

## Distribution of Organic Compounds in the System of Geochemically Linked Mire Landscapes

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Mires account for 4% of the Earth's land surface and accumulate some 4.3 thousand km<sup>3</sup> of water, which is typically enriched in organic matter (OM) of humus nature, contains almost no dissolved oxygen, and has a low mineralization. The fact that bog waters contain a great diversity of humic compounds (HC) of specific nature accounts for many characteristics of these waters.

Our research was centered on the characterization of the organic matter (OM) of bog waters in the system of oligotrophic landscapes in the basin of the Klyuch River. This mire ecosystem is the northeastern periphery of the Vasyugan.

An important role in determining the hydrochemical composition of bog waters belongs to water-soluble humic acids, particularly FA fractions. These bog waters have a yellowish color and contain from tens to hundreds of milligrams of O<sub>2</sub> per water liter, averaging at 200–300 mg of O<sub>2</sub>/l. The FA contents in our waters are greater than the HA concentrations by factors of 5–20, commonly 10, which is consistent with the concentrations of these elements in the peats. It is convenient to consider this hypothesis using the example of the dynamics of the IR spectra of the phenol compounds, which can account for from 3–5 to 41% of the total amount of the water-soluble OM. The comparative analysis of the IR spectra and their spectral coefficients (which reflect the proportions of the hydrophile and hydrophobe constituents in the structures of phenol molecules) in the peats and bog-water precipitates allowed us to determine the general migration characteristics of water-soluble OM.

In the bog water, the ratio of the optic densities of hydroxyl groups D<sub>3400</sub>/D<sub>1460</sub> varies from 0.89 to 1.49, the D<sub>1270</sub>/D<sub>1460</sub> ratio for phenol hydroxyls is 0.78–0.86, D<sub>1720</sub>/D<sub>1460</sub> for carboxyl groups is 1.16–1.28, and D<sub>1620</sub>/D<sub>1460</sub> for aromatic fragments is 1.20–1.85. The

water-soluble compounds contain more phenol hydroxyls (D1270/D1460 increases to 0.96) and carboxyl groups (D1720/D1460 = 1.73).

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