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Thematic Issue on Problems of Geography

# The Great Eurasian Natural Tract as an Object of World Importance

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**Abstract**—The tasks of establishing an ecological network are presented, outlining some outcome of the long-term study of the Great Eurasian Natural Tract (Backbone), which is a continuous series of natural ecological systems from the Pacific Ocean to Fennoscandia. The story of the tract's detection is briefly told as a modern geographical discovery. Its delineation is based on the map of Russia's biomes resulting from remote-sensing analysis with field verification and other open data. Information about changing the area of natural ecosystems and variations of phytomass stock in various biomes are given. The authors give a monetary assessment of the ecosystem services of the Great Eurasian Natural Tract (GEANT), and a short-term forecast of changes in the productivity of its ecosystems is proposed. The issues of GEANT management are discussed: the inclusion of the concept of the ecological network in the Strategy for the Development of a System of Specially Protected Natural Areas in the Russian Federation for the Period up to 2030 and the creation of a state agency that would supervise the territorial conservation. It is proposed to consolidate the GEANT's status legally as a unique world natural heritage.

**Keywords:** territorial conservation, remote sensing, natural ecological systems, landscape fragmentation, landscape transformation, overground phytomass, ecosystem services, ecological network, specially protected natural areas, world heritage, Northern Eurasia, Great Eurasian Natural Tract (Backbone)

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Self-regulation of natural ecosystems supports a favorable environment on Earth. This ability is based on the relative interchangeability of ecologically similar species in natural communities. The populations of each species need a characteristic minimum living space for them, containing the resources and conditions of existence they need. The more mobile and larger the individuals, the greater the size of the territory necessary for their population. At the same time, large and mobile animals, concentrating in places with affordable food resources, regulate the condition of the ecosystem cover in the most significant territories scalewise. When dividing (fragmenting) natural landscapes, for example, by highways and/or development, their separate parts become too small for some species. Therefore, it is necessary that at least ecological links be kept between the topographically isolated fragments so that the individuals that together make up a viable population can move between the inhabited fragments. Then functionally interconnected territories form a *natural frame of ecological stability* [1], within which the self-regulation of ecosystems is carried out thanks to preserved ecological links between its separated parts.

The concept of an ecological network is that the preservation of its ability of self-regulation can be achieved by a focused provision of its functional integrity. In this regard, very large natural arrays acquire

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a particular value, within which a viable population of large carnivores and predator birds, as well as herd herbivore mammals, can dwell. Such natural arrays preserve a qualitatively full biota: on all the spatially hierarchical levels of ecosystem organization and in each functional block, there are various, including ecologically similar, species the ecological niches of which partially overlap, due to which, with temporary reductions in the number of some species, other species occupy their place, and the overall environmental balance is preserved [2, 3]. It is these natural arrays that are most significant for maintaining the ecological balance at the global level, acting as ecological donors in relation to the less large natural territories associated with them.

In the mid-1990s, disturbed natural ecosystems in various regions of Russia were compared by reduction in their area [4, 5] and phytomass per unit area [6] with the ecological well-being of the region as a whole [7], and a ratio scale of natural ecosystems to the state of the natural frame was also compiled [8–10]. A transcontinental continuous series of low disturbed natural ecosystems from the Pacific Ocean in the east to Fennoscandia in the west, with a separate toponym for them—the Great Eurasian (Euro–Asian) Natural Tract (GEANT) [8, 9]—has been identified.

While common, sometimes erroneous, ideas about the "endless expanses of virgin nature" in Russia have existed for a long time, the substantiation of the integrity of the GEANT and the awareness of the theoretical and practical importance of its existence have become a geographical discovery, meaningful against the background of strengthening the interregional interdependence characteristic of the Anthropocene epoch. The Concept of Transition of the Russian Federation to Sustainable Development notes that Russia has preserved the world largest tract of natural ecosystems (8 million km$^2$), which serves as a reserve margin for the biosphere, but this document does not specify its location.

When drawing up an indicative scheme of Russia's ecological network, based on a combination of spatial data on the location and natural territories with higher conservation value (key areas of the ecological frame), on the one hand, and, on the other, various objects that impede the ecological links between natural territories, the primary mapping of the GEANT was conducted [11]. The GEANT was examined in more detail based on the biomic organization of the ecosystem cover [12, 13]: each biome (either its topographically or ecologically holistic part) was considered entirely, including both natural and fundamentally transformed territories, since they actually interact with each other. Given this, the biomes and parts where a continuous natural tract generally preserved its full-fledged biota and ability of self-regulation were outlined.

Residential areas, communications with nonnatural coating, the infrastructure of the mining industry, and arable lands were excluded from the composition of natural territories. Forest fells and fire sites in the depths of the GEANT were considered as reversible changes; however, if the frequency of such effects exceeded the time of reaching at least an early stage of restoring the natural community by a biota, such changes became actually irreversible [10]. When assessing the reliability of ecological ties between natural territories, the fact that the close location of several parallel transport communications, for example, a railway and a motorway, enhanced the barrier effect for displacing animals was taken into account separately [3].

