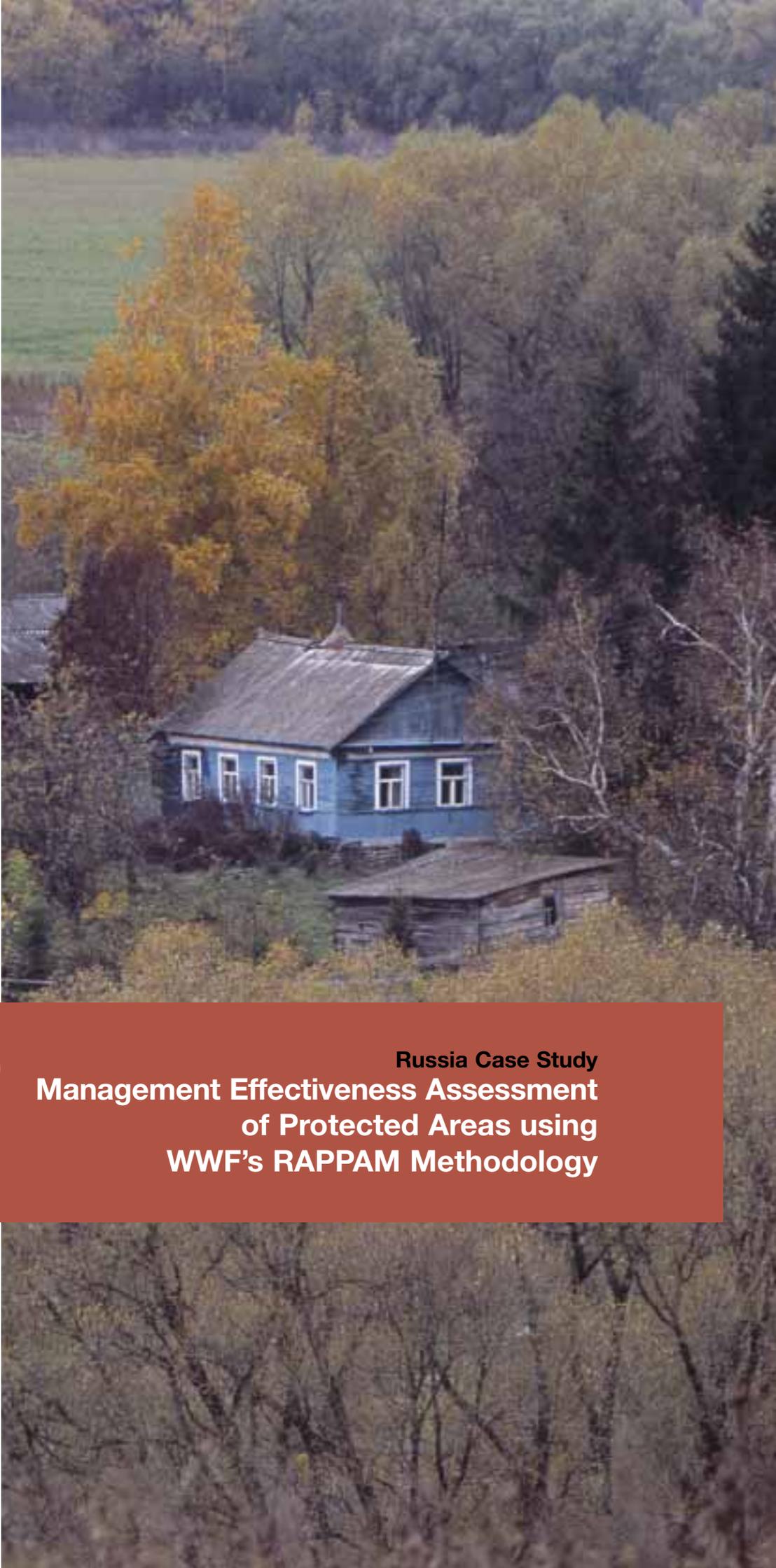


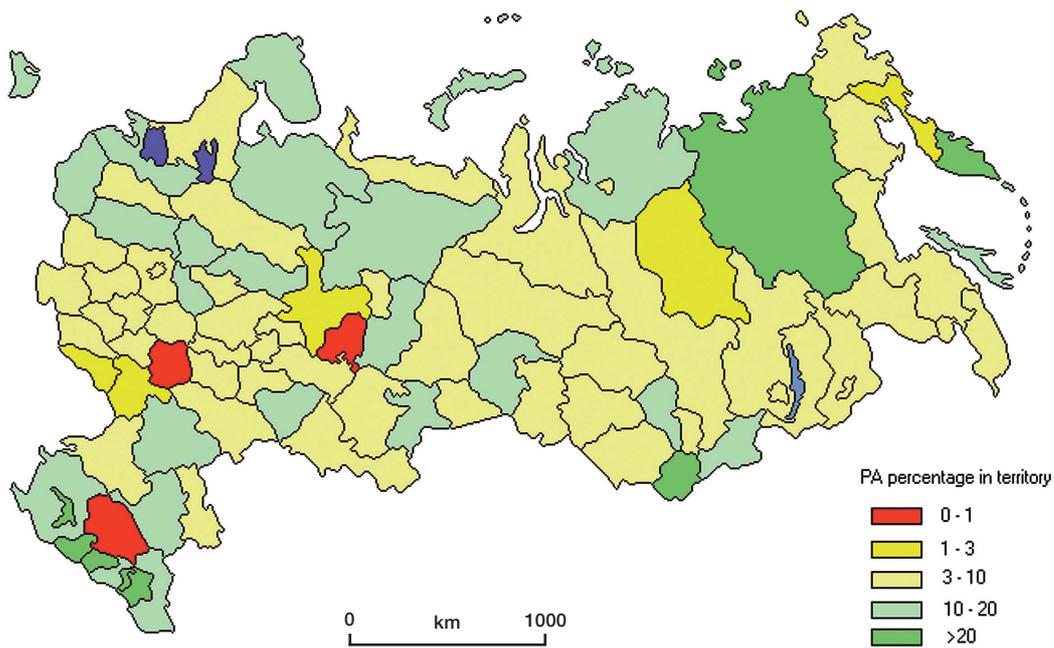


Russia

**Russia Case Study
Management Effectiveness Assessment
of Protected Areas using
WWF's RAPPAM Methodology**



Percentage of Protected Areas in Russia



Federal Protected Areas in the Russian Federation



Tyrlyshkin, V, Blagovidov, A and Belokurov, A.
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Front cover photograph: Pechora-Ilychskiy Nature Reserve – mixed boreal forest, Pechora River, Komi Republic, Russia
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RUSSIA

**Management Effectiveness Assessment
of Protected Areas using
WWF's RAPPAM Methodology**

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INTRODUCTION AND BACKGROUND

PROTECTED AREAS

The 1995 Russian federal law defines protected areas (PAs) as “areas of land and water surface and the air space above them, where natural complexes and objects of special nature conservation, scientific, cultural, aesthetic, and recreational importance are located. These areas are fully or partly withdrawn from economic use on the decision of state authorities, and a special regime of protection is established for them”. The Russian national protected area system includes:

- ◆ 100 *zapovedniks* – strict nature reserves
- ◆ 35 national parks
- ◆ 69 federal *zakazniks* – wildlife refuges
- ◆ more than 3,000 regional *zakazniks*
- ◆ more than 10,000 nature monuments, including 28 of federal importance
- ◆ more than 40 regional nature parks.

Protected areas (both federal and regional) cover around 190 million hectares, or about 11 per cent of the whole territory of Russia. Of this, 135 million hectares, or about 7.8 per cent, could be considered to be within IUCN's protected area categories I–IV. There are substantial differences in the area covered by protected areas between the regions (see maps on front inside cover). In regions with a high degree of anthropogenic pressure and transformation (e.g. Central Russia), the percentage is lower than the national average. In regions with a low degree of pressure, and with intact ecosystems, protected area percentages are the highest (e.g. Kamchatka Region, Sakha, and Altay republics).

The federal-level protected areas (*zapovedniks*, national parks, and *zakazniks*) are most important for biodiversity conservation and have a long

history of management. The vast majority of them (95 *zapovedniks*, 35 national parks, 11 federal *zakazniks*, and 28 nature monuments) are under the control of the Ministry of Natural Resources, with the remainder (55 federal *zakazniks*) under the responsibility of the Hunting Department of the Ministry of Agriculture and other ministries.

The IUCN and the Russian protected area categories do not correspond exactly. Broadly speaking, *zapovedniks* fall within IUCN category Ia (strict nature reserves managed mainly for science), all national parks fall within IUCN category II (protected areas managed mainly for ecosystem protection and recreation), and federal *zakazniks* fall within IUCN category IV (protected areas managed mainly for habitat or species conservation through management intervention).

The legislative basis of protected area management is enumerated in a series of federal laws and regulations (e.g. Federal Environmental Protection Law 2001, Federal Law on Specially Protected Areas 1995, Federal Forest Code 1997); numerous subordinate legislative documents (e.g. decrees, resolutions, executive orders); and departmental legislative documents (e.g. guidelines, instructions, instructive letters). The network of *zapovedniks* forms the core of the Russian protected area system. A *zapovednik* is an organizational entity that manages a territory excluded from any form of economic activity, is managed for strict environmental protection, and conducts research and educational activities.

The protected area system and management regime has developed under conditions of strong centralized state power over all aspects of social

and economic life. *Zapovedniks* received central support, and were relatively independent from regional and local pressures. As a result, historically, local interests were not sufficiently taken into account, nor were the social and economic importance of federal protected areas for local populations considered. With the radical changes in the social, economic, and political conditions in Russia, there is now growing recognition that these new realities should be included in protected area management.

The centralized system of natural resources management, which was based on clear national policies that advocated environmental protection, is no longer present. Ministries responsible for resource exploitation now also manage all federal

protected areas. Departmental control is ineffective and irregular, and does not take into sufficient consideration the goals of nature protection. Hence, protected area management throughout Russia is problematic, as evidenced by numerous violations of protected area regulations.

In light of the current economic and political situation, WWF-Russia and IUCN believed that a comprehensive assessment of protected area management status, based on an international methodology, with a broad participatory approach, would be very useful, not only for state management bodies and environmental NGOs, but for everyone interested in sustainable development in Russia.

BIODIVERSITY AND MAJOR ECOSYSTEM TYPES

The Russian Federation occupies a territory that covers more than 11 per cent of the Earth's land surface. Nine terrestrial biomes are represented in the country: polar deserts, arctic and sub-arctic tundra, boreal and semi-tundra larch forests, boreal and temperate coniferous forests (*taiga*), temperate broadleaf and mixed forests, forest-steppe and steppe (temperate grasslands, savannahs, and shrublands), semi-deserts and deserts.

Forests cover about 69 per cent of the Russian landmass. More than one-fifth of the world's forests and half of all boreal coniferous forests are found in Russia. Much of this area is considered globally significant – a quarter of the world's non-

International Recognition for Russian Federal Protected Areas

International Category and Number of Protected Areas	
UNESCO-World Heritage	17
"Man and Biosphere" Site	25
Ramsar	24
Important Bird Area	77

fragmented virgin forests is found in Russia. More than 90 per cent of the Russian federal protected areas contains forests. The mountain forests of the Russian Caucasus and Far East (Sikhote-Alin) have the highest levels of biodiversity of the world's temperate forests.

SOCIO-ECONOMIC ENVIRONMENT

Socio-economic conditions vary greatly between the regions. Average incomes in Moscow and St Petersburg are double the national average, while incomes in economically undeveloped regions are less than a quarter. In such a situation, forests have tremendous economic value, with more than 2,000,000 people employed in the forestry sector. For most indigenous and local people in Russia's undeveloped regions, the direct use of wild natural

resources, through hunting, fishing, timber harvesting, non-timber forest product collection (e.g. berries, mushrooms, medicinal plants), and traditional agriculture (e.g. grazing, hay making) provides a subsistence living. Almost all of the 45 officially registered indigenous nationalities depend on the use of forest and other wild natural resources (tundra, marine, freshwater) for their subsistence.

Forests are also especially significant for the maintenance of indigenous people's traditions (land use, religious customs, and life style). Many indigenous people live near protected areas or actually within them.

In general, the current socio-economic situation in Russia is unfavourable for biodiversity conservation and does not enable the state to invest sufficient resources for protected area management.

MAIN PRESSURES AND THREATS TO FOREST ECOSYSTEMS

Up to 60 per cent of terrestrial areas remain undeveloped and unmodified by human activities, but the distribution of the different landscapes and land use patterns varies widely across the country.

The overwhelming majority of intact natural ecosystems are located in the Asiatic part of Russia, while the European part has been greatly transformed. In the latter, extensively modified landscapes with relatively high population densities (30–60 people per square kilometre) and isolated natural sites prevail. In Siberia and northern regions of the Far East, where population densities are less than one person per square kilometre, natural landscapes are generally not fragmented. But, where there are high concentrations of industries (e.g. Kemerovo Region) highly modified landscapes can be found, including ecological disaster zones.

More than half of all Russian federal protected areas are situated in regions where natural resources have been highly degraded. These regions cover about 20 per cent of Russia, and are mainly found in the European part and in the southern parts of the Urals, Siberia, and the Far East.

In all regions, management must monitor and reduce the many pressures and threats facing protected areas. In regions with industrial development and high population density, protected area management must also prevent further ecosystem fragmentation, habitat loss, and landscape transformation, as well as attempt ecosystem restoration. In regions with a high proportion of natural landscapes, protected area management must also consider sustainable use of natural resources by indigenous and other local people.

