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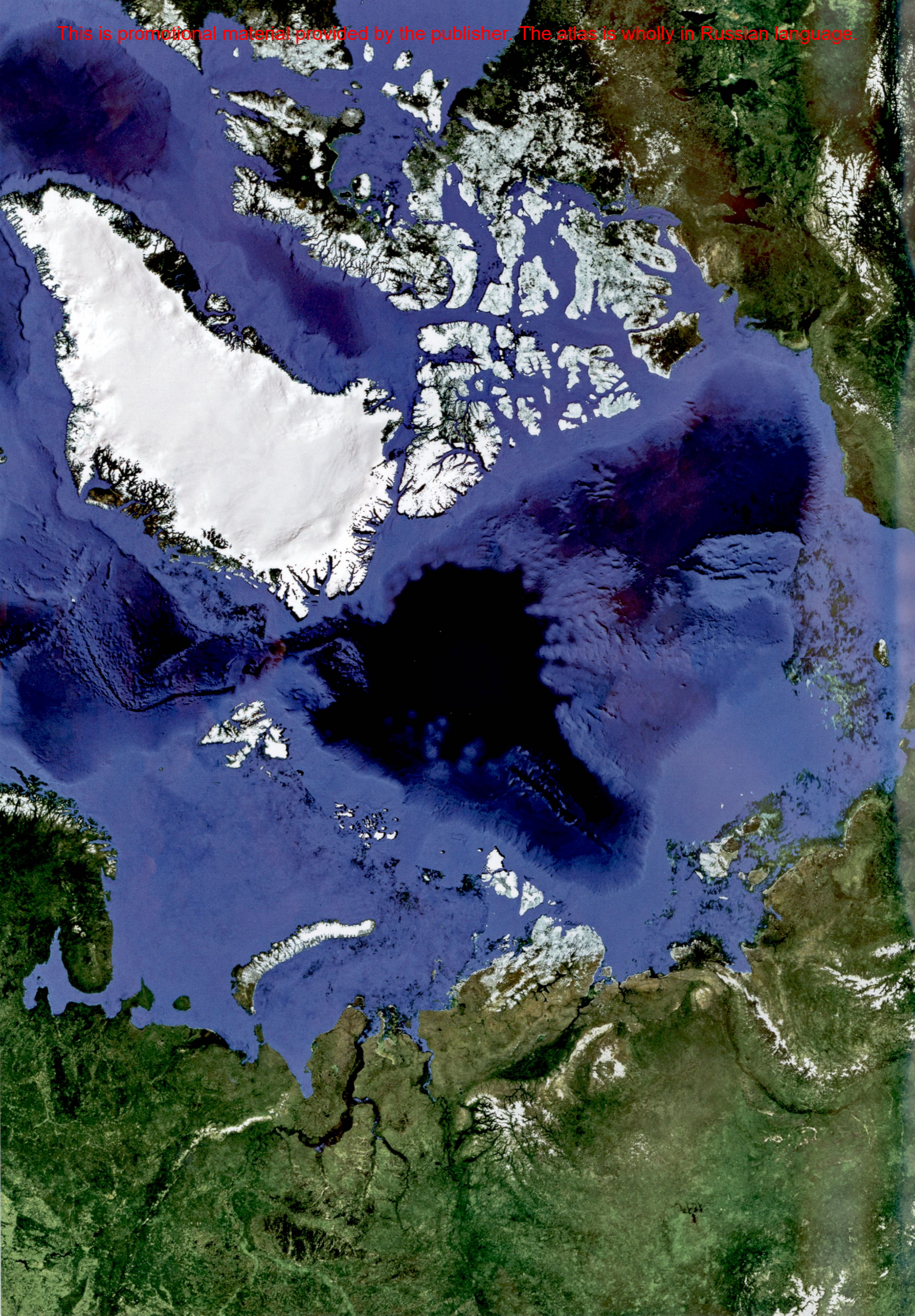
# **NATIONAL ATLAS OF THE ARCTIC**

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**THE ARCTIC AREA OF THE RUSSIAN FEDERATION**



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National Atlas of the Arctic is an official State publication created at the initiative of the Russian geographical society, in accordance with the request of the Russian Federation President Vladimir Putin, on request of the federal public service registration, inventory and cartography (Rosregister) of JSC Roscartography.

The object mapping in the National Atlas of the Arctic area supported the Arctic area of the Russian Federation in all aspects of its formation and development. Taking into account the diversity of existing approaches to defining the southern boundary of the Russian Arctic, in National Atlas of the Arctic accepted mapping territory north of the southernmost natural Arctic boundaries taking into account border the Arctic area of the Russian Federation, certain legislative acts of the Russian Federation.

Diverse information concentrated in Atlas in a systematic, organized, comparable and visualizes, to act as a public knowledge base and is the tool for research and source reliable and objective information on the nature, population and economy of the Arctic area of the Russian Federation for the management of the development of its territories.

The National Atlas of the Arctic is a fundamental complex cartographic work of information, reference, scientific and applied nature, containing a set of mutually agreed information on the geographic, climatic, ecological, economic, historical ethnographic, cultural and social features of the Russian Arctic.

The Atlas contains cartographic documents, diagrams, graphs, space images, materials related to the historical, cultural and natural heritage (textual scientific and artistic parts), and a significant fund of visual material. In the aggregate of illustrative and visual means of presenting information, the Arctic area of the Russian Federation and the Arctic as a whole have never been so represented in either domestic or foreign publications of this level.

The materials presented in the Atlas will find application in solving the issues of expanding the development of the country's resource base, protecting nature and cultural heritage, organizing and conducting environmental monitoring, and ensuring ecological balance in the Arctic area of the Russian Federation. The main part of the Atlas content is represent by new cartographic subjects of various subjects, important for presenting the features of the Arctic area of the Russian Federation from the modern positions. This allows us to draw new conclusions and take into account those relationships that are not visible from the point of view of a single science or field of activity, to form an ideology of industrial revival of the region while preserving its wildlife and historical and cultural sites.