In 2020, the results obtained previously were refined on the basis of analysis of the current open geopositioned data about the development of industrial and transport infrastructure and about the distribution of residential areas and arable land [10]. Such data were verified using the method of rapid long-distance observation [15] and observations at model sites. Considering the results of previous years, a GEANT configuration map was compiled as of the end of 2020 (Fig. 1). The largest proportion of natural territories was identified in tundra biomes and some mountain–taiga orobiomes. The share of natural territories in predominantly forest and forest–steppe biomes was usually lower.

Due to oil-and-gas facilities, the transformation of natural ecosystems over a large area mostly affects the following biomes: Kola–Bol'shezemel'sko-Tazovskii, Mezeno–Pechora (eastern part), West Siberian (northern part), Baltic–Vetluzhskii middle-taiga (eastern part), Priuralskii (eastern part), Ob'–Irtysh, Verkhnevilyui (southeastern part), and the orobiome of the Yenisei Ridge (southeastern part).

An analysis of the distribution of so-called "landscape" (outside settlements) fires shows that they are most likely outside of the forest fund and federal specially protected natural areas, that is, mainly on nonforest lands. Intact forest landscapes are the least prone to fires in the forest fund [15]. Within the GEANT limits, the Amur–Zeya and Amur–Ussuri biomes suffered the most from fires. The Zeya–Bureya biome and part of the Amur–Ussuri biome fell out of the GEANT as a result of intensive economic development, and it is here that fires occur most often.

As a result of logging, the Mezeno–Pechora northern-taiga, West Siberian northern taiga, Baltic–Vetluzhskii middle taiga, Ob'–Irtysh, Verkhnevilyui, Central-Yakut, and Angarsk south taiga biomes have lost the largest areas of intact forest landscapes, and among orobiomes, these areas are the West Urals, Yenisei Ridge, Buryat, Shilkinskii, Aldano–Maiskii, Verkhnezeya, South Okhotsk, and Middle Sikhote-Alin. Timber harvesting often shifts even to the zone of near-tundra forests, and decisions are made to reduce