The main pressure on Russian forests is caused by timber extraction and other forestry activities. While timber extraction is, on average, well below the annual allowable cut (170–180 million cubic metres

versus 450 million cubic metres), the forestry industry is unevenly distributed across the country. Export-oriented operations are concentrated in the North-West, as well as in regions adjoining China (e.g. Irkutsk Region, Khabarovsk, and Primorsky territories). At the beginning of the 1990s, annual felling volumes decreased, but in recent years they have increased by 10 to 20 per cent per year. At the same time, illegal felling has increased, and now accounts for 30 per cent of the total felling volume (in some regions up to 70 per cent), according to WWF estimates. Illegal felling mainly occurs in forests that are the most economically and biologically valuable. For instance, the Far Eastern cedar-broadleaf forests have extremely high levels of biodiversity and endemism, and provide the main habitat for the Amur tiger (*Panthera tigris*). Illegal logging in these areas in recent years has resulted in a 30 to 40 per cent loss of habitat.

The impacts of fires are also widespread. Annually, fires in Russia damage around a million hectares of forests (in some years, such as 1998, the total was close to five million hectares). Ninety per cent of forest fires in Russia are human induced. Some fires (especially in the Far East) are catastrophic, as they lead to massive ecosystem destruction, loss of animal and plant populations and habitats, and to heavy social consequences. Early warning, fire prevention, and fire-fighting are very difficult and ineffective due mainly to a lack of resources.

Regional and global environmental changes have had an indirect effect by leading to desertification, increased frequency and destructive power of fires, and decreased forest resilience.

Road construction and mining operations (especially open-cast mining), as well as industrial pollution are also substantial pressures. The role of agricultural land use is less significant.

IMPLEMENTING THE METHODOLOGY

BACKGROUND

The management effectiveness assessment exercise was conducted in 2001–2002 by WWF-Russia in cooperation with IUCN's Commonwealth of Independent States (CIS) office. Other partners included EcoCentre Zapovedniks, regional state protected area management bodies, non-governmental associations of *zapovedniks* and national parks, other Russian NGOs, research institutes, and universities.

The major goals of the assessment were:

- ◆ assessing protected area conditions and management effectiveness
- ◆ using a participatory approach to increase civic participation
- ◆ proposing specific measures for improving protected area management.

More than 270 Russian and international protected area specialists participated in the regional assessment workshops. The assessment was conducted in 197 protected areas, located in all seven federal regions of Russia. Protected areas assessed included 89 state nature *zapovedniks*, 35 national parks, 49 federal *zakazniks*, and 24 regional protected areas (natural parks, resources reserves, and refuges). Regional protected areas are not included in this analysis.

The assessment analysed the following issues:

- ◆ the ecological and social importance of protected areas
- ◆ protected area vulnerability to external factors
- ◆ the scope, severity, and prevalence of threats and pressures
- ◆ management effectiveness of protected areas, including their strengths and weaknesses
- ◆ prioritization of protected areas based on their significance and management effectiveness

- ◆ protected areas requiring more detailed assessment.

The assessment process and the results were approved at each workshop. Participants also supported the further use of WWF's Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology for assessing management effectiveness of all levels of protected areas in Russia. The participants felt the results accurately reflected the reality of protected area management, and accurately highlighted common protected area strengths and weaknesses. Representatives of regional protected area agencies noted that the results have a practical value for organizing and planning the management of regional protected area systems.

This is the first large-scale, comprehensive protected area management assessment undertaken in Russia. Application of this internationally recognized methodology will enhance mutual understanding and cooperation between protected area managers and other experts at regional, national, and international levels.

The perceived strengths of WWF's RAPPAM Methodology were:

- ◆ Provides easily understandable and readily comparable data that will promote international cooperation in improving protected area management.
- ◆ Demonstrates to decision makers that assessments are possible, and that they must be carried out regularly.
- ◆ Provides a complete and thorough tool that takes into account all of the main aspects of protected area management.
- ◆ Provides a rapid and detailed analysis of the overall situation, and generates new information.

- ◆ Is sufficiently universal to enable comparison between protected areas of differing legal status, objectives, and management conditions.
- ◆ The questionnaire serves as a guideline to study management conditions and improve management.
- ◆ Helps to reveal management weaknesses and problems as well as find ways and measures to strengthen the former and solve the latter.

- ◆ Provides visual, graphic information to support data and trend analysis. Such data helps to convince high-level decision makers to reallocate funding.
- ◆ The participatory approach leads to consensus amongst participants, and enables further work on protected area related issues.
- ◆ Discussions during the assessment help to establish new contacts, as well as improve communications and management capacity.

IMPLEMENTATION

SELECTION OF PROTECTED AREAS

Federal-level protected areas were chosen for assessment due to their biological importance, long management history, and data availability. Furthermore, those areas that possessed their own staff, resources, and facilities were in a better position to incorporate the findings of the assessment to improve management. The majority of these protected areas were established primarily for biodiversity conservation, and mostly include forest ecosystems. Several protected areas contain some marine areas and others contain fresh water, wetlands, and grassland ecosystems.

During the assessment, protected areas of different categories (*zapovedniks*, national parks, *zakazniks*) were assessed in joint working groups. While combining categories sometimes caused misunderstanding, such an approach proved to be helpful in generating critical debate and exchange of views and experiences, thereby improving the professional capacity of the participants. The protected areas assessed were divided into seven groups in accordance with the existing federal regions (*okrugs*).

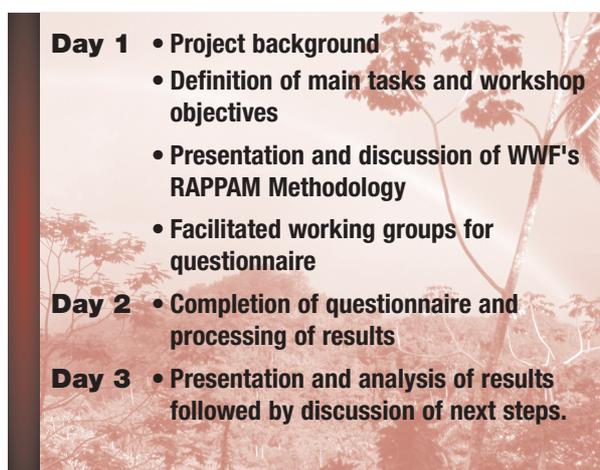
The project included eight workshops, five of them co-hosted with IUCN. During the first workshop, the Rapid Assessment Questionnaire was adapted and the workshop facilitators trained. Adaptations included the development of a general list of pressures and threats to be assessed at all subsequent workshops.

COLLATION OF EXISTING BACKGROUND DATA

Information about management conditions, main activities, and finances of *zapovedniks* and national parks was gathered from the Ministry of Natural Resources. For federal *zakazniks*, information was gathered from the Game Department of Agricultural Ministry. Information from these sources did not cover all aspects of the Rapid Assessment Questionnaire; additional background information was collected directly from protected area managers during the workshop preparations.

The regional assessments consisted of three-day interactive workshops with protected area managers, regional protected area policy makers, and other stakeholders. The workshops involved an evaluation of management effectiveness for each protected area, an analysis of the results, and an identification of next steps and priorities.

Typical Workshop Agenda



IMPLEMENTATION ISSUES

A few difficulties occurred in answering questions, including the following:

- ◆ Lack of data: many participants did not have adequate information on questions regarding awareness and support of local people towards protected areas, levels of biodiversity and endemism within protected areas, and impact and degree of pollution on protected areas.
- ◆ Inappropriate questions: participants were uncomfortable with questions of a sensitive or political nature, such as bribery and corruption. The following are actual quotes from workshops; “We can only answer the question about bribery and corruption if we have the results of a special investigation.” and “Only the court has the right to establish the fact of bribery.”
- ◆ Misunderstanding over terms: some terms are little known in Russia (e.g. critical management activities, key species, umbrella species, critical landscape function) and required group discussion.
- ◆ Inapplicable questions: some of the questions in the WWF questionnaire were felt to be inappropriate to the situation in Russia. For example, “management plans” as such are not a common protected area management practice in Russia. At present, only ten federal protected areas have approved management plans.

For the majority of questions in the questionnaire, a consistent approach was adopted at each regional workshop. However, in some working groups, a few questions were interpreted differently. Also, there were a few cases where external, independent opinion could not corroborate an answer, and the collision of different – even irreconcilable – views was a common phenomenon at each workshop.

As a result, the assessment of some indices may be less reliable, and in several cases seem at least doubtful. But the overall average estimates of each of the elements of protected area management are reliable, and adequately reflect reality.

Sometimes the validity of answers for highly threatened protected areas came into question. For example, Centralno-Lesnoy *zapovednik* was evaluated as one of the most problematic at the regional workshop. The level of threats and pressures was estimated extremely high for this protected area because experts did not compare their assessment with average values in the region. At the final workshop, the assessments by other experts were taken into account, and the necessary adjustments were made. In such cases, testing and correlating doubtful or erroneous assessments is recommended by engaging a broad range of experts, weighing the various opinions, and assessing available, objective data.

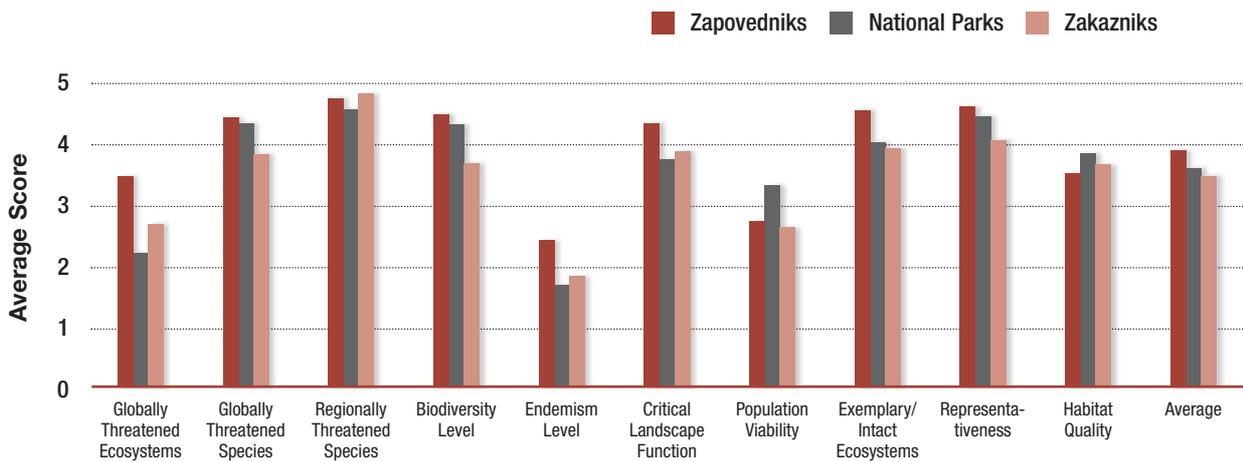
FINDINGS AND ANALYSES

BIOLOGICAL AND SOCIO-ECONOMIC IMPORTANCE

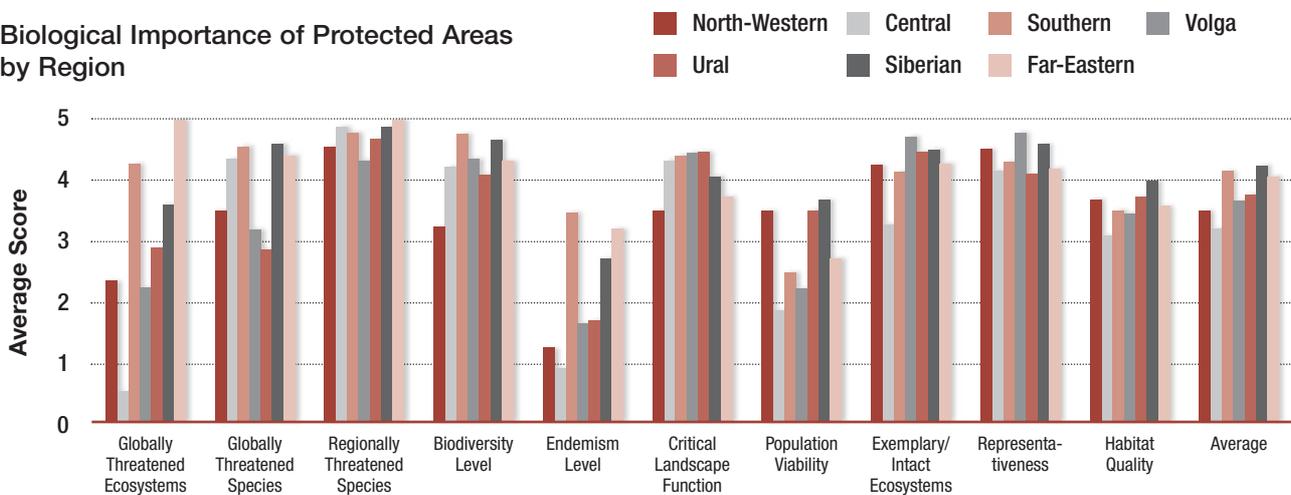
The assessment showed that biological importance of Russian protected areas is, in general, higher than their social and economic importance. *Zapovedniks* are higher than other types of protected areas in biological importance, whilst

national parks are higher in social importance. The biological and socio-economic importance of federal *zakazniks* is lower in comparison than that of protected areas of other categories.

