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# Accidents with oil releases in Russia: impact of natural hazards

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Russia ranks second after the United States by the length of pipelines. Pipeline ruptures accompanying by oil releases have the most severe effects for environment and large economic losses. About 50-60 thousands of accidents are registered in the RF on average per year; in Western Siberia alone about 35 thousands of events of oil pipeline ruptures happen. Irretrievable losses of oil come to 17-20 million ton per year. The geographical distribution of technological accidents in pipeline transportation within Russian federal regions and the main causes of these accidents are analyzed. Pipeline ruptures are more frequent in Khanti-Mansisk AO, Bashkortostan Republic, Samarskaya oblast, and Permskii Territory. The great part of Russian oil pipelines was built in 1960-1980th; coefficient of wear of capital assets in pipeline transportation exceeds now 70 percent. A very high level of pipeline deterioration due to internal and external corrosion and a “human factor” (accidental and deliberate damage to pipelines and operational error) serves as the main causes of these disasters. Among natural factors landslides and slumps, heavy rainfalls and floods, erosion and channel processes, earthquakes, thermokarst, and frost heaving are more significant. In May 1995 Neftegorsk earthquake caused about 200 oil pipeline ruptures in the north part of Sakhalin Island. About 300 km of main oil pipeline and more than 100 km of gathering lines were destroyed. Oil spill was estimated at tens of thousands of tons. Nature has suffered severe damage. Geocryological hazards are very frequent in Western Siberia and Komi Republik. The monitoring of natural hazards along the pipelines as well as information gathering and analyzing needs to be done to prevent such accidents.