



FORESTS OF RUSSIA AND CLIMATE CHANGE

Analytic report

made within the Campaign for the Conservation of Forests and Biodiversity
of the Russian Social-Ecological Union

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Content

Foreword

1. General characteristics of forests and protected natural areas in Russia
2. Forest and environmental legislation
3. State forest management system
4. Timber industry
5. History of forest conservation in Russia
6. Public environmental movements
7. The problem of the impact of climate change on Russian forests
8. Forest fires
9. Discussion on climate change, land use and carbon sequestration
10. Existing experience in afforestation and additional opportunities for carbon dioxide absorption by forests.

Foreword

The analytical report “Forests of Russia and Climate Change” was prepared by the participants of the Campaign for the Conservation of Forests and Biodiversity of the Russian Social-Ecological Union A.Yu. Grigoriev, A.P. Laletin, K.A. Pakhorukova and S.I. Zabelin.

The problems of preserving Russian forests, especially in the context of the intensifying changes in the global climate in recent decades, have attracted more and more attention both domestically and internationally. Already occurring changes in air temperature, an increase in the number of extreme weather events, the risk of forest fires, the possibility of the beginning of active destruction of permafrost can have a catastrophic effect on Russian forests, which make up 21% of all forests on the planet.

The residents of the European part of Russia will remember the grave negative consequences of forest and peat bog fires in 2010. Similar forest fire disasters regularly occur in Siberia and the Far East. In 2019, more than 1 million residents of the Krasnoyarsk and Irkutsk regions and neighboring regions signed an electronic petition demanding that the authorities take emergency measures to combat forest fires.

In the event of a catastrophic scenario of the impact of climate change on Russian forests in the coming decades, a carbon bomb scenario is possible, when, as a result of large-scale destruction of forests, huge additional amounts of carbon dioxide will be released into the atmosphere, which will increase the greenhouse effect.

If timely and effective adaptation measures are taken and the area of plantations is increased, Russian forests can retain huge amounts of carbon in their biomass and soils and provide a powerful counteraction to anthropogenic greenhouse gas emissions.

Russia's ratification of the Paris Climate Agreement in 2019, the adoption and start of implementation in 2020 by the European Union of the Green Deal contributed to a sharp intensification of the activities of Russian public authorities and businesses to preserve and enhance the climate-regulating role of Russian forests, their adaptation to climate change.

When compiling information materials, the authors strove to ensure their balance, correctness, and accuracy. At the same time, both separate factual errors and disagreements with assessments and conclusions are likely to be possible. We are ready to make clarifications and additions, to take part in discussions.

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1. Russian forests and nature protection

Due to the inconsistency of world data on the state of forests, to show the role of Russia in world forestry, data from the United Nations Organization for Agriculture and Food (FAO) are used, which has been preparing and publishing summaries of this kind of information for many decades (1.1).

According to FAO, the total forest area in the world is about 4 billion hectares. Of these, 45%, i.e. 1.8 billion hectares are tropical forests, 27% (about 1.1 billion hectares) - boreal taiga, the rest - temperate and subtropical forests.

In terms of forest area among the countries of the world, Russia is in 1st place - 815 million hectares (21% of all world forests). This is followed by Brazil - 497 million hectares, Canada - 347 million hectares, the USA - 210 million hectares and China - 220 million hectares.

Unlike the rapidly destroyed tropical forests of Africa, Latin America and Southeast Asia, boreal forests (2/3 of which are located in Russia) are stable in area. If we take into account the new forests that have arisen on abandoned agricultural land, but so far ignored by the authorities, then the forest area in Russia is increasing. At the same time, a change in their breed composition should be noted. As a result of forest fires, felling, the impact of diseases and pests, the areas of typical coniferous plantations (spruce, pine) are somewhat reduced, and these species are replaced by secondary species - birch and aspen.

According to FAO estimates, about 700 million hectares of forests in the world have official status of various types of protected natural areas.

The **area of intact** forest territories in the world, still not experiencing significant anthropogenic impact, is about 1.1 billion hectares (i.e. slightly more than a quarter of all forests in the world).

According to FAO, the largest areas of intact forests are preserved in Russia - 255 million hectares, followed by Brazil - 216 million hectares, and Canada - third - 205 million hectares. These FAO data are interesting in that within Russia, forest management authorities still shy away from identifying and recognizing the status of such forests.

When switching to the use of data from Russian forest statistics, one should be aware that a number of the same indicators in it may differ from the FAO estimates. FAO's materials allow for maximum global comparability of data.

The materials of Russian forest statistics allow for a deeper and more detailed analysis. However, it should be borne in mind that for some indicators they have low reliability, and at times (for example, for the impact of forest fires) are not at all connected with reality.

According to the latest published summary data of the forest fund accounting (State Forest Register 2013 - as of 01.01.2014), the total land **area of** the State Forest Fund (SFF) of Russia amounted to 1146 million hectares. (1.2).

At the same time, the area **of forest** land (on which forests can grow) amounted to 874 million hectares. The difference between these indicators is mainly in the swamps.

Of the total **area of forest** land (874 million hectares), 771 million hectares were covered with forest. The difference of 103 million hectares represents burned-out areas and areas of plantations that died due to other causes (not fires), open spaces, unclosed young stands, etc.

Forests also grow on lands of specially protected natural areas, which are not part of the forest fund lands. Their total area is 26.6 million hectares, of which 16.7 million hectares are covered with forest.

Forest areas, insignificant in comparison with the **area of the** State Forest Fund of the Russian Federation, also grow on defense and security lands, settlements, lands of other categories.

However, these official statistics ignore the presence of 30-50 million hectares of forests, which over the past decades have grown on currently unused agricultural land (for more details, see section 8.)

Of the total area **of SFF** lands, 1,146 million hectares are classified as protected forest lands, 287 million hectares (22%), of which 160 million hectares are covered with forest.

The largest protection categories in terms of area are desert, steppe, mountain, forest-tundra and similar forest lands, allocated on an area **of 136 million** hectares, of which 49 million hectares are covered with forest.

The next category of protection in terms of area is spawning forests, allocated along rivers, in which valuable species of fish spawn. The area **of these** forests is 56.9 million hectares, of which 44.0 million hectares are covered with forest. In recent years, conservation organizations have fought against plans to weaken the protective regime of these forests and create more favorable conditions for logging.

The third category of protection in terms of area is water protection forests with a total area **of 28.0** million hectares, of which 23.0 million hectares are covered with forest.

Anti-erosion forests occupy 14.6 million hectares (9.9 million hectares are covered with forest), green areas of populated cities and forest parks - 13.7 million hectares (12.2 million hectares are covered with forest). An interesting feature of Russia is the category of protective forests, walnut zones - these are cedar forests used by the local population to collect walnuts and are traditionally protected. Such forests are allocated on an area **of 10.3** million hectares (9.4 million hectares are covered with forest).

In addition to protective forests, production forests are distinguished. Their total area is 598 million hectares, of which 440 million hectares are covered with forest. They are mainly used for industrial logging. However, it should be borne in mind that only about half of these forests are leased. In the second half of the commercial forests, there are no people who want to engage in logging, which is explained by the lack of transport infrastructure and population, low forest productivity, very difficult natural conditions, etc.

Reserve forests have also been allocated on an area **of** 270 million hectares, of which 170 million hectares are covered with forest. According to the Forestry Code, these are forests in

which it is not planned to harvest timber in the next 20 years, with the exception of felling for the needs of the local population.

A significant part of non-leased production forests and reserve forests are intact forests. Obviously, with a few exceptions, these hitherto undeveloped forest areas are not of interest to the timber industry. In recent years, public environmental organizations have proposed giving these forests the status of the National Forest Heritage of Russia and making their conservation a priority, which is becoming increasingly important in connection with the problem of climate change (1.3).

Russia has a highly developed and complex network of specially protected natural areas (PAs).

On its upper level, there are federal protected areas, of which the most valuable in nature are 108 nature reserves covering an area of 33.6 million hectares. These are wilderness areas with a strict regime, very limited access, mainly for conservation and scientific research purposes.

63 national parks cover an area of 26.6 million hectares. Their main task is the development of nature tourism. The most preserved and naturally valuable parts of the national parks may have a regime similar to that of a nature reserve.

The system of protected areas of the federal level is supplemented by more than 10 thousand protected areas of the regional level on a total area of 117.5 million hectares. The regime of their protection and limitation of nature management are much weaker than those for protected areas of the federal level. However, this status can significantly affect the development and implementation of regional and local development plans, the implementation of industrial projects, etc.

