0,00	0,00
Rostov Oblast	222,1	2,2	123,9	1,2	0,09	0,57	0,54	0,02	0,00	0,00	0,00
Ryazan Oblast	364,4	9,2	350,6	8,9	1,41	2,60	4,32	0,52	0,00	0,00	0,00
Samara Oblast	295,8	5,5	295,8	5,5	0,43	3,33	0,00	1,76	0,00	0,00	0,00
Saratov Oblast	142,2	1,4	142,2	1,4	0,00	0,30	0,44	0,67	0,00	0,00	0,00
Sakhalin Oblast	835,6	9,6	835,6	9,6	1,41	0,02	7,34	0,83	0,00	0,00	0,00
Sverdlovsk Oblast	1437,9	7,4	1277,6	6,6	0,55	0,99	4,80	0,24	0,00	0,00	0,00
Smolensk Oblast	458,0	9,2	369,8	7,4	0,00	4,06	3,07	0,30	0,00	0,00	0,00
Tambov Oblast	193,0	5,6	137,6	4,0	0,30	0,01	2,76	0,92	0,00	0,00	0,00
Tver Oblast	1372,5	16,3	1108,0	13,2	0,29	0,88	11,32	0,67	0,00	0,00	0,00
Tomsk Oblast	1235,2	3,9	1235,2	3,9	1,15	0,00	2,69	0,09	0,00	0,00	0,00
Tula Oblast	8,7	0,3	8,7	0,3	0,00	0,00	0,08	0,26	0,00	0,00	0,00
Tyumen Oblast	986,6	6,2	986,6	6,2	0,00	0,55	5,42	0,17	0,00	0,00	0,02
Ulyanovsk Oblast	241,6	6,5	241,6	6,5	0,00	1,18	4,88	0,44	0,00	0,00	0,00
Chelyabinsk Oblast	841,0	9,5	824,3	9,3	0,66	1,64	5,54	1,48	0,00	0,00	0,00
Yaroslavl Oblast	365,4	10,1	354,6	9,8	1,31	0,66	6,25	1,58	0,00	0,00	0,00

Table 5 Continued (5).

Entities of the Russian Federation	SPNA		SPNA meeting IUCN criteria for PAs									
	Thousands ha	%	Total		SPNA categories established by Russian legislation							
			Thousands ha	%	Strict natural reserves and similar	National parks, natural parks and similar to them SPNA	Natural sanctuaries and similar to them SPNA	Natural monuments and similar to them SPNA	Resource reservations and similar to them SPNA	Recreational zones and similar to them SPNA	Other categories of SPNA	
Moscow	19,3	7,7	15,8	6,3	0,00	5,80	0,38	0,11	0,00	0,00	0,00	0,00
Saint Petersburg	6,1	4,3	6,1	4,3	0,00	0,00	3,90	0,37	0,00	0,00	0,00	0,00
Sevastopol	49,0	56,7	49,0	56,7	0,00	0,10	28,32	28,32	0,00	0,00	0,00	0,00
Jewish Autonomous Oblast	424,3	11,7	422,2	11,6	3,50	0,00	8,07	0,07	0,00	0,00	0,00	0,00
Nenets Autonomous Okrug	1904,2	10,8	1904,2	10,8	0,74	2,87	7,11	0,04	0,00	0,00	0,00	0,00
Khanty-Mansi Autonomous Okrug — Yugra	2781,0	5,2	2781,0	5,2	1,63	2,06	1,48	0,03	0,00	0,00	0,00	0,00
Chukotka Autonomous Okrug	3610,5	5,0	3610,5	5,0	1,10	2,06	1,80	0,04	0,00	0,00	0,00	0,00
Yamalo-Nenets Autonomous Okrug	7923,3	10,3	7923,3	10,3	1,74	0,41	8,15	0,00	0,00	0,00	0,00	0,00
Russian Federation	200683,4	11,72	197532,1	11,53	1,63	1,89	4,01	0,14	3,83	0,01	0,02	0,00

Table 6.

**Relative size of specially protected natural areas (SPNA)
in the Russian Federation (land and inner water bodies)
by IUCN categories**

Entities of the Russian Federation	IUCN categories of PAs, % of the entity area						
	Ia	Ib	II	III	IV	V	VI
Republic of Adygea	35,70	0,00	0,47	0,15	2,71	0,00	0,00
Altai Republic	11,01	4,01	4,32	0,01	5,67	0,00	0,23
Republic of Bashkortostan	2,11	0,00	1,45	0,04	2,26	0,00	0,00
Republic of Buryatia	1,88	0,00	4,46	0,00	2,56	0,00	0,00
Republic of Dagestan	0,01	0,00	0,11	0,02	8,58	0,03	1,88
Republic of Ingushetia	9,73	0,00	0,00	0,00	0,00	0,00	14,17
Kabardino-Balkar Republic	6,63	0,00	8,10	0,24	12,00	0,00	0,00
Republic of Kalmykia	1,62	0,00	0,00	0,00	8,05	0,00	6,19
Karachay-Cherkess Republic	6,86	10,43	1,91	0,00	4,80	0,00	0,00
Republic of Karelia	1,05	0,99	0,81	0,29	2,03	0,00	0,28
Komi Republic	6,28	1,33	0,00	0,00	5,40	0,00	0,00
Republic of Crimea	2,07	0,00	2,01	0,23	1,28	0,02	0,00
Mari El Republic	0,92	0,00	1,58	0,06	1,95	0,00	0,00
Republic of Mordovia	1,23	0,00	1,39	0,09	0,21	0,00	0,00
Sakha (Yakutia) Republic	0,74	23,17	0,02	0,01	0,31	0,00	5,55
Republic of North Ossetia -Alania	3,70	3,75	6,88	0,01	4,67	0,00	0,00
Republic of Tatarstan	0,17	0,00	0,39	0,02	1,87	0,00	0,00
Tuva Republic	3,90	0,95	3,35	0,00	2,79	0,00	0,63
Udmurt Republic	0,00	0,00	1,00	0,03	8,28	0,00	0,00
Republic of Khakassia	4,35	0,88	2,64	0,00	6,80	0,00	0,00
Chechen Republic	0,00	0,00	0,00	0,10	14,17	0,00	0,00
Chuvash Republic	0,50	0,00	1,37	0,00	1,88	0,00	0,38
Altai Krai	0,25	0,00	0,25	0,02	4,78	0,00	0,00
Zabaykalsky Krai	0,60	2,68	0,82	0,01	2,41	0,00	1,02
Kamchatka Krai	2,71	1,41	2,49	0,07	1,34	0,00	2,48
Krasnodar Krai	2,44	0,00	2,76	0,03	5,07	0,00	0,00
Krasnoyarsk Krai	3,62	0,72	0,16	0,01	1,08	0,00	0,09
Perm Krai	1,74	0,00	5,11	0,03	3,41	0,00	0,00
Primorsky Krai	3,75	7,05	2,62	0,04	6,89	0,00	0,00

Table 6 Continued (1).

Entities of the Russian Federation	IUCN categories of PAs, % of the entity area						
	Ia	Ib	II	III	IV	V	VI
Stavropol Krai	0,00	0,00	0,00	0,12	0,03	0,01	0,00
Khabarovsk Krai	2,09	1,67	0,20	0,05	3,71	0,00	0,36
Amur Oblast	1,13	1,13	0,36	0,00	8,48	0,00	0,00
Arkhangelsk Oblast	6,37	0,19	0,78	0,00	3,90	0,00	0,00
Astrakhan Oblast	1,53	0,00	4,78	0,00	1,73	0,00	2,23
Belgorod Oblast	0,08	0,00	0,45	0,07	0,13	0,90	0,00
Bryansk Oblast	0,35	0,00	0,00	1,39	3,73	0,00	0,00
Vladimir Oblast	0,00	0,00	4,08	0,42	3,39	0,01	3,87
Volgograd Oblast	0,00	0,00	6,32	0,04	2,26	0,00	0,23
Vologda Oblast	0,45	0,00	0,99	0,18	4,51	0,03	0,00
Voronezh Oblast	0,65	0,00	0,00	0,28	3,16	0,03	0,00
Ivanovo Oblast	0,00	0,00	0,00	0,25	1,25	0,00	0,83
Irkutsk Oblast	1,61	1,00	0,54	0,00	0,31	0,00	0,00
Kaliningrad Oblast	0,00	0,00	0,44	0,41	1,88	1,52	0,00
Kaluga Oblast	0,62	0,00	3,31	0,12	5,11	0,00	0,00
Kemerovo Oblast	4,20	4,71	4,32	0,00	0,41	0,00	0,00
Kirov Oblast	0,19	0,00	1,45	0,05	0,85	0,00	0,33
Kostroma Oblast	0,98	0,00	0,00	0,05	1,02	0,09	0,00
Kurgan Oblast	0,00	0,00	0,00	0,10	6,01	0,00	0,00
Kursk Oblast	0,18	0,00	0,00	0,00	0,05	0,00	0,00
Leningrad Oblast	0,51	0,00	2,25	0,52	3,60	0,00	0,00
Lipetsk Oblast	0,56	0,00	0,00	0,15	3,85	0,00	0,00
Magadan Oblast	1,91	2,57	0,00	0,00	0,00	0,00	0,00
Moscow Oblast	0,11	0,00	1,57	0,04	3,88	0,00	0,00
Murmansk Oblast	2,16	0,00	1,22	0,03	9,77	0,00	0,00
Nizhny Novgorod Oblast	0,61	0,00	0,46	0,05	5,13	0,00	0,00
Novgorod Oblast	0,68	0,00	2,92	0,64	3,05	0,00	0,00
Novosibirsk Oblast	1,42	0,00	0,00	0,04	8,25	0,00	0,00
Omsk Oblast	0,00	0,00	0,00	0,00	6,01	0,00	0,00
Orenburg Oblast	0,36	0,00	0,45	0,13	0,35	0,00	0,00
Oryol Oblast	0,00	0,00	3,15	0,01	5,94	0,00	0,00
Penza Oblast	0,19	1,34	0,00	1,15	0,19	0,00	0,00
Pskov Oblast	0,68	0,00	0,92	0,03	5,52	0,00	0,00

Table 6 Continued (2).

Entities of the Russian Federation	IUCN categories of PAs, % of the entity area						
	Ia	Ib	II	III	IV	V	VI
Rostov Oblast	0,09	0,00	0,18	0,02	0,54	0,39	0,00
Ryazan Oblast	1,41	0,00	2,60	0,01	4,83	0,84	0,00
Samara Oblast	0,43	0,00	3,33	0,21	1,55	0,00	0,00
Saratov Oblast	0,00	0,00	0,26	0,02	1,08	0,04	0,00
Sakhalin Oblast	1,41	6,07	0,00	0,01	2,11	0,00	0,00
Sverdlovsk Oblast	0,55	0,00	0,92	0,60	4,44	0,11	0,00
Smolensk Oblast	0,00	0,00	4,05	0,10	3,27	0,01	0,00
Tambov Oblast	0,30	0,00	0,00	0,04	3,64	0,01	0,00
Tver Oblast	0,29	0,00	0,88	0,21	11,77	0,01	0,00
Tomsk Oblast	1,15	2,36	0,00	0,01	0,41	0,00	0,00
Tula Oblast	0,00	0,00	0,00	0,03	0,31	0,00	0,00
Tyumen Oblast	0,02	1,63	0,00	0,04	3,91	0,55	0,00
Ulyanovsk Oblast	0,00	0,00	1,18	0,19	5,13	0,00	0,00
Chelyabinsk Oblast	0,66	0,00	1,64	0,33	6,69	0,00	0,00
Yaroslavl Oblast	1,31	0,00	0,66	1,44	5,51	0,00	0,88
Moscow	0,00	0,00	0,00	0,10	0,39	5,80	0,00
Saint Petersburg	0,00	0,00	0,00	0,15	4,12	0,00	0,00
Sevastopol	0,00	0,00	0,00	27,66	28,32	0,10	0,66
Jewish Autonomous Oblast	3,50	0,00	0,00	0,00	8,13	0,00	0,00
Nenets Autonomous Okrug	0,74	4,28	2,83	0,00	2,87	0,04	0,00
Khanty-Mansi Autonomous Okrug — Yugra	1,63	2,29	0,10	0,00	1,17	0,00	0,00
Chukotka Autonomous Okrug	1,10	3,86	0,00	0,02	0,02	0,00	0,00
Yamalo-Nenets Autonomous Okrug	1,74	8,36	0,00	0,00	0,20	0,00	0,00
Russian Federation	1,89	5,53	0,71	0,05	2,16	0,02	1,19

Table 7.

**Size of buffer zones of specially protected natural areas (without marine area)
and biosphere polygons of state natural biosphere reserves of the Russian Federation**

Entities of the Russian Federation	Buffer zones						Biosphere polygons			
	Total			IUCN categories of PAs, % of the entity area			Total			
	Thousands ha	%	Ib	IV	V	VI	Thousands ha	%	II	V
Republic of Buryatia	5,2	0,10	0,00	0,00	0,10	0,00	0,0	0,00	0,00	0,00
Republic of Dagestan	0,0	0,00	0,00	0,00	0,00	0,00	27,3	1,91	1,91	0,00
Kabardino-Balkar Republic	13,3	0,57	0,00	0,00	0,00	0,57	0,0	0,00	0,00	0,00
Republic of Kalmykia	23,5	0,35	0,00	0,00	0,35	0,00	0,0	0,00	0,00	0,00
Karachay-Cherkess Republic	25,5	1,39	0,00	0,00	0,00	1,39	0,0	0,00	0,00	0,00
Republic of Karelia	26,3	0,16	0,00	0,00	0,00	0,16	0,0	0,00	0,00	0,00
Mari El Republic	31,6	0,08	0,08	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Sakha (Yakutia) Republic	31,0	0,63	0,00	0,00	0,00	0,63	0,0	0,00	0,00	0,00
Republic of North Ossetia-Alania	2,7	0,10	0,00	0,00	0,10	0,00	0,0	0,00	0,00	0,00
Republic of Tatarstan	13,3	0,38	0,00	0,00	0,10	0,28	0,0	0,00	0,00	0,00
Tuva Republic	45,9	1,58	0,00	0,00	0,00	1,58	0,0	0,00	0,00	0,00
Republic of Khakassia	41,6	0,29	0,00	0,00	0,00	0,29	0,0	0,00	0,00	0,00
Chuvash Republic	22,8	0,44	0,00	0,00	0,44	0,00	0,0	0,00	0,00	0,00
Altai Krai	9,0	0,30	0,00	0,00	0,30	0,00	0,0	0,00	0,00	0,00
Zabaykalsky Krai	17,6	0,15	0,15	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Kamchatka Krai	28,7	0,96	0,00	0,00	0,96	0,00	0,0	0,00	0,00	0,00
Krasnoyarsk Krai	4,9	0,20	0,00	0,00	0,20	0,00	0,0	0,00	0,00	0,00

Table 7 Continued (1).

Entities of the Russian Federation	Total			Buffer zones						Biosphere polygons		
	Thousands ha	%	IUCN categories of PAs, % of the entity area	Ib	IV	V	VI	Total		IUCN categories of PAs, % of the entity area		
								Thousands ha	%			
Penn Krai	8,1	0,18	0,00	0,00	0,18	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Primorsky Krai	28,0	0,19	0,00	0,00	0,00	0,00	0,19	0,00	0,00	0,00	0,00	0,00
Khabarovsk Krai	10,7	0,14	0,00	0,00	0,00	0,00	0,14	0,00	0,00	0,00	0,00	0,00
Amur Oblast	4,8	0,09	0,00	0,00	0,00	0,00	0,09	0,00	0,00	0,00	0,00	0,00
Arkhangelsk Oblast	20,6	0,17	0,00	0,00	0,17	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Astrakhan Oblast	16,5	0,38	0,00	0,00	0,38	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Belgorod Oblast	17,3	0,31	0,00	0,00	0,31	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Bryansk Oblast	6,3	0,12	0,00	0,01	0,11	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Vladimir Oblast	7,5	0,15	0,00	0,00	0,00	0,00	0,15	0,00	0,00	0,00	0,00	0,00
Vologda Oblast	11,2	0,33	0,00	0,00	0,33	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Voronezh Oblast	3,5	0,04	0,00	0,00	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Kaluga Oblast	15,4	0,42	0,00	0,00	0,00	0,00	0,42	0,00	0,00	0,00	0,00	0,00
Kemerovo Oblast	46,1	0,55	0,00	0,00	0,00	0,00	0,55	0,00	0,00	0,00	0,00	0,00
Kirov Oblast	46,3	1,88	0,00	0,00	1,88	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Kostroma Oblast	53,3	4,27	4,27	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Kursk Oblast	55,6	0,12	0,12	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Lipetsk Oblast	56,2	0,31	0,24	0,00	0,00	0,00	0,07	0,00	0,00	0,00	0,00	0,00
Magadan Oblast	28,4	0,72	0,00	0,00	0,00	0,00	0,72	33,2	0,84	0,00	0,00	0,84
Moscow Oblast	68,6	1,14	0,00	0,00	1,14	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Table 7 Continued (2).

Entities of the Russian Federation	Buffer zones					Biosphere polygons				
	Total		IUCN categories of PAs, % of the entity area			Total		IUCN categories of PAs, % of the entity area		
	Thousands ha	%	Ib	IV	V	VI	Thousands ha	%	II	V
Murmansk Oblast	70,9	0,20	0,12	0,00	0,07	0,00	0,0	0,00	0,00	0,00
Nizhny Novgorod Oblast	64,5	0,33	0,09	0,00	0,00	0,24	7,6	0,04	0,00	0,04
Novgorod Oblast	73,6	0,46	0,33	0,00	0,00	0,13	0,0	0,00	0,00	0,00
Orenburg Oblast	74,6	2,06	0,00	0,00	1,69	0,37	0,0	0,00	0,00	0,00
Oryol Oblast	86,0	0,99	0,99	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Penza Oblast	86,8	10,86	0,00	0,00	0,44	10,43	0,0	0,00	0,00	0,00
Pskov Oblast	90,0	0,12	0,12	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Ryazan Oblast	91,1	1,22	0,00	0,00	0,00	1,22	0,0	0,00	0,00	0,00
Samara Oblast	97,2	1,58	1,58	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Saratov Oblast	114,8	1,13	0,00	0,00	1,13	0,00	0,0	0,00	0,00	0,00
Sakhalin Oblast	34,8	0,10	0,00	0,00	0,00	0,10	111,1	0,32	0,32	0,00
Sverdlovsk Oblast	223,5	2,33	2,33	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Smolensk Oblast	253,9	0,47	0,47	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Tambov Oblast	297,0	1,80	0,00	0,00	0,48	1,33	0,0	0,00	0,00	0,00
Tver Oblast	416,1	0,53	0,48	0,00	0,00	0,05	0,0	0,00	0,00	0,00
Chelyabinsk Oblast	530,8	1,23	0,00	0,00	0,09	1,14	0,0	0,00	0,00	0,00
Yaroslavl Oblast	676,1	1,46	1,46	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Jewish Autonomous Oblast	691,9	4,10	4,10	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Khanty-Mansi Autonomous Okrug — Yugra	1099,6	0,36	0,36	0,00	0,00	0,00	0,0	0,00	0,00	0,00
Yamal-Nenets Autonomous Okrug	3040,8	1,28	1,27	0,00	0,01	0,01	0,0	0,00	0,00	0,00
Russian Federation	8960,9	0,52	0,40	0,00002	0,04	0,08	179,1	0,010	0,008	0,002

TERRITORIES OF TRADITIONAL NATURE USE

In total, there are currently about 600 territories of traditional nature use (TTNUs) of regional and local significance in 15 regions of the Russian Federation established in accordance with regional laws on SPNAs. Their total area is approximately 214.,29 million ha, i.e. approximately 12.5% of the area of the country (Table 8). The situation with TTNUs is overall quite variable, they are often abolished on various grounds and established and re-established. Also, the data on the areas of individual TTNUs or their combined area is not always available in certain regions. For these reasons, the data below should only be seen as approximate, however, their magnitude reflects the real situation.

Table 8.

Number and size of territories of traditional nature use (TTNU) in the Russian Federation (? – data are missing)

Entities of the Russian Federation	Number of TTNU		Size of TTNU	
	Regional	Local	thousands ha	% of the entity area
Altai Republic		1	1984,5	21,4
Republic of Buryatia		1	1861,6	5,3
Republic of Karelia		1	52,9	0,3
Sakha (Yakutia) Republic		51	155058,5	50,3
Republic of Khakassia	1		360,4	5,9
Zabaykalsky Krai	3		?	?
Krasnoyarsk Krai		1	2663,1	1,1
Primorsky Krai	1		407,8	2,5
Khabarovsk Krai	43		33720,2	42,8
Irkutsk Oblast	9		679,8	0,9
Leningrad Oblast	1		?	?
Sverdlovsk Oblast	1		?	?
Tomsk Oblast		1	27,1	0,1
Nenets Autonomous Okrug	8		6791,8	38,4
Khanty-Mansi Autonomous Okrug — Yugra	475		12668,4	23,7
Russian Federation	542	56	214291,6	12,5

Out of the 15 regions of Russia where TTNUs exist, Khanty-Mansi Autonomous District is a clear leader in the number of TTNUs, followed after a big gap by Sakha (Yakutia) Republic and Khabarovsk Territory. Sakha (Yakutia) is an absolute leader in the combined area of TTNUs, where they cover 155,058,500 ha, which is slightly more than a half of the area of the Republic and over 70% of the total area of all TTNUs in Russia. The second place both in absolute and relative combined area of TTNUs belongs to Khabarovsk Territory, and the third position in their relative combined area belongs to Nenets Autonomous District. This number is also significant in Khanty-Mansi Autonomous District and Altay Republic where it exceeds 20%.

