

Аннотации статей на английском языке

RISKS OF MAN-NATURE INTERACTION

Yu.I. Sokolov, All-Russian Scientific Research Institute for Civil Defense and Emergency Management, Moscow

Annotation. The article deals with the issues of the man-nature interaction, both globally and in the Russian Federation.

Keywords: environment, Anthropocene, anthropocentric worldview, environment studies, environmental risk, environmental safety, environmental disasters, accumulated environmental damage.

RISK OF DISTURBED AND CONTAMINATED SOILS OF THE ISLAND BELY (KARA SEA)

V.N. Bashkin, A.O. Alekseev, Institute of Physicochemical and Biological Problems of Soil Science RAS, Moscow region, Pushchino

R.V. Galiulin, R.A. Galiulina, Institute of Basic Biological Problems RAS, Moscow region, Pushchino

A.K. Arabsky, Gazprom Dobycha Yamburg LLC, Yamalo-Nenets Autonomous Okrug, Novy Urengoy

Annotation. Existence of the disturbed and contaminated soils on the island Bely (Kara Sea), as a result of long functioning of polar infrastructure is established. The problem of risk of the disturbed and contaminated soils is solved by their recultivation with use of peat and received from its potassium humate as growth and development factor of plants. The possibility of the similar recultivation of soils which is carried out taking into account their full moisture capacity was estimated in the conditions of in vitro experiment by means of the biochemical analysis. Such methodological approach allows promptitude to obtain necessary information for carrying out large-scale in situ of recultivation of soils.

Keywords: disturbed and in situ large-scale recultivation of soils, full moisture capacity, recultivation, peat, potassium humate, biochemical analysis.

RISK OF DISTURBED SOILS OF THE TAZ PENINSULA (YAMALO-NENETS AUTONOMOUS OKRUG)

A.K. Arabsky, Gazprom Dobycha Yamburg LLC, Yamalo-Nenets Autonomous Okrug, Novy Urengoy

V.N. Bashkin, Institute of Physicochemical and Biological Problems of Soil Science RAS, Moscow region, Pushchino

R.V. Galiulin, R.A. Galiulina, Institute of Basic Biological Problems RAS, Moscow region, Pushchino

Annotation. Risk of the disturbed tundra soils of the Taz Peninsula (Yamalo-Nenets Autonomous Okrug) around productive activity of Gazprom Dobycha Yamburg LLC is estimated. The problem of risk of the disturbed soils is solved by their recultivation with use of peat and determination of efficiency of this process by means of the biochemical analysis of soils.

Keywords: disturbed soil, risk, recultivation, peat, biochemical analysis.

STATE OF THE ENVIRONMENT AND RISKS TO HEALTH OF THE POPULATION (ON THE EXAMPLE OF A SMALL CITY OF MOSCOW REGION PUSHINO)

V.V. Snakin, Institute of Fundamental Problems of Biology of RAS, Pushchino, Lomonosov Moscow State University, Moscow

A.A. Prisyazhnaya, Institute of Fundamental Problems of Biology of RAS, Pushchino

N.I. Kosyakova, Hospital of Pushchino of RAS, Pushchino

G.V. Mitenko, Institute of Fundamental Problems of Biology of RAS, Pushchino

Annotation. The attempt to estimate risk degree to health of the population bound to ecological parameters of the environment for lack of significant industrial loads on the example of the town is made. The ecological state was determined by bioindicators (morphosis of wood vegetation, the fluctuating asymmetry of leaves, change of biological activity of the soil in city conditions) and by physical and chemical parameters (pollution of soils by heavy metals, a transport load and air pollution, tension of the geomagnetic field). Health of the population was estimated on diseases of acute respiratory infections, pneumonia, angina, asthma, allergic rhinitis and atopic dermatitis. The correlation between integrated assessment of an ecological condition and health of the population at the level of residential districts of the city was significative (the coefficient of correlation is 0,65), demonstrating that health of the person should consider existence of risk from influence of the environment even in the conditions of low anthropogenous loads.

Keywords: quality of the environment, dichotomy of plants, the fluctuating asymmetry, biological activity of the soil, heavy metals, transport loading, the geomagnetic field, environmental risk, population health, risk to health of the population.

