

Simulation study of the vegetation structure and function in eastern Siberian larch forests under changing climate

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Siberian larch forest covers is the largest coniferous forest region in the world; in this vast region, larch often form pure of nearly stands, regenerated by recurrent fire. This region is characterized by a short and dry growing season. With its huge area and vast potential carbon pool within the biomass and soil, Siberian larch forest likely plays a major role in the global carbon balance.

In this study, we refine the parameterization of the Spatially Explicit Individual-Based DGVM (SEIB-DGVM) (Sato et al., 2007, 2010) to the larch forest at Eastern Siberia. Unlike models those are employed by previous studies, SEIB-DGVM is based on individual trees, and thus it can analyze interactions between forest size structure (tree density and mean tree size) and ecosystem material cycles. With this model, we examined the impact of changes in climatic factors and parameters of plant-population dynamics on structures and ecological functions at Eastern Siberia.

Sato, H., Itoh, A., & Kohyama, T. (2007) SEIB-DGVM: A new dynamic global vegetation model using a spatially explicit individual-based approach, *Ecol. Model.*, 200, 279-307.

Sato, H., Kobayashi, H., & Delbart, N. (2010) Simulation study of the vegetation structure and function in eastern Siberian larch forests using the individual-based vegetation model SEIB-DGVM, *For. Ecol. Manage.*, 259, 301-311.

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