

Реконструкция развития болотной экосистемы в условиях городской среды по данным комплексного палеоэкологического анализа

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Peatlands play an important role in the global carbon cycle, but have been exploited over many centuries by humans that greatly reduced their carbon storage capacity. To investigate peatland initiation and development during the Late Holocene with the special attention to their restoration after peat extraction in the mid-19th century we applied a multi-proxy paleoecological approach to peat deposits of the Gorenki peatland (Meshchera Lowlands, East European Plain). Peatland development started 2550 BCE by terrestrial paludification as a waterlogged eutrophic birch forest surrounded by a broad-leaved forest. In 2400 BCE, the waterlogged forest turned into an open mire with *Sphagnum* mosses, sedges, and willow bushes surrounded by a broad-leaved forest with alder and spruce. In the late Subboreal period (900–800 BCE), the mire transformed into a wet mesotrophic peatland surrounded by a spruce forest. First human settlements around the mire and deforestation for agriculture are detected 300–400 CE that coincided with the oligotrophization of the mire. Growth of Slavic population in the Moscow region in 14th century CE caused transformation of indigenous spruce-broad-leaved forests into the croplands; mire became drier and turned into a forested peatland. Mire restoration after peat extraction started in the beginning of 20th century when *Sphagnum cuspidatum/obtusum* quagmire formed on the basis of unexcavated peat layers that floated to the surface when the mire was rewetted. The *Sphagnum* mat has stabilized during 1960–2000 and its surface wetness gradually decreased. During last twenty years, agricultural activity decreased and forest was restored in the surrounding area; the floating mat became drier and more oligotrophic that can lead to the formation of bog in the future in the absence of anthropogenic impact.

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