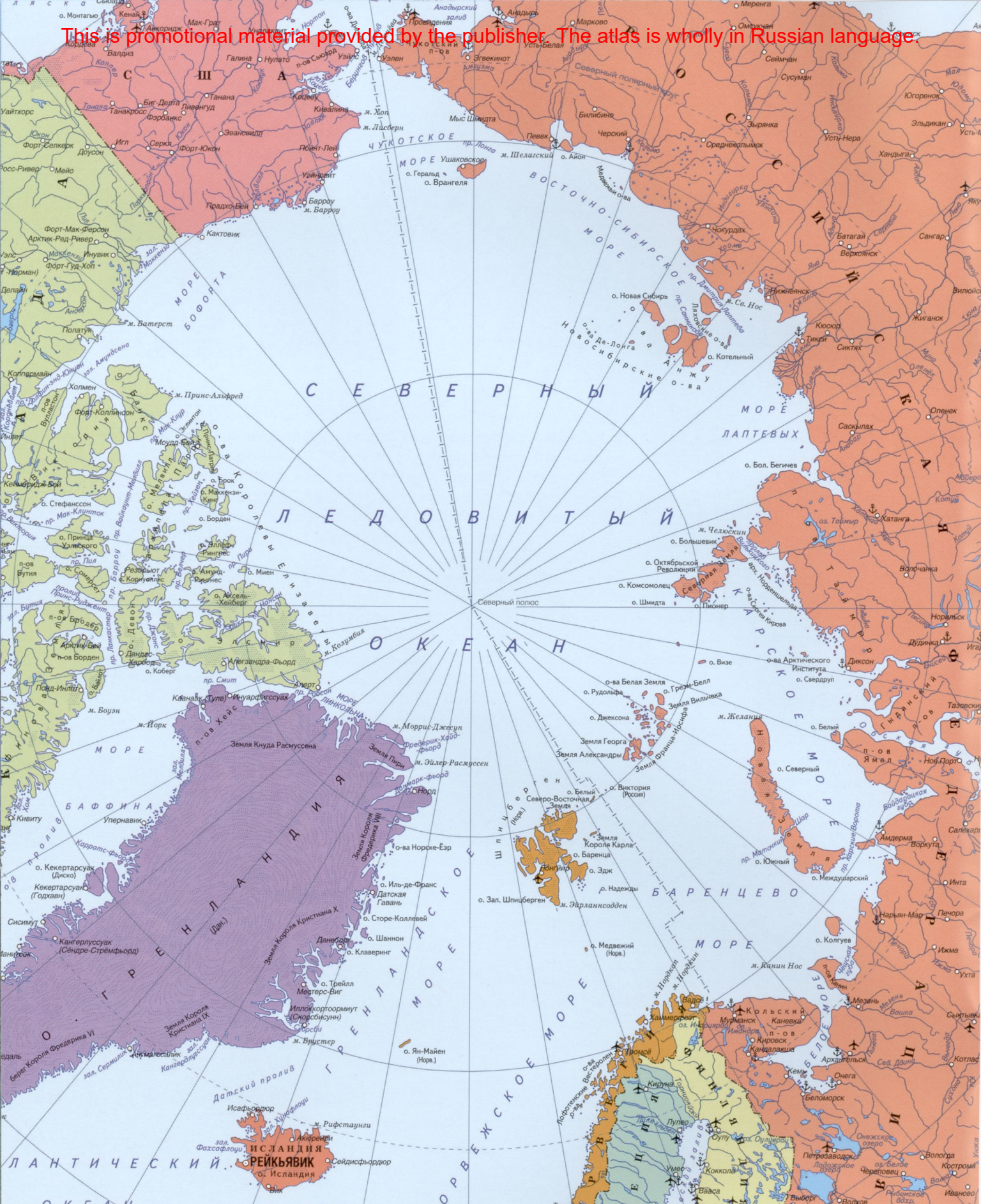
The target consumers of the National Atlas of the Arctic, in accordance with its scope of application, are the bodies of state power of the Russian Federation and the subjects of the Russian Federation, local self-government bodies, subdivisions of the country's law enforcement agencies, commercial structures that carry out social, economic, environmental, nature protection and other activities including ensuring national security) on the territory of the Arctic area of the Russian Federation, various scientific organizations, educational institutions, librarians, individual legal entities and individuals.

The Atlas was created with the assistance and active participation of the Russian Geographical Society, many of its members are the developers of the thematic content of the Atlas.

*General Director of JSC Roscartography  
Dmitry Krasnikov*

*First Vice-President of the Russian geographical society,  
editor-in-Chief of the National Atlas of the Arctic,  
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Nikolay Kasimov*

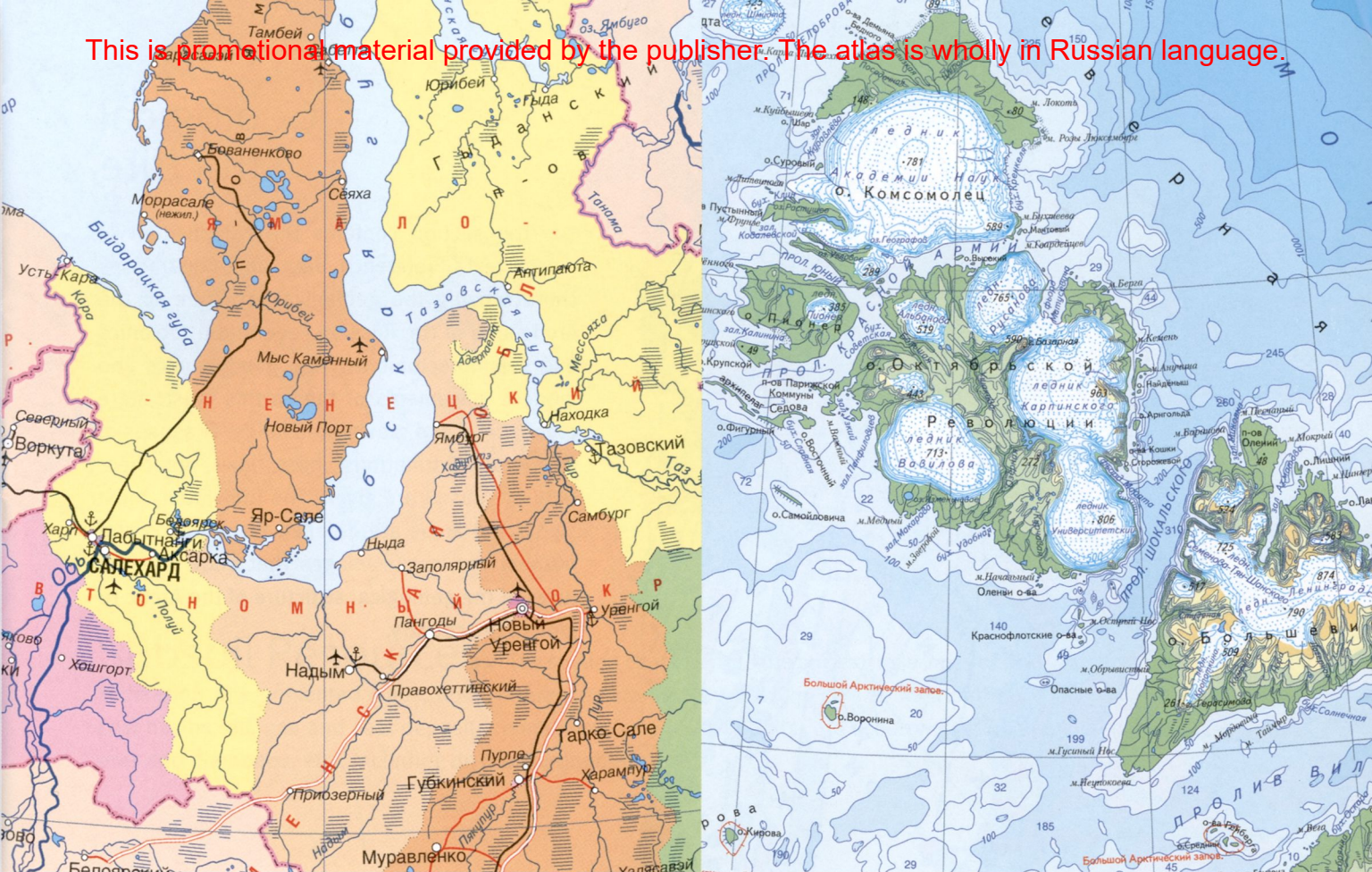




**The World Arctic.** The section is represented by circumpolar maps: a survey of general geographic, natural boundaries and political-administrative maps. In addition, they provide thematic overview maps: the Arctic Ocean, geological, climatic, glaciation and permafrost. Small-scale space images of parts of the World Arctic and its space view are given.





