

Holocene fire history and vegetation dynamic in Komi Republic, Urals region, Russia

Chéïma BARHOUMI¹, Odile PEYRON¹, Sébastien JOANNIN¹, Dmitri SUBETTO², Alexander KRYSHEN³,
Igor DROBYSHEV⁴, Adam A. ALI¹

¹ *ISEM CNRS UMR 5554, Montpellier, France*

² *Northern Water Problem Institute, Petrozavodsk, Russia*

³ *Karelian Research Center of the Russian Academy of Sciences, Petrozavodsk, Russia*

⁴ *Southern Swedish Research Center, Uppsala, Sweden*

Wildfire is a major perturbation in boreal ecosystem. Current global warming could favor the occurrence of this perturbation with heavy consequences in term of ecosystem functioning global climate, and socio-economical point of view. In order to better predict effects of these changes on fire activity, long-term paleoecological data are required notably to understand the complex interactions between climate, human, fire and vegetation trough time. In the frame of the PRERREAL project (<http://www.prereal.org/index.htm>) funded by the Belmont program, we provide fire history and vegetation dynamic during the Holocene, in Komi Republic, Ural mountain (Russia). Fire history is based on the analysis of charcoal particles sequestered in forest peat deposits and dendrochronological analysis. Results indicate a gradual increase of fire frequency over time. The fire return interval has oscillated between ca 300 years at 11000 years cal BP to a value inferior to 100 years since 250 years.

This increase in fire frequency could be driven by human activities, climate and vegetation. Human density of this area remained very low throughout the Holocene and only increased recently. In order to highlight the interactions that have occurred between fires, vegetation and climate, palynological analysis of peat deposits is being processed to be related to fire activity.

Key words: Fire, Russia, Charcoal, Pollen, Holocene