



## **The Structure of Prokaryotic Complexes of the Podzol Soil Chronosequence on Coastal Bars of Ladoga Lake, Russian Federation**

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Soil chronosequences are convenient and widely used models for the study of soil ecogenesis as well as the concurrent evolution of its microbiome. This work is the first study of the interrelation of the main soil-forming process in the taiga zone – podsolization, and the succession of the microbial community with the special reference to the diversity and composition of the soil prokaryotic complex. The objects were the whole profiles of Podzols formed 70, 135, 455 and 1590 years ago on the coastal bars of the Ladoga Lake transgression – the classical model of podzol soils evolution on sandy bedrock.

Both the age and the specific physicochemical conditions of the certain genetic horizons influenced the microbiome composition. The diversity of the microbiomes of mineral horizons was generally higher than that of the organic horizons, relatively high acidity caused the sharp decrease in the biodiversity in podzolic horizons. Microbiomes of organic horizons were characterized by the domination of rhizospheric proteobacteria (Betaproteobacteria) and Gammaproteobacteria lineages. In the mineral horizons (especially BFG<sub>1,2</sub>-horizons) the abundance of representatives of Deltaproteobacteria and Acidobacteria (more oligotrophic lineages) as well as the number and diversity of archaea (G-horizons) increased.

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