

Radioecological Problems in the Forests of Russia

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The article summarizes the research results of the Department of Forest Radiation Ecology and Ecotoxicology of VNIILM since its inception. A brief description of the occurrence of the radioactive contamination problem of Russian forests is given. Lists the main radiation accidents. It is noted that most of the radiation accidents and incidents are “rural” in nature and lead to pollution of natural landscapes, including forests.

Radiation-related information is required for rehabilitation activities in polluted forests. The source of such information is radiation monitoring of forests (RMF). At present, in the late stage of radiation accidents, RMF faces new challenges in monitoring the results of chronic exposure of forest ecosystems.

The article describes the problem of forest fires in areas of radioactive contamination. It is shown that all forest fires in areas with a density of radioactive soil contamination with cesium-137 37 kBq/m^2 (1 Ci/km^2) or more can be classified as radioactive forest fires.

Reforestation and afforestation in radioactively contaminated areas is considered an important part of countermeasures. They allow you to manage the natural processes of restoration of forest vegetation, directing them to solving the problems of rehabilitation of contaminated areas.

The article discusses a number of problems associated with chronic irradiation of forest ecosystems. Their insufficient knowledge is noted. The possibility of multidirectional effects of ionizing radiation on components of forest biota and significant modification of their biological stability is indicated. The results of studies of the reactions of various types of forest

flora and fauna to existence under the conditions of exposure to chronic and acute irradiations confirm this conclusion. The obtained results allow us to identify a new direction of forest radioecology, which studies the effect of radioactive contamination and ionizing radiation on the sanitary condition of forest ecosystems and the development of pathogenic foci – radiation forest pathology.

The article emphasizes the need for in-depth comprehensive research involving specialists from various fields of knowledge.