On the territory of Russia, as of 1994, there were 35 Ramsar wetlands with a total area of 10.3 million hectares. 60% of these territories had the status of protected areas of various levels, which ensured their status of protected natural objects. (1.4)

Literature:

1. 1. Global Forest Assessment 2020. Main Report, FAO,

<http://www.fao.org/3/ca9825en/ca9825en.pdf>

1.2. State Forest Register 2013 (as of 01.01.2014), Ministry of Natural Resources-Rosleskhoz, 2014. http://www.forestforum.ru/info/glr_2014.pdf

1.3. D. Aksenov et al. Conceptual approaches to the creation of the national forest heritage of the Russian Federation. Sustainable forest management, 2015, №3.

<https://wwf.ru/upload/iblock/20f/01-4.pdf>

1.4. State report on the state and protection of the environment in the Russian Federation in 2019 by the Ministry of Natural Resources, 2020.

https://www.mnr.gov.ru/docs/gosudarstvennye_doklady/proekt_gosudarstvennogo_doklada_o_sostoyanii_i_ob_okhrane_okruzhayushchey_sredy_rossiyskoy_federat2019/

2. Forest and environmental legislation

The main laws governing nature protection and forest management in Russia are the laws "On Environmental Protection (2002)," On Environmental Expertise "(1995), Law on Specially Protected Natural Areas" (1995), and Forest Code (2006).

The peculiarity of forestry legislation is its redundancy and low quality. This entails the need for constant amendments, sometimes of fundamental importance, which creates a situation of legislative chaos. Unfortunately, environmental legislation has also suffered from constant changes in recent years, mainly aimed at weakening its requirements.

In addition to laws, there is a huge number of bylaws developed and approved by the executive authorities, which brings additional chaos to the Russian legislative and regulatory framework in the field of forest management and use and nature protection.

The current version of Federal Law No. 7-FZ "On Environmental Protection" was adopted on 10.01.2002, and since then more than 50 amendments have been made to it.

The law includes more than 80 articles defining state policy in the field of environmental protection, nature conservation, biological diversity, natural resources, and environmental safety.

An interesting feature of the law is the absence of articles on climate change and the need to adapt to these changes.

The law includes a separate chapter "Rights and obligations of citizens, public associations and non-profit organizations in the field of environmental protection", in which there are 3 articles [2.1].

Federal Law No. 174-FZ "On Ecological Expertise" was adopted on November 23, 1995 and includes about 35 articles. Since its adoption, more than 45 amendments have been made to the law.

The law contains a separate chapter "Rights of citizens and public organizations (associations) in the field of environmental expertise, public environmental expertise", which includes 7 articles. Potentially, this law could become very important for regulating the use of forests. Attempts by environmental organizations in the 1990s and early 2000s to introduce the requirement for environmental assessments of forest management plans and forest management plans were ultimately unsuccessful. Since the beginning of 2000, the degradation of the system of state ecological expertise began.

Nevertheless, although the list of objects subject to environmental impact assessment has been significantly reduced in recent years, it is one of the few remaining mechanisms for obtaining information about projects that may have an impact on the environment, ensuring citizen participation in the discussion of these impacts.

In this regard, legislative bodies under various pretexts regularly make attempts to cancel or weaken the requirements for environmental impact assessment for a large number of objects. Such attempts were made in early 2020 in connection with the coronavirus pandemic, in the summer of 2020 in connection with construction plans in the Baikal-Amur Mainline zone, in February 2021 in connection with the need to drill to find oil on the shelf in the Arctic, and so on [2.2] ...

Federal Law No. 33-FZ "On Specially Protected Natural Areas" was adopted on March 14, 1995 and includes about 40 articles. Since its adoption, more than 45 amendments have been made to it.

It contains a separate article devoted to the participation of citizens, as well as public associations and non-profit organizations operating in the field of environmental protection, in the organization, protection and use of specially protected natural areas [2.3].

Federal Law No. 200-FZ "Forest Code of the Russian Federation" was adopted on 4.12.2006 and includes more than 120 articles [2.4]. Since its adoption, 53 amendments have already been made to it, and the adoption of the following amendments is being prepared. The remnants of the original text are less than 20% of its current current volume [2.5].

To implement this law, the executive authorities have developed a large number of bylaws, which, in turn, have to be constantly changed in connection with the ongoing changes in the Forest Code.

Unlike the laws considered before, the Forest Code does not contain a separate article defining the rights of citizens and public organizations to participate in forest management, although a separate chapter was devoted to this in the previous version of the Forestry Law.

The law also lacks any articles on the impact of climate change on forests and the need to adapt to it.

Literature :

2.1. Federal Law No. 7-FZ "On Environmental Protection" dated 10.01.2002.

http://www.consultant.ru/document/cons_doc_LAW_34823/

2.2. Federal Law No. 174-FZ "On Environmental Expertise" dated 23.11.1995

http://www.consultant.ru/document/cons_doc_LAW_8515/

2.3. Federal Law No. 33-FZ "On Specially Protected Natural Areas" dated March 14, 1995

http://www.consultant.ru/document/cons_doc_LAW_6072/

2.4. Federal Law No. 200-FZ "Forest Code of the Russian Federation" dated

4.12.2006. http://www.consultant.ru/document/cons_doc_LAW_64299/

2.5. Brief quantitative results of the decade of legal chaos in the Russian forestry. Greenpeace Forest Forum, 25.12. <http://forestforum.ru/viewtopic.php?f=9&t=25239>

3. The system of state forest management in Russia

Officially almost all of the country's forests were state-owned. This property was managed by a system of state forest management bodies.

In Soviet times, on the territory of Russia, it had three stages: the Ministry of Forestry of the Russian Federation - Forest Management Departments in the regions - forestry enterprises (leskhoz). Leskhoz, in addition to carrying out forestry work, were also engaged in forest felling, which served as a significant addition to the insufficient budgetary financing of forestry work. However, this integrated forest management has been criticized because leskhoz simultaneously exercised management and control over forests and at the same time themselves carried out forest use, including logging, which created a conflict of interest.

With the beginning of market reforms, the reform of the forest management system began. Currently, it consists of 5 stages, and the contractors are at the 6th stage: Ministry of Natural Resources - Federal Forest Service (Rosleskhoz) – Rosleskhoz' departments in federal districts - Forest management bodies in the regions – local forestry enterprises (lesnichestva)- contractors who perform forestry work.

The system of forest management bodies, with rare exceptions, does not itself carry out logging work, but hires contractors for this. As a result, the forestry complex became fragmented between numerous, sometimes frequently changing contractors, and the management system became cumbersome, highly bureaucratic and ineffective.

Since 2010, Greenpeace Forest Forum regularly conducts surveys of participants with a professional background to the forestry complex. They are attended by 250-350 people.

In 2020, the answers to the question: "How much of your time does "paperwork" take from you?", the answers were distributed as follows: less than 50% of the time - 11% of respondents, 51-70% of the time - 18%, 71-100% of the time - 71% of those who answered.

To the question: "What part of this "paperwork" makes sense?" 63% of respondents indicated less than 30%, 25% of those who answered believe that it makes sense for 40-50%, and only 12% - that this indicator is more than 60%.

Thus, according to the respondents, the majority of forestry workers are mainly engaged in paperwork, which has little meaning.

After the next change of leadership of Rosleskhoz, the Forest Forum also conducted polls with a request to evaluate the results of their activities.

Evaluation of results (% of the number of respondents)	Years of work of the head			
	2004-2008	2008-2010	2010-2013	2014-2019
Forestry flourishing	6	2	5	6
As it was, no significant changes	10	6	24	22
Decline, but the role of the head of Rosleskhoz was not decisive	46	50	46	40
The decline in which the head of Rosleskhoz played a decisive role	39	41	24	31

The table shows the results of assessments (%) of the total number of respondents (from 350 to 650 people) for 4 managers who have been in charge of Rosleskhoz for more than 1 year.

Beginning in 2004, the results of the work of the heads of the Federal Forestry Agency as “the flourishing of forestry” were assessed by 2 to 6% of the survey participants. In the same period, the results were assessed as "decline" - from 70 to 91%.

A survey conducted in December 2020: “When will Russian forestry move from degradation to restoration and development?” gave the following results: “in the next two years” - 5%, “within 3-10 years” - 26% and “in 15 years and more ”- 73% (3.1).

Despite the fact that these polls have been carried out annually for more than 10 years, and these problems have been repeatedly raised by public environmental organizations before the leadership of the Federal Forestry Agency and the Ministry of Natural Resources, the situation with bureaucracy in the forestry complex did not change.