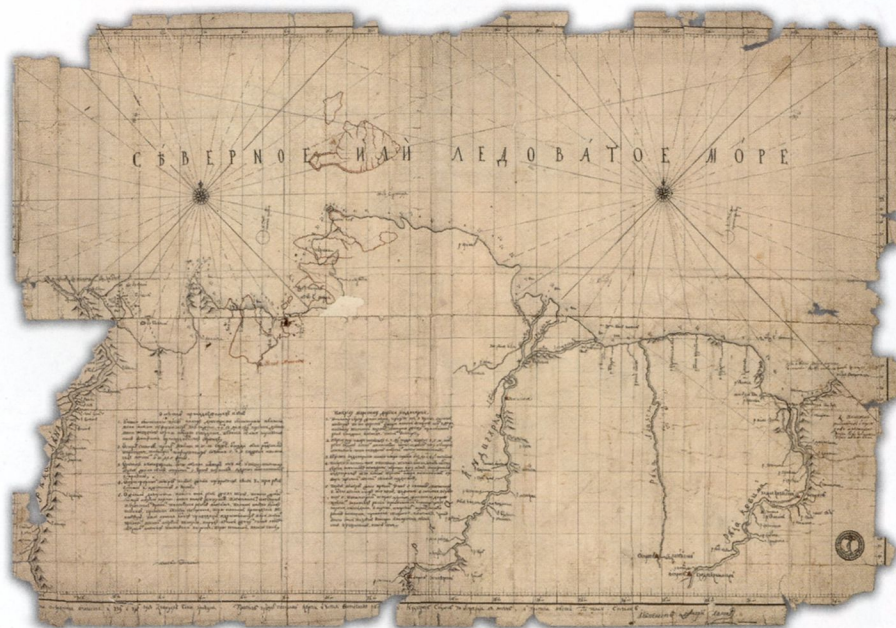


## The Federal Subjects included in the Russian Arctic

In the section are represent by separate maps of the administrative division and general geographic maps. General characteristics of the territory of the Russian Arctic area are shown by overview and thematic maps.

## History of Research, Discoveries and Development of the Arctic

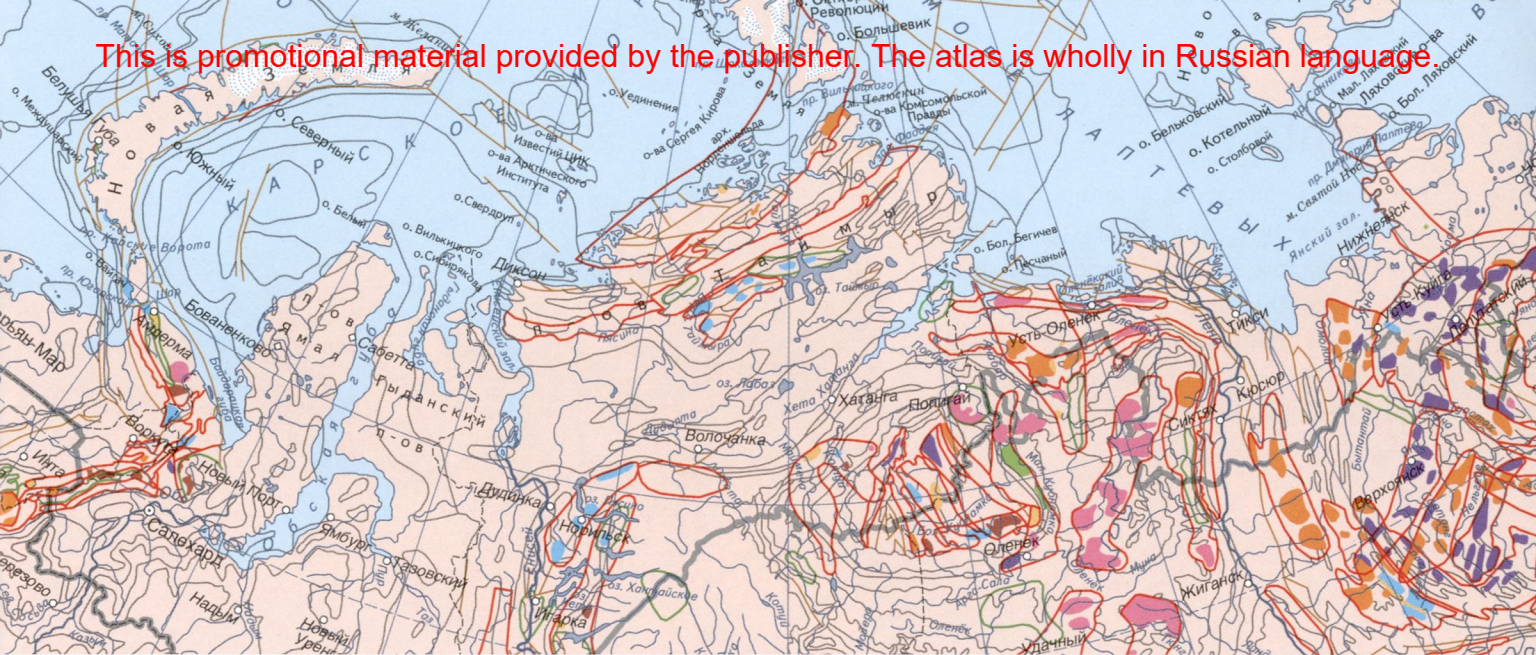
The section contains basic data (cartographic and textual) on geographical discoveries of the Arctic. It's begin with the first polar maps. Stages of the history of development of the Arctic are represent by a series of maps (by centuries). The maps show the trajectories of the drift of the Soviet and Russian polar stations "North Pole" for the period from 1937 to 2015, as well as areas of work and routes of the most important marine expeditions in the Russian Arctic.