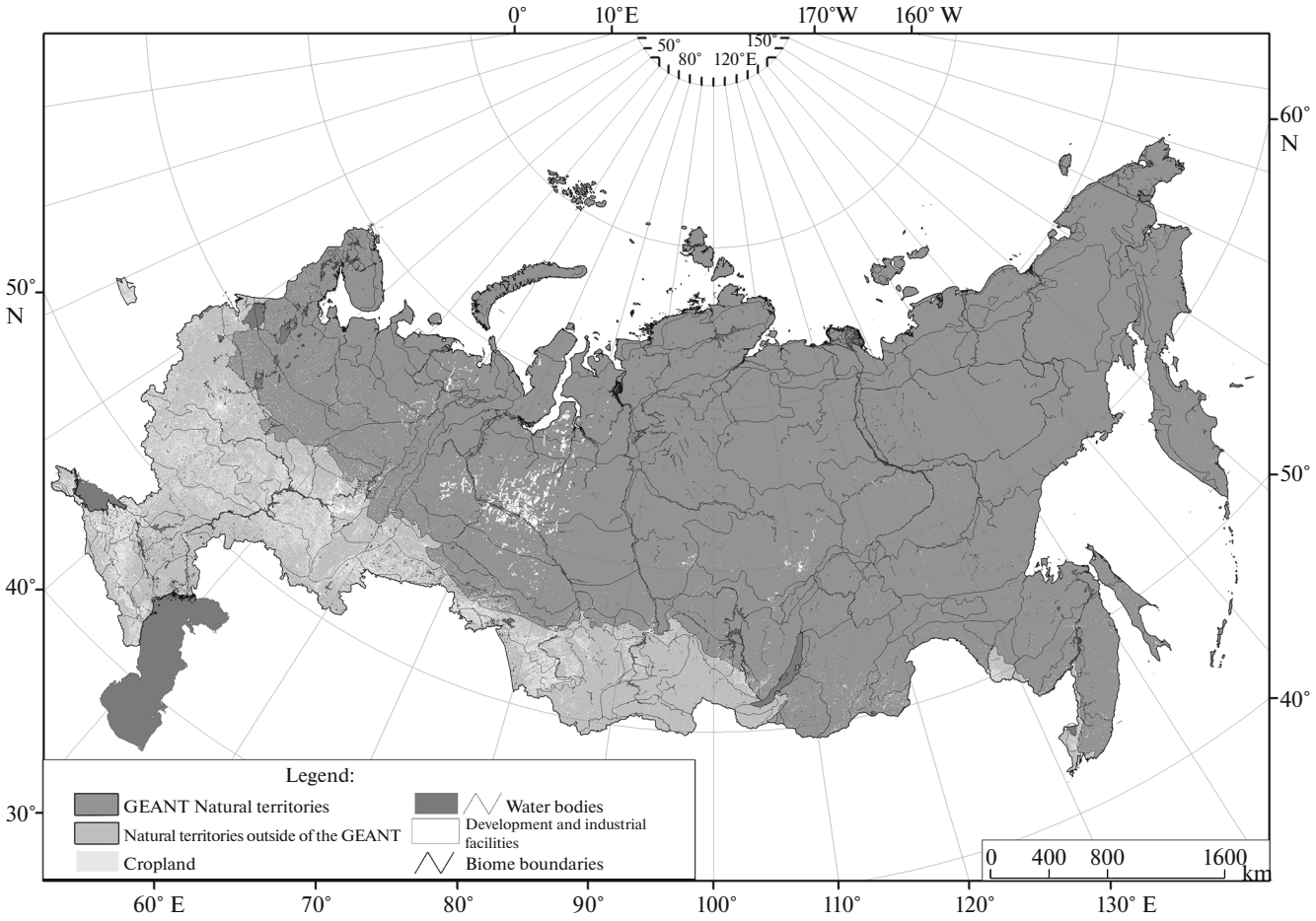


**Fig. 1.** Map of the GEANT borders as of December 1, 2020.

the area of the corresponding category of protective forests. Anthropogenic disturbances, including deforestation and infrastructure development, are accelerating the process of permafrost thawing.

In the Russian Arctic, the withdrawal of significant land plots from traditional nature management can lead to a break in the integrity of the land and cause changes in the permafrost and hydrological regime. Against the background of climate change, there is an increase in the area of ecosystems that are being degraded both due to the accumulated effect of impacts and due to slow recovery processes. The relatively low fragmentation of most regions of the Arctic zone suggests that the focal nature of the anthropogenic transformation of ecosystems has not yet developed into a frontal one.

A set of spatially integrated data in carbon equivalent was used as the initial data on the phytomass dynamics [16]. When modeling, two time series were taken: 2000–2003 and 2017–2020. Landscape classification data based on the MCD12Q1 program and regionalization of the world ecoregion map [17] were used for each series. This made it possible to model aboveground phytomass stocks in the context of various types of energy transformation for biomes. The materials of the RAS Institute of Geography's Bazilevich Database (registration no. 2017621515) were used for verification and comparison.

Table 1 provides information on positive and negative changes in the aboveground phytomass stocks in the considered types of biomes of Northern Eurasia. A total negative trend in the stocks is observed in the 21st century in treeless tundra, steppe, and desert biomes. They have a shorter characteristic response time to climate shifts than forests.

In the biomes of the forest–steppe, steppe, and desertified lands of Northern Eurasia, the balance of the specific and areal parameters of the phytomass is significantly influenced, in addition to climatic factors (droughts, interseasonal changes in precipitation, etc.), by agriculture and other economic and geographical impacts. A background negative trend of phytomass stocks in the Tobol–Priobskii and Daurskii biomes was noted. There is an expansion of areas of postforest meadows along the southern border of forest biomes, for example, in the Sikhote-Alin southern

**Table 1.** Changes in stocks of aboveground phytomass of the GEANT ecosystems from 2000 to 2020 according to remote analysis

| Biome type | Positive trends | | Negative trends | | Change balance | |
|---|---|---|---|---|---|---|
| | average reserves, t/ha | total reserves, t | average reserves, t/ha | total reserves, t | total, t | % |
| Broad-leaved and mixed temperate forests | 63.8 | 80773300 | –44.6 | –69749018.7 | 11024281.3 | 1.4 |
| Temperate coniferous forests | 77.3 | 31630663.8 | –46.2 | –14936389.3 | 16694274.5 | 6 |
| Boreal dark coniferous forests | 57 | 529693722.3 | –47.6 | –475227863.7 | 54465858.6 | 1.2 |
| Temperate steppes | 38.2 | 26664162.2 | –28.3 | –48609617.7 | –21945455.5 | –9.6 |
| Floodplain meadows | 67 | 4652751.7 | –38.9 | –2506679.9 | 2146071.8 | 8.1 |
| Mountain meadows and shrubs | 61.8 | 4117044.7 | –20.2 | –1458493 | 2658551.7 | 9.8 |
| Tundra | 9.2 | 27712651.4 | –7.3 | –48286324.3 | –20573672.9 | –6 |
| Desertified steppes and deserts | 19.3 | 938543.5 | –13.4 | –1469811 | –531267.4 | –11.3 |

orobiome, where, due to frequent fires, a savannah type of landscape is forming.