Held in 2019-2020 so called “Regulatory guillotine” - updating the regulatory framework with the abolition of some outdated rules and requirements - gave a dubious result, and, obviously, did not change the principles of this system.

As a solution, in 2021 the authorities stepped up the digitalization of documentation. Its volumes are enormous - this is 3.5 million declarations of timber transactions, 9.8 million title and reporting documents, 206 thousand lease agreements and 4.1 million contracts for the sale and purchase of forest plantations, 4.8 million answers about use of forests, 657 thousand forest declarations and 40 thousand government contracts. And this is only a part of the available documents. There are serious doubts that simply translating it into digital form, without radically restructuring the forest management system, and, first of all, without getting rid of bureaucracy, will give a positive result.

Some optimism is caused by the fact that the deputy head of Rosleskhoz in charge of this area considers it important to digitize Russia's forestry not only for officials, but also for people, and in his previous work he showed examples of informational openness of forestry and the establishment of constructive relations with the population (3.2 ,3. 3).

Literature:

3.1. Forest Forum of Greenpeace Russia. Survey results section:

<http://www.forestforum.ru/viewtopic.php?f=17&t=24254>

<http://www.forestforum.ru/viewtopic.php?f=17&t=24255>

<http://www.forestforum.ru/viewtopic.php?f=17&t=4072>

<http://www.forestforum.ru/viewtopic.php?f=17&t=7566>

<http://www.forestforum.ru/viewtopic.php?f=17&t=14539>

<http://www.forestforum.ru/viewtopic.php?f=17&t=23538>

<http://www.forestforum.ru/viewtopic.php?f=17&t=25155&sid=a65fa6c834516e4e99c5403d0d5794db>

3.2. Rosleskhoz: digitalization of forestry will take four years. 28.08.2020.

<http://rosleshoz.gov.ru/news/2020-08-28/n9626>

3.3. Press center of Rosleskhoz "The President of Russia signed the federal law on digital transformation of the forestry complex" 02/04/2021

<http://rosleshoz.gov.ru/news/2021-02-04/n9742>

4. Timber industry in Russia

In the presence of the largest forests in terms of forest area, according to FAO, in 2018, Russia ranked 2nd in the world in logging (10% of the world), 3rd in the production of sawn timber (9% of the world) and wood-based panels (5% of the world).

However, in terms of the production of cellulose, Russia is only in 8th place in the world (4% of the world), and with 0.9% of the world output of paper and cardboard it is not among the ten leading manufacturers of these products. (4.1,4. 2, 4.3).

The relatively low level of consumption of forest products within the country allows a significant part of it to be exported. Thanks to this, in 2019, Russia provided 11% of the world trade in roundwood, 22% in lumber, 6% in wood-based panels and plywood, 3.5% in cellulose, and 3.0% in paper and cardboard. In the total volume of sales of forest products on the world market of forest products, Russia accounts for about 5%. (4.3,4.4).

The share of the forestry complex in the country's GDP is small and amounts to about 0.7%. The relatively significant amount of timber exports, on average about \$ 12 billion per year, accounts for only about 3% of its total volume, which in recent years has consistently exceeded \$ 400 billion per year, mainly due to the sale of hydrocarbons and other raw materials.

Nevertheless, in some regions of Russia the forestry complex plays a significant role in the local economy and employment. In the European part, these are the Arkhangelsk, Vologda, Leningrad and Perm regions, the Republics of Karelia and Komi. In Siberia and the Far East, these are the Irkutsk, Krasnoyarsk and Khabarovsk Regions.

Harvesting of wood, production of lumber.

After the start of market reforms, as a result of which the timber industry was completely privatized, initially in the 1990s, the volume of logging decreased by 3-4 times compared to that achieved in the USSR. However, the logging industry gradually stabilized and began to increase the volume of logging, which is currently stable at the level of 200-220 million cubic meters in year.

Due to the possibility of organizing the production of sawn timber with a relatively small investment, this industry has developed very actively. Over the past 20 years, the production of sawn timber in Russia has more than doubled. Thousands of private companies are engaged in their production, from the smallest to large modern industries. The total volume of Russian sawn timber production, according to various estimates, ranges from 30 to 40 million cubic meters per year (discrepancies are apparently caused by incomplete statistical reporting) (4.4,4.5,4.6).

Manufacture of wood-based panels and plywood.

Only a few dozen private companies operate in this sector, the creation of this production requires significant investments. Plywood production, since the mid-1990s, has tripled the production volume, which currently exceeds 4 million cubic meters in year. During this period, the production of wood-based panels increased at an even higher rate, more than 6

times, and reached 10 million cubic meters in year. Thanks to this, it is possible to use a significant amount of low-value wood, which until then did not find sale. (4.4,4.5,4.6).

Manufacture of pulp, paper and cardboard.

The production of these products is controlled by a small number of private companies. Russian pulp and paper industries are fully integrated into the world market and operate on market conditions. The largest Russian pulp and paper company, Ilim Pulp, is a joint venture with the International Paper from USA. The second largest company in the sector, Syktyvkar Pulp and Paper Mill, is part of the large Mondi company. There are also large pulp and paper mills owned by Russian industrial groups, such as Segezha Group, part of AFK Sistema.

After the drop in the volume of cellulose production from 8 million tons per year under the USSR to 3 million tons in the mid-1990s, it has now recovered again at the level of 7-8 million tons per year. A similar dynamics of changes in production volumes is shown by the output of paper and cardboard (8-9 million tons per year in the USSR, then a drop to 3-4 million tons per year in the 1990s and 8-9 million tons of paper and cardboard per year in present. (4,5,6).

All this was achieved through the reconstruction of existing enterprises, which pay significant attention to the social and environmental aspects of forest management and logging and are mainly certified according to the FSC system. At the same time, serious problems remain with the environmental consequences of the activities of these enterprises (discharges of pollutants into the water, the use of chlorine compounds for bleaching, etc.)

Swedish and Finnish forestry companies, which started active in the Russian forestry sector in the 1990s, now have relatively small capacities for the production of roundwood, sawn timber, sanitary products and packaging.

Despite active discussion of this topic in the media, large well-known Chinese pulp and paper companies do not have significant production facilities in Russia. At the same time, China is the largest buyer of Russian timber products, including pulp and paper products, i.e. Russian companies mostly work for the Chinese market.

In February 2021, the Government adopted a new "Strategy for the development of the forestry complex until 2030", which declared much more realistic forecasts of forest products output, compared to the previous Strategy until 2020, which was adopted in 2007 and, in mostly has not been implemented.

This time the growth of logging volume is forecasted from 219 million cubic meters in 2019 up to 231-286 million cubic meters in 2030. Lumber production is expected to increase from 45 million cubic meters up to 62-66 million cubic meters, wood-based panels from 9 million cubic meters to 9.5-11.1 million cubic meters, paper - from 9.2 million tons to 11.7 million tons per year.

Among the products of deep processing in the optimistic scenario, a significant increase in pulp production is predicted - from 8.2 million tons at present to 14.0 million tons. At the same time, the Strategy recognizes that the investment climate in Russia is not conducive to

implementation of such projects, which are very costly for the timber industry (6). It should be borne in mind that, despite regularly announced intentions, not a single large pulp mill has been built in Russia over the past 30 years.

Literature

4.1. FAO «Forest product consumption and production»

<http://www.fao.org/forestry/statistics/80938@180723/en/>

4.2. FAO Global Forest Products - Fact and Figures 2018, FAO - 2019,

<http://www.fao.org/3/ca7415en/ca7415en.pdf>

4.3. Measures of state support for the timber industry complex in Russia. Ministry of

Industry and Trade, 2020. <https://programlesprom.ru/mery-gosudarstvennoi-podderzhki-lpk-rossii/>

4.4. FAO «Global production and trade in forest products in 2019»

<http://www.fao.org/forestry/statistics/80938/en/>

4.5. Timber industry of Russia in 2019: production results. Portal "Proderevo" 2020-02-06.

<https://proderevo.net/analytics/main-analytics/lpk-rossii-v-2019-godu-itogi-proizvodstva.html>

4.6. Strategy for the development of the forestry complex until 2030. 02/11/2021. Portal of

the Government of the Russian Federation <http://government.ru/news/41539/>

5. History of forest conservation in Russia

The history of state measures to preserve forests in Russia begins in the Middle Ages. Similarly to Europe, hunting grounds became one of the first protected forests. An example is the largest forest in the north-east of Moscow - the Losiny Ostrov National Park. It survived due to the fact that in the 17th century it was the royal hunting grounds in which hunting, including elk, was carried out [5.1].