Biological Importance of Protected Areas by Category



Biological Importance of Protected Areas by Region



BIOLOGICAL IMPORTANCE

The high biological importance of Russian protected areas is mainly a factor of their role in conserving rare and endangered species of global and national importance, providing a high level of representativeness and ecosystem integrity, and representing high levels of biodiversity. Federal *zapovedniks* have the highest levels of biological importance, followed by national parks, and then *zakazniks*. Biological importance increases from the northwest to the southeast, reaching the highest levels in the mountain regions of Siberia, the Caucasus, and Far East, and the lowest levels in Central Russia. The protected areas of the Far East, Siberia, and the north and south of the European part of Russia, as well as the mountain and steppe protected areas of the Volga and Ural regions play an essential role in the conservation of globally threatened ecosystems (e.g. WWF Global 200 ecoregions, Ramsar wetlands sites). In addition, protected areas in the Caucasus, Siberia, and the Far East are characterized by high levels of endemism, including local endemics with a range limited to the protected area itself.

The ability of most Russian protected areas to independently maintain minimum viable populations of key species is assessed to be rather low. Such ability depends on the size of the protected area and having adequate habitats within it. Corresponding indices are especially low in the *zapovedniks* of Central Russia.

SOCIO-ECONOMIC IMPORTANCE

The social importance of Russian protected areas, except for national parks, is considerably lower than their biological importance. At the same time, both the socio-economic and biological importance increases from the west to the east, reaching its highest levels in Siberia. The socio-economic importance of protected areas in the central and southern European parts of Russia (except for the Caucasus) is assessed lower than average.

The highest scoring elements of socio-economic importance included:

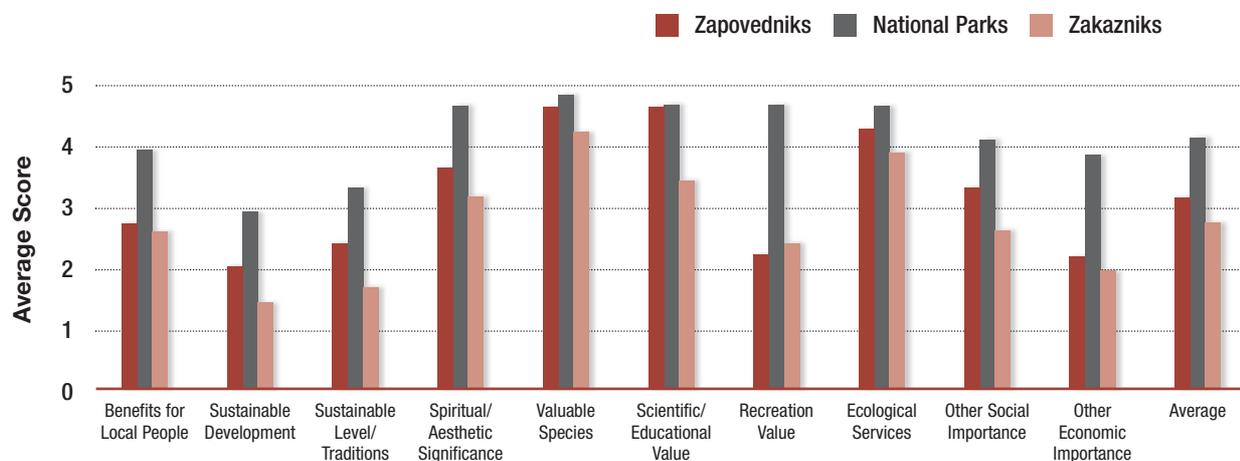
- ◆ the conservation of species with high socio-economic importance
- ◆ ecological functions and services to society
- ◆ scientific and educational value
- ◆ spiritual and aesthetic value.

The lowest scoring elements included:

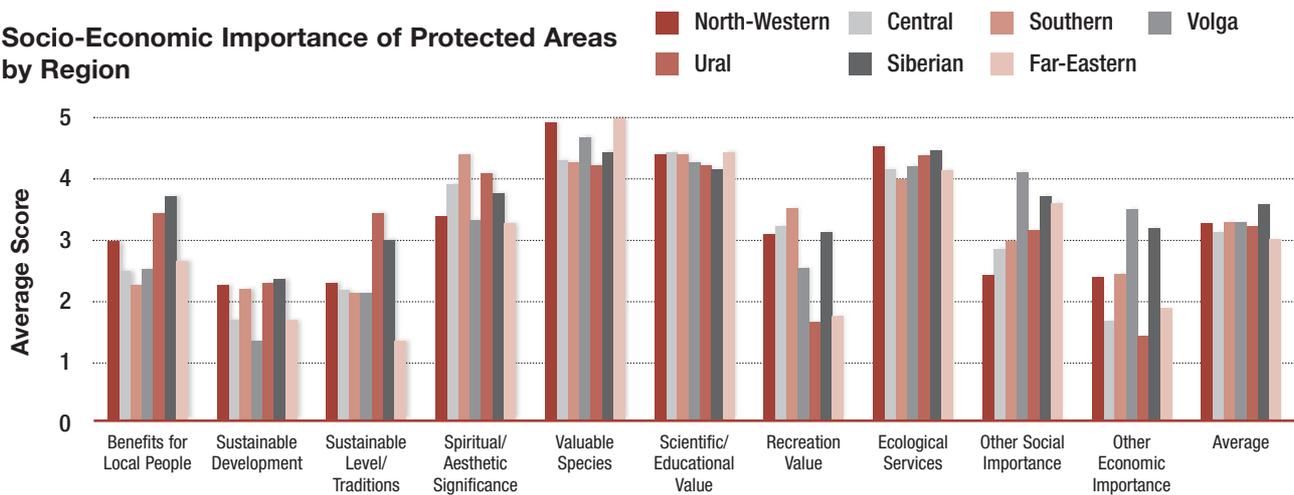
- ◆ potential for protected areas to demonstrate models of sustainable development
- ◆ subsistence importance
- ◆ tourism and recreation.

However, a number of protected areas, even those that had low scores for socio-economic importance, faced high levels of degradation from recreational and developmental pressures.

Socio-Economic Importance of Protected Areas by Category



Socio-Economic Importance of Protected Areas by Region



These data highlight one of the major weaknesses of the protected area system – socio-economic benefits and services are systematically under valued, under recognized, and poorly managed,

but at the same time, these protected areas are inappropriately pressured to provide an array of socio-economic benefits.

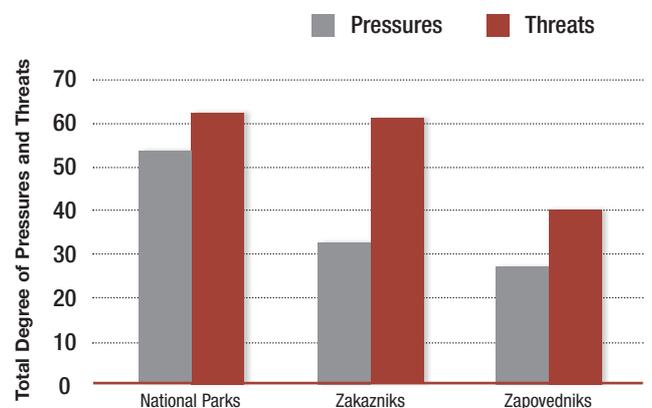
PRESSURES AND THREATS

OVERVIEW OF PRESSURES AND THREATS SYSTEM-WIDE

The protected area system in Russia faces numerous pressures and threats.

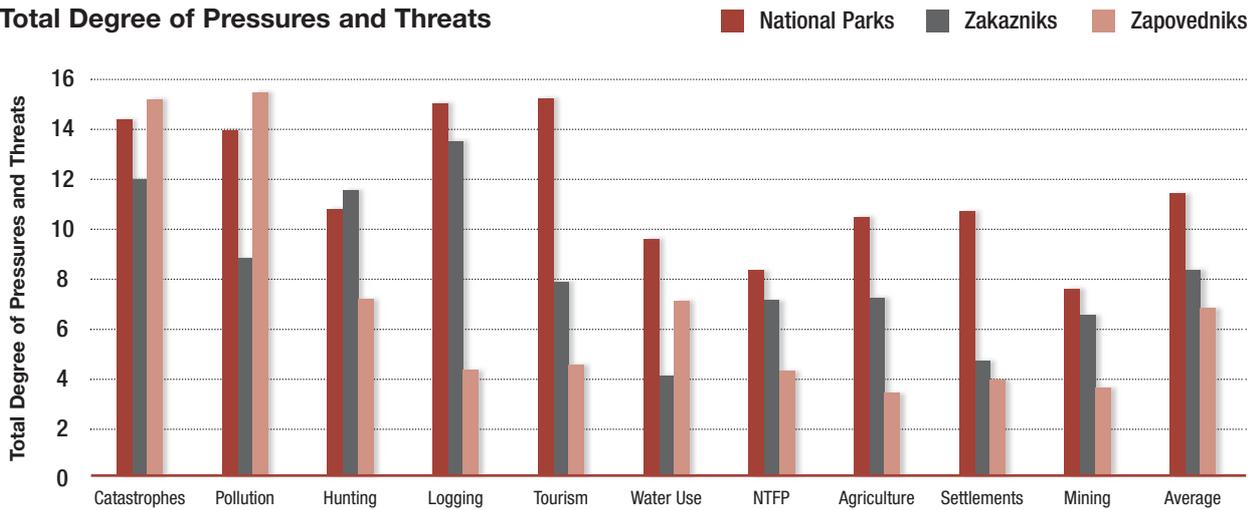
- ◆ Tourism – visiting protected areas for a variety of purposes (research, education, religious). Specific activities, planned and unplanned, include illegal encroachment, road building, and infrastructure development. Tourism and related activities not only result in the degradation of plant communities and disturbance of wildlife, but also require additional rangers' resources.
- ◆ Hunting – direct hunting and fishing, as well as other pressures on wild animals. Examples include species introduction for sport hunting, destruction of burrows, and other habitat changes. Legal as well as illegal activities were considered as a threat or pressure, although poaching is the main problem. Examples of threatened species include the Russian desman (*Desmana moschata*), Far East leopard (*Panthera pardus ussuriensis*), and the saiga antelope (*Saiga tatarica*).

Cumulative Pressures and Threats

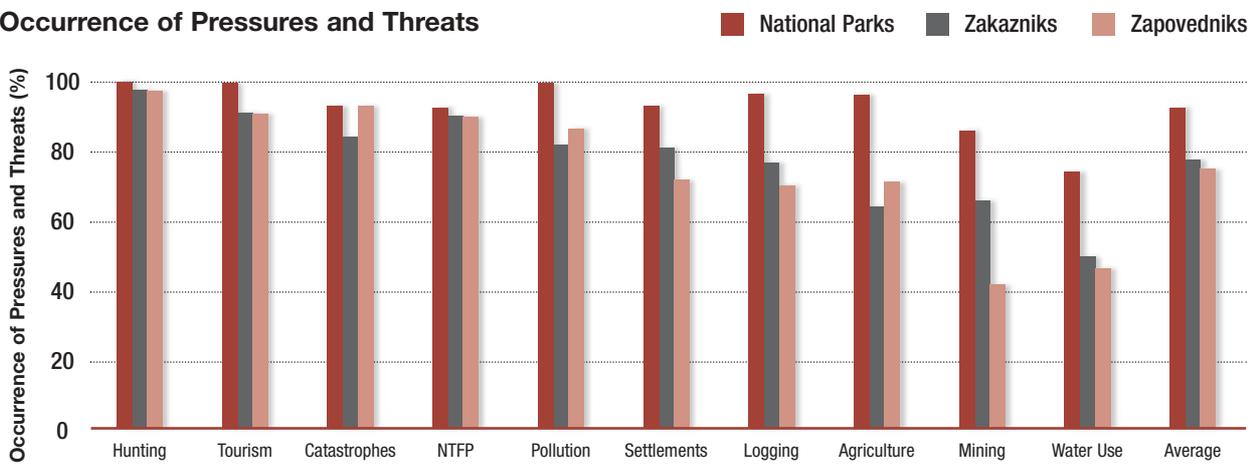


- ◆ Logging – felling and forestry-related activities, such as forest thinning, soil preparation, fertilization, and tree planting. These activities cause direct impacts on forests by degrading large areas, destroying natural plant communities, and impeding natural processes. Such practices also create favourable conditions for invasive species introduction.
- ◆ Collection of non-timber forest products (NTFPs) includes the collection and harvesting of all plant

Total Degree of Pressures and Threats



Occurrence of Pressures and Threats



materials from the protected area (food, medicinal, resins, herbarium specimens). These activities cause damage to and elimination of plant species, for example species of ginseng family (*Araliaceae*) in the Far East, and rose-root stone-crop (*Rhodiola rosea*) in the Urals and Siberia.

- ◆ Agriculture – agriculture ranges from swidden agriculture to industrial farms (inside and outside protected areas), as well as grazing and harvesting of any resources within the protected area for animal feed or fodder.
- ◆ Settlements – settlements range from individual temporary huts to large housing developments, including infrastructure-related development (e.g. farms, enterprises, roads, pipe and power lines, and other communications) that cause

landscape degradation and fragmentation, and habitat destruction.

- ◆ Pollution – pollution stems from a variety of sources (industrial, agricultural). The type of pollution varies from protected area to protected area, although the most important type is trans-border pollution. Information on pollution is incomplete and generally unavailable.
- ◆ Water use – direct use of water from rivers and lakes, and the associated changes in hydrological regimes, including water pollution, small-scale dam building, and large hydro-power projects and reservoirs. The negative consequences of water use leads to degradation of natural ecosystems. For instance, in Laplandsky *zapovednik*, water level fluctuations

connected to hydro-power plant activity have caused severe mortality of salmon eggs.