By the beginning of the 21st century, phytomass stocks in the tundra increased on average by 15–30% [18], but in 2000–2019, only yearly fluctuations were noted. A decrease in aboveground phytomass stock was noted in the southern belt, while in the typical and arctic tundra, on the contrary, a weak positive trend is observed, including due to meadowing and bushing. The general trend of changes in the tundra is disturbed by the growth of phytomass stock along river valleys, which spreads in the northerly direction: this reflects the northward movement of forests along the most closed landscape positions. On the Yamal and Taimyr peninsulas, where a high rate of warming (0.8–0.9°C/10 years) is noted, the aboveground phytomass has not increased in the 21st century [19]. The expected correspondence of changes in the production gradient of ecosystems to the zonal climate gradient turned out to be unfounded.

In forests, clustering of negative changes is observed, which, obviously, reflects focal transformations of ecosystems (fires, logging, foci of pests and forest diseases, drying out of forests when drainage changes). More moderate changes show the succession and natural development of ecosystems. An increase in the phytomass stock is observed in the forest biomes of Central and Eastern Siberia and the Far East. It is most noticeable in the Upper Vilyui middle taiga, the Central Yakut middle taiga, the Amur–Zeya south taiga, and the Amur–Ussuri subtaiga biomes, as well as the Aldano–Maiskii and Yankano–Dzhagda orobiomes. This is apparently due to the processes of reforestation after intensive logging and fires, which is confirmed by the clustering of plots with a background positive trend.

The analysis carried out showed different forms and directions of the dynamics of aboveground phytomass stock for individual types of ecosystems, biomes, and regions of the GEANT. These changes in the 21st century were compared with data on the decrease in phytomass per unit area of ecosystems at the end of the 20th century. [6]. Thus, an estimate of the specific loss of phytomass (degradation) of ecosystems in various biomes to date was obtained in comparison with their initial state (Fig. 2).

Based on the above results, assessments of ecosystem services associated with the GEANT have been made. They are divided into two large groups in accordance with the specifics of their use: supporting/regulating services and providing services.

To assess the ecosystem services, the data on permissible pasture pressure on ecosystems and landscapes associated with forest fund lands were refined [20]. In accordance with fluctuations in the price level, the values of bioresource ecosystem services were determined as of December 2020. For this, the range of purchase prices (minus extreme values) for the corresponding types of bioresources was used according to the international trade portal LesnoiResurs.RF (https://woodresource.ru/browse/buy/lesna-kornyu/), the Russian agro-industrial server AGROSERVER.ru (https://agroserver.ru/), the network of regional business portals RegTorg.Ru (http://www.regtorg.ru/), and the trade portals Agrobazar (https://agrobazar.ru/) and DikoEd (https://dikoed.ru/). The previously obtained calculated values of the specific values of ecosystem services for the main types of the GEANT landscapes were refined (Table 2).

The ratio of landscape types characteristic of biome groups was indirectly determined from official statis-