All territories of traditional nature use belong to **category VI** in the IUCN classification — **Protected area with sustainable use of natural resources**. Forests in the territories of traditional nature use may partially or fully belong to categories of protection forests and specially protected forest plots that also meet the IUCN PA criteria. Their categories may meet other PA categories in the IUCN classification, mainly category IV. However, if these forests cover vast areas within TTNUs, they also belong to category VI, while forests corresponding with other categories of PAs only form bigger or smaller clusters. Therefore, in any case all TTNUs should be seen as PAs of category VI.

WETLANDS OF INTERNATIONAL IMPORTANCE

There are 35 wetlands of international importance in the Russian Federation, with the total area of 8,425,700 ha, out of which 7,223,900 ha (94%) are land and inland water bodies, covering about 0.5% of the area of the country.

The distribution of wetlands of international importance is limited to 16 regions of the Russian Federation (Table 9), out of which Astrakhan and Tyumen Regions stand out given that the relative area of such wetlands is very significant there and exceeds 7%. The relative area of wetlands is also significant in the half of the remaining regions, where it exceeds 1%.

About a quarter of the total area of wetlands of international importance (including land and inner water bodies) is located within the existing SP-NAs and their buffer zones (Table 9). Some 5,974,100 ha of wetlands of land and inner water bodies are outside of those, which is 75.4% of total terrestrial area of wetlands and 0.35% of the area of the Russian Federation. Under the IUCN classification, all wetlands of international importance belong to **category IV — Habitat/species management areas**.

Table 9.

**Size of wetlands of international importance (excluding marine areas)
in the Russian Federation**

Entities of the Russian Federation	Total area of wetlands (without marine area), thousands ha	% of the entity area	Size of SPNA and buffer zones within wetlands (without marine area), thousands ha	Size of wetlands without SPNA and buffer zones		
				Thousands ha	% of total area of wetlands	% of the entity area
Republic of Karelia	1,0	0,01	1,0	0,0	0,0	0,00
Kamchatka Krai	1662,4	3,58	679,2	983,2	59,1	2,12
Krasnodar Krai	173,0	2,29	30,0	143,0	82,7	1,89
Krasnoyarsk Krai	1400,0	0,59	250,0	1150,0	82,1	0,49
Primorsky Krai	310,0	1,88	128,2	181,8	58,6	1,10
Khabarovsk Krai	538,0	0,68	103,6	434,4	80,7	0,55
Amur Oblast	145,0	0,40	101,0	44,0	30,4	0,12
Astrakhan Oblast	436,2	8,90	104,1	332,1	76,1	6,77
Leningrad Oblast	65,5	0,78	53,7	11,8	18,0	0,14
Murmansk Oblast	80,0	0,55	30,0	50,0	62,5	0,35
Nizhny Novgorod Oblast	226,5	2,96	94,7	131,8	58,2	1,72
Novosibirsk Oblast	391,7	2,20	132,0	259,7	66,3	1,46
Pskov Oblast	93,6	1,69	70,3	23,3	24,9	0,42
Rostov Oblast	394	3,90	9,5	384,5	97,6	3,81
Tyumen Oblast	1217	7,60	46,0	1171,0	96,2	7,31
Khanty-Mansi Autonomous Okrug	790	1,48	116,6	673,4	85,2	1,26
Russian Federation	7923,9	0,5	1949,8	5974,1	75,4	0,35

HISTORIC AND CULTURAL MEMORIAL ESTATES

Out of 107 Russian memorial estates that may include not just cultural heritage, but also its buffer zones and zones of protected natural landscape, 20 such areas located in 15 regions meet the IUCN categories of protected areas, as they include sufficiently representative natural or mixed natural and cultural complexes and objects, the preservation of which is among their objectives.

The memorial estates with well represented natural complexes correspond with **category II** in the IUCN classification of PAs — **National parks** (Solovetsky state historic and architectural and natural memorial estate, Divnogorye natural historic and archeological memorial estate and others). Memorial estates where mixed natural and cultural landscapes dominate belong to **category V — Protected landscape** (Iz-borsk state historic and architectural and natural and landscape memorial estate, Khmelita state historic and cultural and natural memorial estate named after A.S. Griboedov and others). Memorial estates of small size that include fragments of natural complexes or individual natural or mixed natural and cultural objects belong to **category III — Natural monument or feature**.

The areas taken by memorial estates are insignificant in almost all regions and do not exceed 1%, more often — 0.5% (Table 10). The only exception is the Republic of Ingushetia, where

the Assa-Jeyrakh historic and architectural and natural memorial estate covers almost 18% of the area of the republic. The total size of memorial estates meeting the protected area criteria is 244,000 ha, or about 0.014% of the size of the country, out of which over one half are the areas meeting category II criteria and under one half are the areas meeting category V criteria.

Table 10.

Sizes of memorial estates meeting IUCN criteria for protected areas in the Russian Federation
(Roman numerals refer to corresponding IUCN categories)

Entities of the Russian Federation	Size of memorial estates meeting PA criteria, thousands h			Total area, thousands ha	% of the entity area
	II	III	V		
Republic of Ingushetia	65,00			65,00	17,916
Republic of Karelia			10,00	10,00	0,055
Republic of Tatarstan		0,10	3,00	3,10	0,046
Republic of Khakassia	18,00			18,00	0,292
Perm Krai		0,04		0,04	0,000
Stavropol Krai		0,04		0,04	0,001
Arkhangelsk Oblast	34,70			34,70	0,084
Voronezh Oblast	11,00			11,00	0,211
Ivanovo Oblast			22,30	22,30	1,040
Kemerovo Oblast		0,20		0,20	0,002
Leningrad Oblast	0,20	0,01		0,21	0,003
Pskov Oblast			12,70	12,70	0,229
Rostov Oblast	3,70		38,00	41,70	0,413
Smolensk Oblast			24,00	24,00	0,482
Tula Oblast			1,00	1,00	0,039
Russian Federation	132,60	0,39	111	243,99	0,014

PROTECTION FORESTS

Protection forests are present in all regions of the Russian Federation, except for the cities of Moscow, Saint Petersburg and Sevastopol. Some of them are included in the forests of SPNAs and their buffer zones. Out of all the diversity of the remaining protection forests, **forest park zones** and some categories of **valuable forests** also meet the IUCN criteria for PAs:

- *anti-erosion forests,*
- *forests located in desert, semi-desert, steppe and subundra zones,*
- *pine belts,*
- *subundra forests,*
- *forests of scientific and historic significance,*
- *nut harvesting zones and forest horticultural stands.*

Forests of these categories are also found in almost all regions of Russia, except for the aforementioned cities and Magadan Region, covering 164,373,100 ha, or **9.6%** of the area of the country.

Overall in the country, out of the referenced categories of protection forests located outside SPNAs and their buffer zones, forest tundra and subundra forests dominate, covering over 70% of the total area (Fig.4). The smallest area is covered by the forests of scientific and historic significance and forest park zones.

The largest absolute areas of protection forests meeting the IUCN criteria for PAs are in Krasnoyarsk Territory, Chukotka Autonomous District, Sakha (Yakutia) Republic, Komi Republic and Yamalo-Nenets Autonomous District (Table 11) where foresttundra as well as subundra forests and open woodlands are widespread. Chukotka Autonomous District, Altay Republic, Murmansk Region, Republics of Komi and Khakassia are the leaders in the percentage of the area covered by protection forests in question, where they cover over 25% of the area. In 20 regions of Russia the area of protection forests of these categories is between 10 and 25%, in other 60 regions— less than 10%, including less than 5% in 45 regions and less than 1% in 20 regions.

Protection forests of specially protected natural areas and their buffer zones that are assigned to separate categories are not accounted for in this case because their areas are already a part of SPNAs and their buffer zones. However, on top of this, stands of protection forests meeting the

IUCN criteria for PAs may be located within the territories of traditional nature use and historic and cultural memorial estates. Identifying all such overlaps and calculating their area for the entire country may only be possible if a huge amount of technical mapping is carried out, and the completeness of their source data also cannot be taken for granted. As a result, in order to estimate the areas of protection forests meeting the IUCN criteria for PAs outside of other areas meeting the same criteria, there needs to be an assumption that all their types are equally distributed within each Russian region. Only then their percentage in the total area in the region outside TTNUs and memorial estates can be calculated (protection forests of SPNAs and their buffer zones are excluded from the beginning). This quite rough estimation of the area of protection forests meeting the IUCN criteria for PAs outside SPNAs, their buffer zones, TTNUs and memorial estates is 151,469,900 ha, or **8.8%** of the size of the Russian Federation.

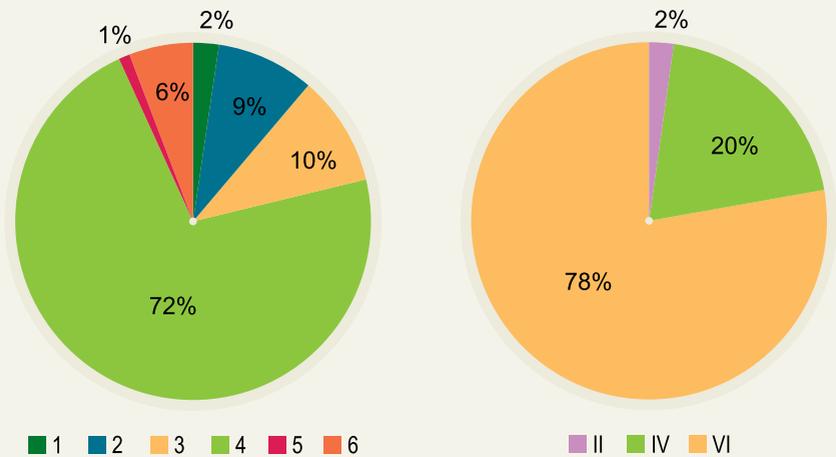


Fig 4. Ratio between the areas of protection forests of different categories meeting the IUCN criteria for PAs outside SPNAs and their buffer zones (left) and the areas of their categories in the IUCN classification (right). 1 – forest park zones, 2 – anti-erosion forests, 3 – forests located in desert, semidesert and steppe zones, including pine belts, 4 – forests of forest tundra zone, including subtundra forests, 5 – forests of scientific and historic significance, 6 – nut harvesting zones and forest horticultural stands, II, IV, VI – IUCN categories of PAs.

Out of the reviewed categories of protection forests that meet the IUCN criteria for PAs, forest park zones correspond with **category II – National park**, anti-erosion forests, forests located in desert, semi-desert and steppe zones, pine belts and forests of scientific and historic value — with **category IV – Habitat/species management area**, forest tundra and sub-tundra zones, as well as nut harvesting zones and forest horticultural stands — with **category VI – Protected area with sustainable use of natural resources**. Almost 80% of the area of these forests are PAs of category VI. Protection forests of category IV cover 20% of the total area, and category II makes up only 2% of it (Fig. 4).

SPECIALLY PROTECTED FOREST BLOCKS (SPFB)

The total area of specially protected forest blocks in the Russian Federation is 29,446,400 ha, i.e. about 1.72% of the area of the country. SPFBs are represented in 75 regions and are absent only in the *Chechen Republic, Stavropol Territory, Volgograd, Irkutsk and Rostov Regions, Cities of Moscow, Saint Petersburg and Sevastopol, Nenets and Chukotka Autonomous Districts*. Out of all SPFB types, only the following meet the IUCN criteria for protected areas:

- *preserved forest plots,*
- *forest seed plots,*
- *forest plots with relict and endemic plants,*
- *habitats of rare and endangered wild animals,*
- *small forest plots located in treeless areas,*
- *forest plots around wood-grouse mating sites;*
- *forest belts along rivers and other water bodies inhabited by beavers,*
- *nut harvesting and honey production forest plots.*

Furthermore, *reproduction plots* and (or) *non-disturbance areas* in hunting estates meet these criteria to a significant extent as well. They are not separated in the available SPFB statistical data and are therefore reviewed separately (see below).

The total area of SPFBs meeting the IUCN criteria for PAs (with the exception of reproduction plots in hunting estates) is **2,348,700 ha**, i.e. a little less than **8%** of their total area and about **0.14%** of the country area (Table 12).

Out of the SPFB types meeting the IUCN criteria for PAs, the largest by area are those dedicated to the conservation of key habitats of game species of animals — *forest plots around wood-grouse mating sites and forest belts along the rivers inhabited by beavers*, comprising about 1/3 of the total area (Table 13, Fig. 5). They are followed by *nut harvesting and honey production forest plots* and *forest plots located in treeless areas*. *Preserved forest plots* account for approximately 3% of the total SPFB area and forest seed plots – for less than 1%.

Over 70% of the area taken by the various SPFB types match **category IV** in the IUCN classification — **Habitat/species management area**, and slightly over a quarter are under **category VI** — **Protected area with sustainable use of natural resources (nut harvesting and honey production plots)**. Approximately 3% are preserved forest plots meeting the criteria for category **Ia** — **Strict nature reserve** (fig. 5).

The leaders in absolute areas of specially protected forest blocks meeting the IUCN criteria for PAs in the Russian Federation are *Vologda Region*,

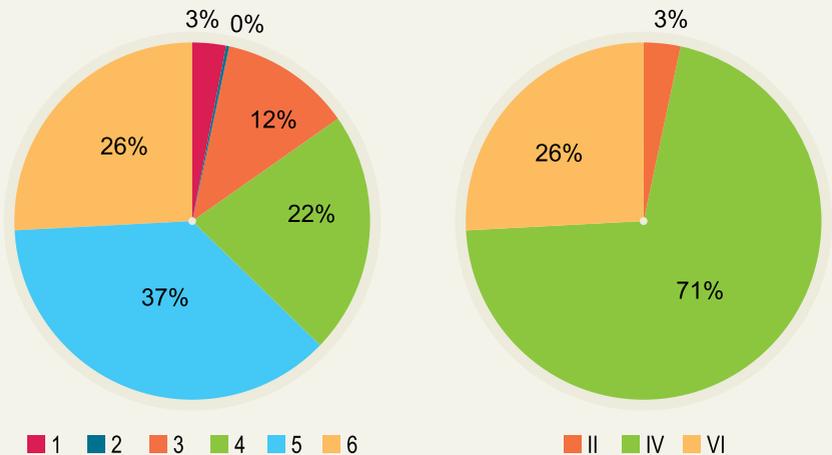


Fig.5. Ratio between the area of the SPFB types meeting PA criteria (left) and the area of their categories in the IUCN classification (right). 1 – preserved forest plots, 2 – forest seed plots, 3 – forest plots with relict and endemic plants and habitats of rare animals, 4 – forest plots in treeless areas, 5 – forest plots around wood grouse mating sites and forest belts along the rivers inhabited by beavers, 6 – nut harvesting and honey production forest plots, II, IV, VI – IUCN categories of PAs.

Arkhangelsk Region, Republic of Tatarstan, Kurgan Region, Republic of Bashkortostan, Jewish Autonomous Region, Sverdlovsk Region, where their area exceeds 100,000 ha. At the same time, there are no such blocks in 8 regions (*Republic of Kalmykia, Republic of Karelia, Komi Republic, Kamchatka Territory, Astrakhan Region, Orenburg Region, Saratov Region, Yamalo-Nenets Autonomous District*), on top of the aforementioned ones where SPFBs are not represented at all. Relative areas of these SPFBs in the regions are usually insignificant (Table 12) and exceed 1% in only 5 of them — *Jewish Autonomous Region, Republic of Tatarstan, Kurgan Region, Vologda Region and Udmurt Republic*.

Apart from production and reserve forests, SPFBs can be designated in protection forests as well, and some of them also meet the IUCN criteria for PAs (see above). In turn, they may be located within SPNAs, their buffer zones, TTNUs and memorial estates that are also PAs as per the IUCN criteria. Calculating the precise area of SPFBs meeting the IUCN criteria for PAs outside other areas meeting the same criteria is complicated and may be done only approximately, like in the previous case with protection forests, if an assumption is made about their equal distribution between the regions. Per relevant calculations, the total area of such SPFBs (except for reproduction areas in hunting estates) is **2,269,670 ha**, which is a little over **0.13%** of the size of the country. The leaders in the absolute and relative areas of SPFBs outside other areas meeting PA criteria are the same regions as for all SPFBs meeting the IUCN criteria.

Table 11.

Size of protective forests meeting IUCN definition of PAs in the Russian Federation, outside SPNU and their buffer zones (Roman numerals refer to corresponding IUCN categories)

Entities of the Russian Federation	All protective forests, thousands ha	Park belts, thousands ha	Valuable forests, thousands ha				Protective forests meeting IUCN criteria for PAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for PAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)		
			Anti-erosion forests	Forests located in desert, semi-desert and steppe zones, including ribbon coniferous forests	Forests of subtundra zone, including subtundra forests	Forests of scientific and historic significance	Nut harvesting zones and forest horticultural stands	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
		II	IV	IV	VI	IV	VI	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Republic of Adygea	239,5	10,2	1,5	180,6				192,3	24,7	192,3	24,7
Altai Republic	3308,4		867,3	1509,9			410,2	2787,4	30,0	2190,9	23,6
Republic of Bashkortostan	1688,7	14,1		437,9				452,0	3,2	452,0	3,2
Republic of Buryatia	9308,1	26,1	1803,6	1566,0		7,6	596,4	3999,7	11,4	3787,7	10,8
Republic of Dagestan	449,1	18,4	179,9	210,0				408,3	8,1	408,3	8,1
Republic of Ingushetia	84,2		18,5	55,6				74,1	20,4	60,8	16,8
Kabardino-Balkar Republic	194,8	0,3	65,4	78,6				144,3	11,6	144,3	11,6
Republic of Kalmykia	55,3		43,6					43,6	0,6	43,6	0,6
Karachay-Cherkess Republic	397,0	0,5	97,8	229,9				328,2	23,0	328,2	23,0
Republic of Karelia	4507,1	12,8				2,8		15,6	0,1	15,5	0,1
Komi Republic	14444,7	5,1			10514,0	848,1		11367,2	27,3	11367,2	27,3
Republic of Crimea	236,4		165,8			0,1		165,9	6,4	165,9	6,4

Table 11 Continued (1).

Entities of the Russian Federation	All protective forests, thousands ha		Valuable forests, thousands ha					Protective forests meeting IUCN criteria for SPAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for SPAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)	
	II	IV	VI	IV	VI	IV	VI	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Mari El Republic	536,7	27,3		44,9		0,4		72,6	3,1	72,6	3,1
Republic of Mordovia	209,0	11,1		59,2		1,9		87,3	3,3	87,3	3,3
Sakha (Yakutia) Republic	32912,8				21922,3			21922,3	7,1	10895,4	3,5
Republic of North Ossetia-Alania	172,5			56,7				91,7	11,5	91,7	11,5
Republic of Tatarstan	554,0	77,3		248,9		13,5		358,7	5,3	358,3	5,3
Tuva Republic	1081,9			106,2				106,2	0,6	106,2	0,6
Udmurt Republic	449,8	6,4		123,0		1,3		130,7	3,1	130,7	3,1
Republic of Khakassia	2136,3			698,7		5,1	623,8	1553,4	25,2	1457,1	23,7
Chechen Republic	307,1			131,7				242,6	15,5	242,6	15,5
Chuvash Republic	325,9	13,9		61,1		0,1		105,2	5,7	105,2	5,7
Altai Krai	3201,5	11,1		2731,5		1,1	8,7	2752,4	16,4	2752,4	16,4
Zabaykalsky Krai	3542,1	28,9		80,6		2,3	972,6	1155,8	2,7	1155,8	2,7
Kamchatka Krai	12987,5	0,4			3831,3			3831,7	8,3	3831,7	8,3
Krasnodar Krai	1265,8	56,1		748,5		3,5	0,2	810,3	10,7	810,3	10,7

Table 11 Continued (2).

Entities of the Russian Federation	All protective forests, thousands ha		Park belts, thousands ha		Valuable forests, thousands ha					Protective forests meeting IUCN criteria for PAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for PAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)	
	Thousands ha	% of total area of the entity	Thousands ha	VI	IV	VI	IV	VI	IV	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Krasnoyarsk Krai	51857,7		12,3	1048,0	702,6	36000,0	31,5	2514,6	40309,0	17,0	39865,6	16,8	
Perm Krai	1769,8		23,1	46,4					69,5	0,4	69,5	0,4	
Primorsky Krai	3279,2		17,1	401,5			0,7	634,4	1053,7	6,4	1027,4	6,2	
Stavropol Krai	114,4			47,1			7,1		54,2	0,8	54,2	0,8	
Khabarovsk Krai	9318,3				18,1			269,3	287,4	0,4	164,4	0,2	
Amur Oblast	2515,2		2,4						2,4	0,0	2,4	0,0	
Arkhangelsk Oblast	8711,8			5,1		3052,3	79,7		3137,1	7,6	3134,0	7,6	
Astrakhan Oblast	190,8		39,6	27,6					67,2	1,4	67,2	1,4	
Belgorod Oblast	228,6		40,2	182,7			1,3		224,2	8,3	224,2	8,3	
Bryansk Oblast	654,5		31,0		353,5		12,0		396,5	11,4	396,5	11,4	
Vladimir Oblast	632,1		79,8	25,3	6,0		2,2		113,3	3,9	113,3	3,9	
Volograd Oblast	667,4		84,3	424,8			5,8		514,9	4,6	514,9	4,6	
Vologda Oblast	1773,3		16,4				112,3		128,7	0,9	128,7	0,9	
Voronezh Oblast	416,1			83,2	198,2		29,4		310,8	6,0	310,2	5,9	

Table 11 Continued (3).