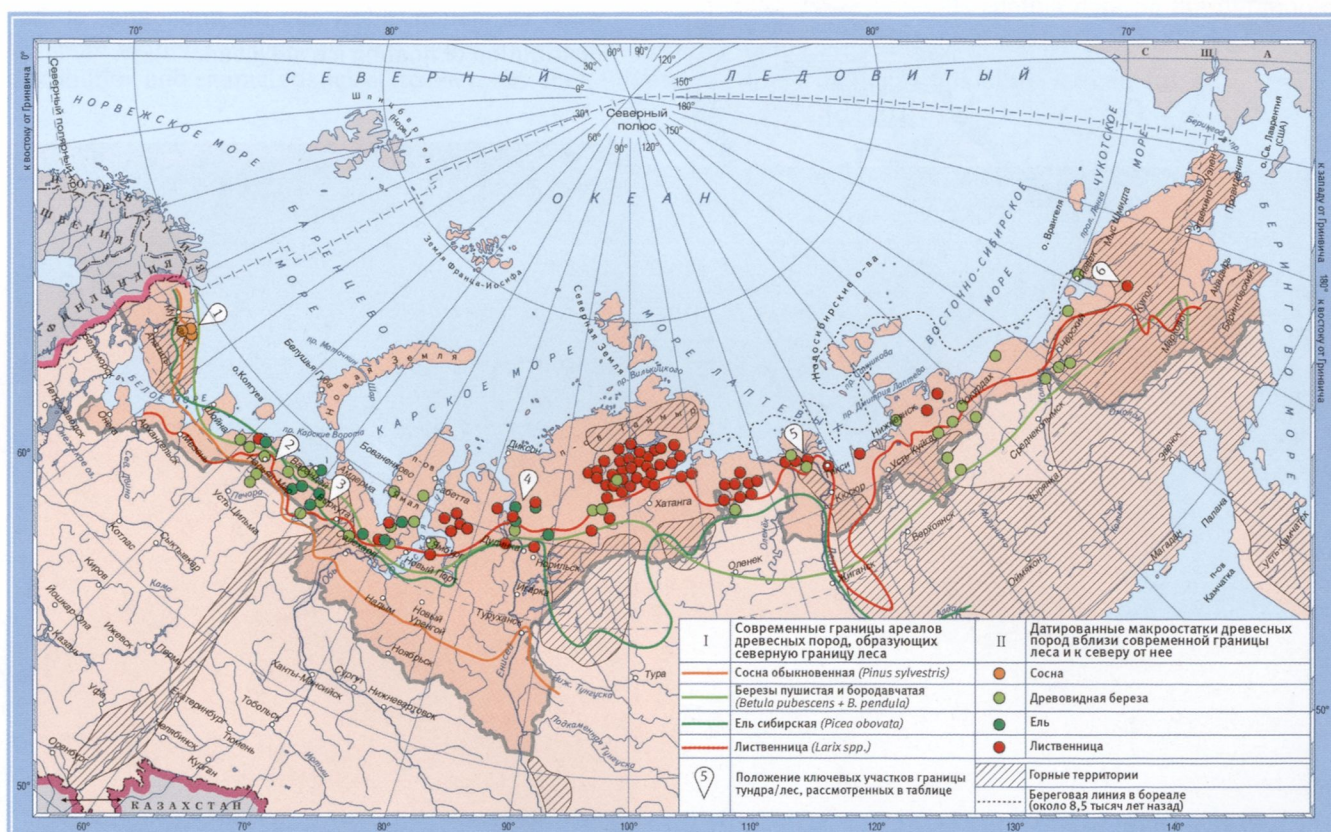








**Subsoil Resources.** The section characterizes the mineral resources of the Arctic area of the Russian Federation. The presented maps, texts, reference data and illustrations give an idea of the location of oil and gas and coal basins, oil, gas and coal deposits, metallogenic zones and belts, ore occurrences, precious metals, polymetallic ores and diamonds, etc., including on the continental shelf.



## Evolution of the Natural Environment

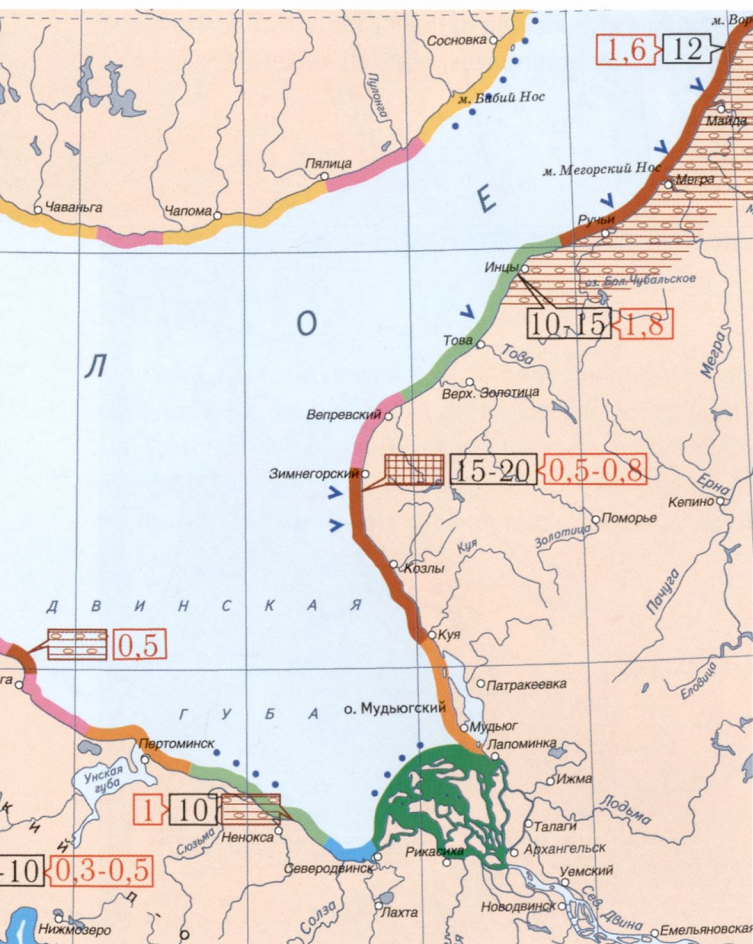
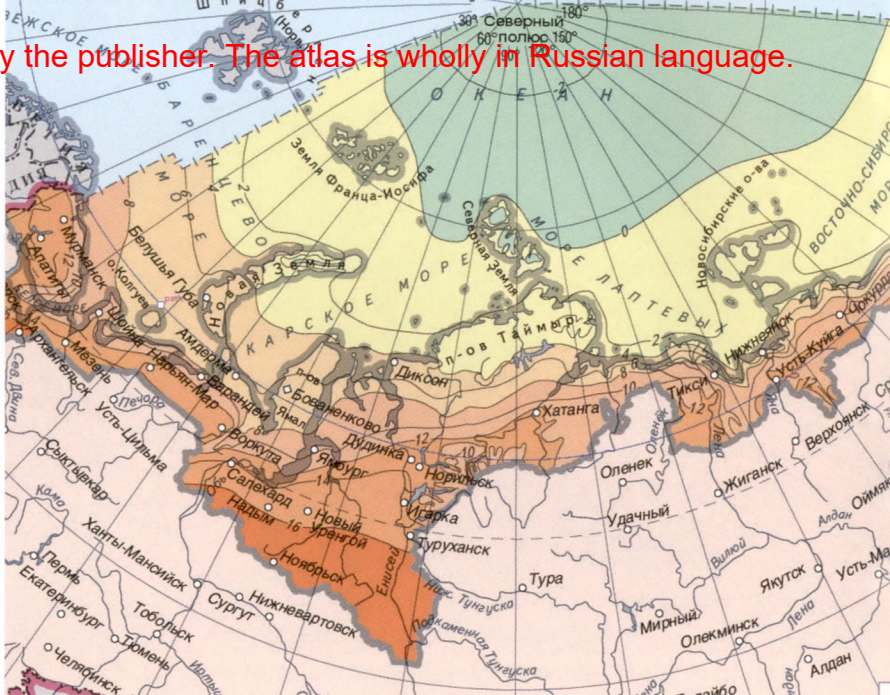
The stages of the evolution of the natural environment are reflected in the section, the dynamics of the formation of Arctic ecosystems within the Arctic area of the Russian Federation is reflected. Small-scale maps contain information on the glaciation of the Quaternary period, physical and geographical zones, climate in different era of glaciation, as well as data on the conditions of development and habitat in the Arctic of man in the Late Pleistocene and Holocene, during the Neolithic period.



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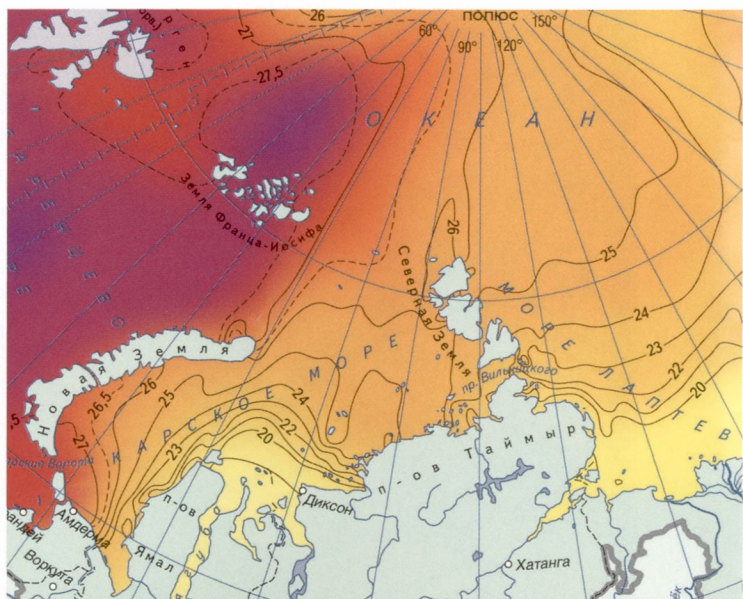
## Climate

The section consists of a series of maps, explanatory texts that characterize the climatic factors, climatic conditions and resources of the Arctic area of the Russian Federation: atmospheric circulation, heat and water regime, current and expected climate changes, and other indicators of the climate change trend.



