Improving the monitoring system towards early detection and prediction of the Siberian moth outbreaks in Eastern Siberia

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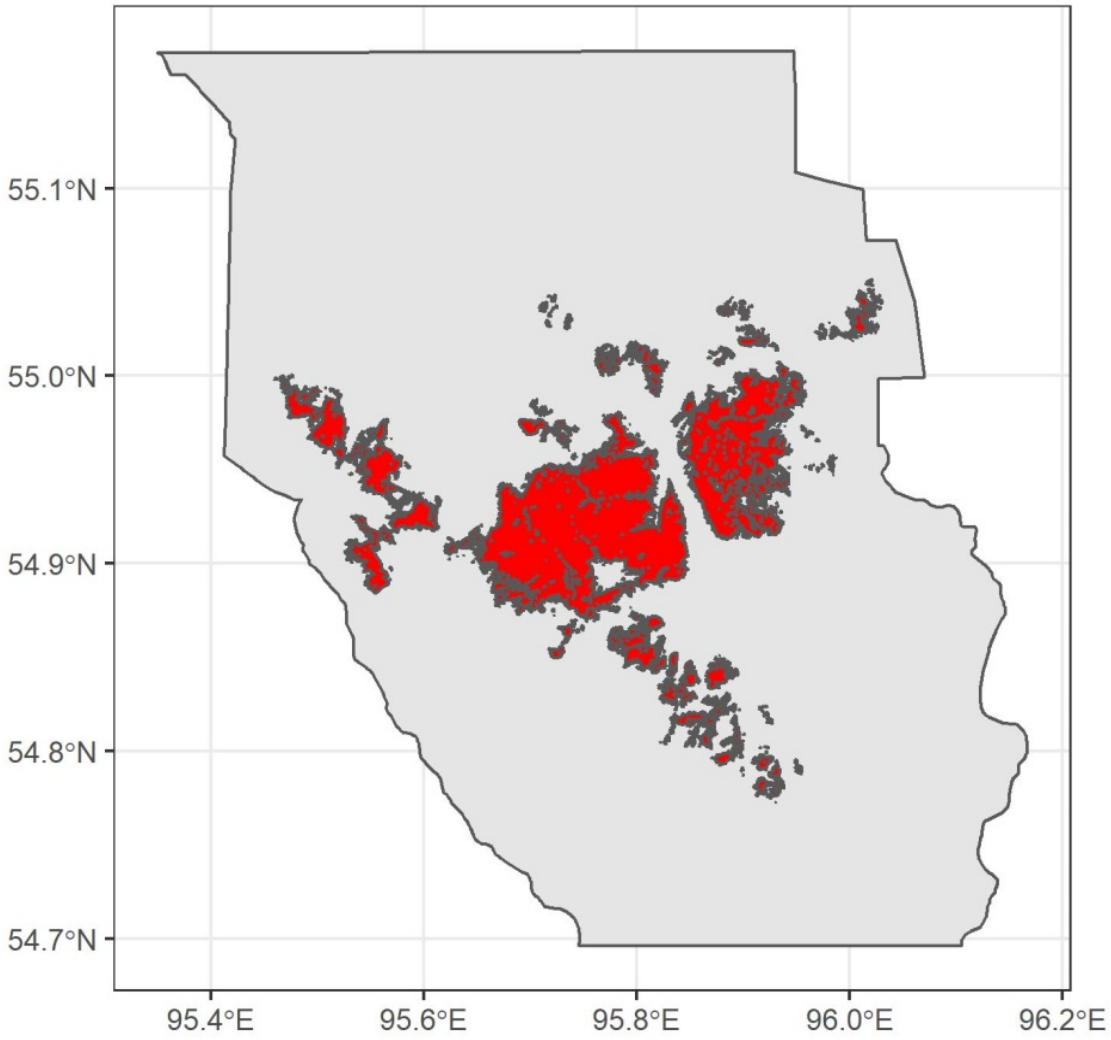
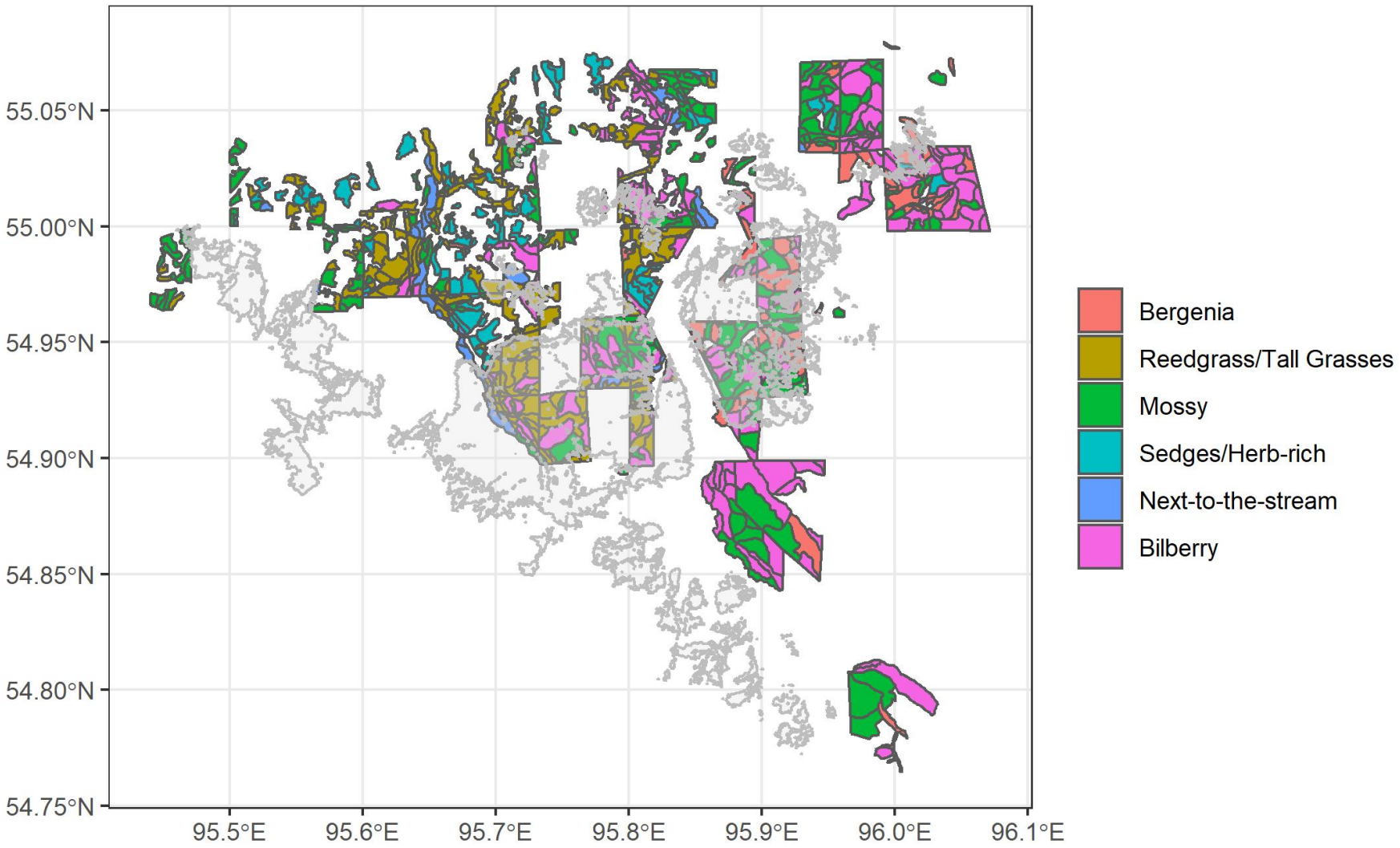
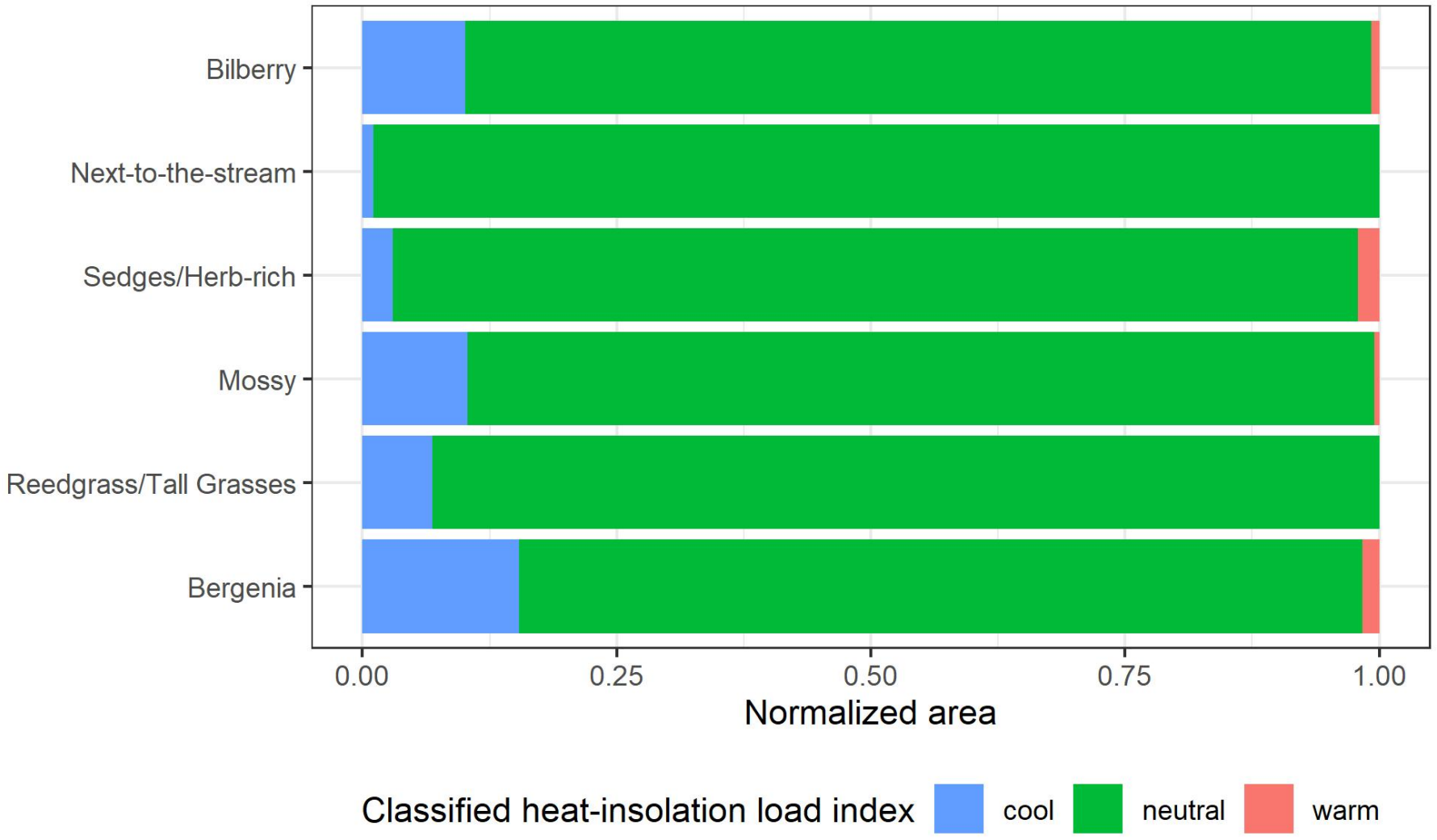