Entities of the Russian Federation	All protective forests, thousands ha		Valuable forests, thousands ha					Protective forests meeting IUCN criteria for PAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for PAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)	
	II	IV	VI	IV	VI	IV	VI	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Ivanovo Oblast	295,6	78,1						78,1	3,6	77,3	3,6
Irkutsk Oblast	15861,9	16,9	5922,4	134,0			3299,7	9373,0	12,1	9288,6	12,0
Kaliningrad Oblast	272,9	12,8	7,8	171,0		0,5		192,1	12,7	192,1	12,7
Kaluga Oblast	483,0	30,7	15,7	6,5				52,9	1,8	52,9	1,8
Kemerovo Oblast	948,1	25,3		22,9		11,0	2,1	61,3	0,6	61,3	0,6
Kirov Oblast	1616,5	30,3	15,6			4,3		50,2	0,4	50,2	0,4
Kostroma Oblast	638,7	9,0				0,3		9,3	0,2	9,3	0,2
Kurgan Oblast	1298,3	84,6		1000,5		14,0		1099,1	15,4	1099,1	15,4
Kursk Oblast	237,1	22,8	199,4					222,2	7,4	222,2	7,4
Leningrad Oblast	2763,5	199,8				30,2		230,0	2,7	230,0	2,7
Lipetsk Oblast	180,5	16,5	48,2	96,5		1,7		162,9	6,8	162,9	6,8
Magadan Oblast	2308,4							0,0	0,0	0,0	0,0
Moscow Oblast	1940,8	562,7				43,5		606,2	13,7	606,2	13,7
Murmansk Oblast	6032,8	8,0			4336,0	0,9		4344,9	30,0	4344,9	30,0

Table 11 Continued (4).

Entities of the Russian Federation	All protective forests, thousands ha	Park belts, thousands ha	Valuable forests, thousands ha				Protective forests meeting IUCN criteria for PAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for PAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)		
			Anti-erosion forests	Forests located in desert, semi-desert and steppe zones, including ribbon coniferous forests	Forests of subtundra zone, including subtundra forests	Forests of scientific and historic significance	Nut harvesting zones and forest horticultural stands	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Nizhny Novgorod Oblast	1384,5	121,1	0,4	146,3	VI	2,9	VI	270,7	3,5	270,7	3,5
Novgorod Oblast	921,6	17,3						17,3	0,3	17,3	0,3
Novosibirsk Oblast	2146,9	32,9	2,2	1750,8		0,6	15,9	1802,4	10,1	1802,4	10,1
Omsk Oblast	973,1	3,0		558,6			113,5	675,1	4,8	675,1	4,8
Orenburg Oblast	558,1	38,9	276,0			118,4		433,3	3,5	433,3	3,5
Oryol Oblast	101,4	21,1	59,5	9,4		1,1		91,1	3,7	91,1	3,7
Penza Oblast	500,0	30,7	71,9	101,9		1,1		205,6	4,7	205,6	4,7
Psikov Oblast	560,0	63,7		11,7				75,4	1,4	75,2	1,4
Rostov Oblast	334,4	5,9	65,7	187,7		5,9		265,2	2,6	264,1	2,6
Ryazan Oblast	367,9	30,7		31,8		0,1		62,6	1,6	62,6	1,6
Samara Oblast	577,9	52,6		310,4		30,7		393,7	7,3	393,7	7,3
Saratov Oblast	670,3	42,5	333,4	110,9		41,1	0,2	528,1	5,2	528,1	5,2
Sakhalin Oblast	1334,1	8,2						8,2	0,1	8,2	0,1
Sverdlovsk Oblast	3354,8	917,5	1,5	32,5		2,1	355,3	1308,9	6,7	1308,9	6,7

Table 11 Continued (5).

Entities of the Russian Federation	All protective forests, thousands ha	Park belts, thousands ha	Valuable forests, thousands ha				Protective forests meeting IUCN criteria for PAs, outside SPNAs and their buffer zones		Protective forests meeting IUCN criteria for PAs, outside SPNAs, their buffer zones, TTNUs and memorial estates (see text)		
			Anti-erosion forests	Forests located in desert, semi-desert and steppe zones, including ribbon coniferous forests	Forests of subtundra zone, including subtundra forests	Forests of scientific and historic significance	Nut harvesting zones and forest horticultural stands	Thousands ha	% of total area of the entity	Thousands ha	% of total area of the entity
Smolensk Oblast	548,3	21,4				6,0		27,4	0,6	27,3	0,5
Tambov Oblast	374,7	21,0	168,5	95,0		45,4		329,9	9,6	329,9	9,6
Tver Oblast	1959,2	21,7				4,3		26,0	0,3	26,0	0,3
Tomsk Oblast	1728,7	12,0				4,0	394,9	410,9	1,3	410,5	1,3
Tula Oblast	283,0	55,5	168,4			55,8		279,7	10,9	279,4	10,9
Tyumen Oblast	1168,3	5,8		237,9		1,2	8,2	253,1	1,6	253,1	1,6
Ulyanovsk Oblast	752,5	65,0	19,0	362,1		4,7		450,8	12,1	450,8	12,1
Chelyabinsk Oblast	2054,0	226,0	902,5	130,8		86,1		1345,4	15,2	1345,4	15,2
Yaroslavl Oblast	476,5	138,1						138,1	3,8	138,1	3,8
Jewish Autonomous Oblast	379,9							81,0	2,2	0,0	0,0
Nenets Autonomous Okrug	446,8				405,0			712,5	4,0	0,0	0,0
Khanty-Mansi Autonomous Okrug	2761,4	2,2						2,2	0,004	0,0	0,0
Chukotka Autonomous Okrug	27734,5				26534,7			26534,7	36,8	81,0	2,2
Yamalo-Nenets Autonomous Okrug	12497,2				11293,2			11293,2	14,7	438,9	2,5
Russian Federation	2786533,5	3718,5	14577,9	15891,7	117888,8	1687,7	10608,5	164373,1	9,6	151469,9	8,8

Table 12.

Sizes of specially protective forest blocks meeting IUCN criteria for PAs in the Russian Federation
(Roman numerals refer to corresponding IUCN categories)

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										Total, thousands ha	% of total area of SPFB	% of the area of the entity	
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	IV	IV				IV
Republic of Adygea	25,5	0,00	0,00	0,70	0,00	0,40	0,00	0,00	0,00	0,00	0,00	0,10	1,20	4,71	0,1540
Altai Republic	3,9	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,70	0,00	3,70	94,87	0,0398
Republic of Bashkortostan	212,5	0,00	0,00	18,80	0,00	30,00	0,00	0,00	0,00	0,80	0,40	61,60	124,90	58,78	0,8738
Republic of Buryatia	2159,0	0,00	0,00	0,00	0,00	25,50	1,30	0,00	0,00	0,00	0,00	0,00	27,20	1,26	0,0774
Republic of Dagestan	0,1	0,00	0,00	0,00	0,00	0,10	0,00	0,00	0,00	0,00	0,00	0,30	0,10	100,00	0,0020
Republic of Ingushetia	5,3	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,30	0,30	5,66	0,0827
Kabardino-Balkar Republic	0,2	0,00	0,00	0,10	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,10	50,00	0,0080
Republic of Kalmykia	10,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Karachay-Cherkess Republic	1,2	0,00	0,20	1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	1,20	120,00	0,0841
Republic of Karelia	884,7	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Komi Republic	3988,2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Crimea Republic	0,2	0,00	0,20	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,20	100,00	0,0077

Table 12 Continued (1).

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										Total, thousands ha	% of total area of SPFB	% of the area of the entity	
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	IV	IV				
Mari El Republic	85,6	0,00	0,00	0,30	0,00	0,00	0,00	0,00	0,00	0,00	0,60	6,20	10,50	12,27	0,4492
Republic of Mordovia	27,8	0,00	1,10	1,10	0,00	8,70	0,00	1,70	0,00	3,20	9,80	9,80	25,60	92,09	0,9798
Sakha (Yakutia) Republic	0,1	0,00	0,00	0,00	0,00	0,10	0,00	0,00	0,00	0,00	0,00	0,00	0,10	100,00	0,0000
Republic of North Ossetia-Alania	10,4	0,00	0,20	1,10	0,30	0,00	0,00	0,00	0,00	0,00	0,00	1,30	2,90	27,88	0,3631
Republic of Tatarstan	224,0	0,00	0,90	4,90	0,00	3,00	0,00	0,60	0,60	0,70	182,50	182,50	192,60	85,98	2,8387
Tuva Republic	59,3	0,00	0,00	0,00	0,00	0,90	0,00	0,90	0,90	0,00	0,00	0,00	1,80	3,04	0,0107
Udmurt Republic	81,3	0,00	0,00	12,30	0,00	1,90	5,80	9,40	0,10	0,00	24,70	0,00	54,10	66,54	1,2862
Republic of Khakassia	318,5	0,00	0,00	0,00	0,00	0,90	0,10	0,42	0,00	2,73	6,26	0,00	1,00	0,31	0,0162
Chuvash Republic	13,6	0,00	1,36	0,00	0,00	2,83	0,00	0,00	0,00	0,00	0,00	0,00	13,61	111,13	0,7420
Altai Krai	300,7	0,00	0,20	0,50	0,20	43,00	0,01	1,60	0,00	1,60	0,00	0,00	45,51	15,13	0,2709
Zabaykalsky Krai	185,5	0,10	0,00	0,00	0,00	55,80	0,00	0,50	0,00	0,50	0,00	0,00	56,40	30,40	0,1306
Kamchatka Krai	6722,5	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Krasnodar Krai	133,2	0,00	0,70	7,33	0,00	0,80	0,00	0,00	0,00	0,00	7,80	0,00	16,63	12,48	0,2203
Krasnoyarsk Krai	3662,7	0,00	0,00	0,00	0,00	47,60	1,00	24,80	0,00	24,80	0,00	0,00	73,40	2,00	0,0310
Perm Krai	399,2	0,00	0,00	1,50	0,00	15,10	5,80	23,70	0,00	23,70	27,50	0,00	73,60	18,44	0,4593

Table 12 Continued (2).

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										Total, thousands ha	% of total area of the SPFB	% of the area of the entity	
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	IV	IV				
Primorsky Krai	54,0	0,00	0,00	2,60	0,00	0,00	0,00	0,00	0,00	0,00	0,00	25,60	28,20	52,22	0,1712
Khabarovsk Krai	444,6	0,00	0,00	47,20	0,00	13,10	0,00	0,00	0,00	0,30	11,80	11,80	72,40	16,28	0,0919
Amur Oblast	987,6	0,00	0,00	0,00	0,00	0,80	0,00	0,00	0,00	0,00	14,20	14,20	15,00	1,52	0,0414
Arkhangelsk Oblast	197,4	63,80	0,80	2,30	8,30	14,60	19,70	86,00	0,00	0,00	0,00	0,00	195,50	99,04	0,4732
Astrakhan Oblast	1,2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Belgorod Oblast	2,2	0,00	0,93	0,10	0,00	0,00	0,00	0,00	0,00	0,00	1,18	1,18	2,21	172,68	0,0816
Bryansk Oblast	48,1	0,00	0,00	0,90	0,00	0,00	2,30	0,00	0,00	0,00	4,20	4,20	7,40	15,38	0,2123
Vladimir Oblast	177,8	0,00	0,00	0,00	0,00	3,20	5,00	2,20	0,00	0,00	0,40	0,40	10,80	6,07	0,3713
Vologda Oblast	1477,0	0,00	1,32	7,14	0,00	0,00	68,79	130,28	0,00	0,00	0,00	0,00	207,53	14,05	1,4359
Voronezh Oblast	8,6	0,00	2,74	0,30	0,00	0,00	0,00	0,39	0,00	0,39	2,79	2,79	6,21	72,56	0,1189
Ivanovo Oblast	27,5	0,00	0,00	0,20	0,00	0,70	2,70	6,40	0,00	0,00	0,20	0,20	10,20	37,09	0,4758
Kaliningrad Oblast	0,2	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,20	0,20	0,20	100,00	0,0132
Kaluga Oblast	89,0	0,14	0,59	1,80	1,39	1,30	2,40	0,10	0,00	0,10	10,60	10,60	18,33	20,58	0,6154
Kemerovo Oblast	559,6	0,00	0,00	6,80	0,00	0,00	0,00	0,50	0,00	0,00	0,00	0,00	7,30	1,30	0,0763
Kirov Oblast	44,1	0,00	0,00	0,70	0,00	0,20	7,20	0,70	0,00	0,00	1,20	1,20	10,00	22,68	0,0831

Table 12 Continued (3).

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										Total, thousands ha	% of total area of SPFB	% of the area of the entity	
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	IV	IV				IV
Kostroma Oblast	65,3	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	47,20	72,28	0,7839
Kurgan Oblast	199,7	0,00	0,00	4,70	0,00	184,00	1,50	0,00	0,00	0,00	0,00	0,00	190,30	95,29	2,6620
Kursk Oblast	2,2	0,00	0,00	0,10	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,00	2,10	95,45	0,0700
Leningrad Oblast	783,8	0,00	0,00	5,78	0,00	0,00	46,05	0,00	0,00	3,71	0,00	0,00	55,54	7,09	0,6619
Lipetsk Oblast	5,5	0,96	0,05	1,00	0,30	0,00	0,00	0,00	0,00	0,00	1,00	1,00	3,31	60,66	0,1378
Magadan Oblast	1,9	0,00	0,00	0,00	0,00	1,90	0,00	0,00	0,00	0,00	0,00	0,00	1,90	100,00	0,0041
Moscow Oblast	48,0	0,00	0,00	0,00	0,00	0,70	0,20	0,10	0,00	0,10	0,00	0,00	1,00	2,08	0,0225
Murmansk Oblast	12,2	0,00	0,00	0,80	0,00	0,00	3,30	0,00	0,00	0,00	0,00	0,00	4,10	33,61	0,0283
Nizhny Novgorod Oblast	153,6	0,00	0,00	1,50	0,00	12,90	8,60	12,70	19,80	12,70	19,80	19,80	55,50	36,13	0,7243
Novgorod Oblast	161,5	0,00	0,00	22,30	0,00	0,00	20,70	3,70	0,00	3,70	0,00	0,00	46,70	28,92	0,8569
Novosibirsk Oblast	20,2	0,00	0,00	0,30	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,30	1,49	0,0017
Omsk Oblast	43,4	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,30	36,80	4,30	0,00	41,10	94,70	0,2912
Orenburg Oblast	4,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Oryol Oblast	1,9	0,00	0,00	0,03	0,00	0,90	0,00	0,00	0,80	0,00	0,00	0,80	1,73	89,66	0,0704
Penza Oblast	36,4	0,00	0,00	0,20	0,00	0,10	2,90	1,10	1,40	1,10	1,40	1,40	5,70	15,66	0,1315

Table 12 Continued (4).

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										% of total area of SPFB	% of the area of the entity		
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	Total thousands ha					
Pskov Oblast	6,5	0,00	0,00	1,00	0,00	0,00	3,90	0,30	0,00	0,00	0,00	10,00	5,20	80,00	0,0939
Ryazan Oblast	42,3	0,00	0,00	0,00	0,00	5,00	5,30	3,70	10,00	24,00	24,00	10,00	24,00	56,74	0,6060
Samara Oblast	78,1	0,00	0,00	0,00	0,00	1,00	0,60	0,00	14,10	15,70	15,70	0,00	0,00	20,10	0,2931
Saratov Oblast	0,6	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Sakhalin Oblast	569,1	0,00	0,00	61,90	0,00	0,10	0,10	0,00	0,00	62,10	10,91	0,00	62,10	10,91	0,7130
Sverdlovsk Oblast	860,4	0,00	0,70	0,60	0,00	0,20	76,00	16,00	16,00	109,50	12,73	16,00	109,50	12,73	0,5635
Smolensk Oblast	19,9	0,00	0,17	0,00	0,18	0,20	4,90	8,17	2,52	16,14	81,23	2,52	16,14	81,23	0,3243
Tambov Oblast	16,9	0,00	0,58	0,27	0,61	0,00	1,90	1,80	0,00	5,15	30,54	0,00	5,15	30,54	0,1496
Tver Oblast	84,5	0,00	0,00	0,10	0,00	0,00	6,90	10,30	0,90	18,20	21,54	0,90	18,20	21,54	0,2161
Tomsk Oblast	117,9	0,00	0,00	0,00	0,00	8,30	0,00	67,70	0,00	76,00	64,46	0,00	76,00	64,46	0,2417
Tula Oblast	5,0	0,00	0,41	1,53	0,00	0,00	0,00	0,00	3,06	5,00	107,77	3,06	5,00	107,77	0,1948
Tyumen Oblast	599,5	0,00	0,00	0,70	0,00	1,80	0,00	1,70	9,40	13,60	2,27	9,40	13,60	2,27	0,0849
Ulyanovsk Oblast	14,5	0,00	0,00	0,80	0,00	3,20	3,40	0,00	0,00	7,40	51,03	0,00	7,40	51,03	0,1990
Chelyabinsk Oblast	89,5	0,00	0,00	3,10	0,00	12,50	2,50	2,30	52,80	73,20	81,79	52,80	73,20	81,79	0,8268

Table 12 Continued (5).

Entities of the Russian Federation	All SPFB	SPFB meeting IUCN criteria for PAs (with exception of reproduction plots and peace areas in game areas)										Total, thousands ha	% of total area of SPFB	% of the area of the entity
		Preserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by beavers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	IV	IV			
Yaroslavl Oblast	87,0	0,00	0,00	0,00	0,00	0,00	7,90	13,50	0,10	21,50	0,10	21,50	24,71	0,5943
Jewish Autonomous Oblast	155,9	0,00	0,00	45,10	0,00	3,40	0,00	0,00	72,50	121,00	72,50	121,00	77,61	3,3365
Khanty-Mansi Autonomous Okrug — Yugra	683,1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,50	0,50	0,50	0,50	0,07	0,0009
Yamalo-Nenets Autonomous Okrug	831,9	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Russian Federation	29446,4	65,01	13,20	271,50	11,28	506,73	354,16	515,17	611,62	2348,66	7,98	0,1371		

Table 13.

Sizes of specially protective forest blocks meeting IUCN criteria of PAs in the Russian Federation outside other areas meeting IUCN definition of PAs
(Roman numerals refer to corresponding IUCN categories)

Entities of the Russian Federation	Reserved forest plots, thousands ha	IV	IV	IV	IV	IV	IV	IV	IV	IV	Total, thousands ha	% of the entity area
	la	IV	IV	IV	IV	IV	IV	IV	IV	IV		
Republic of Adygea	0,00	0,00	0,53	0,00	0,00	0,30	0,00	0,00	0,00	0,00	0,90	0,1160
Altai Republic	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,08	0,00	2,08	0,0224
Republic of Bashkortostan	0,00	0,00	18,67	0,00	0,00	29,21	13,56	0,79	0,79	61,17	123,40	0,8633
Republic of Buryatia	0,00	0,00	0,00	0,00	0,00	21,85	1,30	0,35	0,00	0,00	23,50	0,0669
Republic of Dagestan	0,00	0,00	0,00	0,00	0,00	0,09	0,00	0,00	0,00	0,00	0,09	0,0018
Republic of Ingushetia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,20	0,20	0,0540
Kabardino-Balkar Republic	0,00	0,00	0,09	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,09	0,0071
Republic of Kalmykia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Karachay-Cherkess Republic	0,00	0,15	0,77	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,92	0,0647
Republic of Karelia	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Komi Republic	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Crimea Republic	0,00	0,19	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,19	0,0072
Mari El Republic	0,00	0,00	0,29	0,00	0,00	0,00	3,37	0,58	0,58	6,15	10,40	0,4449
Republic of Mordovia	0,00	1,06	1,09	0,00	0,00	8,43	1,70	3,20	3,20	9,67	25,15	0,9625

Table 13 Continued (1).

Entities of the Russian Federation	Reserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic plants, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by bivers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	Total, thousands ha	% of the entity area
Sakha (Yakutia) Republic	0,00	0,00	0,00	0,00	0,05	0,00	0,00	0,00	0,05	0,0000
Republic of North Ossetia-Alania	0,00	0,18	0,97	0,27	0,00	0,00	0,00	1,15	2,57	0,3214
Republic of Tatarstan	0,00	0,85	4,82	0,00	2,85	0,59	0,67	179,24	189,03	2,7861
Tuva Republic	0,00	0,00	0,00	0,00	0,90	0,90	0,00	0,00	1,80	0,0107
Udmurt Republic	0,00	0,00	12,24	0,00	1,89	5,79	9,32	24,57	53,81	1,2794
Republic of Khakassia	0,00	0,00	0,00	0,00	0,63	0,07	0,00	0,00	0,70	0,0114
Chuvash Republic	0,00	1,29	0,00	0,00	2,83	0,42	2,73	6,26	13,53	0,7377
Altai Krai	0,00	0,20	0,42	0,17	35,95	0,01	1,34	0,00	38,09	0,2267
Zabaykalsky Krai	0,10	0,00	0,00	0,00	55,62	0,00	0,50	0,00	56,22	0,1302
Kamchatka Krai	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000
Krasnodar Krai	0,00	0,62	6,54	0,00	0,71	0,00	0,00	6,96	14,84	0,1966
Krasnoyarsk Krai	0,00	0,00	0,00	0,00	44,44	0,91	21,50	0,00	66,85	0,0282
Perm Krai	0,00	0,00	1,50	0,00	15,09	5,80	23,69	27,49	73,57	0,4591
Primorsky Krai	0,00	0,00	2,55	0,00	0,00	0,00	0,00	25,17	27,72	0,1683
Khabarovsk Krai	0,00	0,00	47,07	0,00	12,41	0,00	0,17	11,07	70,72	0,0898
Amur Oblast	0,00	0,00	0,00	0,00	0,80	0,00	0,00	14,20	15,00	0,0414
Arkhangelsk Oblast	63,18	0,80	2,22	8,13	14,58	19,45	79,45	0,00	187,81	0,4546
Astrakhan Oblast	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000

Table 13 Continued (2).

