
Abstracts

Problem of Development and Development of Polar and Arctic Territories: the Ural Aspect

V. Litovskiy

Problems of allocation of borders of geographical and economic space of the Ural sector of the Arctic regions are considered in the article. Problems of the academic science in sphere of regional planning and accommodation of the economic infrastructure are also considered. Factors of progressing asymmetry in accommodation of productive forces of the Arctic area of the Ural Federal District and the adjacent territories, fundamental principles of maintenance of biosphere stability for allocation of potential poles of growth are investigated.

Economic Assessment of Status and Prospects of the Development of the Arctic Sea Oil and Gas Resources

V. Pavlenko, I. Panichkin

As for the preliminary assessments, the Arctic Ocean may contain up to one-third of the world undiscovered oil and gas resources. Yet, development of these resources is associated with severe climate conditions, lack of appropriate technologies, significant investments and public concerns about protection of the Arctic environment. This article analyses the current status and prospects of those resources development by the Arctic states.

Energy Development in the Arctic: Challenges and Opportunities of Low-Power Plants

D. Smolentsev

Prospects for economic and energy development in the Arctic are considered. Major energy problems impeding sustainable economic and social development of the region are identified and their solution through the development of low-power plants is proposed. The possibilities of using low-power plants are analyzed and a comparative evaluation of their cost-effectiveness is provided. As concluded, nuclear power plants of low power represent one of the most promising categories of low-power plants to be potentially used in the Arctic.

The Experience of Seismotomographical Investigations of the Soil Condition of RW Treatment and Long-Term Storage Facilities at Saida Bay

*V. Konukhin, N. Abramov,
E. Kabeyev*

The article deals with methodological aspects and gives specific results of seismotomographical control over foundation soil condition while constructing facilities of enhanced responsibility in the West Sector of the Russian Arctic based on the example of construction of Long-Term Storage Facility for 120 reactor compartments of dismantled Nuclear Powered Submarines and Center of Conditioning and Long-Term Storage of Radioactive Waste at Saida Bay.

Parameter Assessment of Human and Natural Capital in Context of Modern Nature Management at the North of Russia

D. Dushkova, A. Yevseyev

The article presents the economic assessment of human health costs from environmental pollution for some regions of the North of Russia based on medical-ecological indicators. The results give the necessary information for anthropogenic dynamic assessment of natural capital. Some parameters of natural and human capital were assessed and assume as a basis for environment-economic substantiation of nature management for sustainable development and rise in living standards and human health.

Environmental Safety and Monitoring of Exploratory Works on Gas in Ob and Taz Bays in 2000-2009

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A. Khistyayev*

The water area of Ob and Taz Bays serves as the only and main place of joint dwelling of all valuable representatives of the fish fauna of Ob-Irtysh basin and provides their survival in dying down time as well as the formation of new generations of fish.

Gasflot and Gazprom began the wide-ranging exploratory works on gas at the water areas of Ob and Taz Bays in 2000. They have been carried out on Kamennomysky, Obsky, Chugorjahinsky, Semakovsky (Aderpajutinsky), Antipajutinsky and Tota-Yahincom license areas and proceeded till 2009. Now there are 26 drilled explorative wells in total. The key aspect under carrying out the prospective drilling was the ensuring of works safe for the environmental.

Publication
of Book Series
“Contribution of Russia
to the IPY 2007/08”

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As a sum of main scientific results of IPY 2007/08 the book series “Contribution of Russia to International Polar Year 2007/08” was issued. The series includes 7 books: “Polar Atmosphere”, “Oceanography and Marine Ice”, “Polar Cryosphere and Land Waters”, “Structure and Evolution of the Lithosphere”, “Land and Marine Ecosystems”, “Problems of Public Health Service and Social Development of Russia Arctic” and as a summary – “Main Results of IPY 2007/2008 and Future Plans of Russian Polar Researches”.

The series contains papers that describe results have achieved by more than 80 Russian science organizations involved in IPY activities. All papers have summaries in English language.

Contamination
of Soil and Vegetation
with Polycyclic Aromatic
Hydrocarbons
in the Vicinity
of Barentsburg Coal Mine

*B. Demin, A. Grayevsky,
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Studies of the contamination levels of soil and vegetation with polycyclic aromatic hydrocarbons (PAHs) in the vicinity of the Barentsburg settlement and coal mine, implemented in the North-West branch of Typhoon SPA in the period 2002–2010 revealed a particular spatial and temporal variability in the levels of their content in the typical representatives of arctic plants - mosses and vascular plants. It was shown, that the most sensitive indicator of the aerosol air pollution by PAHs is a community of mosses, having a high developed surface of the leaves, and a year-round growing season.

Main sources of PAHs intake in the environment were identified and the contribution of the emissions of power plant to the contamination of soil and vegetation were assessed, the area of direct industrial impact of the settlement infrastructure was proved. Based on the analysis of the actual situation in the region it was shown that the existing network of background stations covered only part of this area, recommendations to optimize this background monitoring network were made.

Perspective Directions
and Challenges
of the Arctic Transport
System of Russia
Development in XXI
Century

V. Polovinkin, A. Fomichev

Now the Arctic becomes the most important guarantor of sustainable development of the Russian Federation in the XXI century. The real contribution of the Russian North to economy of our state will be in many respects defined by scales and rates of the unique Arctic transport system development. It is necessary to increase the commercial and research navigation, develop transport hubs and corridors, polar aviation, passenger-and-freight transpolar and cross polar transportation.