

Climate change processes impact on wetland ecosystems of Polissia Region in Ukraine

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Under the influence of global warming, obvious changes in the environment are taking place that have already led to some negative environmental consequences and will further exacerbate them in the future. The analysis of instrumental observations data of meteorological stations network in Ukraine showed that the surface temperature on the territory of Ukraine has increased by 1.2 ± 0.2 °C per 100 years for the period 1900-2019. However, climate change processes in Ukraine have regional features. Thus, during the same period, in the northern, north-eastern and north-western regions, covering the territory of the Polissia, warming is more intense than over Ukraine in general (1.7 ± 0.4 °C per 100 years). During 1971–2019, the annual temperature increase in the Polissia regions was even higher (about + 0.04–0.05 °C per year). Precipitation regime has changed as well. The annual amount of precipitation in this humid region reduced by 10-15% per 100 years (for XX century). However, in the period 1971-2018, the annual amount of precipitation decreased by $30 \pm 5\%$, mainly in the summer (July-August). Monitoring stations have recorded a slight increase in the cold period with annual amount of precipitation 530–630 mm. Anomaly high-temperature indicators, alternating with the cool, long absence of atmospheric precipitation with sudden heavy showers, a manifestation of a number of adverse events (drier, dust storms, heavy winds, etc.) became the causes of degradation of some ecosystems in this region. Wetlands ecosystems, typical for Polissia, represent one of the most sensitive indicators of these environmental changes. The study paid special attention to the state of wetlands located in the Polissya region. Field studies of wetlands of the left-bank Polissia region have revealed the specific destruction of birch enriched biotopes. Relation of such destructions with extreme weather events has been confirmed. Most affected ecosystem services of such biocenoses has been determined, described and assessed.

Keywords

Climate change, wetland ecosystems, biocenoses

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