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Flow from oligotrophic area of Vasyugan mire

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Mires in Western Siberia occupy about 1 ml km^2. Vasyugan mire is the biggest in the world. This unique marsh ecosystem plays an important environmental role not only in Siberia but also in the whole world. Tendencies of climate changes will, certainly, influence resistance of marsh ecosystems. This resistance is mainly determined by hydrological regimes of ecosystems.

Changes appear, on our opinion, in the structure of hydrologic and heat balances of marsh ecosystem which are quantitative concepts of correspondent regime. In this connection the task of hydrologic mire regime appears.

Thus, formation of mire river network of secondary origin connects with evolution of mires themselves, their association into large massifs and appearance of complicated marsh systems with erosion, as a result of peat accumulation, peculiar topography.

Let's consider these statements on the example of landscape profile of drainage river basin in the limits of oligotrophic are of Vasyugan mire, especially, during spring high waters, when rain waters flow along the bog surface favoring formation of new secondary water courses.

The aim of this work was to identify connections filtration properties of separate microsites with bog waters levels and calculation of flow of 5% probability.

On the basis of site and typological map of 1:25000 scale six types of microsites were detached. In this case type is considered as filtration characteristics classification. All the calculations were made individually for every microsite.

Curves of links of individual discharges with bog water levels were calculated for following types of mire microsites: *pine-shrub-Sphagnum* biogeocoenasis with low pine (low rjam), *pine-shrub-Sphagnum* biogeocoenasis with high pine (high rjam). For others there were used bookish data getting for mires of North-West European area of Russia.

According to the calculated levels of 5% probability flowages are determined, and maximum outflow from the area, which is limited by contour of run-off L, is calculated. Digital analog of site and typological map was used for identifying of areas and linear sizes of marked types of microsites. This analog was made with the help of GIS Arc View 3.2. Total discharge flowing through the whole contour is determined by formula:

$$Q = \sum_{j=1}^{j=s} Q_j = \sum_{j=1}^{j=s} q_{zj} \sum_{i=1}^{i=n} (\Delta L)_i \sin \alpha_i$$

where αi is the angle between the element of the contour ΔLi and the line of run-off at the given point of the contour Li; qzi is the individual discharge (cm^2/s) identifying according to the curve of connection with bog water levels for j - microsites; j –is the ordinal number of a microsite (Ivanov K.E. Hydrology of Mires, 1953).

As a result of calculations the modulus of maximum spring flow of 5% probability from high oligotrophic bog is 83,2 k/s c km^2, this is significantly lesser analogous flow from mires of european area of Russia.

Keywords: high bog, flow, filtration, mollisoil, microsite, phytocoenose, individual discharge, contour of run-off, bog water level

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