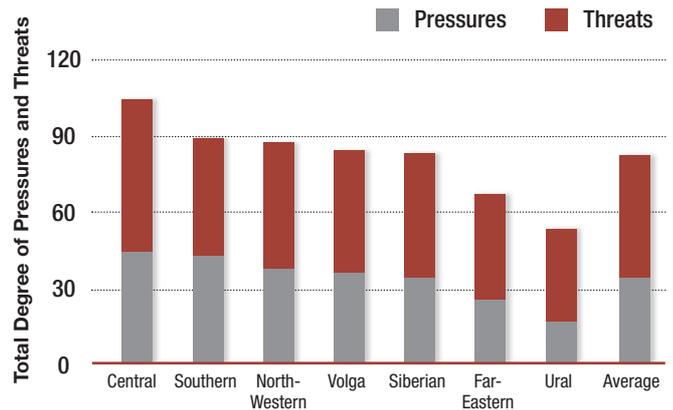
- ◆ Mining – use of underground resources and related activities (drilling, exploration) as well as surface destruction of soils, plants, and rock outcrops.
- ◆ Natural catastrophes – while natural catastrophes include fires, floods, earthquakes, and avalanches, the most common catastrophe in the assessments was anthropogenic fires. According to the Global Forest Watch, the frequency of fires in forests with human activities is ten times higher than in the forests without them. Only fires (natural and human induced) having a negative influence on protected area objectives were considered.

DEGREE OF PRESSURE AND THREAT

The overall degree of pressures and threats among the protected areas varied greatly, from 0 to over 150 for pressures and from 4 to over 200 for threats. Although in a few cases estimates of the degree of pressure and threat may be inflated, participants felt that overall scores generally reflected reality.

The estimates of pressures and threats inevitably reflect the specific goals and tasks of protected areas of different categories, as well as specific regional and local conditions of protected area management. Nevertheless, general trends have been identified.

Cumulative Pressures and Threats by Region



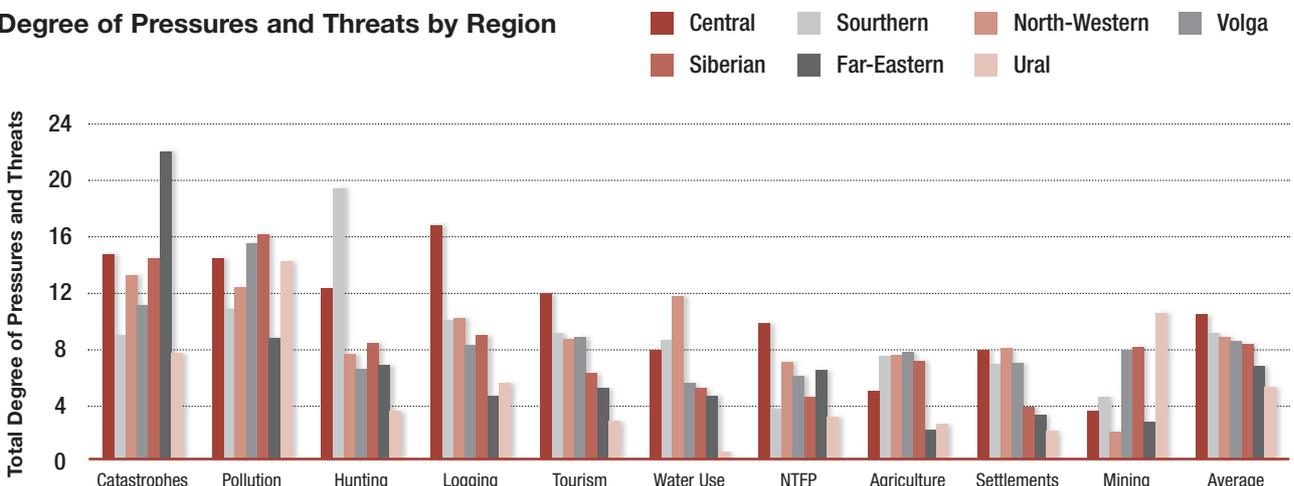
The primary pressures and threats to all categories of protected area are: natural catastrophes (primarily fires), pollution, hunting and other pressures on wild animals, and logging. Catastrophes and pollution cause the most damage to *zapovedniks* and national parks, while forestry activities and hunting cause the most damage to national parks and *zakazniks*.

In national parks, real and expected damage from tourism and encroachment exceeds the damage from logging, catastrophes, or pollution. The total damage from all threats and pressures as well as their occurrence is highest in national parks.

Zapovedniks are least exposed to pressures and threats; each *zapovednik* in general experiences a narrower spectrum of critical pressures and threats.

The degree of pressures and threats is highest in the Central region, followed (in declining importance) by the Southern, North-Western, Volga, Siberian, Far Eastern, and Ural regions.

Degree of Pressures and Threats by Region



Catastrophes are the most serious pressure and threat to ecosystems in the Far Eastern and North-Western regions; pollution in Ural, Siberian and Volga regions; logging in the Central region; and hunting and other kinds of impacts on animals in the southern European part of Russia.

Pollution is one of the three most critical pressures and threats in all seven regions. Catastrophes, another critical pressure and threat, are similar for all regions except the Southern. Logging is one of the three key pressures for the Central, Southern, and Siberian regions. Hunting and other impacts on wild animals are most important in the Southern region, and hold third place after catastrophes and pollution in the Far East and Volga regions. Water use is important in the North-Western region.

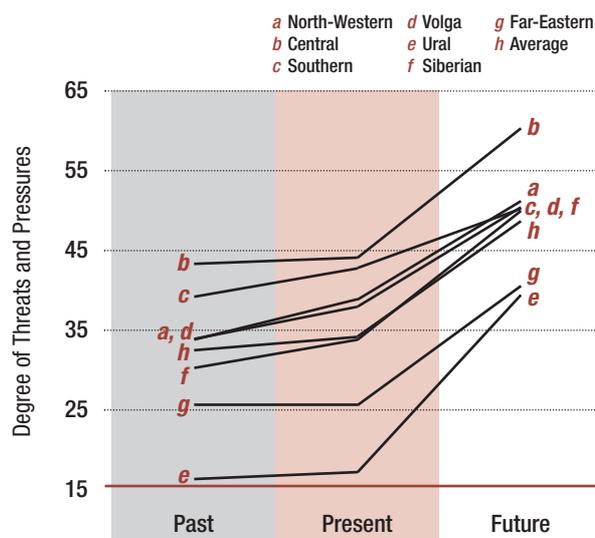
Hunting, tourism, nature catastrophes, and NTFP collection are the most widespread pressures and threats. These activities are registered in more than 90 per cent of all protected areas (though NTFP collection in the Southern region and catastrophes in the North-Western region are not critical).

In addition, the following pressures and threats are widespread:

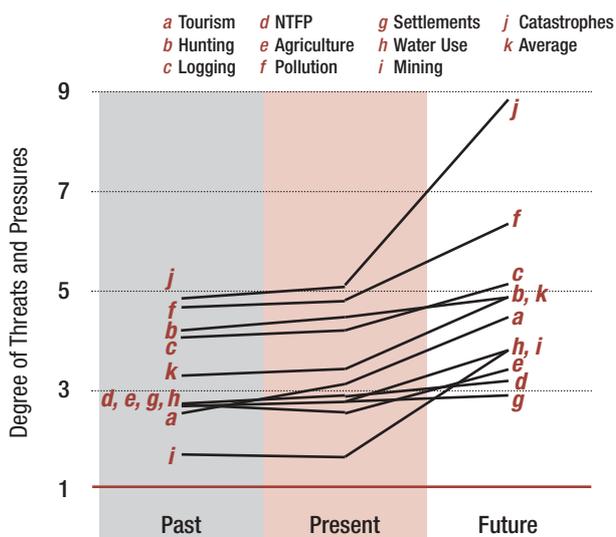
- ◆ Settlements and corresponding infrastructure developments, which damage the integrity of natural ecosystems (or threaten them) in more than 9 out of 10 national parks and in three-quarters of *zakazniks* and *zapovedniks*.
- ◆ Logging and other forest use occur in 97 per cent of national parks, more than two-thirds of *zapovedniks*, and three-quarters of *zakazniks* (logging in national parks is usually legal, but it is economically driven, and causes high levels of environmental degradation).
- ◆ Agricultural land use (grazing, hay making) in the protected areas and adjacent territories, damages or threatens practically all national parks, as well as two-thirds of protected areas from other categories.

Mining, water use, and other soil surface and hydrology violations are the least widespread activities. Nonetheless, mining is a real pressure and/or threat in the majority of national parks, in more than a third of *zapovedniks*, and in half the *zakazniks*.

General Trends by Degree of Pressure (Region)



General Trends by Degree of Pressure (Pressure)



TRENDS AND OUTLOOK

In the past five years, pressures have increased on the Russian protected area system. Pressures grew considerably in national parks and *zakazniks*, while in *zapovedniks* they have decreased slightly. An increase was registered for most types of pressures. The growth of tourism was especially noticeable, while the level of damage from pollution remained the same. Impacts from agriculture and mining decreased slightly. Growth of pressures was observed in all the regions except for the Far East. Though in most of Khabarovsk, Kamchatka and several other Far East protected areas pressures did increase. Especially visible was the growth of

pressures in the North-Western and Southern regions of Russia.

Within the next five years, an increase in the total degree of threats and their frequency or occurrence

is expected for the protected area system in general and particularly in the Ural and Central regions. According to forecasts, pressures of all types will increase. Especially sharp increases are expected for pollution and catastrophes.

MANAGEMENT EFFECTIVENESS

EXTERNAL FACTORS REDUCING MANAGEMENT EFFECTIVENESS

The factors having the most impact on protected areas are:

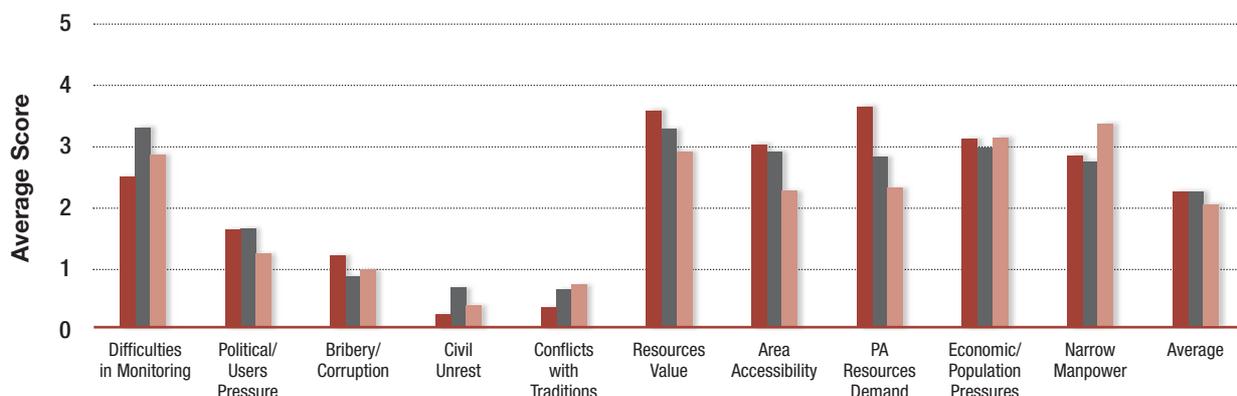
- ◆ High value of resources in protected areas and their paucity in surrounding territories (this factor is one of the three critical factors for all protected areas, but is more important for national parks).
- ◆ Lack of personnel suitable for recruiting as protected area staff from surrounding areas (the situation is aggravated by the critically low salary levels, particularly for *zapovedniks*).
- ◆ Difficult social and economic situation in areas surrounding protected areas (low level of services and production, unemployment and poverty, lack of food products and other goods).
- ◆ Layout and characteristics of protected areas and surrounding areas leading to difficulties in

management (e.g. large size of protected areas, their remoteness, fragmentation, complicated configuration, extensive borders, and absence of roads).

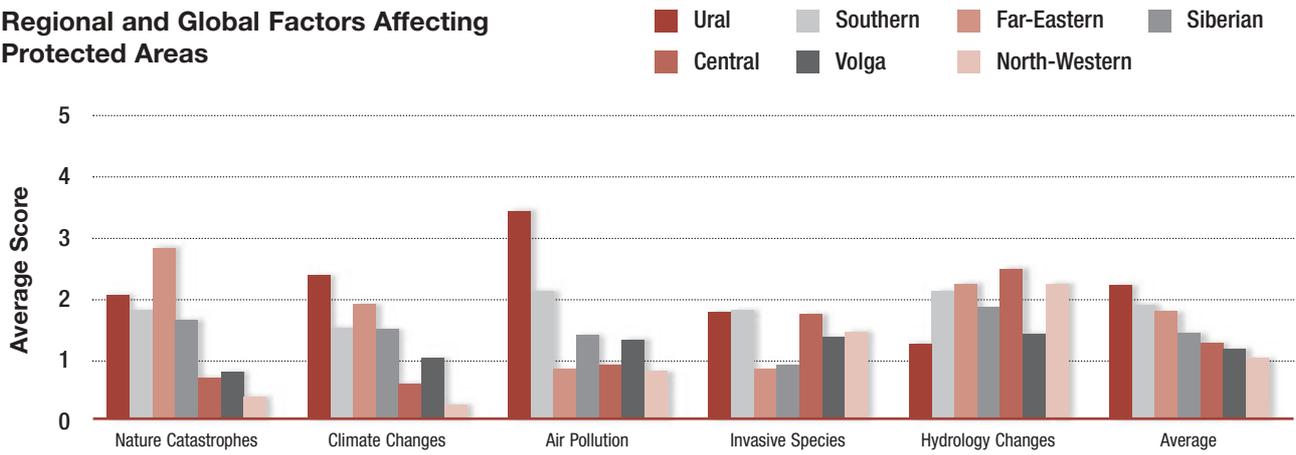
Other less important factors included: conflicting local cultural practices and traditions, and pressure on protected area administration from local authorities and corruption. While these factors were less important, they became critical for the most threatened protected areas with weak management; evidently these factors may have a strong influence on management effectiveness.