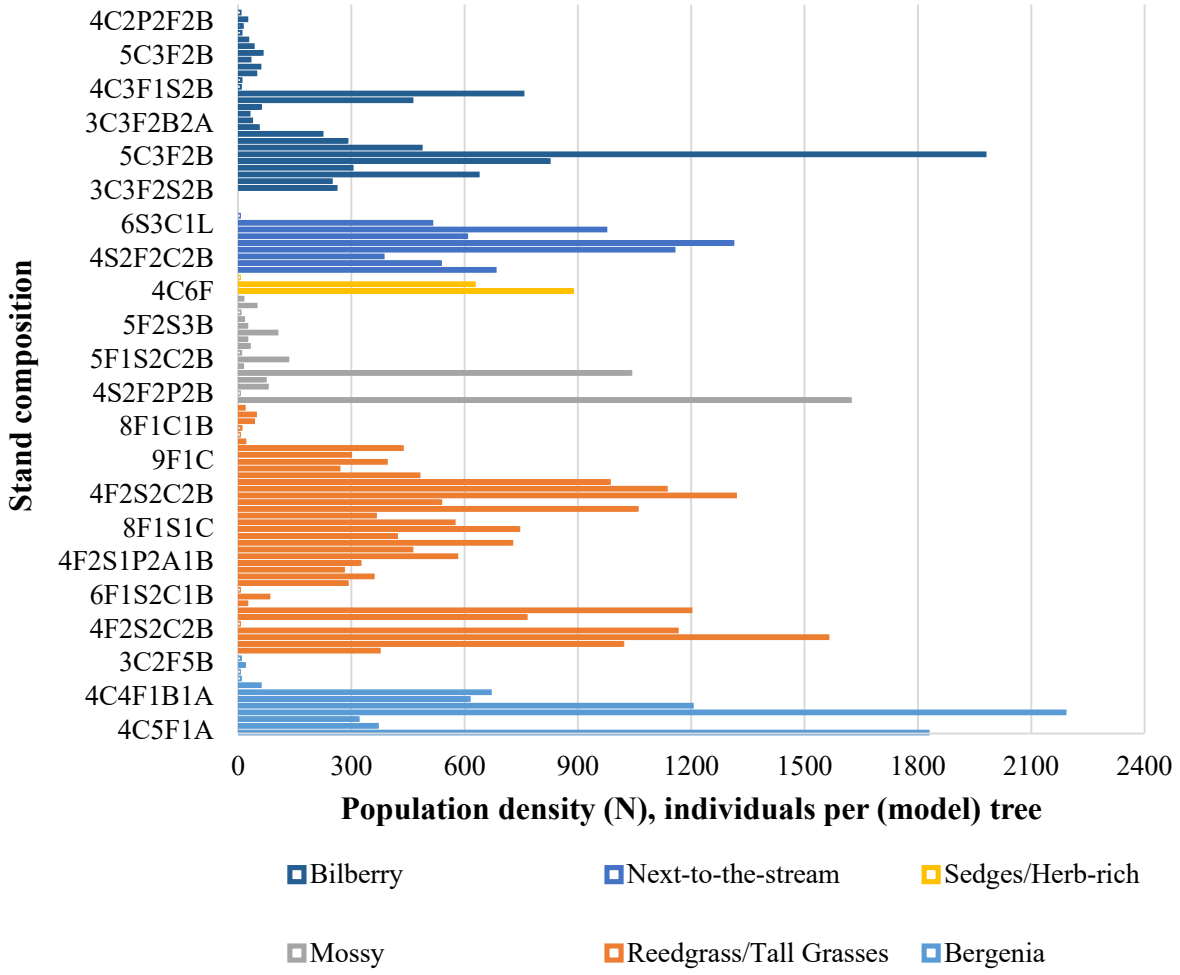
Study area of dark-coniferous taiga damaged by the Siberian moth (Eastern Siberia, Krasnoyarsk Krai, South Siberia Mountain Forest Zone, Altay-Sayan Mountain Taiga Province. Red shows the areas of forest stands damaged by the pest (defoliation of 50% or more) on a 09.09.2019.



