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Insect Mass Outbreak Dynamics Analysis Based on Monitoring Data in Voronezh region Forests

Nikolay I. Lyamtsev[1]
Candidate of Biological Sciences

Abstract. *Long term (1963–2022) outbreak area dynamics analysis findings of 8 most harmful needle and leaf-eating insects in Voronezh region forests are presented. At relatively small outbreak area on average annually they cover significant part of (13,9 %) forests: needle-eating pests – 2,9 %, leaf-eating – 4,8 %, other insects – 2,0 %, diseases – 4,2 %.*

Pine moth, geometer moth and noctuid moth are especially dangerous and its mass outbreaks result in not only forest decline but mortality of severely affected forests as well. Maximum annual outbreak area over monitoring period is: pine moth – 22 075 ha, geometer moth – 29 763 ha, noctuid moth – 6 785 ha, red pine sawfly – 17 917 ha, common pine sawfly – 14127 ha, oak leaf roller – 116 755 ha, gypsy moth – 47 155 ha, brown-tail moth – 39 360 ha.

Outbreak area over the years varied greatly. Insect mass outbreak intensity and rate decrease in Voronezh region forests has been observed. Stable outbreak area decrease trend has been identified for all pest species especially intensive after 2000. We regard the outbreak dynamic trend qualitative assessment presented by us as preliminary because outbreak area estimation has a rather sufficient subjective component. Annual insect population records as well as its analysis are needed to raise assessments accuracy.

Key words: *defoliator insects, oak and pine forest pests, long-term outbreak area data sets, forest pathology monitoring.*

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[1] Russian Research Institute of Silviculture and Mechanization of Forestry, Head of the Forest Protection Department – Center for Priority Biotechnologies in Forest Protection, Senior Researcher (Pushkino, Moscow region, Russian Federation), lyamtsev@vniilm.ru