Original article

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Regional Zoning Factors of Dark Coniferous Resilience to Drought Impacts (Moscow Region)

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Abstract. *Bark beetle and other stem pest mass outbreak intensity is growing. In cases of limited management activities in Moscow region protection forests there is a buildup of overmature woods, windfall and windbreak resulting in stem pest population growth and its outbreak shaping. The situation is complicated by drought frequency and period growth. The earlier study results found that spruce wood resistance sufficiently depend on soil moisture availability, In case of droughts soil moisture can be balanced by groundwater.*

There fore area zoning by groundwater depth determine dark coniferous forest drought resistance zones layout. This model was tested in Moscow region territory. Spruce wood territory resilience zoning was based on sanitary cut reporting data. Areas with over 80% of sanitary cuts were referred to dark forest low resilience zone. In mean resilience zone sanitary cut varies from 10 to 20% of its area and in high resistance zone – under 10%.

The studies found that in periodic drought occurrence conditions spruce wood high resilience in Moscow region territory is at groundwater depth level from 1 m to 6 m, low stand resilience is observed at depth level s over 6 m. In Moscow region territory low spruce wood drought resilience prevails which in fact requires forest management system adjustments with introduction of tree species more resistant to drought impacts.

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