However, unlike Europe, in the 15-17 centuries in Russia, in addition to hunting grounds, a powerful system of protected forests was created, which were used to protect against the raids of steppe nomads. These are the so-called serif forests. A system of fortifications was placed in them, between which forest blockages were made, difficult to pass for the cavalry. The felling of such forests and even movement outside the officially permitted paths were strictly prohibited.

The first line of these defensive serif forests is located 150-200 km south of Moscow, but gradually it shifted to the south. The total length of the strips of these defensive, in fact reserved, forests with a width of 3-5 km and more reached 4000 km.

A number of areas of these defensive forests have survived to this day, and at present they are reserves (Bryansk Forest, Kaluzhsky Zaseki) and a national park - Ugra.

Russian environmental organizations, including the Social- Ecological Union, were actively involved in the topic of pristine forests in the 1990s. Currently, the topic of these unique natural and historical sites is actively covered in the works of reserves, national parks and museums [5.2, 5.3, 5.4, 5.5].

Under Peter I in the early 18th century, in connection with the construction of the fleet, ship groves and, especially, oak forests growing along the rivers were taken under strict state protection. Regular forest protection was established there. Under Peter 1, more than 100 decrees and orders were issued in the forest.

In 1798, during an inspection trip, Emperor Paul 1 was informed about the barbaric destruction of state forests. As a result, a unified Forestry Department was established, which began to deal with forests. In 1802, the "Charter on Forests" was adopted.

In 1888, when after the abolition of serfdom, deforestation sharply intensified, the Forest Protection Law was adopted, which began to regulate the use of forests by private forest owners. At the same time, the importance of forests for preventing droughts and soil erosion was realized, and work began on their restoration, especially on sands, as well as in the steppe and forest-steppe zones [5.6].

After the revolutions of 1917, all forests in Russia were nationalized. In the conditions of the civil war, the collapse of the management system, logging got out of the control of the state.

At the same time, the new authorities understood the need to regulate the use of forests, and in 1918 the "Decree on Forests" was adopted. This is a very extensive law (120 articles),

which regulates in detail the creation, conservation and use of protective forests, which were created to protect soils, agriculture and populated areas, "preserve the influence of forests on the climate" (as in the text!), Protect rivers, strengthening sands and ravines, protecting natural monuments, solving aesthetic and cultural problems, etc. Obviously, at the time of its adoption, this Decree was of a declarative nature and in most of the territory of Russia could not be implemented due to the absence of Soviet power there [5.7].

After the end of the Civil War, the state forest management system was gradually strengthened. Despite the priority of industrial logging, which was carried out, among other things, by prisoners in labor camps, measures were taken to preserve forests.

In 1936, water protection zones up to 20 km wide were established along the main rivers and their tributaries, in which deforestation was prohibited or sharply limited. These forests with a total area of 75 million hectares (15% of all forests in the country) were transferred to the Main Department of Forest Protection and Plantations.

The Second World War caused a sharp increase in the felling of forests, which were used both for obtaining timber for industrial purposes and for heating. The volume of logging in some places was dozens of times higher than the allowable cut. However, the negative consequences of these felling became so acute that in April 1943, at the peak of hostilities, the division of forests into 1, 2 and 3 groups was introduced according to their functional purpose, which is still one of the foundations of the Russian forest management system [5.8].

The first group included forests, the main purpose of which is to perform water protection, protective, health-improving and other similar functions, forests of specially protected natural areas that perform conservation and protective functions, field protection, located around settlements, etc. They allowed felling for the maintenance of forests and their restoration.

The forests of the second group include forests in areas with a high population density, which also perform protective and conservation functions, in regions with insufficient forest resources. In these forests, felling was limited and regulated.

The forests of the third group included forests of multi-forest areas, mainly intended for logging.

In the 30 years since the start of market reforms, non-governmental environmental organizations (NGOs) have begun to play an important role in forest conservation.

Their activities do not allow the authorities to dismantle the forest conservation system by refusing to divide them into 3 groups, and to weaken its restrictive functions. NGOs actively demand to recognize the need to stop logging and the development of old-growth intact forests.

Timber companies are also involved in this activity, thanks to certification by the Forest Stewardship Council. As of early 2020, out of 49 million hectares of certified forests, 1 million hectares of high conservation value forests were completely excluded from forest

use, and on an additional 9 million hectares, companies assumed voluntary restrictions on deforestation [5.9].

Literature:

5.1. The site of the Losiny Ostrov National Park, the History of the Park section.

<https://losinyostrov.ru/about/history>

5.2. Ponomarenko et al. The Green Wall of Russia: A Bridge from the Past to the Future, Prirody No. 6, 1993.

https://www.researchgate.net/publication/322147316_Ponomarenko_EV_Ponomarenko_S_V_Ofman_GU_Havkin_VP_Zelenaa_stena_Rossii_most_iz_proslogo_v_budusee_Priroda_No_6_1992_s84-94

5.3. V. Zakharov. Green wall of Russia. Vesti SoES No. 1 (20) 2002

<http://www.seu.ru/vesti/2002-01/34.htm>

5.4. Site of the museum "Tula Kremlin", section "The large serif line".

<https://xn--e1afdccc8afjm2jj.xn--p1ai/large-serif-line/>

5.5. Kozelskie Zaseki website

<http://kozelskie-zaseki.narod.ru/index.html>

5.6. A.I.Pisarenko, V.V. Strakhov. Forestry of Russia - from use to management, publishing house "Jurisprudence" 2004,

<https://www.booksite.ru/fulltext/les/noy/eho/zya/yst/vo/index.htm>

5.7. Decree on forests. Adopted by the Central Executive Committee on 05/27/1918.

http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=ESU&n=9898#063616566821_21959

5.8. Resolution of the Council of People's Commissars of the USSR No. 430 of 04/23/1943 "On the Procedure for Allocating Cutting Areas in the Forests of the State Fund of the USSR and on the Cutting Fund for 1943"

http://base.garant.ru/58051634/#block_11

5.9. Strategic plan for the development of FSC in Russia until May 2022. Sustainable Forestry # 1 (60), 2020.

<https://wwf.ru/upload/iblock/087/07.pdf>

6. Public environmental organizations and movements

The movement of student nature protection teams (“Druzhinas”).

Under the conditions of the USSR, the All-Russian Society for Nature Conservation (VOOP in Russian) was the official structure organizing public activities in the field of nature protection. Youth activity was controlled by the Komsomol (All-Union Leninist Communist Youth Union – VLKSM in Russian). Independent activity, which did not receive the support of these structures, was not approved, and sometimes even suppressed.

However, some liberalization in the mid-1950s provided opportunities for the emergence of independent public activity in the field of environmental protection. It developed in the form of Student Nature Conservation Druzhinas. The first of them appeared in the 1958-1960s in the university cities of Tartu (Estonia), Moscow and Kazan.

Participants of student druzhinas managed to maintain their organizational independence, maneuvering between officials from the VOOP, VLKSM and various departments. The movement actively fought against poaching, protected rare and endangered species, especially primroses, conducted environmental education, and contributed to the development of specially protected natural areas.

At its peak in the 1980s, 120 druzhinas operated in the USSR, including 70 in Russia. They united several thousand people on the principles of network self-organization, distinguished not only by high social activity, but also receiving high-quality professional education and training in the fields of biology, game management, pedagogy, etc. (6.1, 6.2)

In the late 1980s, the movement and the specialists who left it took an active part in the perestroika, including in the public discussion of such problems as the transfer of water from north to south, land melioration, etc.

International Social Ecological Union (MSEU)

In December 1988, activists of the druzhinas movement registered one of the first independent public environmental organizations on the territory of the USSR - the International Social Ecological Union (MSEU), which was active in the 1990s and 2000s.

The MSEU's Forest Program actively participated in the work of the international Taiga Rescue Network, dealt with issues of preserving intact forests, increasing the social and environmental responsibility of logging, mining, oil and gas companies, actively working with the Federal Forest Service. However, due to a number of reasons, the activities of the MSEU began to decline, and in 2017, by a court decision, the MSEU was closed as a legal entity. Currently, MSEU continues to act as an expert and educational community, uniting several hundred participants from more than 20 countries of the world.