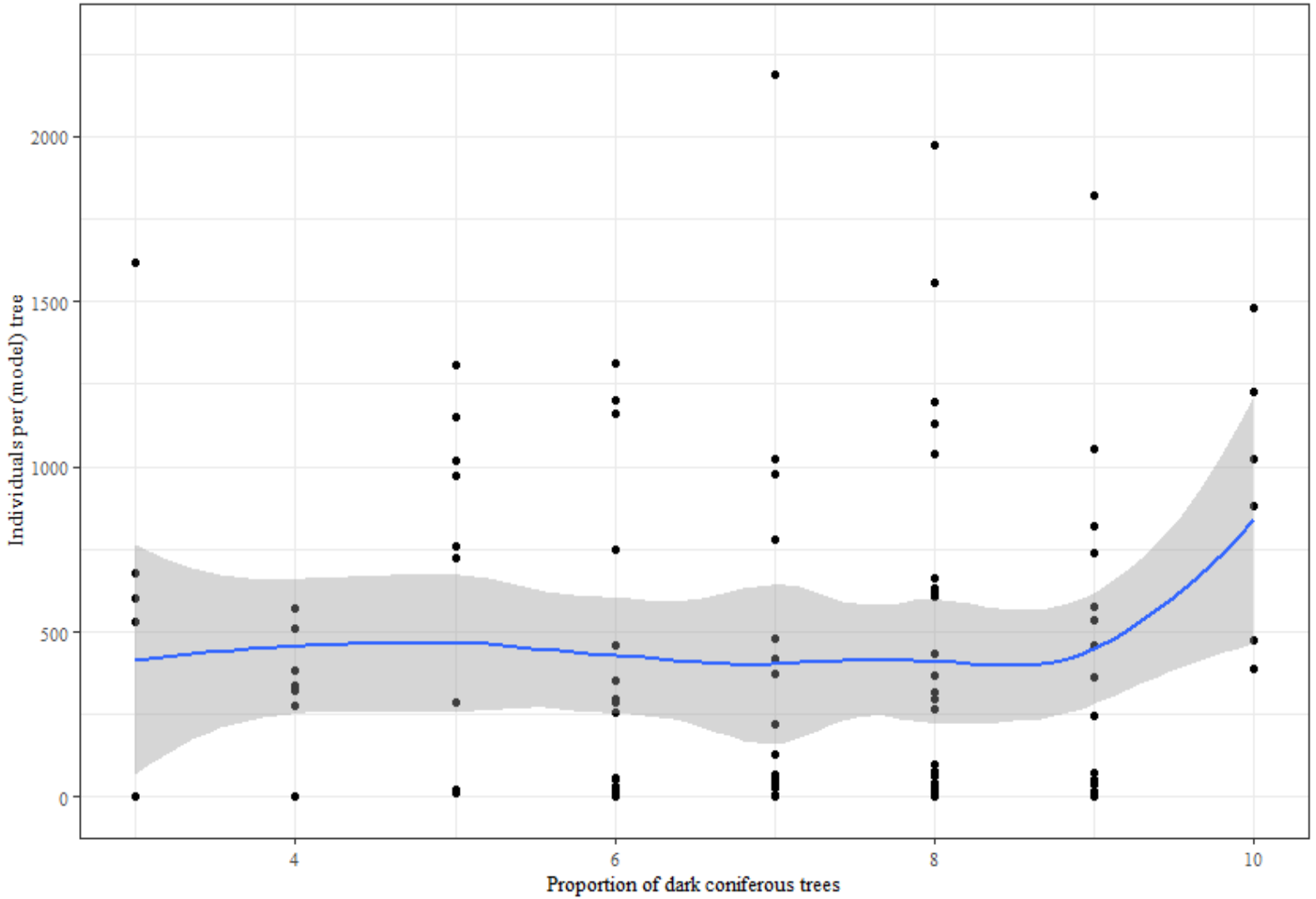
Spatial distribution of forest types within the damaged dark-coniferous stands.