## Ocean, the Sea

The section presents maps of the Arctic Ocean and the seas washing the territory of the Arctic area of the Russian Federation. The temperature processes of water are reflect, the characteristics of water circulation, tides, and the boundaries of the distribution of floating ice are given.

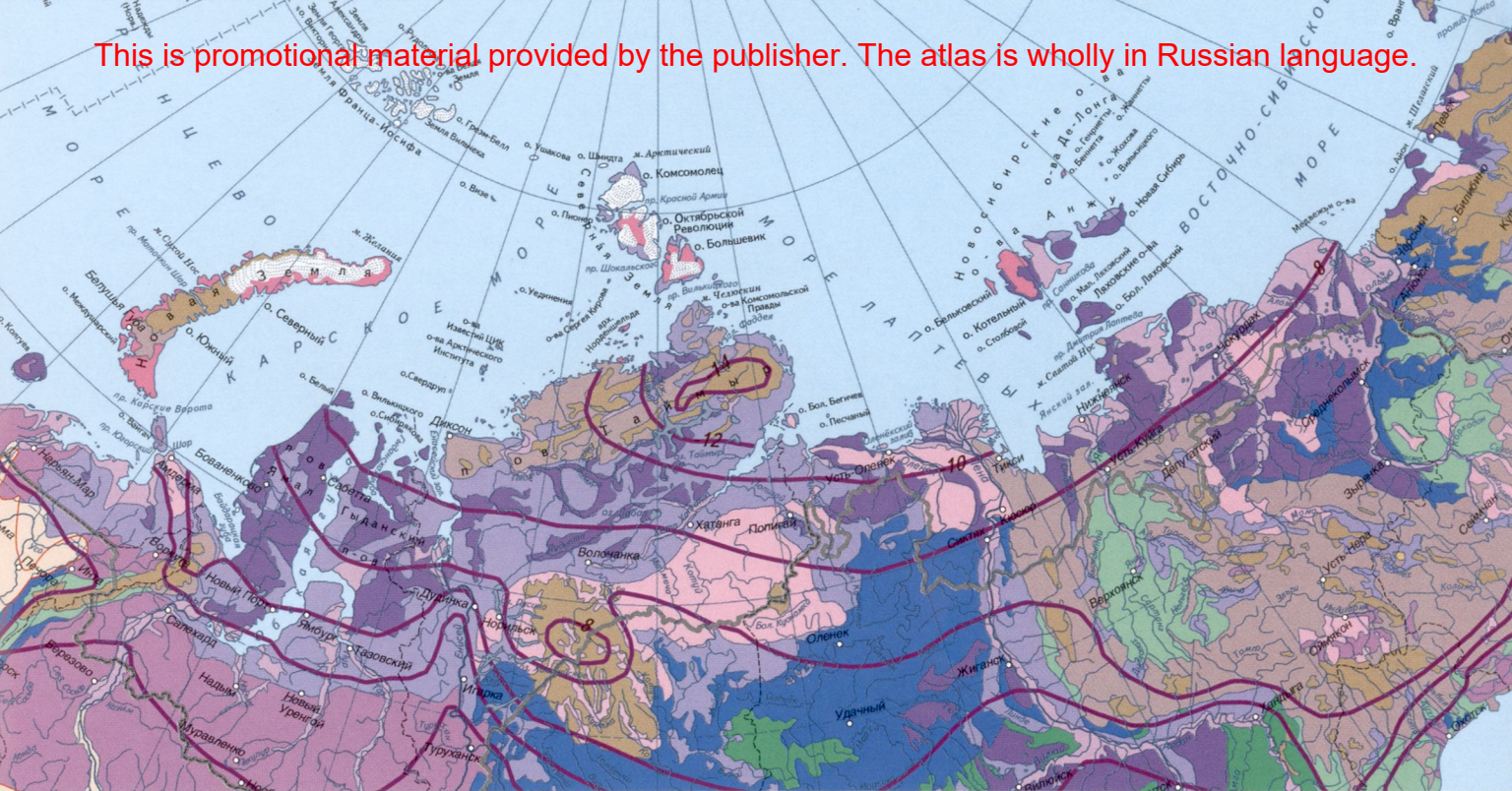


## Coasts of the Sea

The section displays information on morphogenetic and morphodynamic processes occurring on the entire coastline of the Arctic area of the Russian Federation, which makes it possible to use this material in the interests of developing the Arctic coast and the Arctic shelf of the country.







## Snow cover. Glaciers. Permafrost

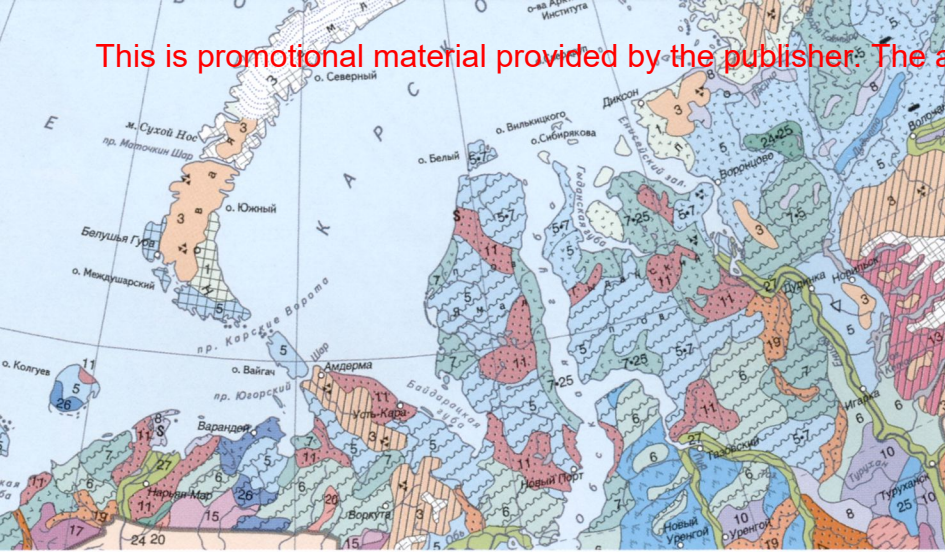
The section contains maps, texts, reference data and illustrations related to the glaciological and snow and ice processes and resources of the Arctic Area of the Russian Federation. Maps and text materials contain data on the duration of the snow period, the dates of their establishment and snow cover, the current state of the ice sheet and glaciers, the distribution and characteristics of frozen rocks, their thickness, average annual temperature, ice content, etc.



## Land Waters

The section contains cartographic, illustrative materials and reference data characterizing the land waters of the Arctic Area of the Russian Federation: a hydrographic network, water basins, dangerous hydrological phenomena and processes, temperature regimes, the ecological state of surface waters and catchments; use of water resources.