Among regional and global factors affecting protected area management, change of hydrological regime, increased frequency and scale of natural catastrophes, and decrease in sustainability of natural ecosystems were most significant. The impact of global climate change, trans-boundary atmospheric pollution, and introduction of alien species were considered less important.

Local Contributing Factors to Protected Area Threats ■ National Parks ■ Zakazniks ■ Zapovedniks

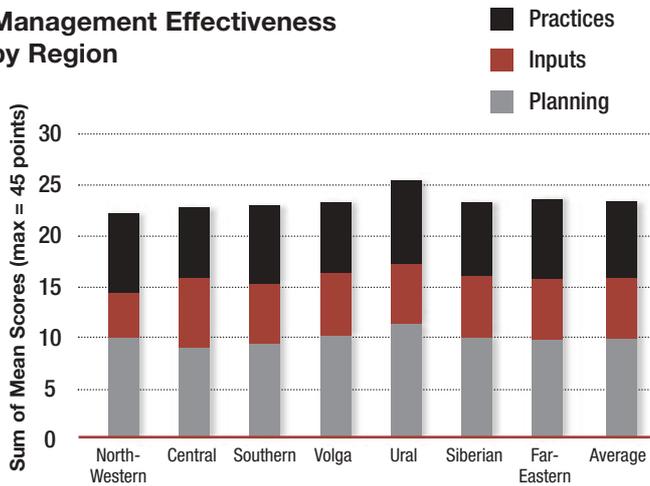


Regional and Global Factors Affecting Protected Areas



MANAGEMENT EFFECTIVENESS COMPARED

Management Effectiveness by Region

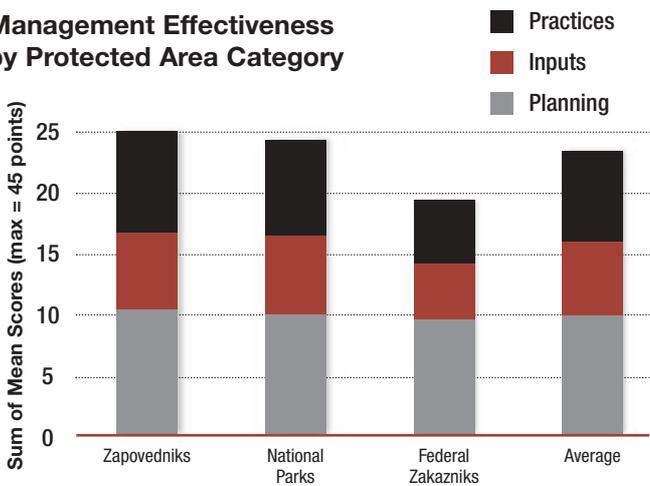


The sum of mean scores for planning, inputs, and practices varies:

- ◆ *zapovedniks*: 7–36 points
- ◆ national parks: 13 – 35 points
- ◆ federal *zakazniks*: 6 – 32 points.

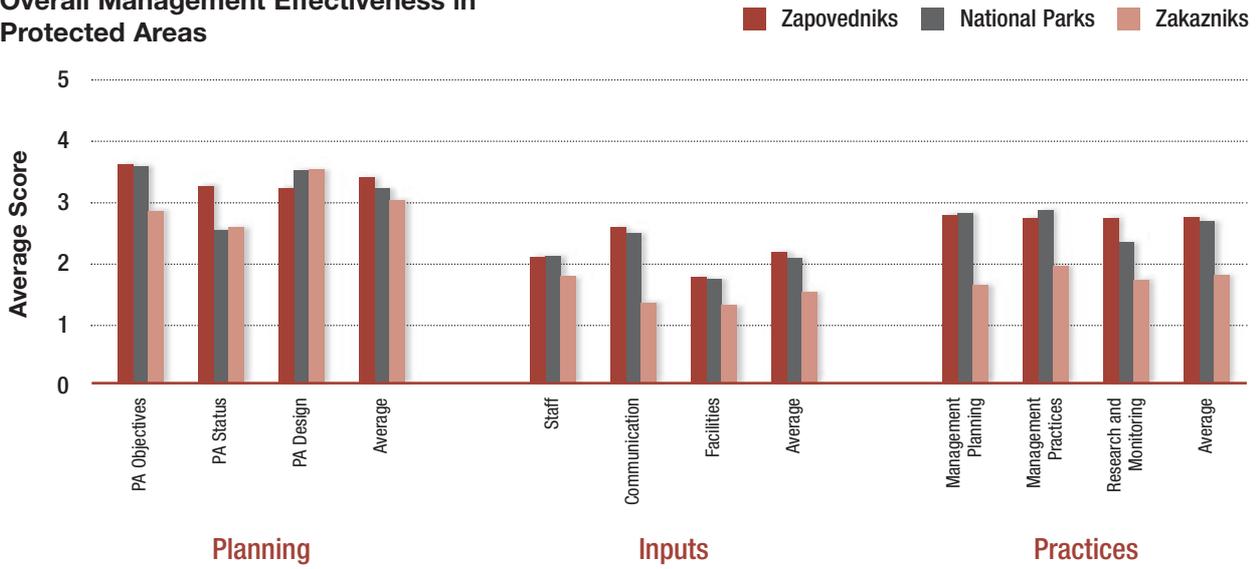
An overview of the scores for the main management components across different protected area categories and for each of the seven federal regions is presented here. Roughly one-third of all Russian protected areas and less than half of *zapovedniks* are managed well (with scores above 3), while one out of six protected area (mainly *zakazniks*) is poorly managed or not managed at all. One *zapovednik* had no inputs at all (the score was 0) and four *zakazniks* had neither inputs nor practices (i.e. they were essentially “paper parks”).

Management Effectiveness by Protected Area Category

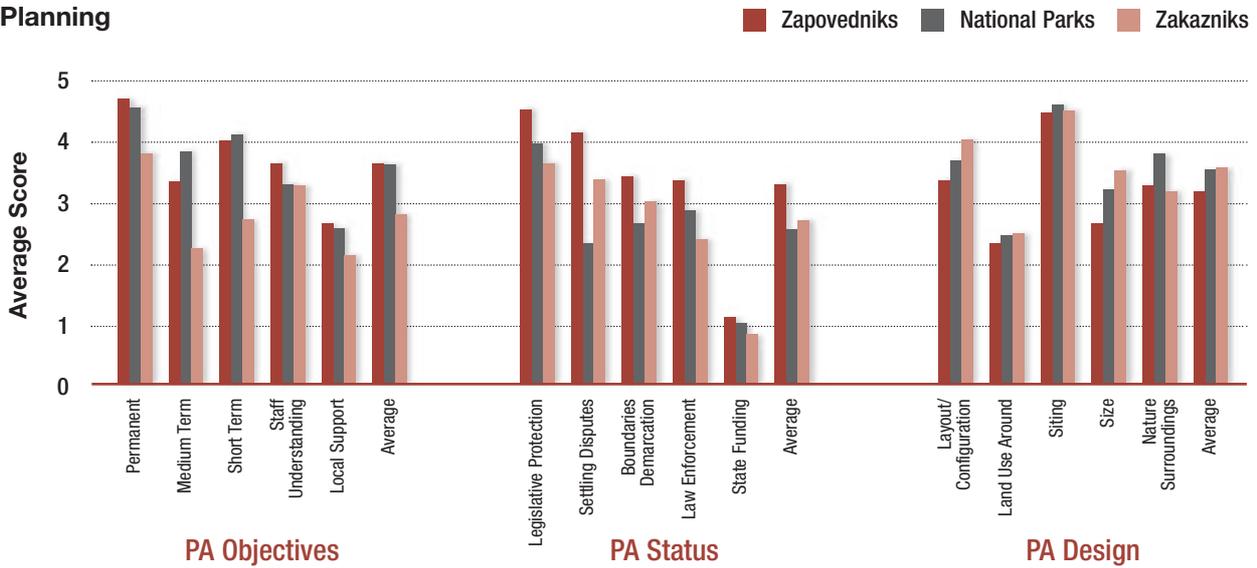


Management components (planning, inputs, and practices) of *zapovedniks* scored highest among the different protected area categories and did not differ greatly between regions. National parks in general received similar scores, but decreased from northwest to southeast. Management scores of the federal *zakazniks* varied greatly between the regions. One reason for this variation is that management of *zapovedniks* is much more centralized, while *zakazniks* are managed regionally.

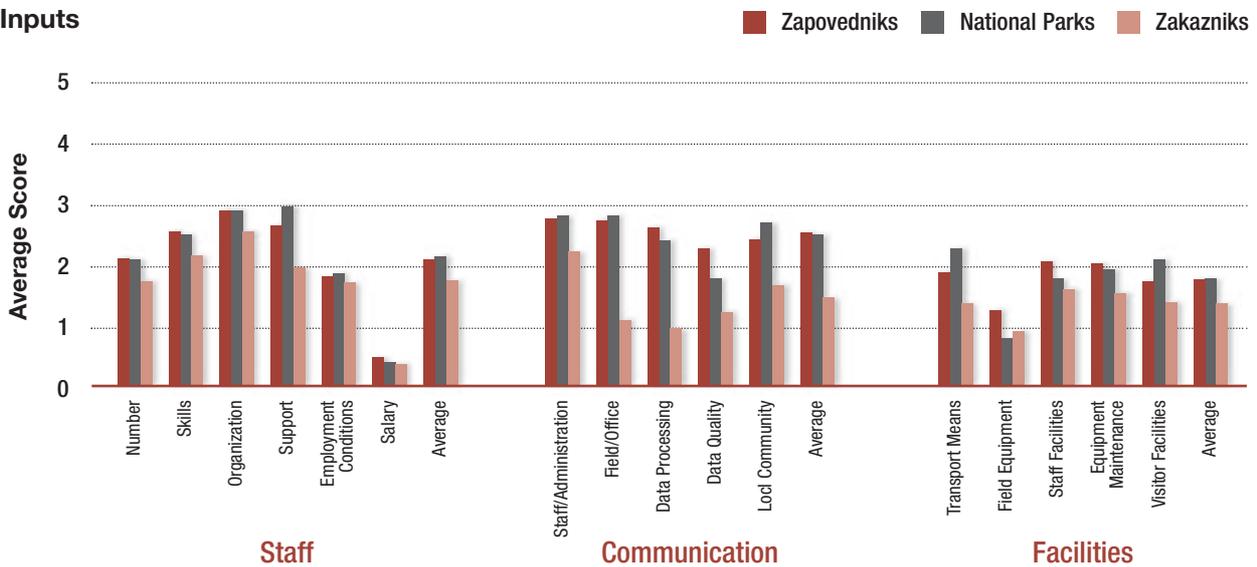
Overall Management Effectiveness in Protected Areas



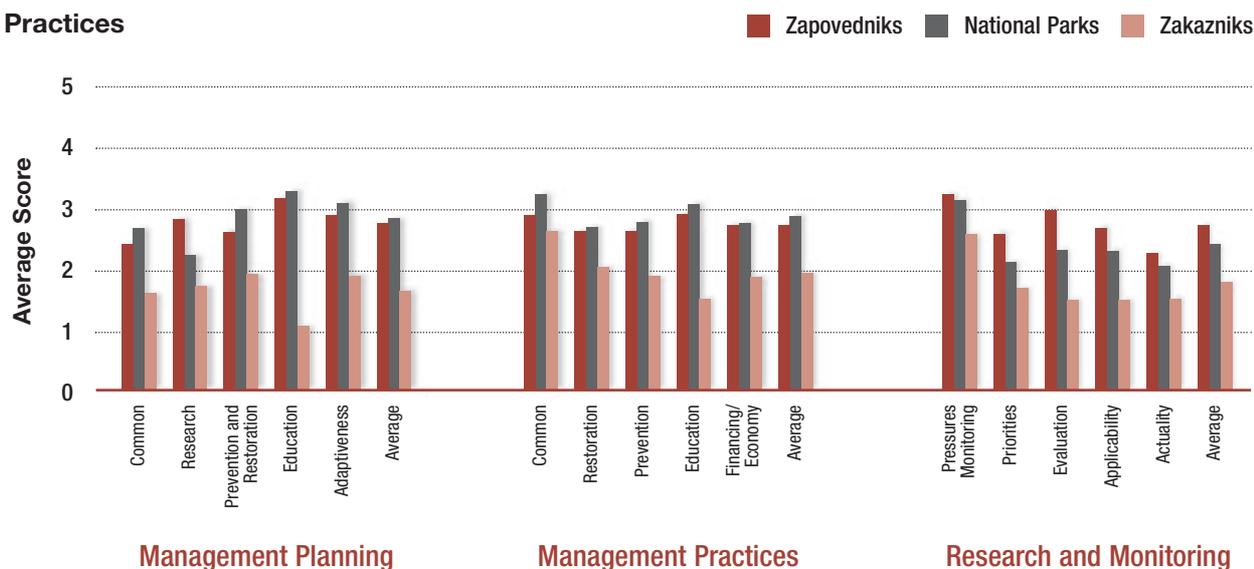
Planning



Inputs



Practices



STRENGTHS OF THE RUSSIAN PROTECTED AREA SYSTEM

Planning was the strongest component of protected area management, including the formulation of strategic goals, integration of goals with management planning, legal status, design, and planning of protected area sites. Site design and planning scored as the strongest element of protected area planning as a whole with protected area location receiving the highest scores. Representativeness, biological importance, and undisturbed ecosystems also contributed to the high scores. For most protected areas, the choice of location is the result of long-term biological and other research, detailed surveys, careful design and planning, as well as complex coordination of the interests of different stakeholders. Usually such planning provides the necessary balance of biological and socio-economic value, as well as the external and internal conditions necessary for effective protected area management. Protected area objectives, especially for *zapovedniks*, provide for the maintenance of biodiversity, are clearly formulated, fixed by the legislation, connected with current planning, and understood by protected area staff. Federal protected areas, particularly *zapovedniks*, have a sound long-term legal basis.