Russian Social Ecological Union (RSEU)

In October 1991, the Russian Social Ecological Union (RSEU) was established by largely the same activists who created the MSEU. Unlike MSEU, it managed to survive as a legal entity and to integrate into international non-governmental environmental movements. Since

2016 RSEU is a member of the international organization Friends of the Earth. Despite the unfavorable environment for independent public activity, the announcement of a large number of local public organizations included in the RSEU as “foreign agents” (as a rule, with their subsequent liquidation), RSEU activists continue to actively work on both traditional forest issues (forestry and forest management, peri-urban and urban forests) and on emerging forest-related topics such as mining, oil and gas, the impact of climate change and the need to adapt to these changes. Internationally, forest activists of the RSEU actively cooperate with the Global Forest Coalition (6.3).

Greenpeace

Greenpeace has been operating in Russia since 1989. In 1992, the Greenpeace office in Russia was organized. From the very beginning, a powerful forestry department was formed in it, which was engaged and continues to be engaged in the organization of forestry, forest fires, openness and reliability of information, specially protected natural areas, legislative and regulatory framework, and so on. Its leader started from the movement of student druzhinas.

Greenpeace Russia has become the driving force behind the organization in Russia of natural sites included in the UNESCO World Heritage List, which includes the virgin forests of Komi, Lake Baikal and a number of others. This status has significantly helped in the protection of these unique natural sites from attempts to implement a number of environmentally destructive industrial projects.

The Greenpeace team of experts working on the problem of wildfires is highly respected by both federal and regional authorities and the local population. Its activities have contributed to the achievement of significant results in the fight against grass burns and peat fires.

In more than 10 regions of Russia, a public program of reforestation and environmental education is being actively implemented on the basis of rural schools.

The Greenpeace Forest Forum is the most authoritative platform on which professionals and the public in Russia discuss the acute problems of Russian forestry. The materials from this forum are used in thousands of media publications every year (6.4, 6.5).

The World Wide Fund for Nature (WWF)

The World Wide Fund for Nature (WWF) began implementing environmental projects on the territory of the USSR in 1988. Since 1994, a WWF office has been opened in Russia, the director of which is a well-known activist from the student movement of nature conservation druzhinas.

From the very beginning, WWF of Russia actively worked in such forest areas as the creation and support of specially protected natural areas, the allocation of high conservation value forests, the greening of forestry and the forest industry, the development of environmental certification under the Forest Stewardship Council (FSC) system, publications on forest topics, including the quarterly magazine "Sustainable Forest Use" published since 2003.

For many years, the representative of the WWF of Russia was the co-chairman of the Public Council at Rosleskhoz, which contributed to the active work of this body. (6.6,6.7)

The All-Russian public movement “People's Front“ For Russia ”(ONF)

The All-Russian public movement “People's Front“ For Russia ”(ONF) was created in 2011 on the initiative of Vladimir Putin, who is the leader of this structure. One of the goals of the ONF is to care for the environment. From the very beginning, forest problems were one of the important and active areas of the All-Russian People's Front. The number of ONF is estimated at 100 thousand people and about 25 thousand experts.

In recent years, the cooperation of the Department of Youth Projects of the ONF with Rosleskhoz has reached an especially large scale within the framework of the All-Russian campaign "Save the Forest" - a campaign to plant forests in response to the disastrous forest fires of 2019 in Siberia and the Far East. It is carried out within the framework of the national project "Ecology". In 2020, the number of its participants reached 1 million people, who planted 42 million trees throughout the country.

In addition, young members of the ONF helped in extinguishing forest and natural fires in the Trans-Baikal Territory, Irkutsk and Rostov Regions (6.8, 6.9).

Literature.

6.1. A.Yu. Yaroshenko. The nature conservation squad of the Biological Faculty of Moscow State University is 60 years old. 12/13/2020. Greenpeace Forest Forum

<http://www.forestforum.ru/viewtopic.php?f=9&t=25209>

6.2. V. Larin, R. Mnatsakian, I. Chestin, E. Schwartz. Nature Conservation in Russia: from Gorbachev to Putin. Moscow, 2003.

<https://wwf.ru/resources/publications/booklets/okhrana-prirody-rossii-ot-gorbacheva-do-putina/>

6.3. The website of the Russian Social and Ecological Union

<https://rusecounion.ru/ru/node>

6.4. Sections of the Greenpeace website

» <https://greenpeace.ru/projects/lesa-i-osobo-ohranjaemye-prirodnye-territorii/>

<https://greenpeace.ru/projects/pozhary-na-prirodnih-territorijah/>

6.5. Greenpeace Forest Forum

<http://www.forestforum.ru/>

6.6. Forest section of the WWF of Russia website <https://wwf.ru/what-we-do/forests/>

6.7. Section of the journal "Sustainable Forest Management" on the website of the WWF of Russia

<https://wwf.ru/resources/publications/periodicals/zhurnal-ustoychivoe-lesopolzovanie/>

6.8. ONF website <https://onf.ru/>

6.9. Publication on the website of the Ministry of Natural Resources of the Russian Federation "Rosleskhoz and" Molodezhka ONF ": ecological culture in action" 12/24/2020

http://www.mnr.gov.ru/press/news/roslezkhoz_i_molodezhka_onf_ekologicheskaya_kultura_v_deystvii/

7. The problem of the impact of climate change on Russian forests

In the first assessment report of 2008, the issue of the impact of climate change on forests was not considered separately, but it was mentioned about the displacement of natural zones to the north and an increase in the risk of forest fires (7.1).

The second assessment report, published in 2014, already included chapter 6.8. "Forestry". It considered climate as a factor in forest productivity, the impact of climate change on forests due to extreme weather events (windblows, droughts), an increase in the risk of outbreaks of pest reproduction and the development of diseases. Particular attention was paid to the growth of the danger of forest fires - schematic maps of the growth of fire danger in forests for various scenarios of climate change were given. In order to adapt forests to climate change, general recommendations were given for the creation of mixed plantations, improvement of forecasting methods and elimination of foci of diseases and reproduction of pests, etc. (7.2).

The report "On Climate Risks in the Territory of the Russian Federation" published in 2017 by Roshydromet also contains section 3.5. "Forestry", but in terms of content and detail it did not differ from the materials of the Second Assessment Report (7.3).

The preparation and publication of the Third Assessment Report, in which you can expect more detailed and relevant materials on the impact of climate change on Russian forests, is planned for 2022.

One of the most complete and up-to-date works on the impact of climate change on Russian forests is the monograph "Russian forests and climate change" (EFI, 2020) published in December 2020 by the European Forest Institute. Leading Russian experts in this field participated.

It examines the results of modeling achieved so far, as well as the remaining fundamental uncertainties in the field of maintaining the stability of Russian forests, the impact of extreme weather events, the possible beginning of the destruction of permafrost, the problem of the stability of tree plantations in the southern part of the forest zone (7.4).

In the annually published State reports on the state and protection of the environment in the Russian Federation, there are sections on the climatic conditions of the year, which show the results of the ongoing global changes, as well as very brief sections on the state of forests. However, they are not related to each other. The analysis of the possible relationship between the climatic conditions of the year and the state of forests is not carried out (7.5).

In the strategic documents of forest planning until 2018, there were no specific activities related to the problem of the impact of climate change on forests.

In mid-2018, unexpectedly, during the preparation of new ten-year forest plans for the constituent entities of the Russian Federation, the Ministry of Natural Resources sent a request to include sections on adaptation to climate change in this document.

Recommendations for the development of these sections contained the first official list of possible risks (7.6). However, due to the unpreparedness of the developers, this section was developed formally (7.7).

However, the actions of the authorities in this direction continued.

In 2019, by the Order of the Government of the Russian Federation, the National Plan for Adaptation to Climate Change was approved, according to which the Federal executive authorities (including the Ministry of Natural Resources and Rosleskhoz) must develop and approve sectoral plans for adaptation to climate change and post them on the Internet by 30.09.2021. The authorities in the constituent entities of the Russian Federation were recommended to organize work on adaptation to climate change and to approve regional adaptation plans by 10.05.2022 (7.8).

"Strategy for the development of the forestry complex until 2030" adopted in February 2021 contains a separate section 6 "Climate Policy", which emphasizes the need to conserve forests and use forestry activities for carbon absorption, primarily through combating deforestation through reforestation and afforestation. Climate risk assessment should be carried out, sectoral plans for adaptation to climate change should be developed and implemented, etc. (7.9)

Russian non-governmental environmental organizations are active in discussing the impact of climate change on Russian forests and the need for adaptation.

In 2018, WWF, with the participation of RSEU, held a series of Russian-Swedish-Finnish seminars, at which, taking into account the experience of Sweden and Finland, the problem of the impact of climate change on the forests of the north-west of the European part of Russia - in the Republics of Komi and Karelia and in the Arkhangelsk region was discussed (7.7).