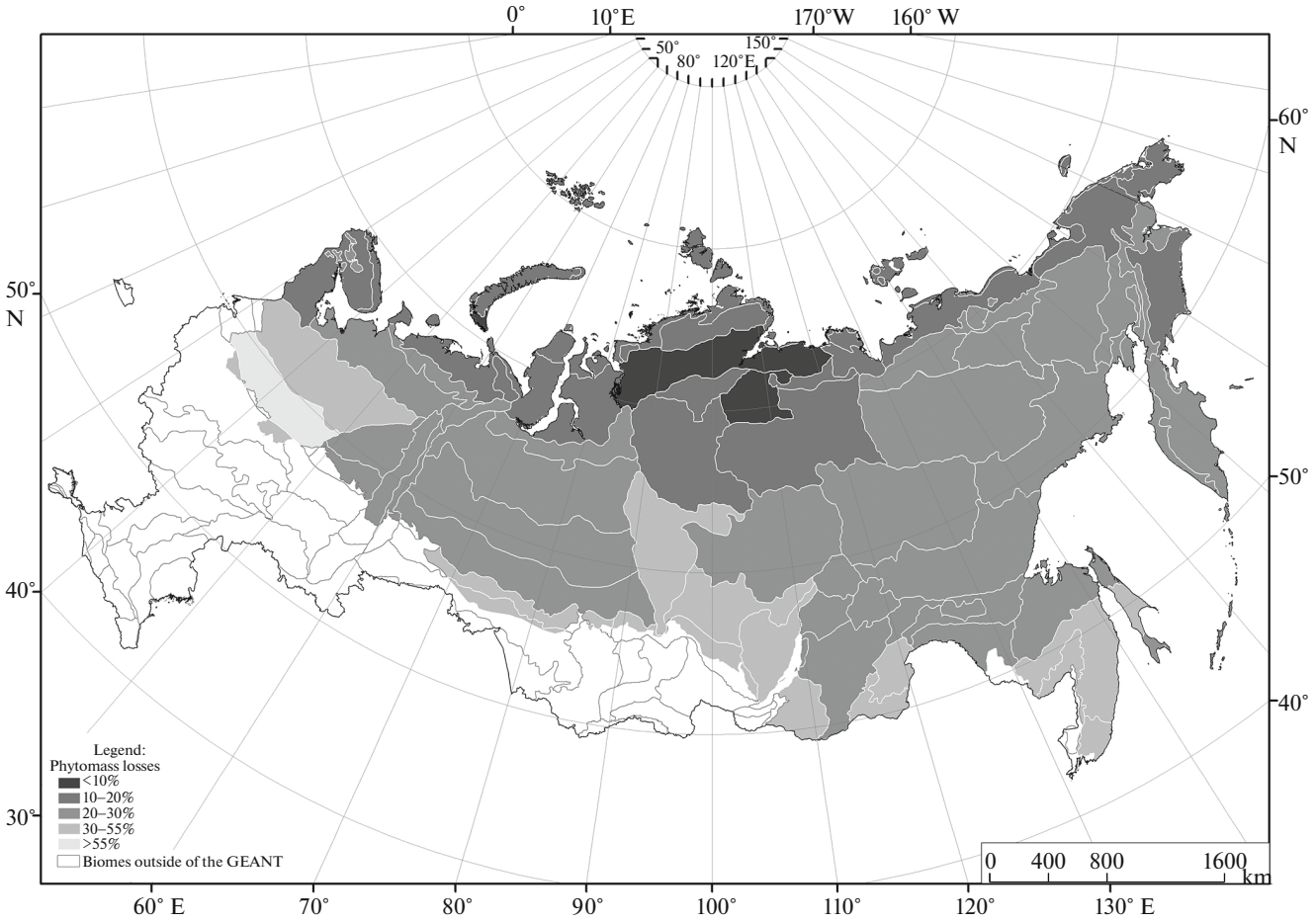


**Fig. 2.** Loss of phytomass in the GEANT natural ecological systems.

tics [21, 22] in comparison with previously collected materials and additional published data [23]. On this basis, the ecosystem services associated with the GEANT biomes are calculated, depending on the area of natural territories of each of the biomes included in its composition, from ₽10079 to ₽36246 billion/year. The volume of Russia's GDP for 2020 amounted to ₽106606.6 billion in prices at the beginning of 2021. [24]. Thus, the estimated indicators of ecosystem services associated with the natural territories of GEANT correspond to approximately 10–35% of the country's annual GDP. Determining the state of the biosphere, including our habitat, the supporting and regulating ecosystem services associated with the natural territories of the GEANT biomes range from ₽6384 to ₽8578 billion/year.

Monetary assessments of environment-forming (supporting and regulating) ecosystem services make it possible to consider Russia as a global ecological donor. Such estimates should actually correspond to the funds to compensate for the possible loss of these services, which follows, among other things, from the calculation methods used. However, such large additional funds are never reserved for these purposes. Moreover, at any financial cost, compensation for environmental ecosystem services on a planetary scale is technically unfeasible, at least in the foreseeable future. In this regard, it is naive to talk about savings in funds that can then be redistributed. It is more realistic to admit that these are unsustainable costs that we avoid due to the existence of modern nature, but which will put humanity in a dead end if their necessity becomes practical. From this it follows how much investment in the conservation of the GEANT nature would be cost effective. This should be taken into account when developing and applying international institutional and legal instruments to stimulate measures to mitigate global climate change and adapt to its negative consequences in accordance with the UN Framework Convention on Climate Change.

The significant volumes of providing ecosystem services (from ₽3732 to ₽27668 billion per year) testify in favor of supporting the traditional nature management practiced by the peoples inhabiting the GEANT regions, as well as in favor of environmentally sound projects for the further economic development of these regions for sustainable nature management. Travel companies and individual entrepreneurs orga-

**Table 2.** Specific value of ecosystem services of the GEANT landscape types

| Ecosystem services | Specific value of ecosystem services, rubles per hectare per year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | tundra | | taiga | | swamps | | meadows | | steppes | |
| | min | max | min | max | min | max | min | max | min | max |
| Water regulation | 90 | 100 | 400 | 600 | 300 | 400 | 150 | 200 | 100 | 120 |
| Climate regulation | 250 | 300 | 250 | 350 | 300 | 400 | 50 | 60 | 900 | 1300 |
| Soil protection | 1000 | 1500 | 2000 | 3000 | 1500 | 2000 | 250 | 300 | 2500 | 3000 |
| Assimilation | 120 | 140 | 200 | 300 | 200 | 300 | 80 | 100 | 250 | 350 |
| Bioproduction | 800 | 1000 | 4000 | 5000 | 1200 | 1500 | 2000 | 2500 | 3200 | 4000 |
| Maintenance of biodiversity | 100 | 120 | 90 | 120 | 50 | 80 | 50 | 80 | 100 | 120 |
| Total (supporting and regulating services) | 2360 | 3160 | 6940 | 9370 | 3550 | 4680 | 2580 | 3240 | 7050 | 8890 |
| Bioresource | 2000 | 13300 | 2300 | 20000 | 1750 | 8350 | 12850 | 91100 | 15600 | 95300 |
| Health improvement | 2 | 5 | 10 | 20 | 2 | 5 | 5 | 10 | 5 | 10 |
| Recreational (commercial use) | 30 | 50 | 100 | 100 | 20 | 30 | 50 | 70 | 50 | 100 |
| Aesthetic (noncommercial use) | 30 | 50 | 50 | 70 | 30 | 50 | 30 | 50 | 70 | 100 |
| Total (providing services) | 2062 | 13405 | 2460 | 20190 | 1802 | 8435 | 12935 | 91230 | 15725 | 95510 |
| Sum of ecosystem services | 4422 | 16565 | 9400 | 29560 | 5352 | 13115 | 15515 | 94470 | 22775 | 104400 |