Despite the critical shortage of inputs, positive changes in the management practices of *zapovedniks* and national parks are occurring. The creation of a federal management body has led to an atmosphere of heightened attention to nature

protection practices in *zapovedniks* and national parks, and eventually to the improvement of protected area ranger service operations.

Most attempts to encroach upon ecosystems in *zapovedniks* and national parks, from local authorities and business, have been stopped. One indicator of this change is the greatly diminished volume of “permissible” felling.

The practice of creating multiple-use zones continues to be developed and tested. Such zones allow new possibilities for developing models of sustainable resources use and local development in conformity with principles of the Seville Strategy for Biosphere Reserves, and may increase protected area socio-economic significance, status, and prestige at regional and international levels.

Research and monitoring in *zapovedniks* scored higher in comparison with protected area of other categories. The *zapovedniks* have maintained their long tradition of scientific research. Moreover, certain measures were undertaken to adapt the system to present conditions, and to attract new, qualified scientific staff. The use of modern information technology and communications has also increased: 80 per cent of *zapovedniks* and national parks use e-mail, more and more *zapovedniks* and national parks have websites, and geographical information system applications are used in protected area monitoring and management more frequently.

Ecological education has improved in *zapovedniks* and national parks, and its social relevance has been strengthened. An annual publication that analyses the results of the operational and financial activities in *zapovedniks* and national parks is freely distributed and freely available to the public.

The fundamentals of protected area management planning and practices have also improved. Two programme documents, *The Main Directions of Development and Organizing of the State Zapovedniks Activities until 2010* and *The Management Strategy for National Parks of Russia*, have been developed and approved by the Ministry for Natural Resources in cooperations with NGOs. In addition, new comprehensive management plans have been approved for ten *zapovedniks* and national parks.

A new financing system for *zapovedniks* and national parks has been developed. This taps non-federal sources of revenue. This financing system includes regional and local budgets, Russian and foreign charities and sponsors, and protected area-based revenue. In the last two years, the federal government has increased its contribution to the individual budgets of *zapovedniks* and national parks. For example, the federal contribution in 2001 was 79 per cent higher than in 2000.

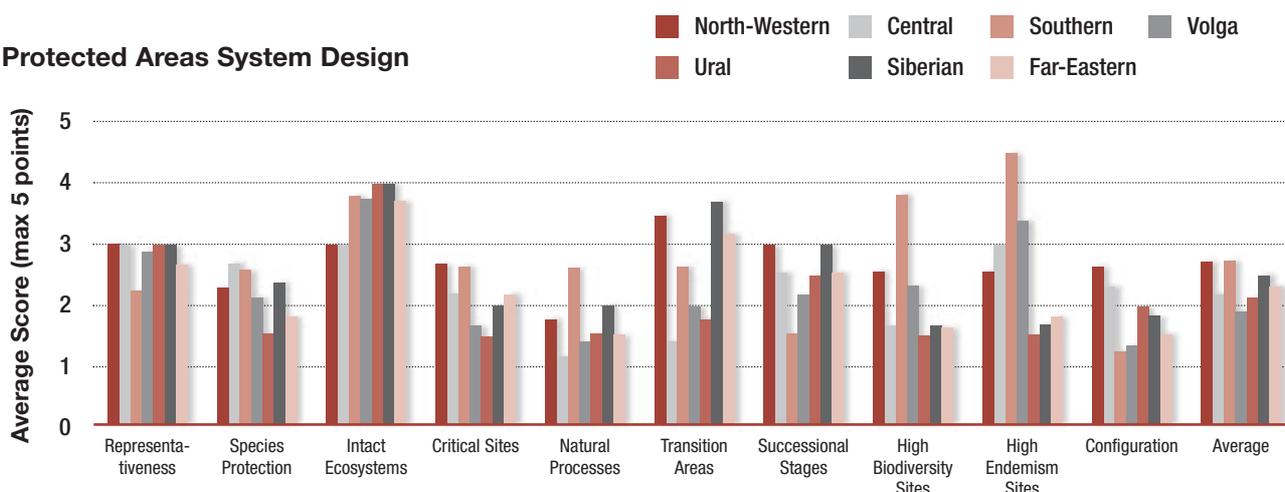
WEAKNESSES OF THE RUSSIAN PROTECTED AREA SYSTEM

At the protected area system level, assessment of the policy environment identified the following weaknesses (average score of the 10 indices was 1.37):

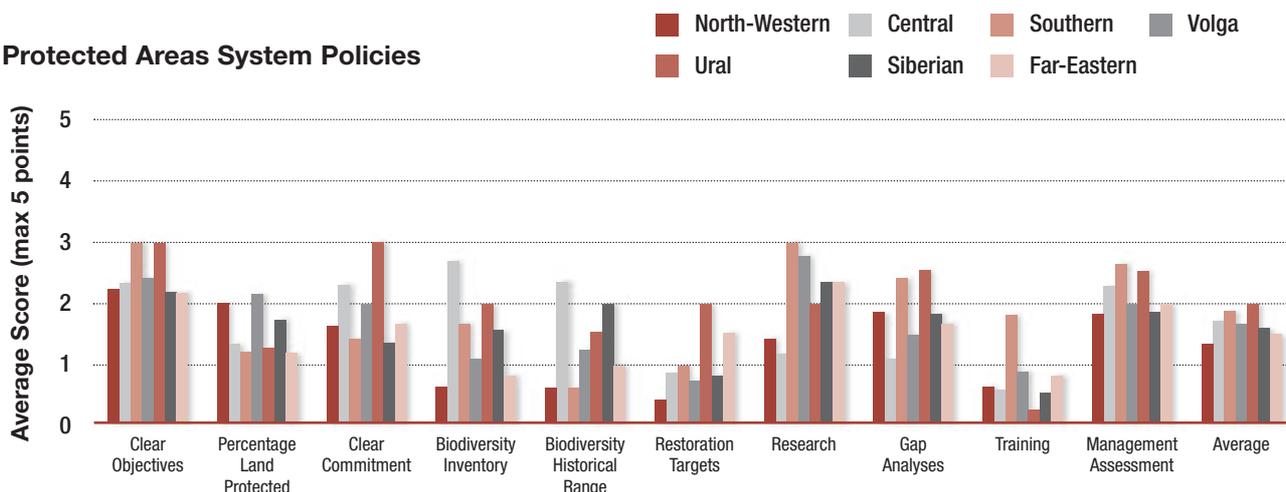
- ◆ An absence of adequate environmental training and education for government employees (average score 0.18).
- ◆ Low level of political support for public and private mechanisms of land conservation (average score 0.55).
- ◆ Weak political guarantees for sustainable management of protected area system (average score 1.07), including critically insufficient and unstable state funding.
- ◆ Insufficient consideration of the goals of environmental protection and sustainable development in policy development (average score 1.17).
- ◆ Insufficient political support for sustainable forestry management (average score 1.46).

In general, the political environment is unfavourable for effective management of protected area system.

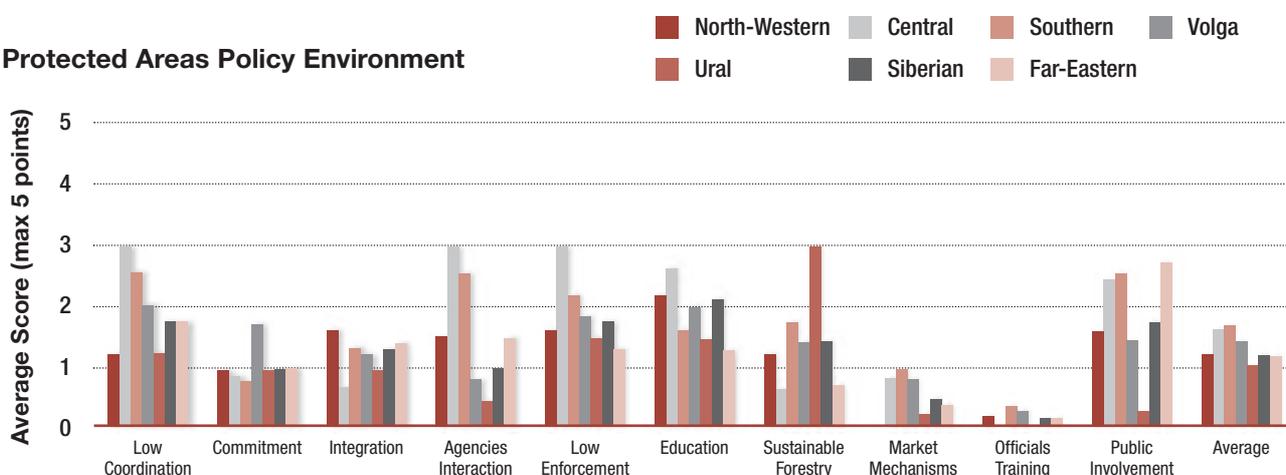
Protected Areas System Design



Protected Areas System Policies



Protected Areas Policy Environment



Protected area policies exhibited the following weaknesses (average score 1.66):

- ◆ An absence of adequate training and capacity-building for protected area managers and administrators (average score 0.78).
- ◆ An absence of clear restoration targets for under-represented and/or degraded ecosystems (average score 1.06).
- ◆ An absence of adequate assessment of the historical range of variability of ecosystem types and biodiversity (average score 1.32).
- ◆ Low level of the current biological diversity inventory throughout the regions (average score 1.47).
- ◆ Inadequate percentage of land cover under protection (average score 1.53).

- ◆ Incomplete and irregular assessment of the protected area system in general, and even an absence in certain regions (average score 1.82).

Protected area system-level design had the following weaknesses (average score of 10 indices was 2.33):

- ◆ The protected area system was not able to maintain natural processes at a regional level (average score 1.71).
- ◆ Unsatisfactory configuration of protected area system (average score 1.84).

Management inputs at the protected area site level had the following weak points (average score of 16 indices was 1.97):

- ◆ Transportation and facilities (in descending order: lack of field equipment, inappropriate visitor facilities, inadequate transportation –

especially opportunities for flying – staff facilities and housing shortage, inadequate maintenance and care of equipment) (average score 1.66).

- ◆ Staffing – critically low salary levels and other employment conditions hamper full recruitment of staff, causing few and inadequately qualified staff (average score 2).
- ◆ Communication and information systems – shortage and poor quality of information, a lack of up-to-date systems for data processing, and a lack of a centralized system for data collection and filing (average score 2.25).

For protected areas of all categories, “inputs” was by far the weakest management component.

Management practices at protected area site level had insufficient level and quality of (average score of 15 indices was 2.49):

- ◆ Research and monitoring (average score 2.41); there is insufficient research, prioritization, and integration with management planning and practices.
- ◆ Management planning (average score 2.48); there is an absence of systematic medium-term planning, i.e. absence of management plans for the majority of protected areas.
- ◆ Management practices (average score 2.57); weaknesses were identified regarding prevention and restoration, natural and cultural resources management, and education and outreach.

Management practices are most effective in national parks and *zapovedniks*. In national parks planning and implementation of plans scored well, especially for prevention and restoration practices, ecological education, and outreach. In *zapovedniks* research and monitoring was strong. *Zakazniks* lag behind in all aspects.

In protected area site planning the following weaknesses were revealed (average score of 15 indices was 3.30):

- ◆ Scant and unstable state funding (average score 1.01).
- ◆ Inadequate coordination of land use in the surrounding territories with protected area objectives (average score 2.40 for all protected areas and 2.33 for *zapovedniks*).
- ◆ Insufficient understanding and support of the protected area management objectives by local people (average score 2.66 for all protected areas and 2.15 for *zakazniks*).
- ◆ Insufficient accordance of medium-term planning with main protected area objectives (average score 2.29 for *zakazniks*).
- ◆ Unsettled land tenure or use rights disputes (average score 2.29 for national parks).

Insufficient and unstable state funding is the primary weakness for all protected areas. Lack of adequate funding causes insufficient inputs and hampers a lot of management activities, especially those with high financial and organizational requirements (e.g. research, monitoring, education, and communication with local communities).

The status of national parks is threatened by disputes with land users, as national parks do not have adequate legal security regarding land tenure and land use rights. As a rule, external borders of *zakazniks* and national parks, as well as internal borders between zones in national parks, are poorly marked. For several *zapovedniks* size and configuration of the protected area are additional weak points.

From the assessment results it is clear that all management components and indices are interconnected. Under the same conditions, management practices score higher where planning and inputs are higher.