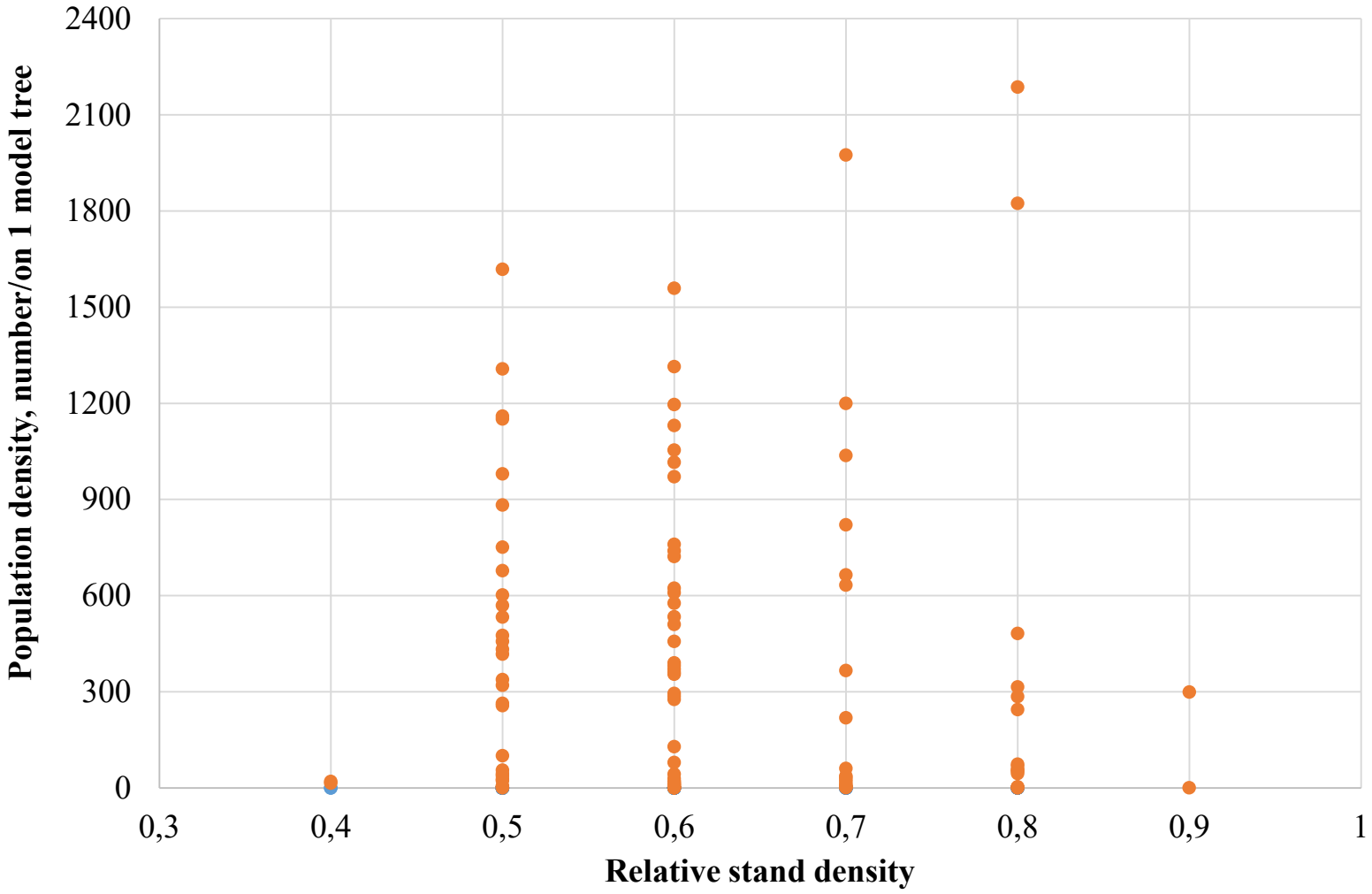
Stands distribution by forest types depending on solar radiation on sloping surfaces.



The Siberian moth population density (N) depending on forest type and stand species composition: tree species – Siberian pine (C) (*Pinus sibirica*), Pine (P) (*Pinus sylvestris*), Fir (F) (*Abies sibirica*), Spruce (S) (*Picea obovata*), Larch (L) (*Larix sibirica*), Birch (B) (*Betula pendula*), Aspen (A) (*Populus tremula*); 1,2, 3...8,9 – numbers show the share of the species in the total timber stock (e.g. 2=20%).



Correlation between the Siberian moth abundance and the proportion of dark-coniferous species (*Pinus sibirica* and *Abies sibirica*) in the stand species composition.



Correlation between the relative density of forest stands and the Siberian moth population density.