Entities of the Russian Federation	Reserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic plants, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by bivers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	Total, thousands ha	% of the entity area
	la	IV	IV	IV	IV	IV	IV	IV		
Belgorod Oblast	0,00	0,85	0,09	0,00	0,00	0,00	0,00	1,08	2,03	0,0749
Bryansk Oblast	0,00	0,00	0,88	0,00	0,00	2,28	0,00	3,95	7,10	0,2038
Vladimir Oblast	0,00	0,00	0,00	0,00	3,15	4,94	2,16	0,40	10,64	0,3660
Vologda Oblast	0,00	1,31	7,08	0,00	0,00	68,18	129,12	0,00	205,68	1,4232
Voronezh Oblast	0,00	2,57	0,28	0,00	0,00	0,00	0,36	2,61	5,83	0,1116
Ivanovo Oblast	0,00	0,00	0,20	0,00	0,69	2,68	6,27	0,20	10,03	0,4681
Kaliningrad Oblast	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,17	0,17	0,0115
Kaluga Oblast	0,14	0,58	1,77	1,37	1,28	2,39	0,10	10,51	18,13	0,6090
Kemerovo Oblast	0,00	0,00	6,80	0,00	0,00	0,00	0,50	0,00	7,29	0,0762
Kirov Oblast	0,00	0,00	0,70	0,00	0,20	7,20	0,70	1,20	9,99	0,0830
Kostroma Oblast	0,00	0,00	0,00	0,00	0,00	14,70	32,49	0,00	47,18	0,7836
Kurgan Oblast	0,00	0,00	4,04	0,00	159,34	1,33	0,08	0,00	164,79	2,3052
Kursk Oblast	0,00	0,00	0,09	0,00	0,00	0,00	0,00	1,85	1,94	0,0648
Leningrad Oblast	0,00	0,00	5,63	0,00	0,00	44,78	3,60	0,00	54,02	0,6438
Lipetsk Oblast	0,90	0,05	0,93	0,28	0,00	0,00	0,00	0,93	3,09	0,1285
Magadan Oblast	0,00	0,00	0,00	0,00	1,90	0,00	0,00	0,00	1,90	0,0041
Moscow Oblast	0,00	0,00	0,00	0,00	0,60	0,17	0,09	0,00	0,86	0,0195
Murmansk Oblast	0,00	0,00	0,74	0,00	0,00	3,30	0,00	0,00	4,04	0,0279

Table 13 Continued (3).

Entities of the Russian Federation	Reserved forest plots, thousands ha	Forest seed plots, thousands ha	Forest plots with relict and endemic plants, thousands ha	Habitats of rare and endangered wild animals, thousands ha	Small forest plots located in forest-free fields, thousands ha	Forest plots around grouse lekks, thousands ha	Forest belts along rivers and other water bodies inhabited by bivers, thousands ha	Nut harvesting and melliferous forest plots, thousands ha	Total, thousands ha		% of the entity area
									IV	IV	
Nizhny Novgorod Oblast	0,00	0,00	1,49	0,00	12,59	8,52	12,35	19,24	54,18	0,7071	
Novgorod Oblast	0,00	0,00	22,28	0,00	0,00	20,68	3,70	0,00	46,67	0,8562	
Novosibirsk Oblast	0,00	0,00	0,27	0,00	0,00	0,00	0,00	0,00	0,27	0,0015	
Omsk Oblast	0,00	0,00	0,00	0,00	0,00	0,00	36,80	4,30	41,10	0,2912	
Orenburg Oblast	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000	
Oryol Oblast	0,00	0,00	0,03	0,00	0,87	0,00	0,00	0,77	1,67	0,0678	
Penza Oblast	0,00	0,00	0,19	0,00	0,10	2,85	1,07	1,39	5,60	0,1291	
Pskov Oblast	0,00	0,00	1,00	0,00	0,00	3,88	0,30	0,00	5,17	0,0934	
Ryazan Oblast	0,00	0,00	0,00	0,00	4,94	5,28	3,68	9,94	23,85	0,6022	
Samara Oblast	0,00	0,00	0,00	0,00	0,93	0,56	0,00	13,06	14,55	0,2716	
Saratov Oblast	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000	
Sakhalin Oblast	0,00	0,00	61,90	0,00	0,10	0,10	0,00	0,00	62,10	0,7130	
Sverdlovsk Oblast	0,00	0,70	0,60	0,00	0,20	75,84	15,62	15,62	108,58	0,5588	
Smolensk Oblast	0,00	0,17	0,00	0,18	0,20	4,87	8,13	2,51	16,06	0,3225	
Tambov Oblast	0,00	0,52	0,25	0,55	0,00	1,72	1,63	0,00	4,66	0,1353	
Tver Oblast	0,00	0,00	0,10	0,00	0,00	6,90	10,29	0,90	18,19	0,2160	
Tomsk Oblast	0,00	0,00	0,00	0,00	8,30	0,00	67,50	0,00	75,79	0,2411	
Tula Oblast	0,00	0,36	1,36	0,00	0,00	0,00	0,00	2,73	4,45	0,1734	

Table 13 Continued (4).

Entities of the Russian Federation	Reserved forest plots, thousands ha	Forest seed plots, thousands ha		Forest plots with relict and endemic plants, thousands ha		Habitats of rare and endangered wild animals, thousands ha		Small forest plots located in forest-free fields, thousands ha		Forest plots around grouse lekks, thousands ha		Forest belts along rivers and other water bodies inhabited by bivers, thousands ha		Nut harvesting and melliferous forest plots, thousands ha		Total, thousands ha	% of the entity area
	la	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV				
Tyumen Oblast	0,00	0,00	0,70	0,00	0,00	1,79	0,00	0,00	0,00	0,00	9,38	1,70	0,00	9,38	13,57	0,0847	
Ulyanovsk Oblast	0,00	0,00	0,70	0,00	0,00	2,84	0,00	0,00	0,00	3,17	0,00	0,00	0,00	0,00	6,71	0,1804	
Chelyabinsk Oblast	0,00	0,00	2,83	0,00	0,00	10,60	0,00	0,00	2,44	7,84	51,89	2,25	13,42	0,10	70,01	0,7908	
Yaroslavl Oblast	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	21,36	0,5905	
Jewish Autonomous Oblast	0,00	0,00	44,98	0,00	0,00	3,40	0,00	0,00	0,00	0,00	72,34	0,00	0,00	0,38	120,72	3,3288	
Khanty-Mansi Autonomous Okrug	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,38	0,0007	
Yamal-Nenets Autonomous Okrug	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,0000	
Russian Federation	64,32	12,51	267,68	10,93	462,65	350,47	500,27	600,85	2269,67	0,1325							

REPRODUCTION PLOTS AND NON-DISTURBANCE AREAS IN HUNTING ESTATES

The total size of hunting estates in the Russian Federation is 1,124,014,300 ha, i.e. 65.5% of the area of the country, out of which 754,181,000 ha, i.e. 44% of the area of the country or 67% of the combined area of hunting estates are game areas with restricted access (Table 14).

Table 14.

Sizes of game areas and reproduction plots in the Russian Federation

(refer to the narrative)

Entities of the Russian Federation	All game areas		Game areas with private access		Reproduction plots		Reproduction plots outside other areas meeting IUCN criteria for PAs	
	Thousands ha	%	Thousands ha	%	Thousands ha	%	Thousands ha	%
Republic of Adygea	611,3	78,4	489,0	62,8	61,1	7,8	46,0	5,9
Altai Republic	5300,0	57,0	2597,0	28,0	530,0	5,7	291,6	3,1
Republic of Bashkortostan	10552,3	73,8	6859,0	48,0	1055,2	7,4	1021,9	7,1
Republic of Buryatia	20970,0	59,7	16776,0	47,7	2097,0	6,0	1759,8	5,0
Republic of Dagestan	1604,1	31,9	786,0	15,6	160,4	3,2	147,4	2,9
Republic of Ingushetia	1333,3	367,5	360,0	99,2	133,3	36,8	87,1	24,0
Kabardino-Balkar Republic	580,3	46,5	441,0	35,4	58,0	4,7	51,3	4,1
Republic of Kalmykia	2617,9	35,0	733,0	9,8	261,8	3,5	260,3	3,5
Karachay-Cherkeess Republic	1101,3	77,1	826,0	57,9	110,1	7,7	84,8	5,9
Republic of Karelia	9310,6	51,6	6145,0	34,0	931,1	5,2	926,5	5,1
Komi Republic	24087,5	57,8	13489,0	32,4	2408,8	5,8	1751,8	4,2
Crimea Republic	2291,3	87,9	1833,0	70,3	229,1	8,8	214,6	8,2
Mari El Republic	1561,4	66,8	1093,0	46,8	156,1	6,7	151,3	6,5
Republic of Mordovia	2283,8	87,4	1827,0	69,9	228,4	8,7	220,7	8,4
Sakha (Yakutia) Republic	203220,0	65,9	132093,0	42,8	20322,0	6,6	9382,0	3,0
Republic of North Ossetia-Alania	518,2	64,9	399,0	50,0	51,8	6,5	45,9	5,7
Republic of Tatarstan	5800,0	85,5	4524,0	66,7	580,0	8,5	548,8	8,1

Table 14 Continued (1).

Entities of the Russian Federation	All game areas		Game areas with private access		Reproduction plots		Reproduction plots outside other areas meeting IUCN criteria for PAs	
	Thousands ha	%	Thousands ha	%	Thousands ha	%	Thousands ha	%
	Tuva Republic	6754,5	40,1	4458,0	26,4	675,5	4,0	671,2
Udmurt Republic	3441,0	81,8	2684,0	63,8	344,1	8,2	333,4	7,9
Republic of Khakassia	2866,7	46,6	1548,0	25,1	286,7	4,7	201,1	3,3
Chechen Republic	466,7	29,8	84,0	5,4	46,7	3,0	39,4	2,5
Chuvash Republic	1150,0	62,7	920,0	50,2	115,0	6,3	108,4	5,9
Altai Krai	16401,3	97,6	13121,0	78,1	1640,1	9,8	1371,4	8,2
Zabaykalsky Krai	52172,4	120,8	30260,0	70,1	5217,2	12,1	5077,6	11,8
Kamchatka Krai	34792,0	74,9	34792,0	74,9	3479,2	7,5	3192,1	6,9
Krasnodar Krai	5272,5	69,8	4218,0	55,9	527,3	7,0	470,7	6,2
Krasnoyarsk Krai	118433,3	50,0	53295,0	22,5	11843,3	5,0	9718,2	4,1
Perm Krai	12430,3	77,6	9447,0	59,0	1243,0	7,8	1237,6	7,7
Primorsky Krai	15401,3	93,5	12321,0	74,8	1540,1	9,4	1405,5	8,5
Stavropol Krai	5331,3	80,6	4265,0	64,5	533,1	8,1	528,8	8,0
Khabarovsk Krai	70210,0	89,1	56168,0	71,3	7021,0	8,9	4001,4	5,1
Amur Oblast	39462,5	109,0	31570,0	87,2	3946,3	10,9	3946,0	10,9
Arkhangelsk Oblast	8309,5	20,1	1745,0	4,2	831,0	2,0	767,1	1,9
Astrakhan Oblast	3524,0	71,9	1762,0	35,9	352,4	7,2	347,6	7,1
Belgorod Oblast	1882,5	69,4	1506,0	55,5	188,3	6,9	172,7	6,4
Bryansk Oblast	3357,5	96,3	2686,0	77,1	335,8	9,6	297,6	8,5

Table 14 Continued (2).

Entities of the Russian Federation	All game areas		Game areas with private access		Reproduction plots		Reproduction plots outside other areas meeting IUCN criteria for PAs	
	Thousands ha	%	Thousands ha	%	Thousands ha	%	Thousands ha	%
	Vladimir Oblast	2126,3	73,1	1701,0	58,5	212,6	7,3	204,3
Volograd Oblast	11381,3	100,8	9105,0	80,7	1138,1	10,1	1086,2	9,6
Vologda Oblast	7757,6	53,7	5120,0	35,4	775,8	5,4	768,8	5,3
Voronezh Oblast	5908,8	113,2	4727,0	90,5	590,9	11,3	554,6	10,6
Ivanovo Oblast	1640,0	76,5	1312,0	61,2	164,0	7,7	156,4	7,3
Irkutsk Oblast	56200,0	72,5	44960,0	58,0	5620,0	7,3	4895,7	6,3
Kaliningrad Oblast	960,0	63,5	768,0	50,8	96,0	6,3	83,8	5,5
Kaluga Oblast	2486,3	83,5	1989,0	66,8	248,6	8,3	244,2	8,2
Kemerovo Oblast	7975,3	83,3	5822,0	60,8	797,5	8,3	792,4	8,3
Kirov Oblast	11680,0	97,0	9344,0	77,6	1168,0	9,7	1163,1	9,7
Kostroma Oblast	4102,6	68,1	3159,0	52,5	410,3	6,8	409,6	6,8
Kurgan Oblast	6393,6	89,4	4987,0	69,8	639,4	8,9	541,1	7,6
Kursk Oblast	1212,0	40,4	909,0	30,3	121,2	4,0	112,2	3,7
Leningrad Oblast	8179,0	97,5	6625,0	79,0	817,9	9,7	795,5	9,5
Lipetsk Oblast	1830,0	76,1	1464,0	60,9	183,0	7,6	170,6	7,1
Magadan Oblast	37497,5	81,1	29623,0	64,1	3749,7	8,1	3749,7	8,1
Moscow Oblast	4881,3	110,0	3905,0	88,0	488,1	11,0	421,4	9,5
Murmansk Oblast	4968,6	34,3	1739,0	12,0	496,9	3,4	347,9	2,4
Nizhny Novgorod Oblast	6857,5	89,5	5486,0	71,6	685,8	8,9	661,5	8,6

Table 14 Continued (3).

Entities of the Russian Federation	All game areas		Game areas with private access		Reproduction plots		Reproduction plots outside other areas meeting IUCN criteria for PAs	
	Thousands ha	%	Thousands ha	%	Thousands ha	%	Thousands ha	%
Novgorod Oblast	4746,3	87,1	3797,0	69,7	474,6	8,7	473,1	8,7
Novosibirsk Oblast	11615,4	65,3	7550,0	42,5	1161,5	6,5	1043,8	5,9
Omsk Oblast	8233,3	58,3	3458,0	24,5	823,3	5,8	784,0	5,6
Orenburg Oblast	5884,3	47,6	3001,0	24,3	588,4	4,8	567,8	4,6
Oryol Oblast	1903,8	77,2	1523,0	61,8	190,4	7,7	183,3	7,4
Penza Oblast	2757,5	63,6	2206,0	50,9	275,8	6,4	262,7	6,1
Pskov Oblast	4366,2	78,8	2838,0	51,2	436,6	7,9	429,8	7,8
Rostov Oblast	9403,8	93,1	7523,0	74,5	940,4	9,3	912,0	9,0
Ryazan Oblast	4143,8	104,6	3315,0	83,7	414,4	10,5	407,8	10,3
Samara Oblast	4661,3	87,0	3729,0	69,6	466,1	8,7	431,9	8,1
Saratov Oblast	6733,8	66,5	5387,0	53,2	673,4	6,7	638,2	6,3
Sakhalin Oblast	993,8	11,4	795,0	9,1	99,4	1,1	99,3	1,1
Sverdlovsk Oblast	12907,0	66,4	9164,0	47,2	1290,7	6,6	1203,8	6,2
Smolensk Oblast	4802,5	96,5	3842,0	77,2	480,3	9,6	475,2	9,5
Tambov Oblast	2050,0	59,5	1640,0	47,6	205,0	5,9	185,4	5,4
Tver Oblast	8575,0	101,8	6860,0	81,5	857,5	10,2	854,9	10,2
Tomsk Oblast	30987,1	98,6	21691,0	69,0	3098,7	9,9	3055,2	9,7
Tula Oblast	2465,0	96,0	1972,0	76,8	246,5	9,6	219,4	8,5
Tyumen Oblast	52702,0	329,1	26351,0	164,6	5270,2	32,9	5186,9	32,4

Table 14 Continued (4).

Entities of the Russian Federation	All game areas		Game areas with private access		Reproduction plots		Reproduction plots outside other areas meeting IUCN criteria for PAs	
	Thousands ha	%	Thousands ha	%	Thousands ha	%	Thousands ha	%
Ulyanovsk Oblast	3077,6	82,8	2339,0	62,9	307,8	8,3	270,4	7,3
Chelyabinsk Oblast	9100,0	102,8	7280,0	82,2	910,0	10,3	771,7	8,7
Yaroslavl Oblast	3752,5	103,7	3002,0	83,0	375,3	10,4	360,9	10,0
Jewish Autonomous Oblast	3572,5	98,5	2858,0	78,8	357,3	9,9	349,3	9,6
Khanty-Mansi Autonomous Okrug — Yugra	45068,1	84,3	21182,0	39,6	4506,8	8,4	3438,6	6,4
Yamal-Nenets Autonomous Okrug	72,2	0,1	13,0	0,0	7,2	0,0	6,2	0,0
Russian Federation	1124014,3	65,6	754181,0	44,0	112401,4	6,6	90650,1	5,3

Reproduction plots or non-disturbance areas that mainly meet the IUCN criteria for PAs can be established in hunting estates with either restricted or public access as specially protected forest blocks or other zones of protection of game resources, in accordance with the current Forest Code and the Law on Hunting and Preservation of Game Resources. The minimal size of reproduction plots is not defined in the federal legislation, but regional laws on hunting or special statutory provisions for reproduction plots in most Russian regions set their minimal size as at least 10% (sometimes 5%) and no more than 50% of the total area of hunting estates.

Due to technical difficulties, incompleteness of original data and the large volume of needed work, it is not feasible to precisely define the total area of reproduction plots in all regions of Russia within a reasonable timeframe and budget. For a rough estimation, we can make a very approximate assumption that it constitutes on average 10% of the total area of hunting estates. This makes the total area of reproduction plots equal to 112,401,400 ha, or approximately 6.6% of the area of the Russian Federation. A part of this area may be included in other areas that also meet the IUCN criteria for PAs (protection forests, TTNUs), therefore, this result should be decreased proportionally to the area of the latter in each region. As a result, the estimation of the area of reproduction plots within hunting estates outside other areas meeting PA criteria is **90,650,100 ha** or **5.3%** of the area of the country.

The 10 leaders in the area of hunting estates, and thus in size of reproduction plots, are *Sakha (Yakutia) Republic, Krasnoyarsk Territory, Khabarovsk Territory, Irkutsk Region, Tyumen Region, Zabaykalsky Territory, Khanty-Mansi Autonomous District, Amur Region, Magadan Region and Kamchatka Territory*. In 11 entities (*Ingushetia Republic, Tyumen Region, Zabaykalsky Territory, Voronezh, Moscow, Amur, Rязan, Yaroslavl, Chelyabinsk, Tver, and Volgograd Regions*) the estimated size of reproduction plots is more than 10% of their total area. Only 3 regions out of these are among those with the maximum absolute areas of hunting estates— *Zabaykalsky Territory, Tyumen and Amur Regions*.

All reproduction plots within hunting estates meet **category IV — Habitat/species management area** in the IUCN classification of PAs.

Table 15 below shows the estimated size of all areas of the Russian Federation that meet the IUCN criteria for protected natural areas (PAs). Two estimations are provided for the total area of PAs in the country – minimal and maximal ones. The latter includes all the areas reviewed above, while the former – only those of them that unquestionably meet the IUCN definition of PAs, i.e. with the *exception of memorial estates, protection forests and reproduction plots in hunting estates*.

In summary, apart from over 200 million ha (11.5% of the size of the country) of specially protected natural areas meeting the IUCN criteria for PAs, approximately 228 million ha in Russia are other areas that also undoubtedly meet these criteria (some buffer zones of SPNAs, biosphere polygons, wetlands of international importance, territories of traditional nature use and specially protected forest blocks) and an additional 240 million ha are the areas meeting these criteria with some caveats (historic and cultural memorial estates, protection forests, reproduction plots in hunting estates). Thus, the total size of land PAs in the IUCN definition in the country is just over **25%** without the latter categories, and with them it is almost **40%**.

Table 15.