CORRELATION BETWEEN PRESSURES AND THREATS AND BIOLOGICAL AND SOCIO-ECONOMIC IMPORTANCE

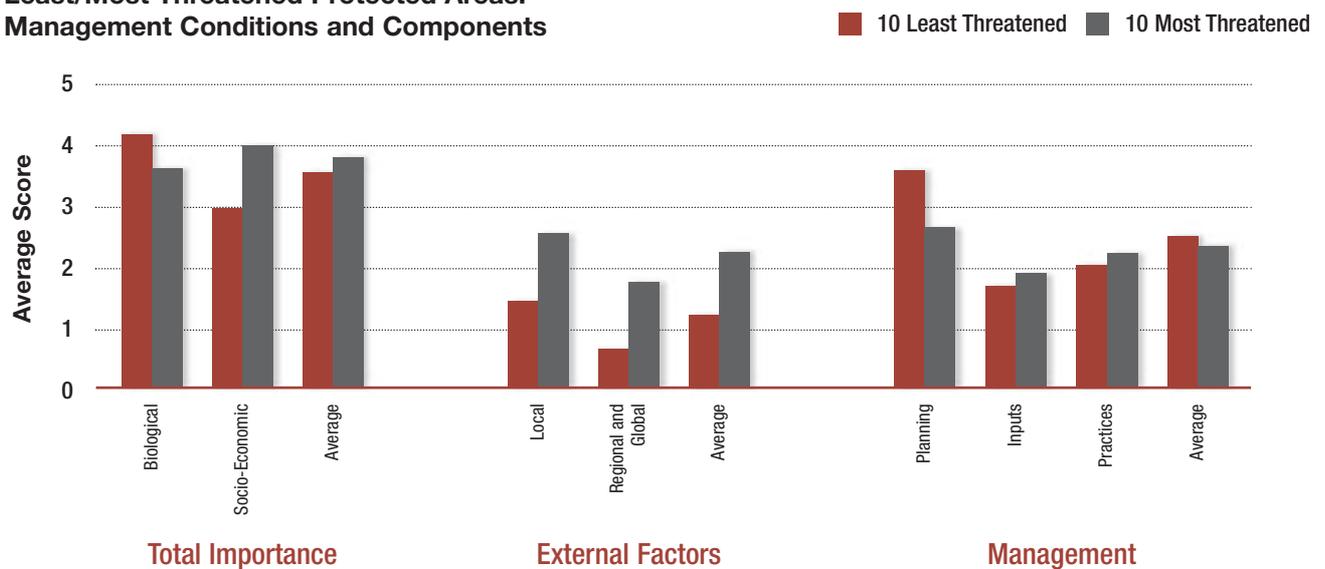
The assessment results show that increased pressures generally lead to decreased biological values of protected areas. Those with the highest levels of pressures and threats have low scores in such indices as viability of animal populations and ecosystem integrity.

They also have the highest indices of social and economic importance, in comparison with other territories. It may appear that a territory that is exposed to intensive pressures from people serves them more fully. But this is only a superficial assessment. The more threatened protected areas

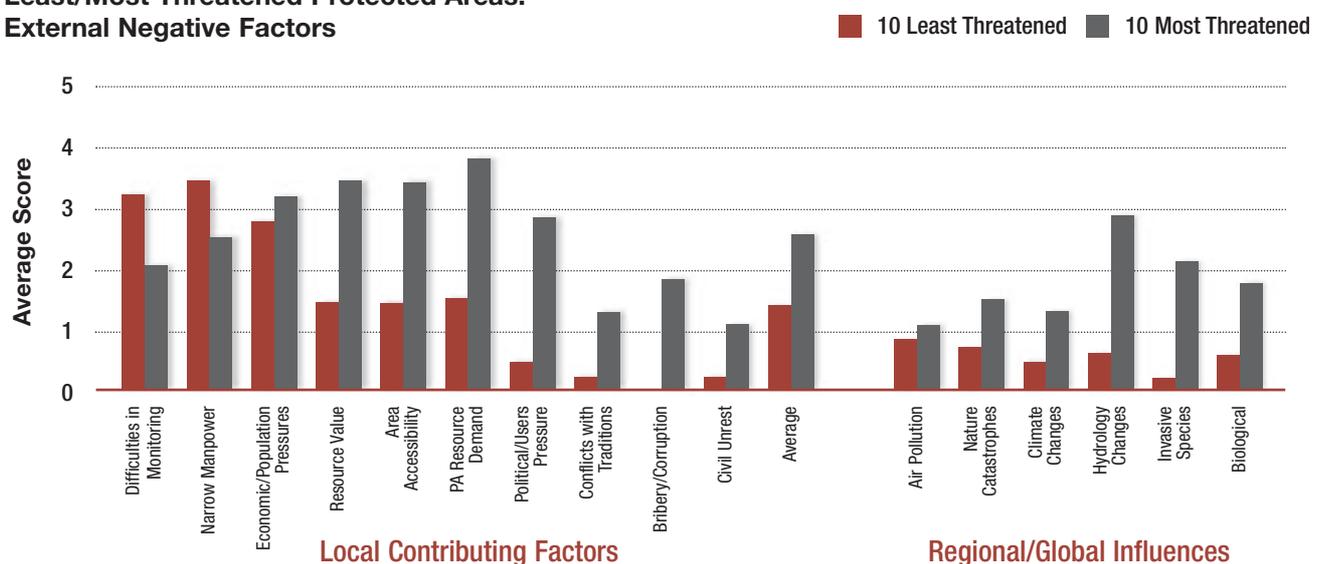
"pay" for this seemingly higher social-economic value by having lower degrees of ecosystem integrity and species viability.

The social and economic importance of protected areas also decreases with increased pressures, which may be less obvious. A decrease in the biological importance of protected areas is connected with the ability to regenerate and the exhaustion of natural resources beyond protected area borders. Such degradation inevitably reduces the potential ability of a protected area and surrounding lands to satisfy various social (scientific, spiritual, cultural, aesthetic, recreational) and economic needs (resources), and does not lead to sustainable development at local and regional levels.

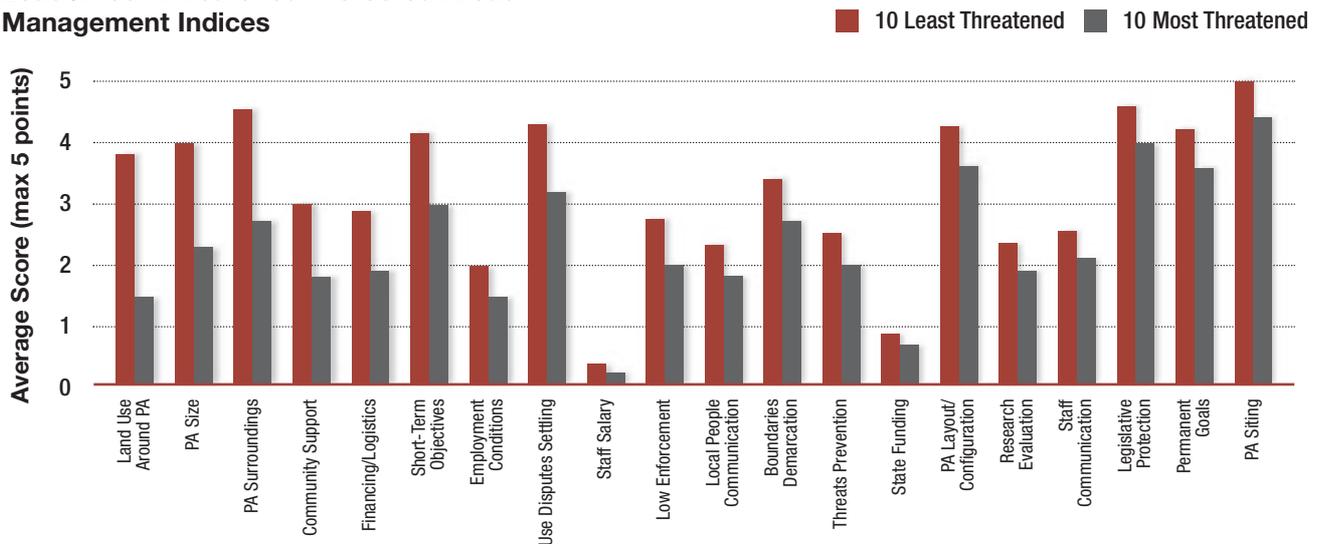
Least/Most Threatened Protected Areas: Management Conditions and Components



Least/Most Threatened Protected Areas: External Negative Factors



Least/Most Threatened Protected Areas: Management Indices



The character and degree of pressures and threats in certain protected areas depends on the condition of its environment (natural, social-economic, political), on the biological values and other specifics of the territory itself, and most importantly, on the degree to which management achieves protected area objectives.

Relatively high management effectiveness is observed in places where adequate resources (financial, human, material, and technical) are allocated, and are purposefully and rationally used. This is the reason why even under equally unfavourable external conditions, the degree of pressures and threats is considerably lower in *zapovedniks*, which have stronger planning, more inputs, and better practices in comparison with federal *zakazniks*.

CORRELATION BETWEEN MANAGEMENT EFFECTIVENESS AND PRESSURES, THREATS AND EXTERNAL FACTORS

From the assessment results, we can also determine the degree of connection, or correlation, between management effectiveness, biological and socio-economic importance, pressures and threats, and external factors.

Analysing the correlation between variables showed:

- ◆ There was a positive correlation between the biological value and social importance for

zapovedniks and *zakazniks* (especially strong for the latter – 0.73) as well as for all federal protected areas. National parks had a negative correlation between biological values and social importance.

- ◆ The biological value of protected areas is positively correlated with regional and global influences, strong protected area planning (for protected areas of all categories), strong management practices (except national parks), and adequate inputs (only in *zakazniks*).
- ◆ The social importance of protected areas has a positive correlation with a high degree of pressures and threats, as well as with a high level of external factors such as high resource value, proximity of resources to local communities, and high market demand. Social importance is also higher in protected areas with stronger management.
- ◆ The degree of pressures and threats has a positive correlation with social importance, but a mainly negative correlation with the main components of management effectiveness.
- ◆ The main components of management effectiveness are highly interdependent. In *zakazniks*, practices and planning have a coefficient of 0.69, and practices and inputs is 0.69. In *zapovedniks*, planning and inputs have a coefficient of 0.64, while practices and inputs is 0.74. In national parks, planning, and practices have a coefficient of 0.71, inputs and practices 0.86.

CONSERVATION PRIORITIES

The more than 200 Russian federal protected areas vary greatly in their management conditions and effectiveness. While each of those protected areas had an individual strategy for improving management effectiveness, a general categorization of conservation priorities will help to set general goals and prioritize categories of management and policy interventions. Protected areas can be divided into six categories: most conserved, most effectively managed, most threatened, least threatened, least conserved, and least effectively managed.

MOST CONSERVED PROTECTED AREAS

These protected areas, which are relatively secure, generally have high biological and social-economic importance, low levels of external negative influences, low levels of pressures and threats, and also rather high management effectiveness.

The protected areas in this category are in relatively remote, under-developed and sparsely populated

areas, primarily in the northeast European part of Russia, and in some parts of Siberia and the Far East. In addition, these protected areas are generally large, have optimal layout and configuration, are surrounded by lands with similar natural conditions and land use, and have low levels of external negative influences, pressures, and threats. As a result, they have higher indices of population viability, habitat quality, security and integrity of ecosystems. National parks with a full set of similar characteristics do not exist; the most conserved and biologically valuable national parks (e.g. Yugyd-Va and Zabaikalsky) have rather weak management, experience critical external influences, and so demand more attention and support from top-level management bodies and other stakeholders.

Generally, in this category mean scores for management are not particularly high. The infrastructure and facilities, research and monitoring, as well as management planning are assessed as middling or slightly above. The visitor facilities, equipment maintenance, staff salaries,

Categories of Protected Area

Type of Protected Area	Total Importance	External Factors	Pressures and Threats	Management Assessment Scores	Examples of Protected Areas
Most Conserved	High	Low	Low	High	Baikalo-Lensky, Verkhne-Tazovsky, Vitimsky <i>zapovedniks</i> ; Phrolikhinsky, Tofalarsky <i>zakazniks</i>
Most Effectively Managed	High	High	Low	High	Teberdinsky, Malaya Sos'va <i>zapovedniks</i> ; Vodlozersky national park; Verkhne-Kondinsky <i>zakaznik</i>
Most Threatened	High	High	High	Low	Putoransky, Ubsunurskaya Kotlovina, Bolshekhekhtsirsky <i>zapovedniks</i> ; Sochinsky national park; Khekhtsirsky, Samursky <i>zakazniks</i>
Least Threatened	Low	Low	Low	High	Bryansky Les, Bolshaya Kokshaga, Central'no-Chernozemny <i>zapovedniks</i> ; Paanayarvi national park; Bairovsky, Remdovsky <i>zakazniks</i>
Least Conserved	Low	High	High	Low	Chernye Zemli, Voroninsky <i>zapovedniks</i> ; Russky Sever, Alkhanay, Tunkinsky national parks; Tsasucheisky Bor, Mekletinsky <i>zakazniks</i>
Least Effectively Managed	Low	Low	High	Low	Darvinsky, Zeisky <i>zapovedniks</i> ; Priazovsky, Kletnyansky <i>zakazniks</i>

Note: Total Importance is biological and social importance combined. Management Assessment Score is the combined score of all three components of management effectiveness – planning, inputs, and practices. “High” means above the average and “low” means lower than average for that protected area category.

quality of research and monitoring, integration of management objectives with management planning and practices, data processing means, data quality, and field equipment scored below the average level for protected areas as a whole.

To summarize, such protected areas do not demand urgent attention for management and policy interventions.

MOST EFFECTIVELY MANAGED PROTECTED AREAS

The most effectively managed protected areas are those which experience pressure from external negative factors, but, despite those pressures, have high scores of biological and social-economic importance, low level of pressures and threats, and also the highest scores of management effectiveness.