nizing visits to the GEANT territories focus specifically on recreational activities that are not associated with the use of bioresources; that is, the economic interest in the conservation of bioresources in this case is limited by their recreational attractiveness. In this regard, it is appropriate to pay more attention to the impact of this activity on specially protected and other natural areas of the tract.

For the sustainable use of GEANT ecosystem services, it is necessary to form a sustainable market for goods and the services provided by them. The huge volume of bioresource ecosystem services opens up the potential for their use. At the same time, if demand suddenly rises sharply, then, without the necessary marketing preparation, this will cause a collapse in product prices and make its production inefficient. It is necessary to spread the GEANT brand actively as one of the foundations of global ecological stability and as a source of ecologically friendly products obtained in compliance with environmental standards.

The forecasting indicators of ecosystem services in monetary terms are faced with the need to take into account the hard-to-predict fluctuations in the value of their various types, adding uncertainty to the calculations. It is more convenient to assess the expected changes in the volume of services in the near future according to the trends in the biological productivity of the vegetation cover, which is the most general characteristic of the dynamics of terrestrial ecosystems.

To determine the dynamics of productivity, we used open data on net primary productivity for 2000–2019, collected from MODIS spectroradiometer images with a resolution of 500 m [25]. Based on the analysis of the data series from 2000 to 2019, a forecast indicator of net primary productivity for 2025 was calculated. Then, for the same data series, the average value of net primary productivity was found for each point. After that, the difference between the forecast value for 2025 and the average value for 2000–2019 was calculated. It characterizes the direction of changes in the value of productivity. A feature of the method is that sections without aboveground vegetation (including extensive swamps where vegetation was not detected by remote sensing) are shown as sections with no data [26]. The result of the assessment for sections with terrestrial vegetation is shown in Fig. 3.

An analysis of the spatial picture of the expected productivity dynamics shows a strong clustering of its most significant positive and negative trends. Clustering reflects the focal transformation of ecosystems (mining, fires, logging, outbreaks of pests and diseases of the forest, and drying out of forests when drainage changes). In areas with a large increase in productivity, there is active restoration of the vegetation cover, often, the development of secondary communities with a low ability to self-regulate. In areas with a sharp