**Sizes of protected areas of the Russian Federation (without marine area)
meeting IUCN criteria for PAs**

Entities of the Russian Federation	Categories of protected areas meeting IUCN criteria for PAs,									Total IPAs (minimum)		Total IPAs (maximum)	
	SPNA	Buffer zones and biosphere polygons of SPNA	TTNU	Wetlands of international importance	Memorial estates	Protective forests	Specially protective forest blocks	Reproduction plots in game areas	Thousands ha	%	Thousands ha	%	
Republic of Adygea	39,0	0,00	0,0	0,0	0,00	24,68	0,1204	5,91	305,2	39,16	543,5	69,75	
Altai Republic	25,2	0,00	0,0	0,0	0,00	23,58	0,0308	3,14	2348,3	25,28	4830,8	52,00	
Republic of Bashkortostan	5,9	0,00	0,0	0,0	0,00	3,16	0,8636	7,15	962,5	6,73	2436,4	17,04	
Republic of Buryatia	8,6	0,42	5,3	0,0	0,00	10,78	0,0669	5,01	5047,0	14,37	10594,5	30,16	
Republic of Dagestan	10,6	0,10	0,0	0,0	0,00	8,12	0,0183	2,93	540,4	10,75	1096,1	21,80	
Republic of Ingushetia	23,9	0,00	0,0	0,0	17,92	16,77	0,0540	24,01	86,9	23,96	299,9	82,65	
Kabardino-Balkar Republic	27,0	4,27	0,0	0,0	0,00	11,57	0,0709	4,11	390,5	31,32	586,2	47,00	
Republic of Kalmykia	15,9	1,22	0,0	0,0	0,00	0,58	0,0000	3,48	1276,4	17,08	1580,3	21,15	
Karachay-Cherkess Republic	22,1	1,91	0,0	0,0	0,00	22,99	0,0647	5,94	343,5	24,06	756,6	52,99	
Republic of Karelia	5,5	0,31	0,3	0,0	0,06	0,09	0,0000	5,13	1094,9	6,06	2046,9	11,34	
Komi Republic	13,0	0,00	0,0	0,0	0,00	27,27	0,0000	4,20	5423,4	13,01	18542,4	44,49	
Crimea Republic	5,6	0,00	0,0	0,0	0,00	6,36	0,0072	8,23	146,5	5,62	527,0	20,21	
Mari El Republic	4,5	0,57	0,0	0,0	0,00	3,11	0,0625	6,47	119,9	5,13	343,8	14,71	
Republic of Mordovia	2,9	0,00	0,0	0,0	0,00	3,34	0,9625	8,45	101,6	3,89	409,6	15,68	
Sakha (Yakutia) Republic	29,8	0,36	50,3	0,0	0,00	3,53	0,0001	3,04	248047,5	80,44	268324,9	87,02	
Republic of North Ossetia Alania	19,0	10,86	0,0	0,0	0,00	11,48	0,3215	5,74	241,2	30,19	378,7	47,42	

Table 15 Continued (1).

Entities of the Russian Federation	Categories of protected areas meeting IUCN criteria for PAs, % of the entity area								Total IPAs (minimum)		Total IPAs (maximum)	
	SPNA	Buffer zones and biosphere polygons of SPNA	TTNU	Wetlands of international importance	Memorial estates	Protective forests	Specially protective forest blocks	Reproduction plots in game areas	Thousands ha	%	Thousands ha	%
Republic of Tatarstan	2,4	0,35	0,0	0,0	0,05	5,28	2,7896	8,09	378,9	5,58	1289,1	19,00
Tuva Republic	11,6	4,10	0,0	0,0	0,00	0,63	0,0107	3,98	2652,6	15,73	3430,0	20,34
Udmurt Republic	9,3	0,00	0,0	0,0	0,00	3,11	1,2794	7,93	445,7	10,60	909,8	21,63
Republic of Khakassia	14,7	1,58	5,9	0,0	0,29	23,67	0,0116	3,27	1361,5	22,11	3037,7	49,34
Chechen Republic	14,3	0,00	0,0	0,0	0,00	15,50	0,0000	2,52	223,2	14,26	505,2	32,29
Chuvash Republic	4,1	1,39	0,0	0,0	0,00	5,74	0,7377	5,91	114,9	6,26	328,5	17,91
Altai Krai	5,3	0,16	0,0	0,0	0,00	16,38	0,2313	8,16	955,7	5,69	5079,5	30,24
Zabaykalsky Krai	7,5	1,23	0,0	0,0	0,00	2,68	0,1302	11,76	3846,0	8,90	10079,4	23,34
Kamchatka Krai	10,5	1,46	0,0	2,1	0,00	8,25	0,0000	6,88	6533,0	14,07	13556,8	29,20
Krasnodar Krai	10,3	0,00	0,0	1,9	0,00	10,73	0,1966	6,24	936,0	12,40	2216,9	29,37
Krasnoyarsk Krai	5,7	1,28	1,1	0,5	0,00	16,84	0,0282	4,11	20406,4	8,62	69990,2	29,57
Perm Krai	10,3	0,46	0,0	0,0	0,00	0,43	0,4592	7,72	1796,4	11,21	3103,6	19,37
Primorsky Krai	20,4	1,80	2,5	1,1	0,00	6,24	0,1683	8,54	4266,5	25,91	6699,4	40,68
Stavropol Krai	0,2	0,00	0,0	0,0	0,00	0,82	0,0000	7,99	11,4	0,17	594,4	8,98
Khabarovsk Krai	8,1	0,53	42,8	0,6	0,00	0,21	0,0098	5,08	40936,4	51,97	45102,2	57,26
Amur Oblast	11,1	0,20	0,0	0,1	0,00	0,01	0,0414	10,90	4145,4	11,45	8093,8	22,36
Arkhangel'sk Oblast	11,2	0,08	0,0	0,0	0,08	7,59	0,4548	1,86	4861,5	11,77	8797,3	21,30
Astrakhan Oblast	10,3	0,63	0,0	6,8	0,00	1,37	0,0000	7,09	867,0	17,68	1281,7	26,15

Table 15 Continued (2).

Entities of the Russian Federation	Categories of protected areas meeting IUCN criteria for PAs, % of the entity area									Total PAs (minimum)		Total PAs (maximum)	
	SPNA	Buffer zones and biosphere polygons of SPNA	TTNU	Wetlands of international importance	Memorial estates	Protective forests	Specially protective forest blocks	Reproduction plots in game areas	Thousands ha	%	Thousands ha	%	
Belgorod Oblast	1,6	0,10	0,0	0,0	0,00	8,26	0,0852	6,36	49,4	1,82	446,3	16,45	
Bryansk Oblast	5,5	0,38	0,0	0,0	0,00	11,38	0,2049	8,54	211,2	6,06	905,3	25,97	
Vladimir Oblast	11,8	1,58	0,0	0,0	0,00	3,90	0,0565	7,03	390,1	13,41	707,7	24,33	
Vologda Oblast	8,9	0,00	0,0	0,0	0,00	4,56	0,0000	9,62	1000,2	8,86	2601,4	23,05	
Vologda Oblast	6,2	0,29	0,0	0,0	0,00	0,89	0,1777	5,32	957,4	6,62	1854,9	12,83	
Voronezh Oblast	4,1	0,44	0,0	0,0	0,21	5,94	0,1116	10,62	243,9	4,67	1119,7	21,44	
Ivanovo Oblast	2,3	0,00	0,0	0,0	1,04	3,61	0,0626	7,30	51,4	2,40	307,5	14,34	
Irkutsk Oblast	3,5	0,00	0,9	0,0	0,00	11,99	0,0000	6,32	3356,9	4,33	17541,3	22,64	
Kaliningrad Oblast	4,2	0,00	0,0	0,0	0,00	12,70	0,0115	5,54	64,4	4,26	340,3	22,50	
Kaluga Oblast	9,2	0,30	0,0	0,0	0,00	1,78	0,6090	8,20	300,3	10,08	597,4	20,06	
Kemerovo Oblast	13,6	2,33	0,0	0,0	0,00	0,64	0,0762	8,28	1537,0	16,06	2390,9	24,98	
Kirov Oblast	2,9	0,15	0,0	0,0	0,00	0,42	0,0830	9,66	374,6	3,11	1567,9	13,19	
Kostroma Oblast	2,1	1,14	0,0	0,0	0,00	0,15	0,7836	6,80	244,9	4,07	663,8	11,03	
Kurgan Oblast	6,1	0,00	0,0	0,0	0,00	15,37	2,3052	7,57	601,6	8,41	2241,7	31,36	
Kursk Oblast	0,2	0,96	0,0	0,0	0,00	7,41	0,0648	3,74	37,5	1,25	372,0	12,40	
Leningrad Oblast	6,9	0,00	0,0	0,1	0,00	2,74	0,6456	9,48	643,2	7,67	1668,9	19,89	
Lipetsk Oblast	4,6	0,20	0,0	0,0	0,00	6,77	0,1617	7,09	118,6	4,93	452,1	18,80	
Magadan Oblast	4,5	0,12	0,0	0,0	0,00	0,00	0,0041	8,11	2132,8	4,61	5882,6	12,72	

Table 15 Continued (3).

Entities of the Russian Federation	Categories of protected areas meeting IUCN criteria for PAs, % of the entity area								Total PAs (minimum)		Total PAs (maximum)	
	SPNA	Buffer zones and biosphere polygons of SPNA	TTNU	Wetlands of international importance	Memorial estates	Protective forests	Specially protective forest blocks	Reproduction plots in game areas	Thousands ha	%	Thousands ha	%
Moscow Oblast	5,6	0,18	0,0	0,0	0,00	13,66	0,0195	9,50	257,7	5,81	1285,3	28,96
Murmansk Oblast	13,2	0,19	0,0	0,3	0,00	29,99	0,0306	2,40	1992,0	13,75	6684,8	46,13
Nizhny Novgorod Oblast	6,2	0,14	0,0	1,7	0,00	3,53	0,7071	8,63	675,2	8,81	1607,4	20,98
Novgorod Oblast	7,3	0,09	0,0	0,0	0,00	0,32	0,8562	8,68	448,5	8,23	938,9	17,23
Novosibirsk Oblast	9,7	0,00	0,0	1,5	0,00	10,14	0,0015	5,87	1986,1	11,17	4832,2	27,18
Omsk Oblast	6,0	0,00	0,0	0,0	0,00	4,78	0,2912	5,55	889,0	6,30	2348,0	16,64
Orenburg Oblast	1,3	0,17	0,0	0,0	0,00	3,50	0,0000	4,59	180,2	1,46	1181,3	9,55
Oryol Oblast	9,1	1,88	0,0	0,0	0,00	3,70	0,0680	7,44	272,4	11,05	546,9	22,18
Penza Oblast	2,9	0,38	0,0	0,0	0,00	4,74	0,1291	6,06	146,6	3,38	614,9	14,18
Pskov Oblast	7,2	0,31	0,0	0,4	0,23	1,36	0,0934	7,76	442,0	7,98	959,8	17,33
Rostov Oblast	1,2	0,00	0,0	3,8	0,41	2,62	0,0000	9,03	508,4	5,04	1726,3	17,10
Ryazan Oblast	8,9	1,56	0,0	0,0	0,00	1,58	0,6022	10,30	436,1	11,01	906,5	22,89
Samara Oblast	5,5	0,12	0,0	0,0	0,00	7,35	0,2716	8,06	316,6	5,91	1142,2	21,32
Saratov Oblast	1,4	1,13	0,0	0,0	0,00	5,22	0,0000	6,30	257,0	2,54	1423,4	14,06
Sakhalin Oblast	9,6	0,99	0,0	0,0	0,00	0,09	0,7232	1,14	984,6	11,30	1092,1	12,54
Sverdlovsk Oblast	6,6	0,37	0,0	0,0	0,00	6,74	0,0956	6,20	1368,3	7,04	3880,9	19,97
Smolensk Oblast	7,4	0,15	0,0	0,0	0,48	0,55	0,3327	9,55	393,8	7,91	920,3	18,49
Tambov Oblast	4,0	0,33	0,0	0,0	0,00	9,57	0,1353	5,38	153,4	4,45	668,7	19,40

Table 15 Continued (4).

Entities of the Russian Federation	Categories of protected areas meeting IUCN criteria for PAs, % of the entity area										Total PAs (minimum)		Total PAs (maximum)	
	SPNA	Buffer zones and biosphere polygons of SPNA	TTNU	Wetlands of international importance	Memorial estates	Protective forests	Specialty protective forest blocks	Reproduction plots in game areas	Thousands ha	%	Thousands ha	%		
Tver Oblast	13,2	0,55	0,0	0,0	0,00	0,31	0,2160	10,15	1172,3	13,92	13,92	2053,1	24,38	
Tomsk Oblast	3,9	0,00	0,1	0,0	0,00	1,31	0,2411	9,72	1338,1	4,26	4,26	4803,7	15,28	
Tula Oblast	0,3	0,00	0,0	0,0	0,04	10,88	0,1734	8,55	13,2	0,51	0,51	513,1	19,98	
Tyumen Oblast	6,2	0,00	0,0	7,3	0,00	1,58	0,0847	32,39	2171,1	13,56	13,56	7611,1	47,53	
Ulyanovsk Oblast	6,5	0,00	0,0	0,0	0,00	12,12	0,1826	7,27	248,4	6,68	6,68	969,7	26,08	
Chelyabinsk Oblast	9,3	0,04	0,0	0,0	0,00	15,20	0,0888	8,72	835,7	9,44	9,44	2952,8	33,35	
Yaroslavl Oblast	9,8	2,06	0,0	0,0	0,00	3,82	0,5905	9,98	450,5	12,45	12,45	949,5	26,25	
Moscow	6,3	0,00	0,0	0,0	0,00	0,00	0,0000	0,00	15,8	6,29	6,29	15,8	6,29	
Saint Petersburg	4,3	0,00	0,0	0,0	0,00	0,00	0,0000	0,00	6,1	4,27	4,27	6,1	4,27	
Sevastopol	56,7	0,00	0,0	0,0	0,00	0,00	0,5150	0,00	49,5	57,26	57,26	49,5	57,26	
Jewish Autonomous Oblast	11,6	0,42	0,0	0,0	0,00	2,23	0,3508	9,63	450,3	12,42	12,42	880,5	24,28	
Nenets Autonomous Okrug	10,8	0,00	38,4	0,0	0,00	2,48	0,0000	0,00	8696,0	49,18	49,18	9134,9	51,66	
Khanty-Mansi Autonomous Okrug — Yugra	5,2	0,47	23,7	1,3	0,00	0,00	0,0007	6,43	16377,1	30,62	30,62	19817,3	37,06	
Chukotka Autonomous Okrug	5,0	0,00	0,0	0,0	0,00	36,78	0,0000	0,00	3610,5	5,00	5,00	30145,2	41,78	
Yamal-Nenets Autonomous Okrug	10,3	0,12	0,0	0,0	0,00	14,68	0,0000	0,01	8013,3	10,42	10,42	19312,6	25,11	
Russian Federation	11,53	0,53	12,51	0,35	0,01	8,84	0,1325	5,29	428685,4	25,03	25,03	671049,3	39,18	

Table 16.

Sizes of protected areas of the Russian Federation (without marine area) meeting IUCN criteria for PAs

Entities of the Russian Federation	All areas irrevocably meeting IUCN definition of PAs						All areas meeting IUCN definition of PAs, either irrevocably or with some remarks							
	Ia	Ib	II	III	IV	V	VI	Ia	Ib	II	III	IV	V	VI
Republic of Adygea	35,70	0,00	0,47	0,15	2,82	0,00	0,01	35,70	0,00	1,78	0,15	32,10	0,00	0,01
Altai Republic	11,01	4,01	4,32	0,01	5,69	0,00	21,59	11,01	4,01	4,32	0,01	28,84	0,00	25,06
Republic of Bashkortostan	2,11	0,00	1,45	0,04	2,70	0,00	0,43	2,11	0,00	1,55	0,04	12,91	0,00	0,43
Republic of Buryatia	1,88	0,00	4,77	0,00	2,63	0,00	5,40	1,88	0,00	4,84	0,00	16,74	0,00	7,01
Republic of Dagestan	0,01	0,00	0,11	0,02	8,58	0,13	1,88	0,01	0,00	0,47	0,02	19,27	0,13	1,88
Republic of Ingushetia	9,73	0,00	0,00	0,00	0,00	0,00	14,23	9,73	0,00	17,92	0,00	40,78	0,00	14,23
Kabardino-Balkar Republic	6,63	4,27	8,10	0,24	12,01	0,00	0,00	6,63	4,27	8,13	0,24	27,67	0,00	0,00
Republic of Kalmykia	1,62	0,00	0,00	0,00	8,05	0,00	7,41	1,62	0,00	0,00	0,00	12,12	0,00	7,41
Karachay-Cherkess Republic	6,86	10,43	3,82	0,00	4,86	0,00	0,00	6,86	10,43	3,86	0,00	33,75	0,00	0,00
Republic of Karelia	1,05	1,23	0,81	0,29	2,03	0,00	0,64	1,05	1,23	0,88	0,29	7,18	0,06	0,64
Komi Republic	6,28	1,33	0,00	0,00	5,40	0,00	0,00	6,28	1,33	0,01	0,00	11,64	0,00	25,23
Crimea Republic	2,07	0,00	2,01	0,23	1,29	0,02	0,00	2,07	0,00	2,01	0,23	15,87	0,02	0,00
Mari El Republic	0,92	0,00	1,58	0,06	2,13	0,00	0,83	0,92	0,00	2,75	0,06	10,54	0,00	0,83
Republic of Mordovia	1,23	0,00	1,39	0,09	0,81	0,00	0,37	1,23	0,00	1,82	0,09	12,17	0,00	0,37
Sakha (Yakutia) Republic	0,74	23,53	0,02	0,01	0,31	0,00	55,83	0,74	23,53	0,02	0,01	3,36	0,00	59,37
Republic of North Ossetia Alania	3,70	3,75	6,88	0,01	4,85	0,44	10,57	3,70	3,75	6,88	0,01	22,08	0,44	10,57
Republic of Tatarstan	0,17	0,00	0,39	0,02	2,01	0,35	2,64	0,17	0,00	1,53	0,02	14,24	0,39	2,64
Tuva Republic	3,90	5,05	3,35	0,00	2,80	0,00	0,63	3,90	5,05	3,35	0,00	7,41	0,00	0,63

Table 16 Continued (1).

Entities of the Russian Federation	All areas irrevocably meeting IUCN definition of PAs						All areas meeting IUCN definition of PAs, either irrevocably or with some remarks							
	Ia	Ib	II	III	IV	V	VI	Ia	Ib	II	III	IV	V	VI
Udmurt Republic	0,00	0,00	1,00	0,03	8,98	0,00	0,58	0,00	0,00	1,15	0,03	19,86	0,00	0,58
Republic of Khakassia	4,35	2,46	2,64	0,00	6,81	0,00	0,59	4,35	2,46	2,93	0,00	24,24	0,00	10,09
Chechen Republic	0,00	0,00	0,00	0,10	14,17	0,00	0,00	0,00	0,00	0,00	0,10	32,19	0,00	0,00
Chuvash Republic	0,50	0,00	1,37	0,00	2,28	0,00	2,11	0,50	0,00	2,13	0,00	13,16	0,00	2,11
Altai Krai	0,25	0,00	0,25	0,02	5,01	0,00	0,16	0,25	0,00	0,32	0,02	29,44	0,00	0,21
Zabaykalsky Krai	0,60	2,68	0,82	0,01	2,54	0,09	2,16	0,60	2,68	0,89	0,01	14,65	0,09	4,41
Kamchatka Krai	2,71	2,87	2,49	0,07	3,46	0,00	2,48	2,71	2,87	2,49	0,07	10,33	0,00	10,73
Krasnodar Krai	2,44	0,00	2,76	0,03	7,07	0,00	0,09	2,44	0,00	3,51	0,03	23,29	0,00	0,09
Krasnoyarsk Krai	3,62	1,99	0,16	0,01	1,60	0,01	1,23	3,62	1,99	0,17	0,01	6,45	0,01	17,32
Perm Krai	1,74	0,33	5,11	0,03	3,69	0,00	0,30	1,74	0,33	5,25	0,03	11,71	0,00	0,30
Primorsky Krai	3,75	7,05	2,62	0,04	8,01	0,48	3,96	3,75	7,05	2,72	0,04	18,93	0,48	7,71
Stavropol Krai	0,00	0,00	0,00	0,12	0,03	0,01	0,00	0,00	0,00	0,00	0,13	8,85	0,01	0,00
Khabarovsk Krai	2,09	2,15	0,20	0,05	4,33	0,00	43,23	2,09	2,15	0,20	0,05	9,43	0,00	43,43
Amur Oblast	1,13	1,25	0,36	0,00	8,60	0,07	0,04	1,13	1,25	0,37	0,00	19,50	0,07	0,04
Arkhangel'sk Oblast	6,52	0,27	0,78	0,00	4,21	0,00	0,00	6,52	0,27	0,86	0,00	6,27	0,00	7,38
Astrakhan Oblast	1,53	0,00	4,78	0,00	8,50	0,00	2,86	1,53	0,00	5,59	0,00	16,16	0,00	2,86
Belgorod Oblast	0,08	0,00	0,45	0,07	0,17	1,00	0,04	0,08	0,00	1,94	0,07	13,31	1,00	0,04
Bryansk Oblast	0,35	0,00	0,00	1,39	3,82	0,10	0,39	0,35	0,00	0,89	1,39	22,85	0,10	0,39
Vladimir Oblast	0,00	0,00	4,08	0,42	3,74	0,01	5,46	0,00	0,00	6,83	0,42	11,92	0,01	5,46
Vologograd Oblast	0,00	0,00	6,32	0,04	2,26	0,00	0,23	0,00	0,00	7,07	0,04	15,70	0,00	0,23
Vologda Oblast	0,45	0,00	0,99	0,18	5,93	0,03	0,29	0,45	0,00	1,11	0,18	12,03	0,03	0,29

Table 16 Continued (2).