Those protected areas which are under unfavourable environmental conditions (e.g. difficult socio-economic situation, lack of qualified manpower, large-scale natural changes in surrounding territories, high value of protected area natural resources, and strong demand for and trade in products from the protected area), have high scores in practically all remaining indices of management conditions and results, especially in comparison with other protected areas. The only index which scored below average and is a general weak point for all protected area system is staff salary levels.

Most effectively managed protected areas in comparison with most conserved ones have higher scores of external negative factors as well as a higher degree of pressures and threats. As a result they have lower scores of habitat quality and population viability. So, the main focus of protected areas management in these areas is improving site design and planning.

MOST THREATENED PROTECTED AREAS

The most threatened protected areas have a high biological and socio-economic importance, as well as high levels of pressure from external factors and a low score in management effectiveness. Such protected areas are mainly situated in regions with

high levels of cultivation and economic development, overuse of natural resources, and/or contain ecosystems extremely vulnerable to negative pressures and threats (e.g. arctic coastal tundra). Most of them fall within a threatened ecoregion.

Management of the most threatened protected areas is considerably more vulnerable to pressure from local authorities and corruption, to air pollution and to natural catastrophes, while the most effectively managed protected areas are more vulnerable to area accessibility, as well as to regional hydrology and global climate changes.

Compared with all other categories, this category of protected areas has the highest scores in socio-economic importance, is the most heavily influenced by external factors, and has the highest degree of pressures and threats. Because of this, and their high biological importance, this category requires the most urgent management and policy interventions. In particular, a deeper, more detailed assessment of management conditions, and an analysis of mechanisms for improving management are warranted.

According to the results of the comparative analysis, the most striking difference in management effectiveness between the most effectively managed protected areas and the most threatened ones is in the following aspects:

- ◆ staff facilities and housing (for protected areas of all categories)
- ◆ systems for data processing (for protected areas of all categories)
- ◆ restoration practices (most essential for *zapovedniks*)
- ◆ coordination of land use in the surrounding territories with protected area objectives (most essential for *zapovedniks*)
- ◆ conditions for equipment maintenance
- ◆ financial and economic management (mostly for national parks and *zakazniks*)
- ◆ demarcation of boundaries (mostly for *zapovedniks* and *zakazniks*)
- ◆ threats prevention (most essential for *zapovedniks*)
- ◆ staff employment conditions (especially in *zapovedniks* and national parks)
- ◆ communication between administration and other personnel (most essential for *zapovedniks*).

The critically important indices of management effectiveness are as follows:

In national parks and zakazniks

- ◆ research applicability (connection with management planning and practices)
- ◆ education and outreach practices
- ◆ monitoring of legal and illegal uses of the protected area
- ◆ research programme and its consistency with the pressures and threats
- ◆ management planning.

In zapovedniks

- ◆ visitor facilities
- ◆ staff salary levels
- ◆ transportation means.

In national parks

- ◆ research priorities and evaluation
- ◆ communication with local people regarding all aspects of protected area management.

In zakazniks

- ◆ adaptiveness of management planning and its conformity to reality
- ◆ local community support
- ◆ accordance of prospective and current planning with main protected area objectives.

These indices are critical for ensuring the effective management of the most threatened protected areas.

LEAST THREATENED PROTECTED AREAS

The least threatened protected areas have rather low scores for biological and socio-economic value, do not experience essential external negative influences, are not subjected to considerable pressures and threats, and have fairly high management indices. These protected areas are mainly situated in ecologically intact regions in the European part of Russia and Western Siberia.

They have a relatively low biological value because they do not contain or belong to globally threatened ecosystems, do not play an essential role in the protection of globally threatened species, and generally do not have high levels of biodiversity and endemism. At the same time, they are representative enough and contain relatively intact ecosystems. However, the size of these protected areas, as a rule, is insufficient for maintaining minimum viable populations of large predators and herbivorous species. The low socio-economic importance of these protected areas means a generally low level of pressures and threats.

The least threatened protected areas do not require immediate attention at the system level. Nevertheless, the following steps may help to strengthen the role of protected areas within the surrounding communities:

- ◆ promoting the creation and development of a system of regional (local) protected areas
- ◆ expanding the rights to manage that system
- ◆ increasing the socio-economic importance of the protected area by creating better employment and sustainable development opportunities
- ◆ integrating these protected areas into the regional socio-economic context.

LEAST CONSERVED PROTECTED AREAS

The least conserved protected areas are those that have low importance, high external factors, high pressures and threats, and low management effectiveness. These protected areas are the opposite of the most conserved protected areas.

The least conserved protected areas are located mainly in regions with high population density, developed industry, and high levels of agricultural development. The socio-economic importance of these protected areas is scored relatively high; overall they have the highest recreational value in

comparison with other groups, and play an important role in satisfying the needs of local communities.

External factors such as the pressure of local authorities and business, conflicts with local people, trans-boundary air pollution, invasive species, and fires spreading from surrounding territories have the most critical negative influence on the management effectiveness of protected areas in this group.

All the management components in this group of protected area scored considerably below the average level. The lowest scores included facilities, transportation, staffing (particularly salaries), practices of all types (especially prevention and restoration), communication, and conformity of land use in surrounding territories with protected area management objectives.

The most important strategies for improving management effectiveness of the least conserved protected areas include strengthening management systems, mitigation of pressures and prevention of threats, and restoration of degraded natural complexes.

LEAST EFFECTIVELY MANAGED PROTECTED AREAS

The least effectively managed protected areas are very similar to the least conserved; they have low importance, a high degree of threats and pressures, and a low level of management effectiveness. The only difference is that they have lower external contributing factors. Like the least conserved areas, these areas are in critical need of management strengthening.

RECOMMENDATIONS

The analyses show that the main conditions that hamper protected area management in Russia are the following:

- ◆ a generally unfavourable political environment
- ◆ inadequate and weak protected area system policies

- ◆ critically insufficient inputs, especially state-level funding
- ◆ several gaps in practices, which are caused mainly by a lack of resources.

A number of recommendations to improve the management of protected areas can be made.

INTEGRATION OF PROTECTED AREAS INTO THE REGIONAL SOCIO-ECONOMIC CONTEXT

This is the primary recommendation for improving the protected area policy environment. This integration policy should include measures to increase and demonstrate the socio-economic importance of protected areas for regions and local communities. While such policies could provide additional resources for improving management effectiveness, they should not result in increased negative pressures or threats, nor in a decrease in the biological value, function, or integrity of protected areas. The following specific measures are recommended as part of this integration policy.

SUSTAINABLE USE OF NATURAL RESOURCES AND PROMOTION OF SOCIO-ECONOMIC DEVELOPMENT

- ◆ Provide assistance to develop sustainable tourism and related infrastructure in the regions.
- ◆ Create and demonstrate other models of sustainable natural resource use (e.g. of hunting, fishing, agriculture, NTFPs).
- ◆ Promote the development of innovative mechanisms of land conservation at regional level, such as voluntary restrictions on economic activities and protected area support measures from companies.

DEVELOPMENT OF THE REGIONAL PROTECTED AREA NETWORK AND ENTIRE NATURE PROTECTION SYSTEM

- ◆ Use the experience and lessons learned from *zapovedniks* and national parks more widely for the development of a regional protected area network. Qualified experts from *zapovedniks* and national parks should be involved in this process.
- ◆ Expand the practice of transferring protected areas with an under-developed management system to the jurisdiction of neighbouring *zapovedniks* and national parks.
- ◆ Create multiple use zones for all protected areas that have UNESCO biosphere reserve status, and modify the federal law on protected areas to expand this practice for all protected areas.

ENVIRONMENTAL RESEARCH, MONITORING, AND EDUCATION

- ◆ *Zapovedniks* and national parks should be involved in the regional ecological monitoring and inventorying of important species (rare and endangered, game, medicinal plants) as well as in environmental impact assessments.

- ◆ *Zapovedniks* and national parks should publish monitoring data to aid natural resource management at the regional and federal levels.
- ◆ *Zapovedniks* and national parks should strengthen links with local high schools and universities, as they may assist with research,

and will provide a base of well-trained employees in the future.

- ◆ *Zapovedniks* and national parks should regularly inform local authorities and other governmental bodies about their achievements within the region.

IMPROVING THE PROTECTED AREA POLICY SYSTEM

The key to improving the entire protected area policy system in Russia is to concentrate all protected area rights and activities in an independent, federal management body

authorized to manage for environmental protection. The national ecological policy dictates the creation of such a body.

IMPROVING PROTECTED AREA MANAGEMENT INPUTS

FUNDING

- ◆ Increase the federal budget for protected areas, with clear line items earmarked for protected area management.
- ◆ Analyse, summarize, and implement for *zapovedniks*, national parks, and other protected area management bodies the benefits and privileges provided for under the federal tax code.
- ◆ Analyse, summarize, and share the experience of *zapovedniks* and national parks in obtaining financial support from regional and local businesses, including the creation of special charitable funds.
- ◆ Extend the involvement of *zapovedniks* and national parks in implementing nature protection projects financed by foreign agencies, funders, and other donors.
- ◆ Implement investment projects directly aimed at improving protected area management facilities.

aegis of regional protected area associations and other authoritative NGOs.

- ◆ Develop training and capacity building programmes for key positions and specialities (e.g. directors, deputy directors, chief rangers, financial/logistic managers, accountants).
- ◆ Prepare and publish recommendations and manuals on key issues of protected area management improvement (particularly comprehensive medium-term management planning, developing regional and local protected area networks, and financial management).
- ◆ Create central and/or regional training centres for key protected area staff.
- ◆ Introduce special state insurance for protected area staff employers (particularly for field staff and rangers).
- ◆ Provide innovative incentives for protected area staff (e.g. government or NGO awards, honours and titles, such as “Best in the Profession”, “Ranger of the Year,” and so on).
- ◆ Improve the ability of managers at the protected areas site level to develop clear strategies for prioritizing the implementation of their programmes with limited staff and funds.

STAFFING AND CAPACITY BUILDING

- ◆ Re-examine and fundamentally change the pay scale for protected area staff, particularly rangers.
- ◆ Continue and broaden the practice of conducting short-term training courses and seminars for key protected area staff under the

IMPROVING PROTECTED AREA MANAGEMENT PLANNING AND PRACTICES

MANAGEMENT PLANNING

- ◆ Ensure the development, approval, and implementation of individual management plans for all federal protected areas. A detailed assessment should be conducted that takes into account both the main objectives as well as the existing conditions and management regime of the protected area. These plans should form the basis and main tool for improving protected area management at the site level.

RESEARCH AND MONITORING

- ◆ Conduct research to gauge the conformity between management goals and objectives, and their connection with management planning.
- ◆ Fill the gaps in biological inventory and monitoring data that are necessary for effective management (especially regarding endangered, valuable and other important species).
- ◆ Expand the application of modern methods of data collection and processing (especially GPS data collection and GIS mapping).

PREVENTION AND RESTORATION

- ◆ Decrease commercial logging in protected areas (particularly, in national parks and *zakazniks*).

- ◆ Develop and implement protected area policies regarding fires and other natural catastrophes, taking into account all the essential ecological and economical aspects, as well as international experience.
- ◆ Develop and implement policies aimed at conserving threatened species, including special measures for regulating and improving habitats.
- ◆ Define clear restoration targets for under-represented and/or degraded ecosystems throughout the regions.

ENVIRONMENTAL EDUCATION

- ◆ Assess (with the participation of independent external experts) the effectiveness of educational programmes.

PROTECTED AREA SITE DESIGN AND PLANNING

- ◆ Systematically engage protected area staff in improving site design and planning, status and security (e.g. creating buffers, developing multiple use and similar zones with restricted or regulated land use, and drafting and approving documents and policies).

FOLLOW-UP ACTION

As was clearly and widely suggested and supported during the assessment, WWF's Methodology should be systematically used in Russia as the basic tool of protected area management effectiveness assessment at national, regional, and local levels.

Below are the next steps aimed at continuing this process and providing for its systematic implementation. These recommendations make best use of the results and experience from the assessment.

- ◆ Provide all the data, results, and recommendations obtained from the assessment, as well as WWF's Methodology, to the Ministry of Natural Resources (MNR) of the Russian Federation, which is responsible for all federal protected areas.
- ◆ Prepare and publish a report addressed mainly at protected area managers and other protected area management experts, to inform them about the assessment results and experience.
- ◆ Adopt WWF's Methodology for application at regional and local levels of protected area management.
- ◆ On the basis of WWF's Methodology, and upon approval by MNR and other authorized protected area management bodies, official documents should be developed that systematically regulate protected area

management effectiveness assessment at national, regional, and local levels. These documents should be aimed at both system-wide management prioritization, and at site-level management improvements.

- ◆ Create and maintain suitable databases on protected area management effectiveness.
- ◆ Introduce regular protected area management effectiveness assessment as an integral part of the protected area management cycle, and strongly link assessments with all other management aspects (e.g. planning, implementing, monitoring, and other policies and practices).

In order to further the process of assessing and improving protected area management effectiveness the following actions are suggested.

- ◆ Conduct a more detailed assessment of the prioritized protected areas (i.e. the most threatened) to define site-specific measures for improving management. Such an assessment would result in the preparation of a comprehensive management plan for each of the most threatened protected areas.
- ◆ Conduct regional protected area system assessments in some model regions most ready for this, (e.g. North-Western and Far-Eastern regions including firstly Sakha Republic).

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ACRONYMS

CIS	Commonwealth of Independent States
IUCN	World Conservation Union
MNR	Ministry of Natural Resources
NTFP	Non-Timber Forest Product
WWF	World Wide Fund For Nature

Russia



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