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Seasonally frozen layer in natural and drained peatlands at the South of West Siberia, Russia

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The temperature regime of soils in natural and drained peatlands at Bakchar bog located in the South Taiga zone of West Siberia is studied. Soil temperature for depths up to 320 cm was registered using autonomous temperature profile recorder during the period from August 2010 to September 2016. Maximal and minimal temperatures were registered at surface in July and February, consequently. Extreme soil temperatures at 320 cm depth shifts to December (maximum) and July (minimum) reducing absolute values. Annual peat soil temperature amplitude decrease with depth from 21,8 °C on surface to 1,1 °C at 320 cm. The analysis of daily, month and annual mean data of temperature in peat soil has shown that seasonally frozen layer was registered up to 20-60 cm depth. The duration of seasonally freeze layer existence varies from 130 to 180 days. Drained peatlands with the lowest water table have highest freeze depth. Soil at water-logged sedge-sphagnum fen in winter is warmer than soil in ryam ecosystem and mineral soil at upland. Maximal freezing depth in peatlands is up to 3 times lower than at drain areas.