The continuation of work in this direction was the course of lectures and seminars on the topic of climate change prepared by the WWF of Russia in 2020 within the framework of the Russian-German project. In addition to general information, we considered in more detail climate changes and their impact on the situation in a number of Russian regions, including such important forest and timber-processing regions as the Arkhangelsk and Primorsky regions (7.10).

Literature:

7.1. The first assessment report on climate change and their consequences on the territory of the Russian Federation, v.2. Consequences of Climate Change, Roshydromet, 2008.

<http://climate2008.igce.ru/v2008/htm/2.htm>

7.2. Second Assessment Report on Climate Change and Their Consequences on the Territory of the Russian Federation, Roshydromet, 2014.

<https://cc.voeikovmgo.ru/images/dokumenty/2016/od2/od2full.pdf>

7.3. Report on Climate Risks in the Territory of the Russian Federation, Roshydromet, 2017.

<https://cc.voeikovmgo.ru/images/dokumenty/2017/riski.pdf>

7.4. Russian forests and climate change, EFI, 2020.

<https://efi.int/articles/russian-forests-and-climate-change>

7.5. State report on the state and protection of the environment in the Russian Federation in 2019 by the Ministry of Natural Resources, 2020.

https://www.mnr.gov.ru/docs/gosudarstvennye_doklady/proekt_gosudarstvennogo_doklada_o_sostoyanii_i_ob_okhrane_okruzhayushchey_sredy_rossiyskoy_federat2019/

7.6. Order of the Ministry of Natural Resources No. 692 dated 20.12.2012 "On approval of the standard form and composition of the forest plan of the constituent entity of the Russian Federation, the procedure for its preparation and amendments to it"

<http://publication.pravo.gov.ru/Document/View/0001201804090039>

7.7. A. Grigoriev, A. Shchegolev, D. Lugovaya. Global climate change and adaptation to it of the forestry complex of the Northwestern Federal District of Russia: using the experience of Sweden and Finland. Sustainable forestry, 2019, no.2

<https://wwf.ru/upload/iblock/22a/06.pdf>

7.8. Order of the Government of the Russian Federation of December 25, 2019 No. 3183-r - National action plan for the first stage of adaptation to climate change.

<http://static.government.ru/media/files/OTrFMr1Z1sORh5Nlx4gLUsdgGHyWIAqy.pdf>

7.9. Strategy for the development of the forestry complex until 2030. Official portal of the Government of the Russian Federation 02/11/2021

<http://government.ru/news/41539/>

7.10. WWF of Russia. Lectures "Climate Change in Russia"

<https://wwf.ru/what-we-do/climate-and-energy/leksi-izmenenie-klimata/>

8. Forest fires

Every year in March-April, in most of the regions of Russia, a fire-hazardous period begins, which lasts until October-November. Despite the measures taken, every year, as a result of natural, (including forest) fires, hundreds of houses are destroyed, people are killed, the operation of transport, power transmission systems, oil and gas production and transportation is disrupted.

In recent years, the population of the country is increasingly reacting to such a negative consequence of forest fires as severe smoke, in the impact zone of which millions of people find themselves. In 2019, in connection with severe forest fires in the Krasnoyarsk and Irkutsk Regions, the smoke from which spread to neighboring regions, more than 1.2 million people signed an electronic petition on the change.org platform demanding the authorities to take emergency measures to improve the situation. For modern Russia, this is a very high level of independent social activity of the population. (8.1)

One of such standard measures on the part of the authorities is the introduction of a special fire-prevention regime, in which the use of open fire is limited, the burning of grass is prohibited, and restrictions on visiting forests are imposed.

Active patrolling of the forests begins, and tens of thousands of people are fined for violations of the fire regime every year. Usually, depending on weather conditions, a special fire regime is introduced in more than half of all regions of Russia. For example, on May 1, 2020, this kind of special fire regime was introduced in 60 out of 85 regions of the Russian Federation. (8.2,8.3)

Forest fires and the measures taken by the authorities to prevent them have a significant negative impact on the possibility of recreational use of forests, fishing, hunting, collection of forest food products, which are traditional and important for the inhabitants of Russia.

In the event that forest fires spread over large areas, when they begin to directly threaten settlements, an emergency regime is introduced. People and equipment are sent to fight forest fires, including the aviation and professional fire departments of the Ministry of Emergency Situations. In especially severe cases, equipment and members of the armed forces may be involved. In mid-July 2020, an emergency regime in connection with forest fires was introduced in 8 regions of the Russian Federation (8.4).

The topic of preventing and combating forest fires becomes a leading topic in the media every summer. As part of the federal information campaign "Stop the fire!", which is supported by the authorities, in 2020 more than 37 thousand materials were posted in the media and on the Internet aimed at preventing wildfires. (8.5)

In addition, the media also post tens of thousands of their publications on forest fires, both informational and analytical, some of which can be quite critical. Non-governmental environmental organizations make a significant contribution to these information flows.

An example is the position of the WWF of Russia on forest fires published in April 2020. It notes that as a result of forest fires, 3 million hectares of forest die annually, which is 3 times more than the felling area for timber harvesting. In addition to creating threats to the life and health of the population, forest fires cause enormous damage to biological diversity, habitats of rare and endangered species of animals and plants, many of which are concentrated in intact forests. The position contains a set of specific measures:

- introduction of a ban on burning dry vegetation, including fire cleaning of cutting areas and preventive burning;
- increasing the volume of financing for the prevention and control of forest fires
- implementation of programs to restore natural ecosystems more resistant to fire, including the formation of mixed stands, watering of drained swamps, etc.
- creation of a mechanism for providing information on the state of forests, including data on forest fires.

Although the amount of misrepresentation and concealment of forest fire data has decreased in recent years, this problem has not been resolved. (8.6)

Currently, the most powerful information platform on which independent information on forest fires is regularly published is the Greenpeace Forest Forum. It is actively used by the leading mass media, which make several hundred messages a year with reference to this source.

The topic of the reliability of data on forest fires, noted in the WWF position, is one of the most active at the Forest Forum. In October 2020, another article was posted here, which critically examined the data included in the report "On the state and protection of the environment of the Russian Federation in 2019", which is published by the Ministry of Natural Resources of Russia.

According to official statistics, the total area **of forest** fires in Russia has been constantly increasing, and in 2018 and 2019 it reached values **of** 8-10 million hectares per year, which is comparable to space observations. If in the area covered by forest fires, the data of official statistics and satellite imagery in recent years have become comparable (which was not until 2015 - they were underestimated, sometimes several times), then in relation to the area **of** forests that died from the impact of fire, the data of official statistics and the results of assessments using space data differ tens of times.

The publication at the Forestry Forum also notes that the data on the **area of dead** forests presented by the Ministry of Natural Resources also do not agree by an order of magnitude (underestimated) with the official data on the indicator "burned out forests". In 2019, it exceeded 300 million cubic meters, which corresponds to an **area of 3-4** million hectares, but not 100 thousand hectares. (8.7,8.8)

Addressing the issue of reliability of information on forest fires in Russia is critically important, since without this, adequate preventive measures and combating forest fires, the development and implementation of effective actions to adapt Russian forests to climate

change will be impossible. Without clarification in this area, internationally trusted changes in assessments of the climate-regulating role of Russian forests will not be possible.

Literature

8.1.

<https://www.change.org/p/%D1%82%D1%80%D0%B5%D0%B1%D1%83%D0%B5%D0%BC-%D0%B2%D0%B2%D0%B5%D1%81%D1%82%D0%B8-%D1%80%D0%B5%D0%B6%D0%B8%D0%BC-%D1%87%D1%81-%D0%BD%D0%B0-%D0%B2%D1%81%D0%B5%D0%B9-%D1%82%D0%B5%D1%80%D1%80%D0%B8%D1%82%D0%BE%D1%80%D0%B8%D0%B8-%D1%81%D0%B8%D0%B1%D0%B8%D1%80%D0%B8-%D0%BF%D0%BE-%D0%BB%D0%B5%D1%81%D0%BD%D1%8B%D0%BC-%D0%BF%D0%BE%D0%B6%D0%B0%D1%80%D0%B0%D0%BC-%D0%B8%D1%8E%D0%BB%D1%8C-2019%D0%B3>

8.2. <http://president-sovet.ru/presscenter/news/read/6267/>

8.3. <https://www.rbc.ru/rbcfreenews/5eaba3f79a79472cea999da1>

8.4. <https://ria.ru/20200707/1574003854.html>

8.5. <https://aviales.ru/popup.aspx?news=6366>

8.6. <https://wwf.ru/about/positions/lesnye-pozhary/>

8.7. <http://forestforum.ru/viewtopic.php?f=9&t=25057>

8.8. Unified interdepartmental information and statistical system (EMISS), indicator "burned out forests"

<https://www.fedstat.ru/indicator/55862>

9. Discussion of issues of climate change, land use and absorption of carbon dioxide

The estimates of the amount of carbon accumulated by the ecosystems of Russian forests published in recent years differ over a very wide range - from 96 to 191 billion tons, with a predominance of values in the region of 120-130 billion tons.

