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Drying Out of Pine Forests and the Role of the *Ips acuminatus*

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Abstract. *The results of the analysis of published materials on the causes of violation of the stability of pine forests, the conditions for the occurrence of their mass drying, the role of the crown beetle (Ips acuminatus Gyll.) and the trends in the distribution of its foci are presented.*

On the example of the south-west of the Bryansk region, the long-term dynamics of the average air temperature and precipitation is analyzed. It is shown that drought events for six consecutive years (2014–2019) were record-breaking since 1966. Air temperature for the period from 1950 to 2020 increased by almost 2.5 degrees, which indicates a significant warming of the climate. This contributed to the weakening of pine forest stands, the development of two full generations of the apex bark beetle annually and the intensive growth of its numbers.

An analysis of the dynamics of the areas of foci of the Ips acuminatus showed that in Russia they had a significantly more local character, in contrast to the Republic of Belarus and other European countries, where their area was more than 100 thousand hectares. It is shown that the intensity of drying out is determined by the level of bark beetle abundance and the degree of weakening of plantations. With the complex impact of negative factors on forest stands, the apical bark beetle damages not only weakened, but also viable trees, its foci spread rapidly, and the drying out of pine forests takes on an acute form. The main reasons for the formation of Ips acuminatus foci and the weakening of pine forest stands are droughts, violation of the hydrological regime of soils (lowering groundwater levels), root rot damage, and the creation of high-density pine monocultures.

Key words: *drying out of pine forests, climate change, Ips acuminatus, distribution of outbreaks.*

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