Entities of the Russian Federation	All areas irrevocably meeting IUCN definition of PAs						All areas meeting IUCN definition of PAs, either irrevocably or with some remarks							
	Ia	Ib	II	III	IV	V	VI	Ia	Ib	II	III	IV	V	VI
Voronezh Oblast	0,65	0,00	0,00	0,28	3,22	0,47	0,05	0,65	0,00	0,21	0,28	19,78	0,47	0,05
Ivanovo Oblast	0,00	0,00	0,00	0,25	1,71	0,00	0,84	0,00	0,00	3,61	0,25	9,01	1,04	0,84
Irkutsk Oblast	1,61	1,00	0,54	0,00	0,31	0,00	0,88	1,61	1,00	0,56	0,00	14,37	0,00	5,10
Kaliningrad Oblast	0,00	0,00	0,44	0,41	1,88	1,52	0,01	0,00	0,00	1,28	0,41	19,28	1,52	0,01
Kaluga Oblast	0,63	0,00	3,31	0,12	5,36	0,30	0,35	0,63	0,00	4,34	0,12	14,31	0,30	0,35
Kemerovo Oblast	4,20	7,05	4,32	0,00	0,49	0,00	0,00	4,20	7,05	4,59	0,00	9,12	0,00	0,02
Kirov Oblast	0,19	0,15	1,45	0,05	0,92	0,00	0,34	0,19	0,15	1,71	0,05	10,75	0,00	0,34
Kostroma Oblast	0,98	0,00	0,00	0,05	1,81	1,23	0,00	0,98	0,00	0,15	0,05	8,62	1,23	0,00
Kurgan Oblast	0,00	0,00	0,00	0,10	8,31	0,00	0,00	0,00	0,00	1,18	0,10	30,07	0,00	0,00
Kursk Oblast	0,18	0,00	0,00	0,00	0,05	0,96	0,06	0,18	0,00	0,76	0,00	10,44	0,96	0,06
Leningrad Oblast	0,51	0,00	2,25	0,52	4,38	0,00	0,00	0,51	0,00	4,64	0,52	14,22	0,00	0,00
Lipetsk Oblast	0,60	0,00	0,00	0,15	3,91	0,20	0,04	0,60	0,00	0,69	0,15	17,09	0,20	0,04
Magadan Oblast	1,91	2,69	0,00	0,00	0,01	0,00	0,00	1,91	2,69	0,00	0,00	8,12	0,00	0,00
Moscow Oblast	0,11	0,00	1,57	0,04	3,90	0,18	0,00	0,11	0,00	14,25	0,04	14,38	0,18	0,00
Murmansk Oblast	2,16	0,00	1,22	0,03	10,15	0,00	0,19	2,16	0,00	1,27	0,03	12,55	0,00	30,12
Nizhny Novgorod Oblast	0,61	0,00	0,46	0,05	7,30	0,00	0,39	0,61	0,00	2,04	0,05	17,89	0,00	0,39
Novgorod Oblast	0,68	0,00	2,92	0,64	3,91	0,00	0,09	0,68	0,00	3,24	0,64	12,59	0,00	0,09
Novosibirsk Oblast	1,42	0,00	0,00	0,04	9,71	0,00	0,00	1,42	0,00	0,19	0,04	25,45	0,00	0,09
Omsk Oblast	0,00	0,00	0,00	0,00	6,27	0,00	0,03	0,00	0,00	0,02	0,00	15,78	0,00	0,83
Orenburg Oblast	0,36	0,00	0,45	0,13	0,35	0,17	0,00	0,36	0,00	0,76	0,13	8,13	0,17	0,00
Oryol Oblast	0,00	0,00	3,15	0,01	5,98	1,88	0,03	0,00	0,00	4,01	0,01	16,25	1,88	0,03

Table 16 Continued (3).

Entities of the Russian Federation	All areas irrevocably meeting IUCN definition of PAs						All areas meeting IUCN definition of PAs, either irrevocably or with some remarks							
	la	lb	II	III	IV	V	VI	la	lb	II	III	IV	V	VI
Penza Oblast	0,19	1,34	0,00	1,15	0,28	0,38	0,03	0,19	1,34	0,71	1,15	10,38	0,38	0,03
Pskov Oblast	0,68	0,00	0,92	0,03	6,03	0,31	0,00	0,68	0,00	2,07	0,03	14,00	0,54	0,00
Rostov Oblast	0,09	0,00	0,18	0,02	4,35	0,39	0,00	0,09	0,00	0,28	0,02	15,94	0,77	0,00
Ryazan Oblast	1,41	0,00	2,60	0,01	5,18	1,67	0,97	1,41	0,00	3,38	0,01	16,28	1,67	0,97
Samara Oblast	0,43	0,00	3,33	0,21	1,58	0,11	0,24	0,43	0,00	4,31	0,21	16,02	0,11	0,24
Saratov Oblast	0,00	0,00	0,26	0,02	1,08	1,18	0,00	0,00	0,00	0,68	0,02	12,18	1,18	0,00
Sakhalin Oblast	1,41	7,06	0,00	0,01	2,82	0,00	0,00	1,41	7,06	0,09	0,01	3,96	0,00	0,00
Sverdlovsk Oblast	0,55	0,09	0,92	0,60	4,92	0,15	0,32	0,55	0,09	5,64	0,60	11,30	0,15	2,15
Smolensk Oblast	0,00	0,00	4,05	0,10	3,55	0,01	0,20	0,00	0,00	4,48	0,10	13,21	0,49	0,20
Tambov Oblast	0,30	0,00	0,00	0,04	3,78	0,33	0,00	0,30	0,00	0,61	0,04	18,12	0,33	0,00
Tver Oblast	0,29	0,00	0,88	0,21	11,98	0,01	0,56	0,29	0,00	1,13	0,21	22,18	0,01	0,56
Tomsk Oblast	1,15	2,36	0,00	0,01	0,65	0,00	0,09	1,15	2,36	0,04	0,01	10,38	0,00	1,34
Tula Oblast	0,00	0,00	0,00	0,03	0,38	0,00	0,11	0,00	0,00	2,16	0,03	17,64	0,04	0,11
Tyumen Oblast	0,02	1,63	0,00	0,04	11,25	0,55	0,06	0,02	1,63	0,04	0,04	45,14	0,55	0,11
Ulyanovsk Oblast	0,00	0,00	1,18	0,19	5,31	0,00	0,00	0,00	0,00	2,92	0,19	22,96	0,00	0,00
Chelyabinsk Oblast	0,66	0,00	1,64	0,33	6,89	0,04	0,59	0,66	0,00	4,19	0,33	28,25	0,04	0,59
Yaroslavl Oblast	1,31	0,00	0,66	1,44	6,10	1,69	1,25	1,31	0,00	4,47	1,44	16,07	1,69	1,25
Moscow	0,00	0,00	0,00	0,10	0,39	5,80	0,00	0,00	0,00	0,00	0,10	0,39	5,80	0,00
Saint Petersburg	0,00	0,00	0,00	0,15	4,12	0,00	0,00	0,00	0,00	0,00	0,15	4,12	0,00	0,00
Sevastopol	0,00	0,00	0,00	27,66	28,37	0,10	0,66	0,00	0,00	0,00	0,00	27,66	28,37	0,10
Jewish Autonomous Oblast	3,50	0,00	0,00	0,00	9,47	0,00	2,42	3,50	0,00	0,00	0,00	19,10	0,00	4,65

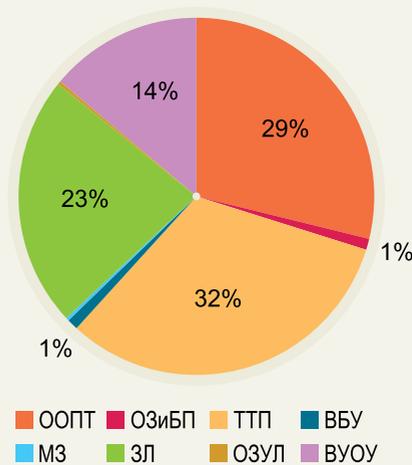
Table 16 Continued (4).

Entities of the Russian Federation	All areas irrevocably meeting IUCN definition of PAs						All areas meeting IUCN definition of PAs, either irrevocably or with some remarks							
	Ia	Ib	II	III	IV	V	VI	Ia	Ib	II	III	IV	V	VI
Nenets Autonomous Okrug	0,74	4,28	2,83	0,00	2,87	0,04	38,41	0,74	4,28	2,83	0,00	2,87	0,04	40,90
Khanty-Mansi Autonomous Okrug — Yugra	1,63	2,77	0,10	0,00	2,43	0,00	23,69	1,63	2,77	0,10	0,00	8,86	0,00	23,69
Chukotka Autonomous Okrug	1,10	3,86	0,00	0,02	0,02	0,00	0,00	1,10	3,86	0,00	0,02	0,02	0,00	36,78
Yamalo-Nenets Autonomous Okrug	1,74	8,48	0,00	0,00	0,20	0,00	0,00	1,74	8,48	0,00	0,00	0,20	0,00	14,68
Russian Federation	1,90	5,93	0,72	0,05	2,60	0,06	13,91	1,90	5,93	0,95	0,05	9,73	0,06	20,71

The combined ratio between the areas meeting the IUCN definition of PAs is shown on Figure 6. The highest ratios belong to *specially protected natural areas* and *territories of traditional nature use*, with some dominance of the latter. The third place is taken by *protection forests* and the fourth — by *reproduction plots in hunting estates*. In total, these four categories comprise 98% of the total area, and the other 2% are shown in the figure.

Fig.6. Ratio between the areas of the main types of areas meeting the IUCN criteria for PAs in the Russian Federation.

ООПТ – specially protected natural areas, ОЗиБП – buffer zones of SPNA and biosphere polygons, ТТП – territories of traditional nature use, ВБУ – wetlands of international importance, МЗ – historic and cultural memorial estates, ЗЛ – protection forests, ОЗУЛ – specially protected forest blocks, ВУОУ – reproduction plots in hunting estates.



Apart from SPNAs, there are two other groups that are equally large in their combined size among all Russian areas meeting the IUCN criteria for PAs — areas without SPNA status that undoubtedly meet the IUCN definition of PAs and areas also without SPNA status that meet IUCN definition of PAs with some caveats. The ratio between these three groups and the percentage of their combined areas in the area of the country are shown in Fig. 7.

The ratio between the IUCN categories of PAs in Russia differs, depending on whether the areas meeting the IUCN PA criteria with some caveats are included in the total sum of areas in question (Table 16, Fig. 8). In both cases, the areas of **category VI: Protected area with sustainable use of natural resources** dominate, **category Ia: Strict nature reserve ranks** fourth, and the fifth place is taken by **category Ia: Strict nature reserve** following all preceding categories with a significant gap. Relative sizes of areas of **category III: Natural monument or feature** and **category V: Protected landscape/Seascape**

Fig.7. Ratio between sizes of areas with different conservation status in the Russian Federation.

ООПТ – specially protected natural areas meeting the IUCN criteria for PAs, *ООПТ MIN* – areas without SPNA status that undoubtedly meet the IUCN criteria for PAs, *ООПТ MAX* – areas without SPNA status that meet IUCN criteria for PAs with some caveats, *HO* –unprotected areas.

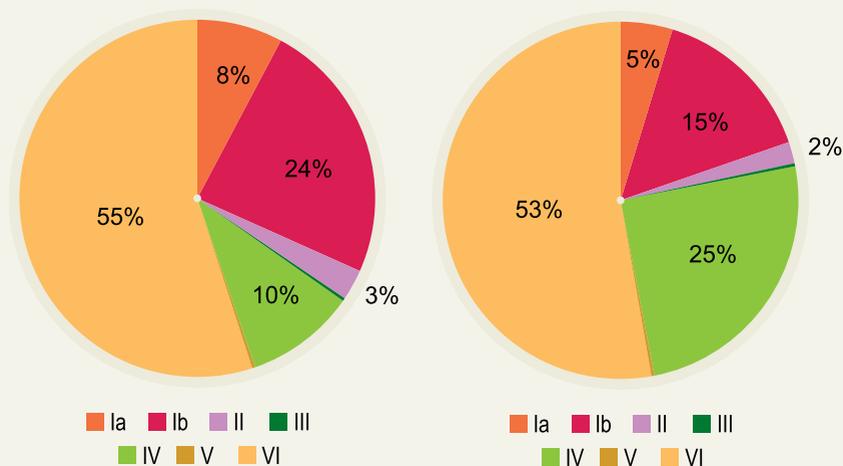
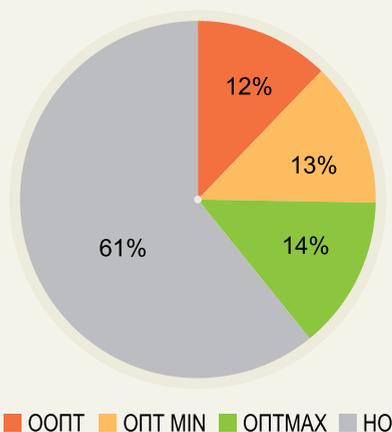


Fig.8. Ratio between the sizes of IUCN categories of PAs in the Russian Federation. Left – for all areas undoubtedly meeting the IUCN criteria for PAs, right – for all areas that may be considered PAs.

are also insignificant in both cases. The differences are in the proportion of **category IV: Habitat/species management area** and its ratio to **category Ib: Wilderness area**. The latter leads in minimal total size of PAs, the former – in their maximum size.

Another important indicator that characterizes the development of the system of PAs is the proportion of areas of categories I – IV that have the most natural profile and are least exposed to human impacts. Areas of these categories with the SPNA status take up **10.3%** of the territory of Russia, those undoubtedly meeting the IUCN definition of PAs (including SPNA) – **11.2%**, and all areas that may be included in PAs – **18.5%**. As can be seen from the data in Figure 9, in the case of SPNAs, the areas of categories I–IV take up about 90% of their area, while in others – less than a half. The size of areas of category V in Russia is very insignificant (and comparable to that of category III), thus, ***high indicators of the relative area of PAs in the country are to a large extent due to areas of category VI.***

Out of federal districts of Russia, the absolute leader in the relative size of all areas that may be considered PAs in the IUCN definition is the *Far Eastern Federal District*, where this ratio exceeds 60% (Fig. 10). It is followed by the *Ural* and *North-Western Federal Districts*, where the PAs cover about 30% of each. They are closely followed by the *Siberian* and *North Caucasus Federal Districts* (just over 25%). They are followed by the *Southern Federal District*, *Central Federal District* (just over 20%), and the last place is taken by the *Volga Federal District* (less than 20%). The trend of changes within federal districts is similar for both totality of the areas in question and «undoubted» PAs and SPNAs meeting the IUCN criteria for PAs (fig. 10).

The features of spatial ratio of different categories of PAs, both established by the Russian legislation and IUCN categories, are shown in Figure 11. *The most prominent differences are between the Central, Southern, North Caucasus and Volga Federal Districts on the one hand and other federal districts – on the other. They are related to the fact that PAs in the second group include territories of traditional nature use, and one of the first positions in size belongs to PAs of category VI.*

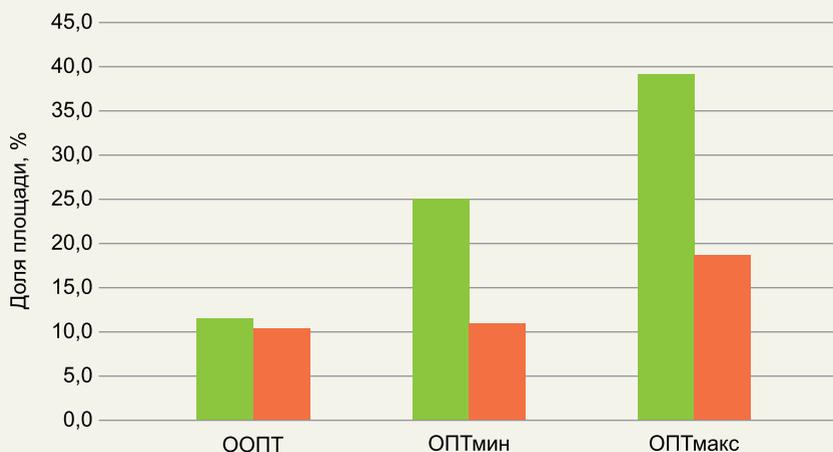


Fig.9. Portions of areas of all categories of PAs (green) and categories I – IV (orange) in the total sum of SPNAs (ООПТ), areas undoubtedly meeting the IUCN criteria for PAs (ОПТмин) and all areas that may be considered PAs (ОПТмакс).

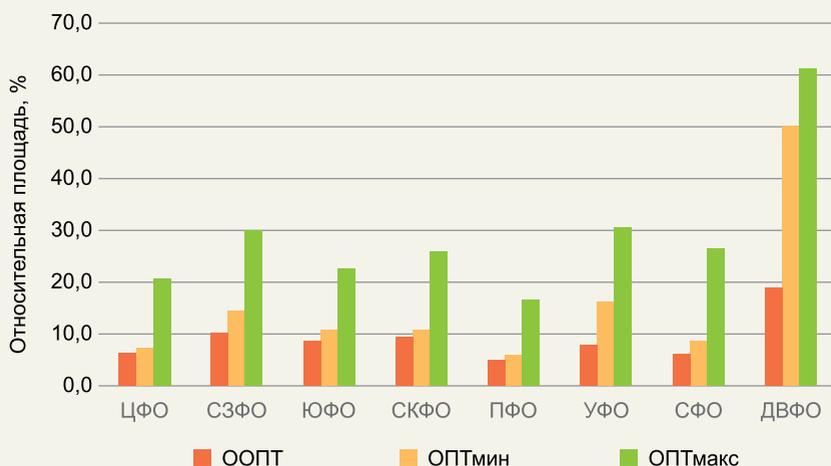


Fig.10. Relative size of protected natural areas in federal districts of Russia (%). ООПТ – specially protected natural areas, ОПТмин – areas irrevocably meeting the IUCN criteria for PAs (including SPNA), ОПТмакс – all areas that may be considered IUCN PAs. Federal districts: ЦФО – Central, СЗФО – North-Western, ЮФО – Southern, СКФО – North-Caucasian, ПФО – Privolzhsky, УФО – Ural, СФО – Siberia, ДВФО – Far Eastern (see fig. 11).

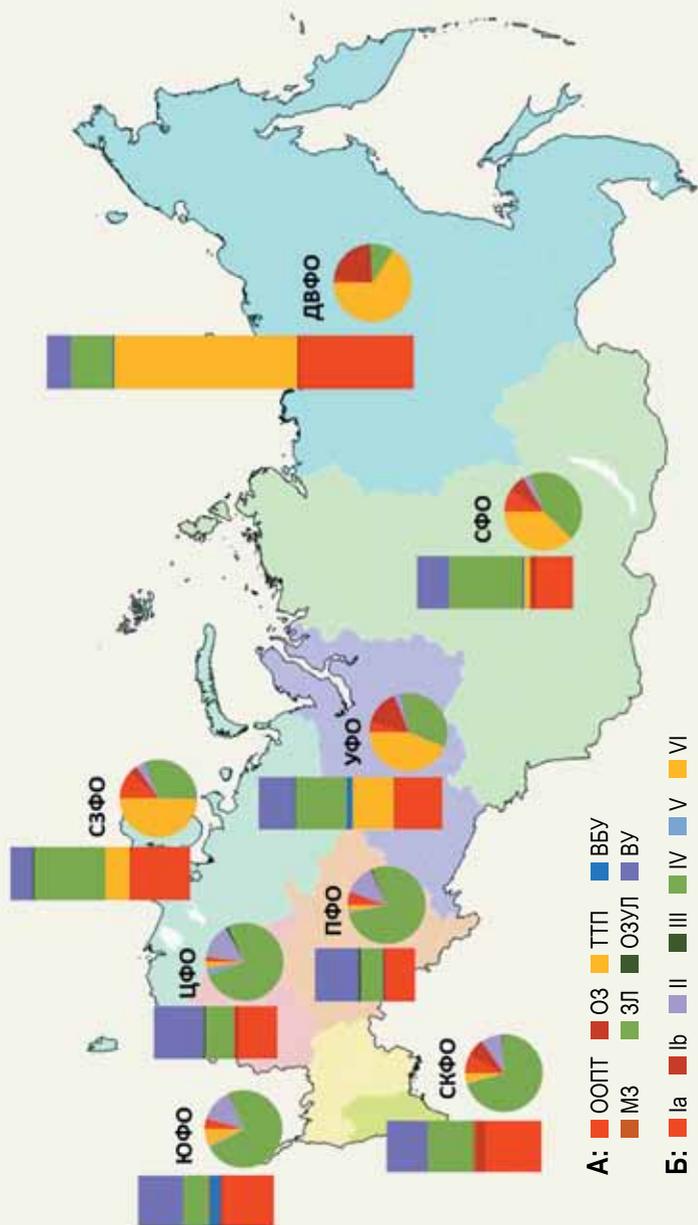


Fig.11. Ratio between sizes of different categories established by the Russian legislation (bar charts, A) and IUCN (pie charts, B) among all areas that may be considered PAs in the IUCN definition in federal districts of the Russian Federation. The height of bars is proportional to the relative size of all areas meeting PA definition.
 ООПТ – specially protected natural areas, ОЗ – buffer zones, ТТП – territories of traditional nature use, ББУ – wetlands of international importance, МЗ – historic and cultural memorial estates, ЗП – protection forests, ОЗУЛ – specially protected forest blocks, ВУ – reproduction plots in hunting estates. The names of Federal districts see on the Fig.10

When other areas undoubtedly meeting the IUCN criteria for PAs are added to SPNAs, the leaders in the size of protected natural areas among the regions of the Russian Federation are *Sakha (Yakutia) Republic, Sevastopol, Khabarovsk Territory, Nenets Autonomous District and the Republic of Adygea*, where it exceeds 37%, and exceeding 80% in the Sakha (Yakutia) Republic (Fig. 13, Table 15). They are followed by 10 regions where the area of PAs is between 17% and 37% – *Kabardino-Balkar Republic, Khanty-Mansi Autonomous District, Republic of North Ossetia – Alania, Primorsky Territory, Altayi Republic, Karachayevocherkessia Republic, Republic of Ingushetia, Republic of Khakassia, Astrakhan Region and Republic of Kalmykia*. This list includes all regions with the maximal relative sizes of SPNAs (see above), with the addition of Khabarovsk Territory and Nenets Autonomous District that is higher than the majority of them in this case.