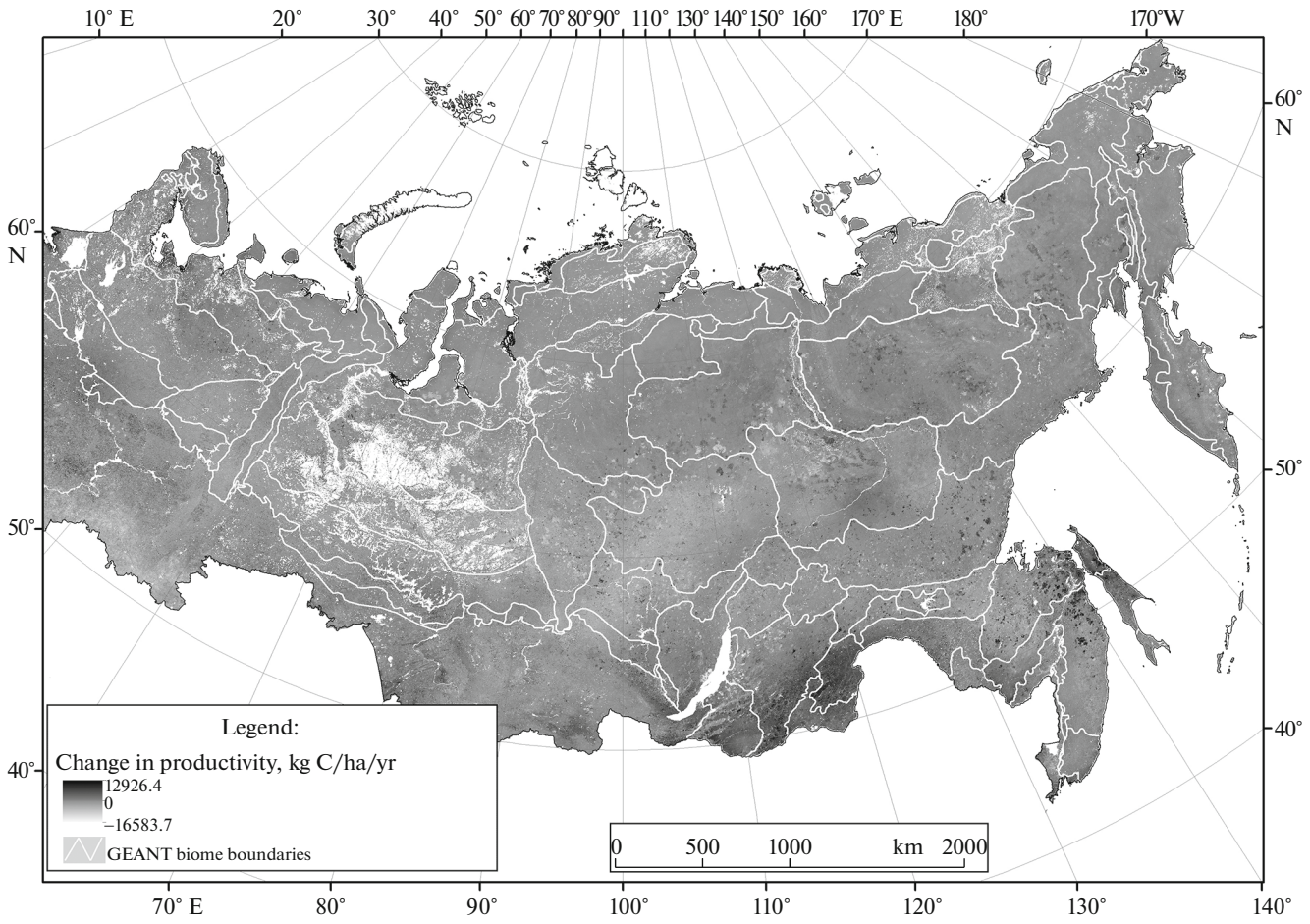


**Fig. 3.** Forecast of changes in ecosystem productivity in the biomes of the GEANT and its surroundings.

decline in productivity, it is difficult to restore even the secondary vegetation cover. More moderate changes in productivity reflect successions and progressive development of ecosystems.

Earlier, we had already noted an increase in the productivity of the Arctic and subarctic ecosystems of Northern Eurasia, which is manifested in the "greening" of the tundra [18, 19]. An analysis of annual fluctuations in the productivity of terrestrial ecosystems has made it possible to give a short-term forecast of changes in production in the GEANT biomes.

Productivity growth is expected over almost the entire territory of the Russian Arctic, except for local areas affected by fires. However, the magnitude of this growth has regional differences, determined by the spatial effects of the impact of climate change on vegetation (the onset and intensity of warming and the manifestations of climatic anomalies in general). The increase in the productivity of the tundra, when compared with the data of field measurements of the 1960s–1970s, at specific points can exceed 50%. With the expansion of shrubs, the phytomass stock in the tundra may have doubled over the past decades.

The greatest increase in ecosystem productivity is expected in the Shilkinskii, Vitimskii (except for its northwestern part), and Amur–Zeya biomes; in the Buryat orobiome; and in the southwestern part of the Middle Sikhote-Alin orobiome. Many centers of a sharp increase in productivity are concentrated in the northern part of the North Sakhalin biome, in the north of the Middle Sikhote-Alin, and northeast of the South Okhotsk orobiomes.

A positive dynamics of productivity over large areas in the presence of foci of sharp multidirectional changes was noted in the southern part of the Mezeno–Pechora north taiga, Kotuisko–Lena north taiga, Nizhnekolyma north taiga, West Kamchatka, the northern part of the Baltic–Vetluga middle taiga, the southern part of the Baltic–Vetluga south taiga, the southern part of Central Yakut, the eastern part of the Angarsk subtaiga, the eastern part of the Smolensk–Privolzhskii biomes, and the West Koryak, Verkhoyansk–Yano–Indigirka, Omolonskii, Severo-okhotsk, and Verkhnelenskii orobiomes. Noticeable positive dynamics was documented for the coastal territories of the Novaya Zemlya–Gydan–Yamal, Kola–Bol'shezemel'sko–Tazovskii, Kola–Karel'skii, Mezeno–

Pechora, West-Koryak orobiomes, in the southern part of the Anadyr–Penzhinskii biome, and the East Koryak orobiome.

Significant sections of the West Siberian northern taiga and Ob'-Irtysh biomes turned out to be out of access for data collection [25, 26], since they are occupied by sections without aboveground vegetation. The developed infrastructure of the oil-and-gas industry covers both these sections and the river valleys where vegetation has been found, including a positive trend in productivity.