Estimates of carbon sequestration in Russian forests vary to an even wider range. From the conservative values of about 150-200 million tons of carbon (C) per year declared at the international level until recently, in recent years there has been a stream of scientific publications, which speak of 200-300 million tons per year, 400-600 million tons per year. tons per year and even more [9.1, 9.2].

Given the sheer size of the country, land-use, land-use change and forestry (LULUCF) interventions can have a significant impact. According to Roshydromet specialists:

- improving the efficiency of forest fire protection can reduce greenhouse gas emissions by 65-113 million tons of C per year;
- changes in harvesting technologies, reducing soil damage and reducing the amount of wood waste can reduce emissions by 27-29 million tons of C per year;
- replacement of coniferous monocultures with mixed, more sustainable stands will increase absorption by 14-19 million tons of C per year;
- an increase in the content of organic matter due to optimal crop rotations and the application of organic fertilizers can reduce the emission of carbon dioxide from agricultural soils by 27-43 million tons of CO₂ [9.3].

The Kyoto Agreement entered into force in 2004 following its ratification by the Russian Federation. However, due to a number of reasons, including bureaucratic ones, the possibility of implementing international climate projects, including in the field of LULUCF, turned out to be impossible [9.3].

In 2016, Russia signed the Paris Climate Agreement, but ratified it only at the end of 2019, 3 years after its entry into force. One of the main conditions for Russia's participation in the Paris Agreement was the maximum consideration of the absorbing capacity of forests and other ecosystems [9.4]. However, the actions of the Russian authorities in this direction until recently were not quick and effective.

The situation began to change dramatically in 2020, when Russia began to implement the Paris Agreement, and especially in connection with the Green Deal adopted by the European Union in December 2019.

The introduction of border carbon regulation, planned within the framework of the Green Deal, caused a sharp reaction from Russian business, including its largest association, the Russian Union of Industrialists and Entrepreneurs. It created the Committee on Climate Policy and Carbon Management. The head of the companies SUEK and Eurochem A. Melnichenko became its head, and L. Fedun, co-owner of Lukoil, became its deputy. The

committee also included about 30 heads of the largest Russian companies - Norilsk Nickel, Novolipetsk Metallurgical Plant, Segezha Group (forest assets of AFK Sistema).

At the first meeting of this committee in October 2020, Minister of Economic Development A. Reshetnikov said that consideration of the issue of achieving carbon neutrality of the Russian economy could begin after the implementation of a set of measures to reduce carbon intensity and use the potential of forests to absorb greenhouse gases. At the same time, according to the minister, the implementation of the unaccounted absorption capacity will allow Russia to reduce the estimate of net emissions by about 30-50%.

Ruslan Edelgeriev, the special representative of the President of the Russian Federation on climate issues, noted that the current regulatory framework lags behind modern requirements. Business initiatives, including the start of the work of a new RSPP committee, take into their own hands certain powers of the government, since it does not have time and cannot create the tools with which business can work.

The Chairman of the RSPP Committee drew the companies' attention to the importance of participation in the preparation of a negotiating position and participation in international negotiations on climate issues [9.5].

In December 2020, the second meeting of the RUE Committee on Climate Policy and Carbon Regulation took place. More than 100 representatives of the largest Russian companies, the scientific community and government authorities took part in it.

At the meeting, the representative of the Ministry of Natural Resources spoke about the development of a comprehensive plan (in accordance with the instructions of the President of the Russian Federation and the Government of the Russian Federation), which will include measures to clarify the initial data and methods for calculating the absorptive capacity of forests.

The representative of the Roshydromet Institute drew attention to the fact that there is both great potential for increasing the completeness and objectivity of the current assessment of the absorption of carbon dioxide by forests, and its increase in this absorption through forest management, especially the fight against forest fires.

The representative of the Ministry of Economic Development and Trade pointed to the underestimation of the absorption of greenhouse gases by Russian forests at the international level and the need for the authorities to work in this direction, given the tight deadlines determined by the EU's plans to submit a draft transboundary carbon regulation as early as June 2021.

The speeches also drew attention to the fact that the United States and the European Union are actively developing satellite systems for monitoring carbon balance. At the same time, the European Union plans to measure the carbon balance around the world using such a system. In this regard, it is important for Russia to have its own satellite monitoring system in order to independently control its carbon balance in order to obtain reliable and objective data.

Based on the results of the survey of companies, it was decided that priority attention will be paid to the issues of European transboundary carbon regulation, implementation of climate projects, absorption of greenhouse gases by forests and other ecosystems and its involvement in economic turnover [9.6].

On February 12, 2021, a message was posted on the website of the Ministry of Natural Resources and Environment of the Russian Federation on the amendments to the "Methodological guidelines for quantifying the volume of absorption of greenhouse gases." The document was prepared by the Ministry of Natural Resources in cooperation with federal executive authorities with the participation of the Russian Academy of Sciences. It is aimed at clarifying the initial data of the calculated indicators to increase the accuracy and reliability of calculations of the absorbing capacity of Russian ecosystems due to:

- clarification of the areas of "managed forests", taking into account the reserve forests and forests on agricultural lands;
- use of data from the first stage of the state forest inventory;
- Clarification of the areas of dead forests as a result of the impact of forest fires, harmful organisms, windblows, as well as clear cuttings;
- Clarification of regional coefficients of carbon accumulation in the main pools;
- clarification of the areas of drained and watered peatlands.

The cumulative effect from the implementation of a set of measures to correct the Methodology may amount to an additional 270-450 million tons of CO₂ (73-122 million tons of C), and the balance of absorption of greenhouse gases by Russian forests will amount to 1.1 GW of CO₂ per year (297 million tons of C per year) [9.7].

Judging by the published in the "Strategy for the development of the forestry complex until 2030" the projected volumes of carbon sequestration by Russian forests, which in the period 2022-2030. must be at least 600 million tons per year, in the near future additional "method refinements" will be made [9.8].

Due to this, the carbon sequestration rate achieved in February 2021 by Russian forests (297 million tons C per year) should at least double and reach 600 million tons per year, possibly slightly more.

Literature:

9.1. DG Zamolodchikov et al. Dynamics of the carbon balance in the forests of the federal districts of the Russian Federation, Problems of forest science, 2018, No. 1.

http://jfsi.ru/1-1-2018-zamolodchikov_et_all/

9.2. AN Filipchuk et al. Boreal Forests of Russia: Opportunities for Climate Change Mitigation. Forestry information, 2020, no. 1.

http://lhi.vniilm.ru/PDF/2020/1/LHI_2020_01-10-Filipchuk.pdf

9.3. The opinion of A.A. Romanovskaya, Director of the Institute for State Ecology and Ethnography, on the implementation of the Paris Agreement in Russia - website of the Federal State Budgetary Institution "Institute of Global Climate and Ecology named after Academician Y.A. Israel" 2020 - March.

<http://www.igce.ru/2020/03/%D0%BC%D0%BD%D0%B5%D0%BD%D0%B8%D0%B5-%D0%B4%D0%B8%D1%80%D0%B5%D0%BA%D1%82%D0%BE%D1%80%D0%B0-%D0%B8%D0%B3%D0%BA%D1%8D-%D1%80%D0%BE%D0%BC%D0%B0%D0%BD%D0%BE%D0%B2%D1%81%D0%BA%D0%BE%D0%B9-%D0%B0-%D0%B0/>

9.4. Nationally determined contribution of the Russian Federation to the implementation of the Paris Agreement of 12.12.2015

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Russia%20First/NDC_RF_ru.pdf

9.5. RSPP Committee on Climate Policy and Carbon Regulation held its first meeting, RSPP website 28.10.

<https://www.rspp.ru/events/press/komitet-rspp-po-klimaticheskoy-politike-i-uglerodnomu-regulirovaniyu-provel-pervoe-zasedanie/>

<https://www.rspp.ru/events/news/sostoyalos-pervoe-zasedanie-komiteta-rspp-po-klimaticheskoy-politike-i-uglerodnomu-regulirovaniyu-5f998b0673d4c/>

9.6. The second meeting of the RUIE Committee on Climate Policy and Carbon Regulation took place, RUIE website 12/14/2020.