The list of the «laggard» regions has also almost not changed. The lowest positions in size of the areas in question belong to *Tula Region and Stavropol Territory*, where it remains under 1%. The areas in question are between 1% and 3% in *Saratov, Ivanovo, Belgorod, Orenburg and Kursk Regions*.

Other entities form two almost equal groups (32 and 31), with the relative sizes of SPNAs in question being between 3% and 8% and between 7% and 17%, respectively (Fig. 12).

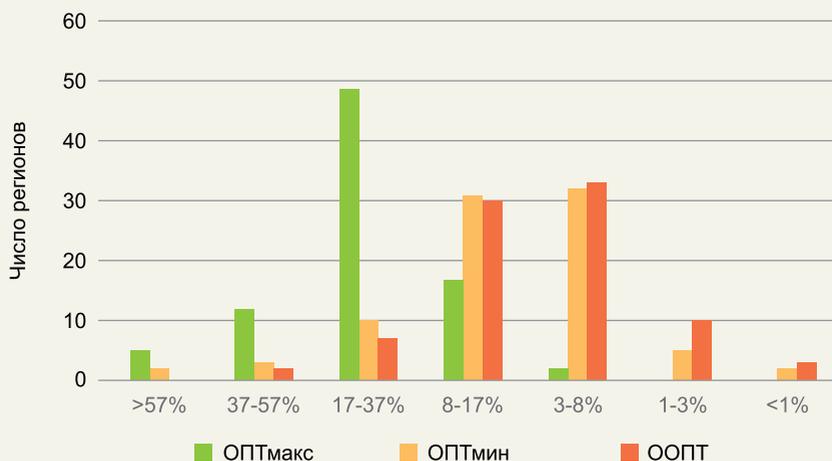


Fig.12. Number of entities of the Russian Federation with different relative sizes of SPNA (OOIT), all areas irrevocably meeting IUCN criteria for PAs (OOITmin) and all areas that may be considered IUCN PAs (OOITmax).

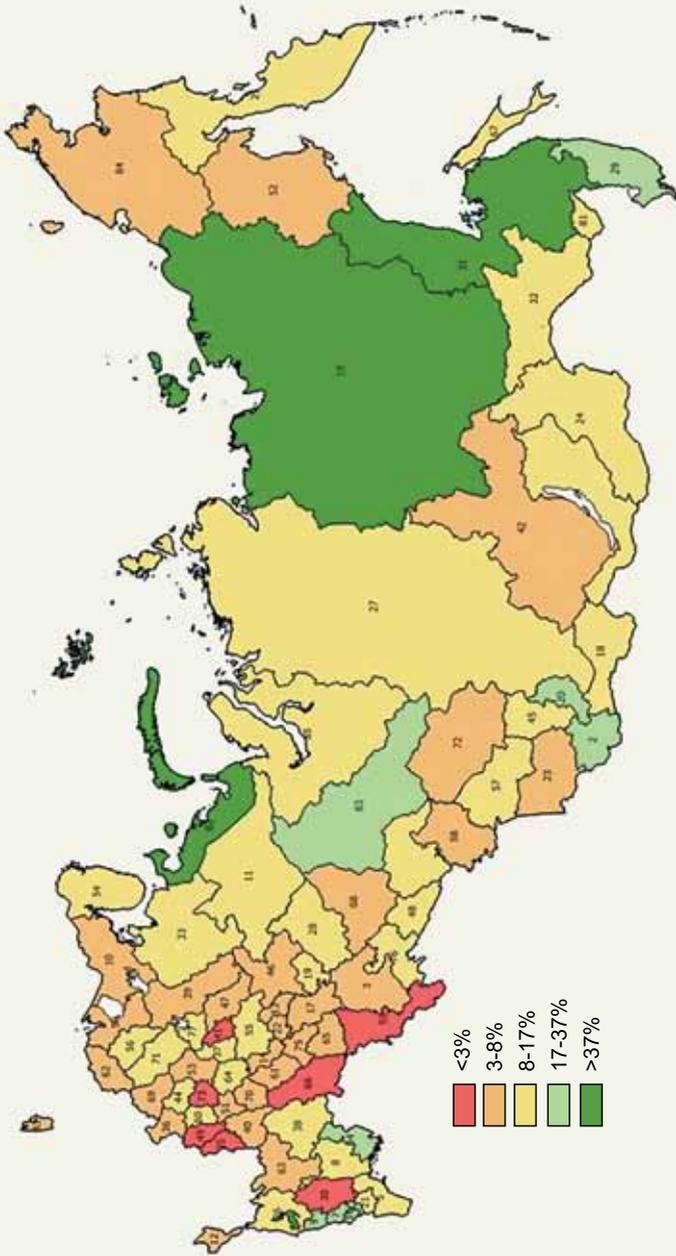


Fig.13. Relative size of the areas that undoubtedly meet the IUCN criteria for PAs (including SPNAs) in the regions of the Russian Federation, %. (Moscow, Saint Petersburg and Sevastopol are not shown)

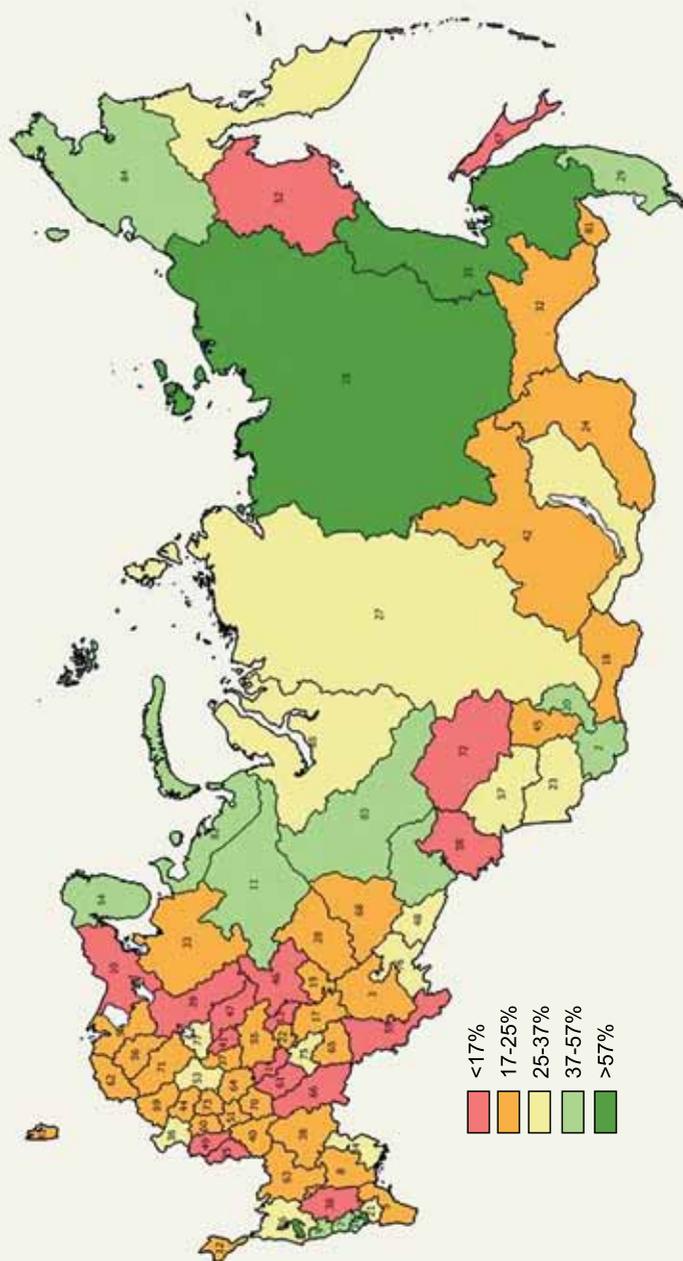


Fig.14. Relative size of all areas that may be considered PAs in the IUCN definition (including SPNAs) in the regions of the Russian Federation, %. (Moscow, Saint Petersburg and Sevastopol are not shown)

The leaders in relative size of all areas that may be considered protected areas in the IUCN definition among the regions of the Russian Federation are again *Sakha (Yakutia) Republic*, *Republic of Ingushetia*, *Republic of Adygea*, *Khabarovsk Territory* and *Sevastopol*. The first two entities are particularly outstanding where this area exceeds 80% (Table 15, Fig. 14). In 12 entities (*Karachayevo-Cherkessia Republic*, *Altay Republic*, *Nenets Autonomous District*, *Republic of Khakassia*, *Tyumen Region*, *Republic of North Ossetia-Alania*, *Kabardino-Balkaria Republic*, *Murmansk Region*, *Komi Republic*, *Chukotka Autonomous District*, *Primorsky Territory*, *Khanty-Mansi Autonomous District*) the size of PAs is between 37% and 57%. The last places (less than 8%) belong to the cities – Moscow and Saint Petersburg. PAs cover 8 – 17% of the area in 17 regions, and in the majority of regions (49) it is 17 – 37% (Fig. 12).

The distribution of regions by the relative size of PAs in this case is very different from the previous cases when only SPNAs and only «unquestionable» PAs were considered. Among all areas that may be considered PAs, over half of all regions fit into a single grade of areas in question, while for the others – two dominant grades with almost equal number of regions can be identified (Fig. 15).

The ratio between the area of SPNAs and other areas meeting the IUCN definition of PAs can be very different in different regions (Fig. 15). In most regions, the relative areas of SPNAs do not exceed the average for the country, with the relative areas of other PAs also being lower than the average for the country, which is observed in half of the regions (Fig. 15a), or with the complete absence of other PAs (*Moscow*, *Saint Petersburg* – Fig. 15б), or with their areas exceeding the average for the country, but not maximal (Fig. 15в – *Khanty-Mansi Autonomous District*, *Chukotka Autonomous District*, *Tyumen Region*, *Khabarovsk Territory*).

There are fewer regions where relative areas of SPNA are close to the average for the country and may also be combined with lower relative areas of other PAs (Fig. 15r), or with their extremely low rates (рис. 15д – *Sakhalin Region*, *Republic of Kalmykia*) or their rates exceeding the average for the country (Fig. 15е – *Komi Republic*, *Republic of Khakassia*, *Murmansk Region* and *Nenets Autonomous District*). In five regions (*Kabardino-Balkaria*, *Karachaevo-Cherkessia*, *North Ossetia Republics* and *Primorsky Territory*) relative areas of SPNAs are higher than the average for the country, while those of other PAs are below the average for the country (Fig. 15ж). Finally, *Republic of Adygea* (Fig. 15и) and *Sevastopol* (Fig. 15з) represent a special situation when maximal sizes of SPNAs are combined with average and extremely low areas of other PAs, respectively. Another unique situation is in *Sakha (Yakutia) Republic*

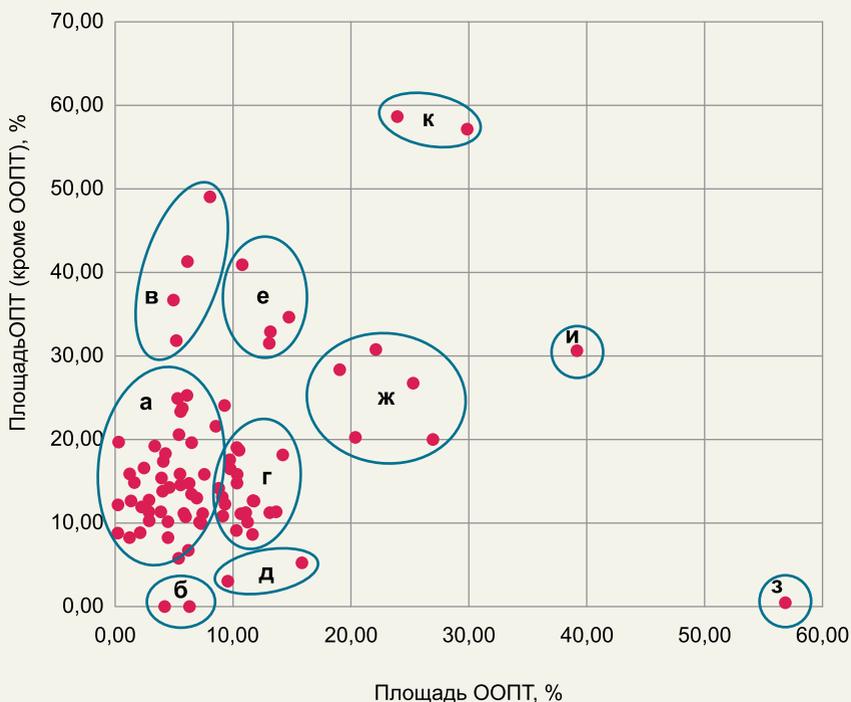


Fig.15. Ratio between sizes of SPNA (X) and other areas that may be considered PAs in IUCN definition (Y) in the entities of the Russian Federation

and Republic of Ingushetia characterised by high relative areas of SPNAs and maximal areas of other PAs (Fig. 15к).

As a result, out of 17 regions characterised by maximal (over 37%) sizes of all areas that may be considered PAs, the majority have this characteristic due to the areas without the SPNA status, with more or less low SPNA areas (*Khanty-Mansi Autonomous District, Chukotka Autonomous District, Tyumen Region, Khabarovsk Territory, Komi Republic, Republic of Khakassia, Murmansk Region, Nenets Autonomous District*). In six cases both indicators are high (*Kabardino-Balkaria, Karachayevo-Cherkessia and Altay Republics, Republics of Adygea and North Ossetia and Primorsky Territory*) and only in one (*Sevastopol*) – a high share of PAs is achieved almost exclusively by SPNAs. In the regions where the proportion of protected natural areas is particularly high, over 80% (*Sakha (Yakutia) Republic and Republic of Ingushetia*), this is achieved through large sizes of SPNAs and particularly large sizes of other PAs, with the latter approximately twice exceeding the former.

4.2 SIZE AND CATEGORIES OF MARINE PAS IN RUSSIA

The following protected zones are represented in the marine areas under the jurisdiction of the Russian Federation, including internal waters and the exclusive economic zone (200 nautical miles from the outer boundary of internal waters, including territorial waters):

- 1) specially protected natural areas (SPNA);
- 2) buffer zones of SPNAs;
- 3) wetlands of international importance;
- 4) marine mammal protection zones established by the Rules of Protection and Use of Marine Mammals.

The same way as for the categories of land PAs, marine SPNAs and their buffer zones may overlap to a certain extent with wetlands of international importance and marine mammal protection zones.

SPECIALLY PROTECTED NATURAL AREAS (SPNA)

Vast marine areas are part of state natural reserves, state natural sanctuaries and natural monuments. The total size of marine areas within SPNAs is approximately 18.5 million ha, or about **2.4%** of all marine areas under the national jurisdiction (Table 17); the same indicator within the internal and territorial waters is **18%**.

In general, marine areas within SPNAs are relatively evenly distributed between three main categories — strict natural reserves, national parks and natural sanctuaries, with a smaller share of the latter, while natural monuments have a very insignificant total size (Fig. 16). Strict natural reserves are represented in all marine basins of the Russian Federation (Table 17), and national parks and natural sanctuaries are represented only in the seas of the Arctic and Pacific basins.

In the IUCN classification, most of marine areas within SPNAs match **category Ia: Strict nature reserve**, while the absolutely largest part

Table 17.

**Size of specially protected natural areas in marine areas
under the jurisdiction of the Russian Federation**

Sea basins	Strict natural reserves		National parks		Natural sanctuaries		Natural monument		Total	
	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%
Arctic	2849,0	0,682	6544,1	1,566	4957,2	1,186	0,0	0,000	14350,3	3,433
Pacific	3800,9	1,155	110,7	0,034	137,9	0,042	0,0	0,000	4049,5	1,231
Baltic	13,2	0,627	0,0	0,000	0,0	0,000	0,0	0,000	13,2	0,627
Azov and Black Seas	0,8	0,003	0,0	0,000	0,0	0,000	1,4	0,005	6,3	0,021
Caspian	29,8	0,504	0,0	0,000	0,0	0,000	0,0	0,000	29,8	0,504
Marine area under RF jurisdiction	6693,6	0,853	6654,8	0,848	5095,1	0,649	1,4	0,0002	18449,0	2,351

Table 18.

**Size of specially protected natural areas in marine areas
under the jurisdiction of the Russian Federation, by IUCN categories of PAs**

Sea basins	IUCN categories of PAs									
	Ia		Ib		III		IV			
	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%
Arctic	9393,0	2,25	4894,1	1,17	0,0	0,000	63,1	0,02		
Pacific	3800,9	1,16	110,7	0,03	0,0	0,000	137,9	0,04		
Baltic	13,2	0,63	0,0	0,00	0,0	0,000	0,0	0,00		
Azov and Black Seas	0,8	0,01	0,0	0,00	1,4	0,005	0,0	0,00		
Caspian	29,8	0,50	0,0	0,00	0,0	0,000	0,0	0,00		
Marine area under RF jurisdiction	13237,7	1,72	5004,9	0,65	1,4	0,0002	201,0	0,03		

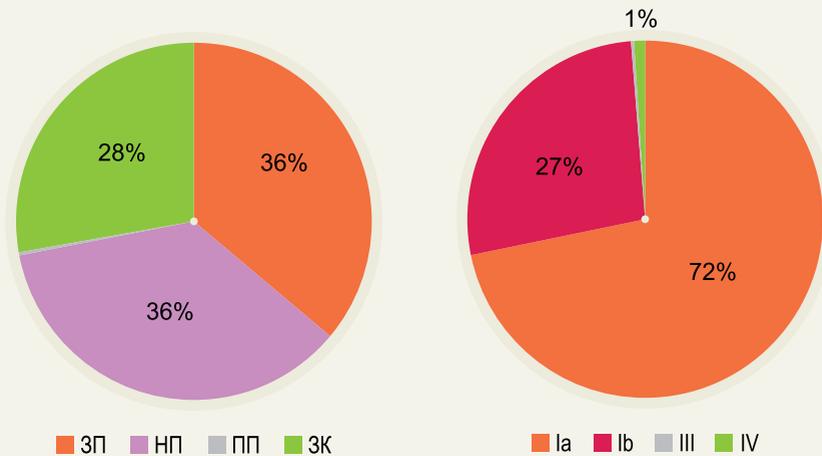


Fig.16. Ratio between sizes of SPNAs of different Russian categories (left) and IUCN categories of PAs (right) in the marine areas under the Russian jurisdiction. 3П – strict natural reserves, НП – national parks and their analogs, III – natural monuments, 3К – natural sanctuaries of federal significance; Ia, Ib, III, IV,VI – IUCN categories of PAs.

of the remaining areas matches **category Ib: Wilderness area** (table 18, fig. 16). Areas meeting the criteria for **category IV: Habitat/species management area** and **category III: Natural monument or feature** are insignificant.

BUFFER ZONES OF SPECIALLY PROTECTED NATURAL AREAS

Strict natural reserves and national parks of the Arctic and Pacific Basins, as well as the Caspian Sea, have marine buffer zones. Their total area is about 3,661,000 ha, i.e. just under 0.5% of the total marine areas under the national jurisdiction (Table 19).

Almost all areas of the buffer zones meet the criteria for **category Ib: Wilderness area**, with the presence of relatively small areas of **category IV: Habitat/species management area** and **category VI: Protected area with sustainable use of natural resources** (Table 19).

Table 19.

**Size of buffer zones of SPNA within marine area
under the jurisdiction of the Russian Federation**

Sea basins	IUCN categories of PAs						Total	
	Ib		IV		VI			
	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%
Arctic	3496,0	0,84	0,0	0,00	0,0	0,00	3496,0	0,84
Pacific	73,5	0,02	0,0	0,00	76,1	0,02	149,6	0,05
Baltic	0,0	0,00	0,0	0,00	0,0	0,00	0,0	0,00
Azov and Black Seas	0,0	0,00	0,0	0,00	0,0	0,00	0,0	0,00
Caspian	0,0	0,00	15,9	0,27	0,0	0,00	15,9	0,27
Marine area under RF jurisdiction	3569,4	0,464	15,9	0,002	76,1	0,010	3661,5	0,476

WETLANDS OF INTERNATIONAL IMPORTANCE

Marine areas within wetlands of international importance are represented only in the western seas of the Arctic Basin and in the Caspian Sea (Table 20). Their total area outside SPNAs is a little over 236,000 ha (0.03% of the total marine area under the national jurisdiction). They all belong to **category IV: Habitat/species management area** in the IUCN classification.

Table 20.