## Soil cover

Maps, illustrations and background information of the section reflect the main features of the soil cover of the overland territories of the Arctic regions of Russia

### Почвы

- |    |  |    |  |
|----|--|----|--|
| 1  | Пелозёмы слабообразованные (арктические), в т. ч. глеевые  | 16 | Подзолистые контактно-элювиальные                                    |
| 2  | Петрозёмы  | 17 | Торфяно-подзолисто-глеевые   |
| 3  | Литозёмы (без разделения)                                  | 18 | Подзолы иллювиально-железистые                                       |
| 4  | Литозёмы сухоторфянистые                                   | 19 | Подзолы иллювиально-гумусовые  |
| 5  | Глеезёмы, в т. ч. криотурбированные (тундровые глеевые)    | 20 | Подзолы глеевые, в т. ч. торфяные                                    |
| 6  | Глеезёмы поверхностно-осветлённые (тундровые оподзоленные) | 21 | Светлосёмы, в т. ч. глеевые  |
| 7  | Торфяно-глеезёмы (тундрово-болотные)                       | 22 | Светлосёмы иллювиально-железистые                                    |
| 8  | Криометаморфические, в т. ч. грубогумусовые                | 23 | Рендзины перегонные (перегонно-карбонатные)                          |
| 9  | Криозёмы грубогумусовые (таёжно-мерзлотные)                | 24 | Торфяные олиготрофные (верховых болот)                               |
| 10 | Криозёмы глееватые и глеевые (таёжные глеемерзлотные)      | 25 | Торфяные олиготрофные мерзлотные (болотные мерзлотные)               |
| 11 | Подбурья иллювиально-гумусовые                             | 26 | Торфяные зутрофные и перегонно-глеевые (переходных и низинных болот) |
| 12 | Подбурья сухоторфянистые                                   | 27 | Аллювиальные, в т. ч. оглеенные                                      |
| 13 | Подбурья, преимущественно грубогумусовые                   | 28 | Аллювиальные торфяно-глеевые   |
| 14 | Гранузёмы  | 8  | Маршевые кислые сульфатные   |
| 15 | Глееподзолистые  |    | Почвы горных территорий — аналоги равнинных                          |

### Почвенные комплексы

- Каменно-многоугольные
- Пятнисто-бугорчатые
- Трецинно-полигональные и полигонально-валиковые
- Крупно- и плоскоструйные органогенных почв

### Почвообразующие породы

- Суглинистые и глинистые
- Песчаные и супесчаные
- Песчаные, подстилаемые суглинистыми и глинистыми (двучленные)

### Непочвенные образования

- Щелбищность и завалуненность почв
- Выходы плотных пород, каменные россыпи, петрозёмы (фрагментарно)
- Ледники



## Vegetation and fauna.

The section contains cartographic and textual material, background information and illustrations reflecting the current distribution of arctic flora (lichens, bryophytes, Arctic vascular plants), the northern boundary of the forest cover, the arctic mammals, birds, ichthyofauna, amphibians and reptiles. Information on the protection of vegetation and fauna of the Russian Arctic, including marine game animals and key species of Arctic fauna, dynamics of abundance and distribution of Arctic mammals and birds, as well as issues related to the protection of the bioresources of the seas are posted.







## State of the Environment and Nature Conservation

The section contains information on rare and endangered species of plants, terrestrial and aquatic animals, and nature conservation measures. The materials in this section reflect the dynamics of the anthropogenic load on the components of the environment (atmosphere, terrestrial water, vegetation and soils), sources, levels and fluxes of chemical pollutants in the marine environment, as well as issues of the state of nature conservation in the Arctic area of the Russian Federation as a whole.







**Population. Culture.** The object of mapping the section is the population with social patterns inherent to the territory of the Arctic area of the Russian Federation, properties and relationships. The presented information reflects the current demographic situation, the areas of residence of indigenous small peoples (the location of national settlements, camps), migration of the population. Plots and themes of the maps show the contrast of the development of the region: from the foci of almost primitive economy and stages of different forms of nomadism to modern urban formations. The section maps display phenomena in their dynamics and historical development, which allows for a deeper understanding of the processes taking place and predicting the features of their development.



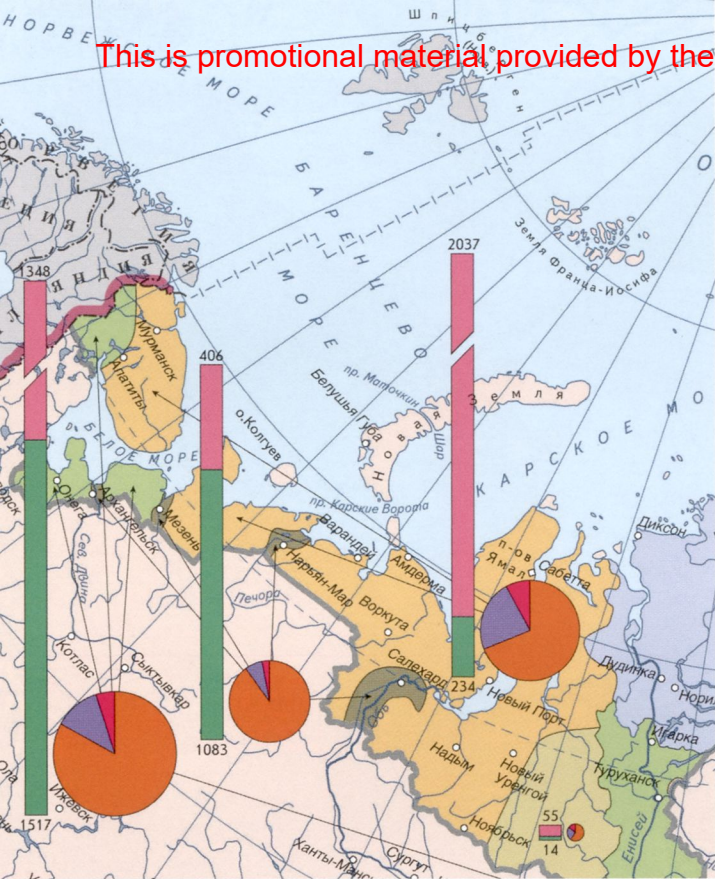




## Cultural, Spiritual and Natural Heritage

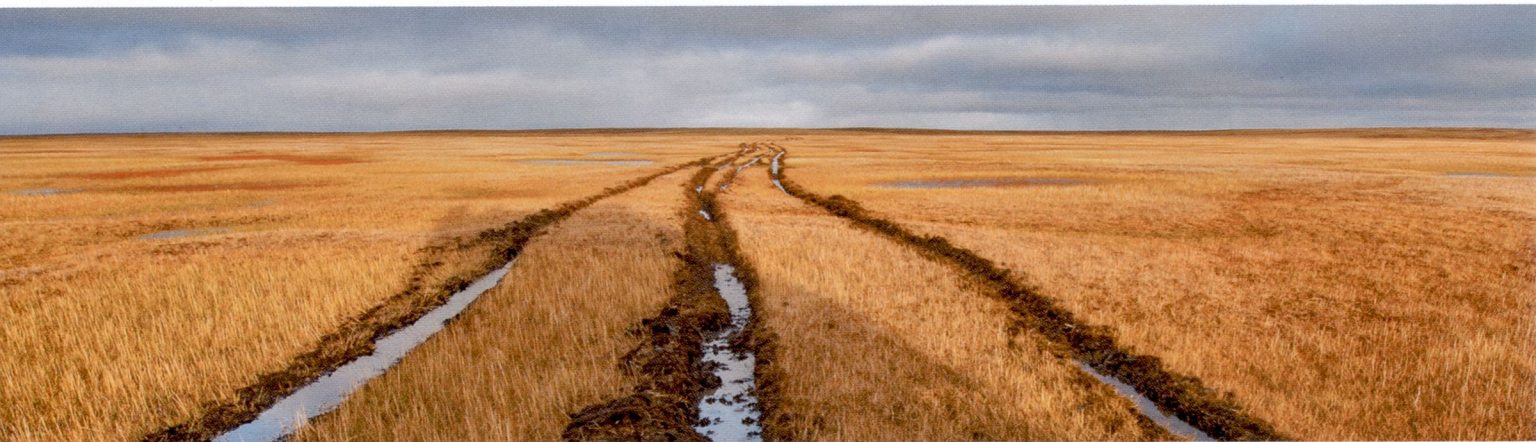
The thematic maps, schemes, photographs and descriptions of historical and cultural heritage presented in the section are directly related to the problems of development of the Arctic area of the Russian Federation, its coast, archipelagos and islands. Areas of concentration and historical significance of objects of cultural and spiritual heritage are shown, their connection with the historical processes taking place in Russia, and the current state of the historical and cultural environment are reflected.