Negative dynamics was revealed in the Urals, Ob'–Irtysh middle taiga, Verkhnevilyui biomes, in the west of the Central-Yakut biome, and in the orobiome of the Yenisei Ridge. Negative dynamics with foci of a sharp positive trend characterizes a compact territory covering the eastern part of the Tukuringra–Dzhagdinskii and Verkhnezeya orobiomes and the central part of the South Okhotsk orobiome. Numerous sections with sharply negative dynamics of productivity are noticeable in the Taimyr–Central Siberian, Leno–Kolyma, Kola–Karelia, Mezeno–Pechora, Kotuisko–Lena forest–tundra, Nizhnekolymskii forest–tundra, Baltic–Vetluzhskii, Ural middle-taiga, and Chukotka biomes.

The above examples show the far-from-ideal state of the Great Eurasian Natural Tract, which, while remaining ecologically integral, is by no means continuous. Inside it are foci of ecological troubles, different in origin and degree of danger. This was the reason for the development of several strategic approaches to the territorial conservation within the boundaries of the tract as described in publication [10].

The environmental doctrine of the Russian Federation provides for the formation of a natural reserve fund of Russia based on specially protected natural areas and other areas with a predominance of natural processes as an integral component of the country's development. If the ecological network ensures the protection of ecologically interconnected communities of biota, the wider "green" infrastructure should also include ecological terminals that connect ecologically subsidized natural, restored, and green areas in the agricultural and urban landscape to the ecological network and thus address ecosystem services for the bulk of their users.

The formation of an ecological framework should become part of territorial planning schemes at all levels. Its development is practiced by most qualified specialists in the field of territorial planning, but at the level of officially approved documents, the reduction of sectoral schemes on one map is often accompanied only by a statement of the presence of conflict zones. In our opinion, the reason for this lies in the absence of a legal and administrative basis for the formation of an ecological framework and a "green" infrastructure. This is manifested in the sectoral and administrative disunity of nature and land management. As we have repeatedly said, it is advisable to consider all natural territories, regardless of their administrative status and form of use, as a natural fund, one hierarchically organized object of state administration in the field of territorial conservation [27, 28], a source of ecosystem services and a favorable environment. In this regard, setting up an ecological network should receive priority as an activity that ensures the constitutional right of every person to a favorable environment, which should be reflected in the Strategy for the Development of the System of Specially Protected Natural Areas in the Russian Federation for the Period up to 2030.

The ecological network is relevant because various types of nature management (subsoil use, forest management, recreational and tourist business, together with the accompanying landscape fires, intensification of permafrost thawing, and other phenomena) cause focal transformation of natural ecosystems of the natural network of ecological stability even within the Great Eurasian Natural Tract (see Fig. 3). It is necessary to establish the responsibility of the right holders of land plots that are natural areas—carriers of natural ecosystems and sources of ecosystem services—for the reduction of the environment-forming properties of ecosystems because of their actions. Particularly high should be the responsibility for the violation of ecosystems with proven high conservation value, primarily in existing and planned specially protected natural areas.

The administrative scheme adopted in Russia implies that the relevant ministries are assigned functions related to the definition of state policy in a particular area. Control functions are assigned to supervisory authorities, and agencies are involved in the management of the provision of various public services. Currently, the Ministry of Natural Resources and Ecology of the Russian Federation determines the state policy in the field of nature management, and Rosprirodnadzor controls the environmental supervision by the state. However, there is no corresponding structure responsible for the management of the provision of ecosystem services. We share the opinion repeatedly expressed by specialists of the Ministry of Natural Resources of Russia, scientists, and the public about the expediency of establishing a special agency that would be in charge of issues of territorial conservation.

Territorial conservation as a branch of the economy of our country [29] should have the main task of preserving natural ecosystems and landscapes, the properties of which are used. Among these properties, the first place is occupied by the environment-forming and information-reference functions, since they provide the possibility of implementing nature management in general, controlling and predicting its impact on nature. Accordingly, nature reserves should remain the basic component of territorial conservation—lands withdrawn from economic and recreational use [30, 31]. The preservation of nature reserves along with the

development of nature-like technologies in the surrounding territories will allow humanity to develop together with Nature [32], and it is the consideration of the Great Eurasian Natural Tract as one object that opens up opportunities for such development.

Being aware of the strictness of the criteria for classifying natural objects as World Heritage Sites and the enormous complexity of legal and organizational procedures on the way to recognizing natural territories as World Heritage Sites, we nevertheless state that the GEANT is a natural phenomenon of global importance for the maintenance of the biosphere, including the human environment, and representing our heritage, which must be passed on to future generations. Perhaps it makes sense to enshrine the status of the tract as a unique natural complex, representing a natural treasure of the world level, in the legislation of the Russian Federation, as was done, for example, with Lake Baikal. Among other things, this will make it possible, on a unified legal basis, to determine the environmental conditions for investments in the development and further advance of the territory of the Great Eurasian Natural Tract.

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## CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.



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