<https://www.rspp.ru/events/news/sostoyalos-vtoroe-zasedanie-komiteta-rspp121-po-klimaticheskoy-politike-i-uglerodnomu-regulirovaniyu-5fd737405c31c/>

9.7. The Ministry of Natural Resources of Russia has developed an order on amendments to the Methodological Guidelines for the quantitative determination of the volume of absorption of greenhouse gases, website of the Ministry of Natural Resources 02/12/2021

http://www.mnr.gov.ru/press/news/minprirody_rossii_razrabotalo_rasporyazhenie_o_vnesenii_izmeneniy_v_metodicheskie_ukazaniya_po_kolich/

9.8. Strategy for the development of the forestry complex until 2030. 02/11/2021. Portal of the Government of the Russian Federation

<http://government.ru/news/41539/>

10. Existing experience in afforestation and additional opportunities for carbon dioxide absorption by forests

Creation of a system of protective forest plantations.

At the end of the 19th century, the steppe black soil ("chernozem") zone of the Russian Empire, which was the main grain-producing region, began to regularly suffer from severe droughts, which led to mass starvation. The analysis of the reasons carried out by Professor V.V. Dokuchaev and published in 1892 in his work "Our steppes before and now" showed that such grave consequences of droughts are caused by the destruction of forests as a result of intensive plowing of land. Reforestation was proposed as a solution. With the support of the Ministry of Agriculture and State Property, reforestation started on several experimental sites (10.1).

Work in this direction also continued after the 1917 revolution. But they were insufficient to solve the persisting problem of droughts, dry winds and soil erosion in the chernozem zone.

After the end of the World War II there were other droughts and famine in 1946 and 1947. In the fall of 1948, a decision was made to implement the largest state program of field-protective afforestation under the slogan "And we will defeat the drought!" In total, it was planned to create more than 5.7 million hectares of field-protective plantations in the form of forest belts, a large number of ponds and small reservoirs. This was supposed to improve the conditions for farming on an area of 120 million hectares (10.2).

In addition to field-protective plantations in Russia, for a long time, systems of protective forest plantations along roads, anti-erosion and water protection plantations along the banks of reservoirs, etc. have been created.

Despite the slowdown in the creation of field-protective plantations after 1953, these works did not stop, and as a result, their area was increased to 5.2 million hectares. However, in the 1990s, the need to care for aging plantations and their reconstruction became more and more urgent. As a result of land privatization, uncertainty of the legal status of protective plantations arose; in fact, they became ownerless, not registered. As a result, their area is currently estimated at only 2.7 million hectares, but it is necessary at least 6-7 million hectares, and optimally - up to 14 million hectares. (10.3.10.4).

The creation of new and reconstruction of existing systems of protective forest plantations is one of the obvious options for reforestation in Russia, which, under new conditions, can also perform the function of absorbing carbon dioxide in order to combat climate change.

Organization of forestry on abandoned agricultural lands.

As a result of the transition to a market economy on the territory of Russia, according to various estimates, there are from 40 to 70 million hectares of abandoned agricultural lands, which are overgrown with forests. These new forests found themselves outside the current Russian legal framework. Formally, these lands continued to be listed as agricultural lands - arable lands, pastures, hayfields, but in reality they are covered with forest.

The situation has become even more tense as a result of the privatization of agricultural lands. The new owners often wanted to use this land to continue growing private forests, i.e. engage in forestry rather than agriculture. However, land inspectors insisted on deforestation, land clearing, fining landowners and threatening to seize land.

Conservation organizations, including Greenpeace and WWF, supported the development of private forestry on overgrown, unproductive agricultural lands, since this will allow:

- to provide employment and incomes for the local population;
- will solve the problem of wildfires on overgrown agricultural lands;
- thanks to the developed road network, it will allow the introduction of an intensive model of forestry. Logging volumes in new private forests can be increased to 200 million cubic meters a year or even more, which will make it unnecessary to continue the development of intact forest areas;
- will provide an opportunity to make full use of the initiative of private entrepreneurs;
- will contribute to the accumulation of significant amounts of carbon in the biomass of new private forests.

As a result of many years of work by environmental organizations in support of this idea, in January 2020 President Vladimir Putin for the second time instructed the Government to take measures to allow the growing of forests on agricultural lands. The previous order of this kind, given in 2013, was not fully implemented. In September 2020, the government finally passed a decree allowing forests to be grown on agricultural lands, making private forests and forestry farming legal (10.5,10.6,10.7).

However, in the spring of 2021, public organizations discovered that the Ministry of Natural Resources had developed clarifications to the rules for growing forests on agricultural lands, which, due to bureaucratic restrictions, made this virtually impossible. Public organizations launched a massive campaign of criticism of the draft of this document, which was supported by more than 6,000 people.

The controversial situation that arose was discussed on March 11, 2021 in the Public Chamber together with the Public Council of Rosleskhoz (National Forestry Committee). The representative of the Ministry of Natural Resources said that the draft document will be revised (10.8.10.9).

This problem has become a topic of heated discussion in the media. As a result, lobbyists for decisions that make it virtually impossible for legal private forests to emerge in Russia were forced to appear - these are the heads of two State Duma Committees. The Ministry of Agriculture was also mentioned with its intentions to begin the implementation of a multibillion-dollar state program to restore the use and land reclamation, although the Soviet experience has convincingly shown the complete ineffectiveness of such programs.

The media reported that the Government has set up a working group that should find a compromise solution, as well as the possibility of experimentally testing the possibility of forest farming in some regions of Russia (10.10,10.11).

Literature:

10.1. V.V. Dokuchaev. Our steppes before and now, 1892, St. Petersburg.

https://rusneb.ru/catalog/000199_000009_003630944/

10.2. Decree of the Council of Ministers and the Central Committee of the All-Union Communist Party of Bolsheviks dated 20.10.1948 No. 3960 "On the Plan of field-protective afforestation, the introduction of grass crop rotations, the construction of ponds and reservoirs to ensure high and sustainable yields in the steppe and forest-steppe regions of the European part of the USSR."

<http://www.consultant.ru/cons/cgi/online.cgi?req=doc;base=ESU;n=14933#07389379163760246>

10.3. Kulik K.N. and others. "Forecast of the development of protective afforestation in Russia until 2020" "Problems of forecasting" INP RAS 2015, issue 4.

<https://cyberleninka.ru/article/n/prognoz-razvitiya-zaschitnogo-lesorazvedeniya-v-rossii-do-2020-goda>

10.4. Erusalimsky V.I., Rozhkov V.A. The multifunctional role of protective forest plantations. Dokuchaev Soil Science Institute Bulletin, 2017, issue 88

<https://cyberleninka.ru/article/n/mnogofunktsionalnaya-rol-zaschitnyh-lesnyh-nasazhdeniy>

10.5. List of instructions following the meeting of the Council for the Development of Civil Society and Human Rights and the meeting with the ombudsmen for human rights.

<http://www.kremlin.ru/acts/assignments/orders/62700>

10.6. Decree of the Government of the Russian Federation of 09.21.2020 No. 1509 "On the peculiarities of the use of protection and reproduction of forests located on agricultural land."

<http://publication.pravo.gov.ru/Document/View/0001202009230018>

10.7. For the first time, private forests will appear in Russia - on agricultural lands. WWF Russia website, 09/25/2020.

<https://wwf.ru/resources/news/lesa/v-rossii-vpervye-poyavyatsya-chastnye-lesa-na-selkhozemlyakh-/>

10.8. Forest on unused land: to prevent the destruction of the industry. Public Chamber 11.03.2021.

<https://www.oprf.ru/ru/press/conference/5183>

10.9. The Ministry of Natural Resources announced the amendment of the project prohibiting forestry on agricultural lands. Greenpeace website 03/12/2021.

<https://greenpeace.ru/news/2021/03/12/minprirody-zajavilo-ob-ispravlenii-proekta-zapreshhajushhego-lesovodstvo-na-selkhozemljah/>

10.10. V. Nekrasov. Some in the forest, some about firewood. Kommersant 02/15/2021

<https://www.kommersant.ru/doc/4692078>

10.11. A. Komrakov. Parliamentarians opposed private forests on private agricultural land. "Nezavisimaya Gazeta", 03/18/2021

https://www.ng.ru/economics/2021-03-18/1_8106_wood.html