## Economy

The section reflects the current state of the economic development of the Arctic area of the Russian Federation, the existing industrial, industrial, agricultural and transport infrastructure, traditional northern crafts, national enterprises and industries. Cartographic and textual material of the section reveals the main problems of economic development and development of the Russian Arctic and can be used as a factual basis for the scientific substantiation of the strategic planning of the socio-economic development of the Arctic area of the Russian Federation.

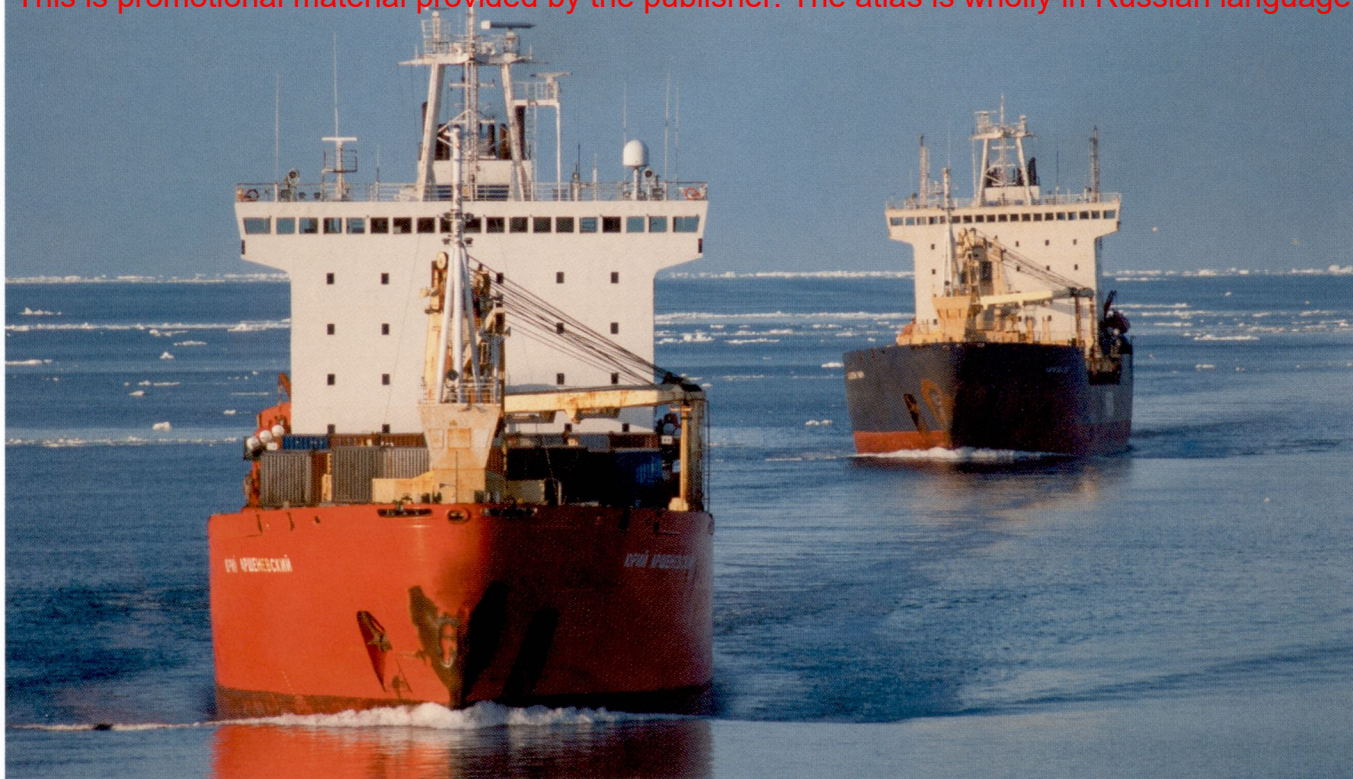


## Land use

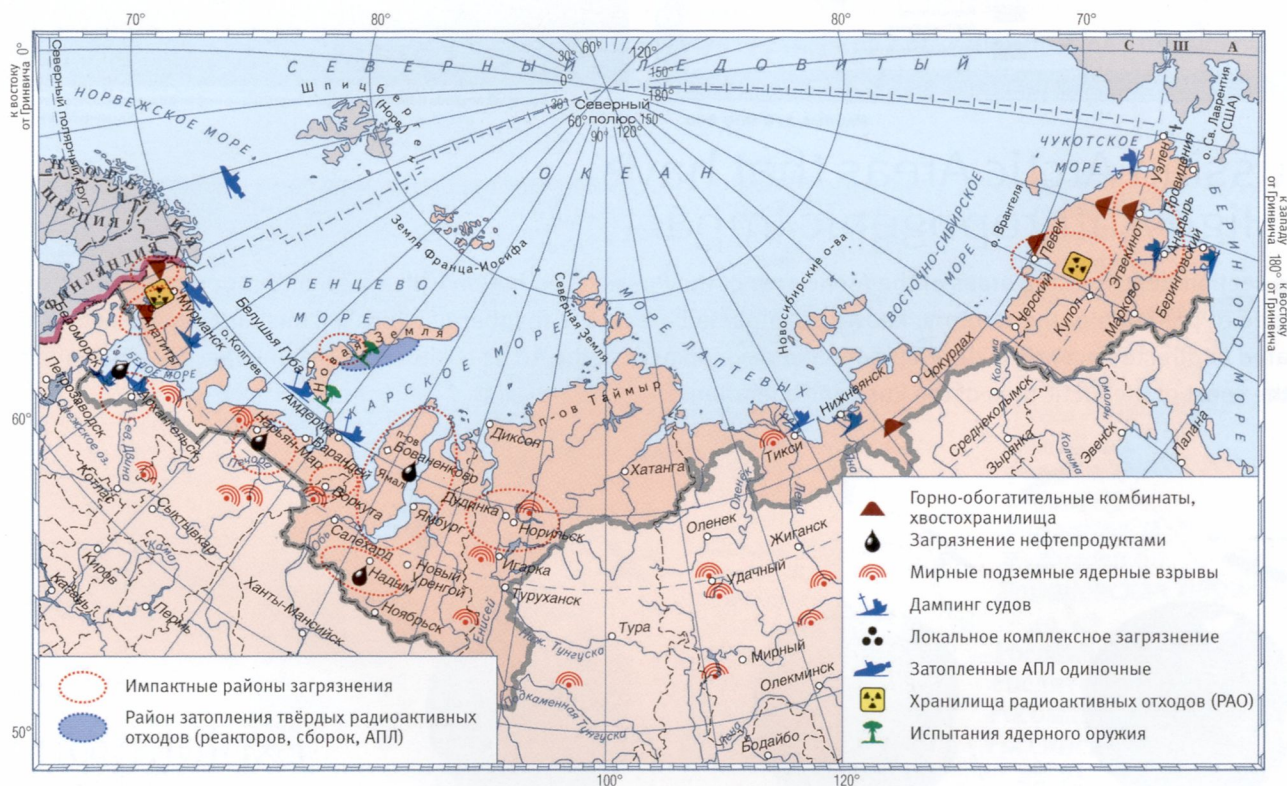
The section shows the current state of use of land resources in the Arctic area of the Russian Federation. The materials in the section characterize the distribution of the land fund by categories of land, land, forms of ownership and ownership. Statistical data on the analysis of the state and dynamics of land use indicators are given.