**Size of wetlands of international importance and marine mammals
protection zones outside SPNA, within marine area
under the jurisdiction of the Russian Federation**

Sea basins	Wetlands of international importance outside SPNA		Marine mammals protection zones outside SPNA	
	Thousands hectares	%	Thousands hectares	%
Arctic	103,8	0,02	323,0	0,08
Pacific	0,0	0,00	3767,7	1,15
Baltic	0,0	0,00	0,0	0,00
Azov and Black Seas	0,0	0,00	0,0	0,00
Caspian	160,0	2,71	0,0	0,00
Marine area under RF jurisdiction	263,8	0,03	4090,8	0,52

MARINE MAMMAL PROTECTION ZONES

Marine mammal protection zones have been created in the eastern part of the Arctic Basin and in the Pacific Basin, with their combined area outside of the existing SPNAs and their buffer zones slightly exceeding 4 million ha, which is just over 0.5% of the total marine area under the national jurisdiction (Table 20). Just like wetlands, all marine mammal protection zones belong to **category IV: Habitat/species management area** in the IUCN classification.

In summary, apart from almost 18.5 million hectares (2.35% of all marine areas under the national jurisdiction) of specially protected natural areas meeting the IUCN criteria for PAs, over 8 million additional hectares of marine areas are other categories of protected marine waters meeting the IUCN criteria for PAs. As a result, the total size of marine areas meeting these criteria is approximately **3.4%** of the total size of the marine area under the national jurisdiction, including just over **25%** of the area of internal and territorial waters.

The largest combined area of marine protected areas is in the seas of the Arctic Basin where it constitutes almost 4.4% of the total marine area under the national jurisdiction (Table 21). The Caspian Sea ranks second (almost 3.5%), and the Pacific Basin – third (2.4%). In the Baltic Basin and the Azov and Black Seas, the size of marine protected areas is a fraction of a percent.

Out of all marine areas meeting the IUCN definition of Pas, those of specially protected marine areas absolutely dominate by area (Table 21, Fig. 17), making up 70% of their total area. They are followed by buffer zones of SPNAs and marine mammal protection zones that cover approximately equal areas (about 15% each). The size of wetlands of international importance is very insignificant.

In accordance with the IUCN classification of PAs, half of the area of marine PAs of Russia is under **category Ia: Strict nature reserve** (Table 22, Fig. 17). Another third of the area is under category **Ib: Wilderness area**, and 17% are marine areas of **category IV: Habitat/species management area**. There are small parts of the marine areas under **categories III and VI**. *This ratio harshly distinguishes marine SPNAs from the land ones where the share of category Ia is much more modest and category VI areas dominate.*

Table 21.

Sizes of marine areas under the jurisdiction of the Russian Federation meeting IUCN criteria for PAs

Sea basins	SPNA		Buffer zones of SPNA		Wetlands of international importance outside SPNA		Marine mammals protection zones outside SPNA		TOTAL	
	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%
Arctic	14350,3	3,433	3496,0	0,84	103,8	0,02	323,0	0,08	18273,0	4,372
Pacific	4049,5	1,231	149,6	0,05	0,0	0,00	3767,7	1,15	7966,9	2,421
Baltic	13,2	0,627	0,0	0,00	0,0	0,00	0,0	0,00	13,2	0,627
Azov and Black Seas	6,3	0,021	0,0	0,00	0,0	0,00	0,0	0,00	6,3	0,021
Caspian	29,8	0,504	15,9	0,27	160,0	2,71	0,0	0,00	205,7	3,479
Marine area under RF jurisdiction	18449,0	2,351	3661,5	0,47	263,8	0,03	4090,8	0,52	26465,0	3,37

Table 22.

Sizes of marine area under the jurisdiction of the Russian Federation meeting IUCN criteria for categories of PAs

Sea basins	IUCN categories of PAs											
	Ia		Ib		IV		III		VI			
	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%	Thousands hectares	%		
Arctic	9399,0	2,2	8390,1	2,0	489,9	0,1	0,0	0,000	0,0	0,000		
Pacific	3800,9	1,2	184,2	0,1	3905,6	1,2	0,0	0,000	76,1	0,023		
Baltic	13,2	0,6	0,0	0,0	0,0	0,00	0,0	0,000	0,0	0,000		
Azov and Black Seas	0,8	0,0	0,0	0,0	0,0	0,00	1,4	0,005	0,0	0,000		
Caspian	29,8	0,5	0,0	0,0	175,9	3,0	0,0	0,000	0,0	0,000		
Marine area under RF jurisdiction	13237,7	1,7	8574,3	1,1	4571,5	0,6	1,4	0,0002	76,1	0,010		

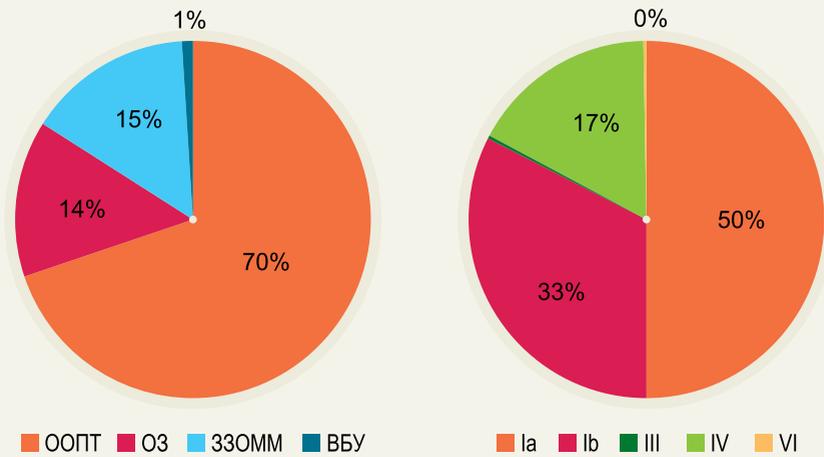


Fig.17. Ratio between the area of protected areas under the jurisdiction of the Russian Federation belonging to different categories under the Russian legislation (left) and IUCN categories of PAs (right). OOIT – specially protected natural areas, O3 – buffer zones of SPNA, 33OMM – marine mammal protection zones, B5Y – wetlands of international importance; Ia, Ib, III, IV, VI – IUCN categories of PAs.

Different basins of the marine area under the jurisdiction of the Russian Federation significantly differ in the ratio between the area of marine protected areas of different categories established under the Russian legislation and the IUCN categories of PAs (Fig. 18). For example, all protected areas in the Baltic Basin and the Azov and Black Seas are represented by SPNAs and are IUCN Ia category. The Caspian Basin is characterised by the dominance of wetlands of international importance and thus, marine protected areas of category IV. SPNAs are dominant in the Arctic Basin, but the area of their buffer zones is also significant, and the dominant IUCN categories are Ia and Ib, represented in a close ratio. The Pacific Basin is characterised by a high share of marine mammal protection zones, which is similar to that of SPNAs, thus resulting in an absolute dominance of the areas of categories Ia and IV that are represented almost equally.

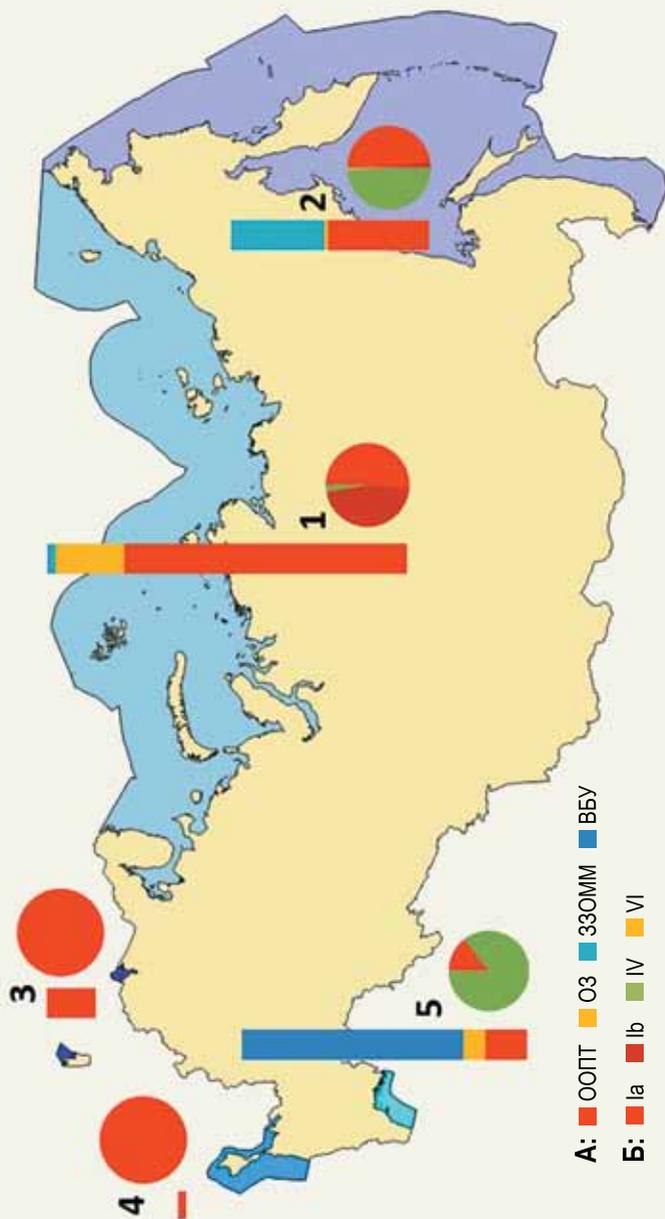


Fig. 18. Ratio between sizes of different categories established by Russian legislation (bar charts, A) and IUCN (pie charts, B) among marine areas meeting IUCN criteria for PAs, in marine basins under the jurisdiction of the Russian Federation. Height of the bars is proportional to the relative size of all marine areas meeting IUCN criteria for PAs. OOPP – specially protected natural areas, O3 – buffer zones of SPNA, 33OMM – marine mammal protection zones, B5Y – wetlands of international importance; Ia, Ib, III, IV, VI – IUCN categories of PAs. Sea basins: 1 – Arctic, 2 – Pacific, 3 – Baltic, 4 – Azov and Black Sea, 5 – Caspian/

5 KEY FINDINGS AND RECOMMENDATIONS

Therefore, in addition to most areas that are considered categories of **specially protected natural areas (SPNAs)** under the Russian legislation, other categories of protected areas and special use zones can be fully or partially regarded as **protected natural areas (PNAs)** under the IUCN definition. Some of them – *territories of traditional nature use (TTNU)*, *wetlands of international significance*, *restricted areas for marine mammal protection*, several varieties of *specially protected forest plots (SPFP)*, as well as certain *protection zones of SPNAs* and *biosphere polygons of state nature biosphere reserves* – can be certainly regarded PNAs under the IUCN as they fully meet their criteria. Others – several categories of *protective forests*, *reproduction sites in the hunting grounds*, as well as *historic and cultural museum-reserves* that include natural areas – also mostly comply with the IUCN criteria for PNAs, with some reservations.

The prevailing practice of treating only SPNAs as protected natural areas renders inaccurate any attempts to compare the development of Russia's protected area system with that of other countries and with the whole world; the same is true of gauging Russia's compliance with the estab-

Table 23.

**Relative area of protected natural areas
of the Russian Federation, %**

Areas	Land and inland water bodies		Marine waters	
	I-VI	I-IV	All waters under the national jurisdiction	Internal and territorial seas
Specially protected natural areas	11,5	10,3	2,4	18,0
Areas that definitely meet the IUCN criteria for PNAs	25,0	11,2	3,4	25,0
All areas that can be regarded as PNAs according to the IUCN definition	39,2	18,5		

lished targets of the Convention on Biological Diversity (CBD) for the size of land and marine protected areas that mean the size of all land and marine areas that meet the IUCN criteria for protected natural areas.

Aggregate areas of various groups of protected natural areas of the Russian Federation within its territory (including inland waters) and seas under the national jurisdiction are shown in Table 23.

If one uses Russia's traditional approach whereby only the area of Specially Protected Natural Areas serves as the main indicator of the size of the country's protected natural areas, then the respective share of land protected areas (11.5%) is still quite far from the CBD 2020 target of 17% for land PAs. This is even further true when applied to the total marine area under the national jurisdiction – 2,4%, as compared to the respective CBD target of 10%; nevertheless, the CBD target is exceeded by the factor of two for the combination of internal and territorial waters (18%).

However, CBD targets apply to all Protected Natural Areas in the IUCN definition – a much broader category than Russia's SPNAs – therefore:

If international standards are applied – both for the minimum and maximum number of categories of protected areas and special use areas matching PNA definitions, CBD targets for land PNAs are substantially overachieved in Russia (at least by the factor of 1.5). Only one-third of the respective target is achieved for the entire marine area under the jurisdiction of the Russian Federation, but it is also overachieved by the factor of 2.5 when applied to internal and territorial waters.

Russia was ranked 113 among the world's countries in the 2014 rating by the World Conservation Monitoring Centre (Figure 19) for its relative share of Protected Natural Areas exactly because only Specially Protected Natural Areas were included in the calculation. If other areas that firmly meet the IUCN PNA criteria were also included, Russia would move up to the 48th position in the same (potentially outdated) ranking. If all areas were included that can be potentially regarded as PNAs (with

5. Key findings and recommendations

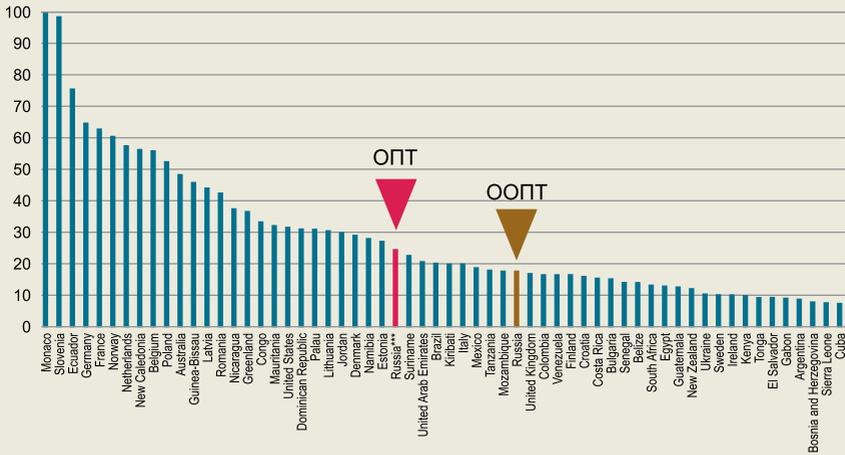
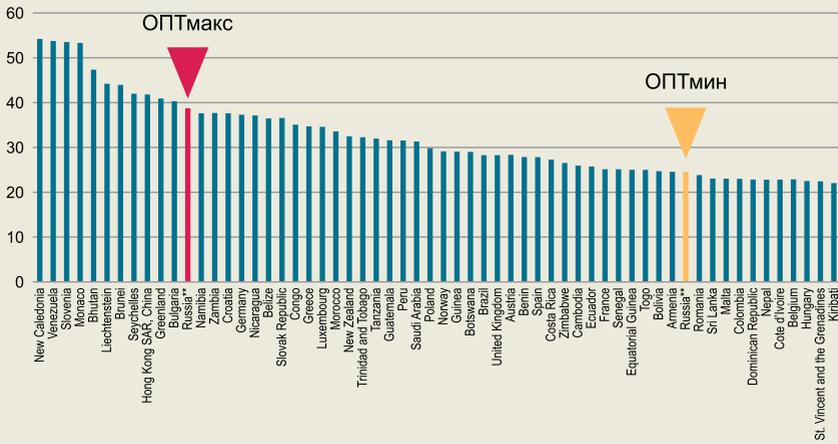


Figure 19. Position of the Russian Federation in the ranking of countries by the relative area of their land PNAs (upper chart) and marine PNAs within the territorial waters (lower chart). Key: “ООПТ” – specially protected natural areas (SPNAs); “ОПТ” and “ОПТмин” – land and water areas that definitely meet the respective PNA criteria; “ОПТмакс” – all areas that can be regarded as PNAs.



some caveats), then Russia would take the 12th position, ahead of all large countries in this relative ranking, becoming an unquestionable leader by the absolute total size of PNAs.

These differences are not so dramatic when applied to marine PNAs; nevertheless, if the water areas that do not have the SPNA status but meet the IUCN PNA criteria were included, Russia would move up from the 35th to the 28th position in the respective rating (see Figure 19).

Only 9 of the constituent regions of the Russian Federation have their area of Specially Protected Natural Areas exceed 17 percent of their territory, namely: *Sevastopol, Sakha (Yakutia) Republic, Altay Republic, Primorsky Territory* and five republic of the North Caucasus – *Agygeya, Kabardino-Balkaria, Ingushetia, Karachaevo-Cherkesia* and *North Ossetia*. If other areas that definitely meet the IUCN PNA criteria are also included, then the number of such regions becomes 15, by adding *Khabarovsk Territory, Nenets Autonomous District, Khanty-Mansi Autonomous District, Kalmykia Republic, Khakasia Republic* and *As-trakhan Region*. If all areas were included that can be regarded PNAs (even with some caveats), then the vast majority of Russian regions (66 of 85) would exceed the 17% target. Only 19 regions would remain below this target: *Mordovia, Mariy El and Karelia Republics, Stavropol Territory, Omsk, Belgorod, Tomsk, Ivanovo, Penza, Saratov, Kirov, Vologda, Magadan, Sakhalin, Kursk, Kostroma and Orenburg Regions*, as well as two federal cities – *Moscow and St. Petersburg*.

When comparing relative areas of land PNAs of the Russian regions (including all areas that can be regards PNAs) to those of other countries, it turns out that Russian regions hold the top five positions in this mixed rating (Figure 20), with a conspicuously clear leadership of Sakha (Yakutia), Ingushetia and Adygea Republics, while another 9 regions are ranked 10th through 19th. Considering the total area of Sakha (Yakutia) Republic, it is the unquestionable world leader both in the relative and absolute area of PNAs.



Figure 20. Position of select Russian regions (red bars) in the ranking of countries by the relative area of their land protected areas that meet the IUCN PNA definition. Only countries and regions with the relative PNA area above 30% are shown.

As far as the water areas under the Russian jurisdiction are concerned, only the territorial waters of the Arctic and Pacific basins and the Caspian Sea reach the CBD target of 10% of area under protection. The same target is still rather far from being reached in the waters of the exclusive economic zone of the Arctic and Pacific basins outside of the territorial waters and in the Baltic and Black Seas and the Sea of Azov. This is particularly true for the Azov-Black Sea basin with its extremely low relative area of marine PNAs.

CBD targets for protected natural areas can be overall considered met (and substantially overachieved) in Russia, judging by their net area on land and in territorial waters. Therefore, in addition to enhancing the conservation effectiveness of the existing PNAs, further development of the Russian PNA system should focus on the following efforts:

1. Expansion of PNAs in those regions where their relative area is below 17% (see above), as well as in the waters of the exclusive economic zone of Russia outside of the territorial waters of the Arctic, Pacific and Caspian basins and in the waters of the Baltic and Black Seas and the Sea of Azov.
2. Expansion of PNAs towards achieving the representativeness of the PNA system with regard to its geographic and biological diversity in those regions and marine basins where it is insufficient, irrespective of the total relative area of PNAs there.

For example, the overall relative area of PNAs in Chukotka Autonomous District is over 40%, however, protection forests in the southwestern half of the District make up over 35% of the area. As a result, PNAs in the northeastern tundra make up less than 10% of the area and fail to include many varieties of landscapes and habitats of rare and high-value species of plants and animals. Therefore, while the total relative area of PNAs is high in the region, the goal of expanding its PNA system remains very valid.

3. Establishment of new PNAs and expansion of existing PNAs to ensure area protection of high-value and unique natural sites, including habitats of rare and endangered species outside of the existing PNAs. Irrespective of the total relative area of PNAs in a given region, there may be locations or districts of high conservation value that require area protection while not being part of the existing PNAs. Even the Republic of Sakha (Yakutia), with the record-high total area of its PNA system, has various habitats of rare and relict species of plants, birds and fish that remain unprotected.
4. Establishment of new PNAs and expansion of existing PNAs to offset a potential decrease of the representativeness and completeness of the PNA system due to the expected climate change.

Considering the ongoing and increased warming in the northern regions of Russia, it would be useful to establish additional PNAs in the mountain tundra areas that may not be of high conservation value at present, but would very likely become important refuges for tundra's flora and fauna in the face of a major expansion of the more southern species.

5. Transfer of existing PNAs to other categories and/or change of their management regime to ensure that the PNA status matches its conservation value and functions.

Such changes are most commonly caused by a need to modify the area's protection regime and its restrictions on certain activities, while other reasons may be at play, too. For example, if a regional-level PNA is to be expanded to include marine areas, this would trigger a need to convert it into a federal-level PNA given the exclusive federal jurisdiction over the marine areas. ***Abolition of existing SPNAs that do not meet the PNA criteria*** may be considered a special case of such transformations, with their ensuing transfer to other categories (e.g., historic and cultural monuments, etc.).

The following additional recommendations may be offered to further unify the system of PNA categories in Russia and increase its compatibility with the international system:

1. Development and implementation of a unified system of regional PNA categories for all regions of the Russian Federation that would be as close to the systems of federal and IUCN categories as possible;
2. Legislative establishment of the category “protected natural area” that would match the IUCN notion of “protected area” accompanied by the list of all related protected areas and special use areas established under the Russian legislation and their respective criteria;
3. Combining various categories of *valuable forests* and *specially protected forest plots* that meet the IUCN PNA criteria into the category of “***national forests***” similar to that of the U.S. National Forests, and introduction of similar categories for other biomes – first of all, steppe (like the U.S. National Grasslands) and also tundra.

Apart from the above, it is very important to create a unified cartographic inventory database of Russia’s protected natural areas including all protected areas and special use areas established under the Russian legislation and meeting the IUCN criteria.



WWF's Mission Statement

To stop the degradation of the planet's natural environment
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