






# POLAR ECOLOGY CONFERENCE 2020

February 12<sup>th</sup>-15<sup>th</sup> 2020

České Budějovice, Czech Republic

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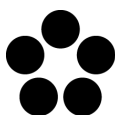
## ORGANISATION

Centre for Polar Ecology and  
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Jihočeská univerzita  
v Českých Budějovicích  
University of South Bohemia  
in České Budějovice



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## CONFERENCE PROCEEDINGS

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Tereza Hromádková

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# KEYNOTE ABSTRACTS



## **Spatial distribution of organic and inorganic carbon fluxes on a wetland complex: hot spots and leading factors (West Siberia, Russia)**

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Northern ecosystems are an important component of global carbon cycle on the planet. Permafrost degradation due to climate change can change both export values and the composition of dissolved organic carbon from cryogenic soils by changing their hydrological regime, structure and functioning of ecosystems. Changes in the amount and composition of dissolved carbon coming from terrestrial ecosystems, in turn, can affect the carbon balance in associated aquatic ecosystems, and also affect the carbon balance of the entire catchment.

The goal of the research was to assess the mechanisms and leading factors of the redistribution of soil and water carbon fluxes for permafrost wetland complex (palsa and surrounding bog) in the north of Western Siberia.

The study included a simultaneous measurement of some labile indicators of soils and natural waters, as well as environmental factors. Research carried out for several years (2016-2019) at the middle of the growing season.

The wetland complex is characterized by a high spatial variability of all properties and processes. The redistribution of carbon compounds and carbon flux largely depends on the topography of the permafrost table. The maximum values of CO<sub>2</sub> efflux and concentration in waters were observed on the edge parts of the palsa and in the wetland close to the palsa. These sites are hot spots in the gas exchange processes between water, soil and atmosphere. Waters near the palsa are supersaturated with dissolved CO<sub>2</sub> (versus the atmosphere) and with temperature rise can be a significant source of this greenhouse gas to the atmosphere.

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