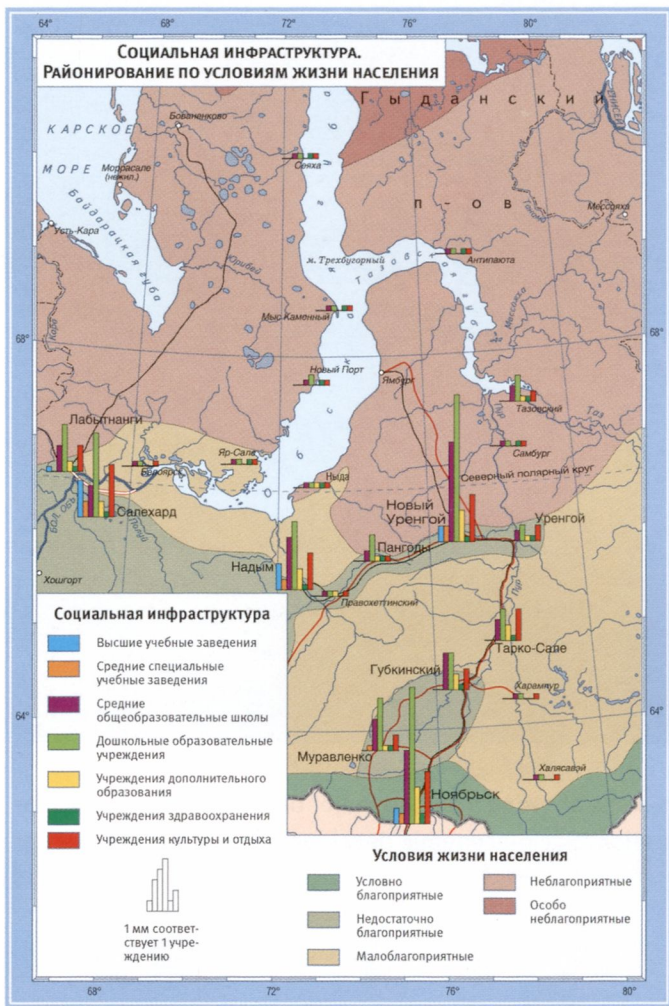
**Strategic planning.** The section contains maps showing selected major objects and measures for the implementation of the State Program of the Russian Federation ‘Socio-economic development of the Arctic area of the Russian Federation for the period until 2020’



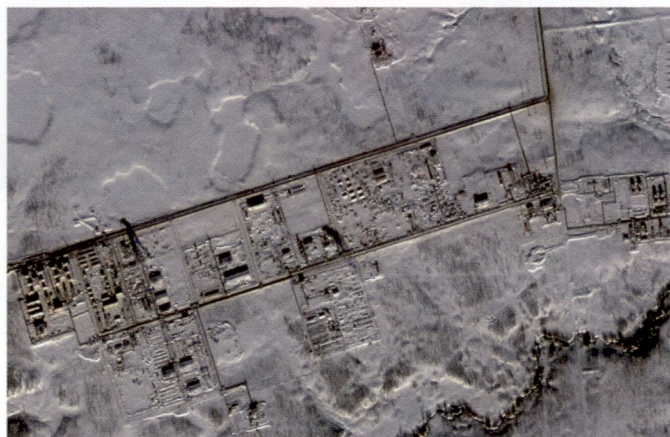
## Ecological Safety. Natural and Technogenic Cause Risks

The Arctic area of the Russian Federation, due to climatic, geocryological, engineering-geological and other natural conditions, has its own specific features, which are reflected in the thematic maps of the Atlas section. An important role in the section belongs to information that reflects the problems of pollution of environmental components in terms of hygienic and biochemical indicators, a comprehensive geo-ecological assessment of the territory, environmental monitoring, environmental policy of federal and regional executive authorities, and local government.





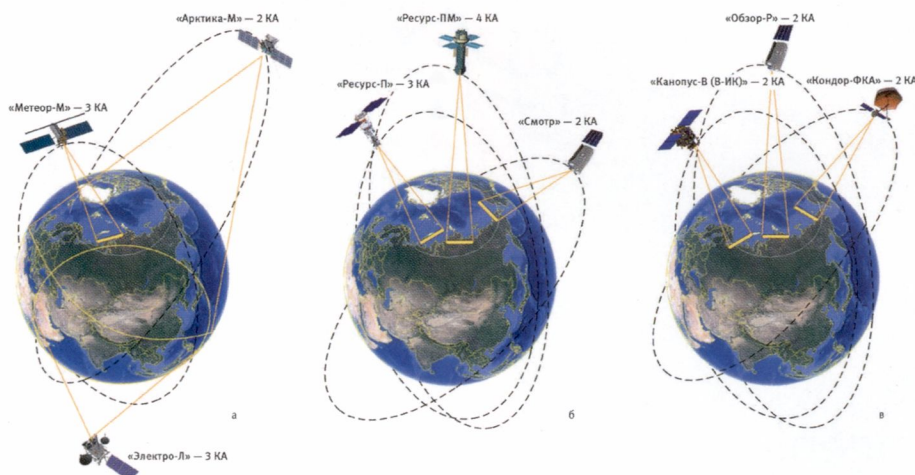
Промышленная скважина добычи газа. Северо-Солённой газоконденсатное месторождение



Вахтовый посёлок Новозаполярный. Заполярное нефтегазоконденсатное месторождение. Космическое изображение

## Russian Arctic Areas that have a High Anthropogenic Impact

This section describes the areas of the Arctic area of the Russian Federation with a high anthropogenic impact and the degree of pollution of the territory, known as impacted areas, the number of which is constantly increasing, which is related to directed economic development and development of the Arctic territories, human impact on Shelf and areas of the coast of the Arctic area of the Russian Federation.



## Arctic Exploration by Space-based Techniques

The section contains unique data that allow one to characterize the retrospective of the formation and development of remote sensing of the Earth in the Arctic region, the coverage of the Arctic area of the Russian Federation with the materials of space imagery obtained by the domestic space vehicles of the Resurs-F, Resurs- DK, Resurs-P, Canopus-V, as well as foreign space remote sensing systems, processing of space images in the areas of complex space monitoring of the Arctic region.





## Arctic as an Area of International Cooperation

The section contains cartographic materials, reference and statistical data reflecting the results of activities aimed at the implementation of Russia's strategic priorities in the Arctic, detailed in paragraph 7 of Section III of the 'Fundamentals of the State Policy of the Russian Federation in the Arctic for the Period to 2020 and Further perspective.



The **Geographical Names Index** contains all the names of geographical objects placed on Atlas maps, formed in the order of the Russian alphabet.

The **Dictionary of Terms** contains the names of special concepts used in the texts of the thematic sections of the Atlas. At the end of the Atlas, a **List of the Sources** used is given.



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