GEOECOLOGY AND GEOPOLITICS IN THE ARCTIC: ECOLOGICAL AND POLITICAL RISKS

O. P. Trubitsina, Northern (Arctic) Federal University, Arkhangelsk

V. N. Bashkin, FSIS Institute of Physicochemical and Biological Problems in Soil Science RAS, OOO "Gazprom VNIIGAZ", Moscow region, Razvilka

Annotation. The article is devoted to the issues of geoecology and geopolitics in the Arctic. The authors reveal the importance of the combined accounting of geo-environmental (GER) and geopolitical (GPR) risks in the industrial development of the Arctic territory. Special attention is paid to the ratings of the risks of the oil and gas industry in 2009—2015 with a focus on the key issues, the transformation of risks into opportunities and the importance of the relationship and interaction of the GER and GPR for strategy management, planning and development business in the Arctic region.

Keywords: geo-environmental risk, geopolitical risk, geoecology, geopolitics, rating, oil and gas industry, the Arctic.

THE APPROACH TO ASSESSING THE RISKS OF NATURAL HAZARDS IN ECONOMIC MARINE SYSTEMS

V. V. Kulygin, Institute of Arid Zones Southern Scientific Center of Russian Academy of Sciences, Rostov-on-Don

Annotation. The paper discusses the basic concepts and principles of representation of geographic information on hazardous natural processes in the economic marine systems. Scenario approach to assess the risks, which taking into account the climate change affecting the probability of hazards, and the time component of vulnerability, are proposed. This approach also allows explicitly compares different strategies of economic activity. The main types of spatial objects constituting geomodel of economic marine systems are considered.

Keywords: natural hazards, marine and coastal economic activities, risks, vulnerability

ENVIRONMENTAL RATING AS AN INCENTIVE TO REDUCE GEOENVIRONMENTAL RISK OF RUSSIAN OIL AND GAS COMPANIES OPERATING IN THE ARCTIC

O. P. Trubitsina, Northern (Arctic) Federal University, Arkhangelsk

V. N. Bashkin, OOO "Gazprom VNIIGAZ", FSIS Institute of physicochemical and Biological Problems in Soil Science RAS, Moscow region, Pushchino

Annotation. The article is devoted to the issues of environmental ratings an incentive to reduce geoenvironmental risk of oil and gas companies, operating in the Arctic. The authors disclose the need of environmental rating using for oil and gas industry in Russia. Particular attention is given to the issues of rating results of Environmental Responsibility of Oil and Gas companies in Russia that was first held in 2014 and then in 2015. It was conducted by the cooperative initiative by CREON Group and WWF Russia with participation of National Rating Agency. The authors have selected from all Russian oil and gas companies only those who operating in the Arctic region and they have analyzed them. The rating's results show that there are «top three» among Russian oil and gas companies, operating in the Arctic. They are Gazprom, Sakhalin Energy (Sakhalin-2) and Zarubezhneft. There are also different companies in rating's sectors. For instance, the best position of section «Environmental impact» belong to Gazprom, Zarubezhneft, LUKOIL. In whole, the environmental rating of Russian oil and gas companies, operating in the Arctic, can be an incentive to reduce here geoecological risks, and to create a new mechanism to inform foreign investors that can contribute to the growth of foreign direct investment in Russia and environmental safety in the Arctic.

Keywords: geoenvironmental risk, environmental rating, oil and gas industry, the Arctic.

TECHNOLOGY OF EMERGENCIES RISK MANAGEMENT ON THE OBJECTS OF YAMBURG GAS FIELD CAUSED BY THE IMPACT FORCES OF FROST HEAVING ON PILING FOUNDATIONS

A. K. Arabskiy, O. B. Arno, Sh. G. Baltabaev, E. P. Serebryakov, Gazprom Dobycha Yamburg LLC, YNAD, Novy Urengoy

M. S. Lebedev, Gazprom Transgaz Stavropol LLC, Stavropol

E. T. Lebedeva, North-Caucasian Federal University, Stavropol

Annotation. In the operation of gas facilities in the zone of continuous distribution of permafrost there is a risk of development of negative geocryological processes and phenomena. One of them is cryogenic heaving of soils, which is manifested in the form of mounds heaving and frost cracking, leading to deformations and displacements of pile foundations. Control and management of this process includes geotechnical monitoring of bases and foundations with a forced discharge of grounds strain, which virtually eliminates the risk of accidents.

Keywords: frost soil heaving, the water-bearing horizon over permafrost, soil heaving hillock, ice wedge, water lowering wells, regime geotemperature measurements, zonal hydrodynamic model.