46-P Assessment of contamination level of oxbows based on core sediments in the upper Tisza region, Hungary.

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Many organic and inorganic contaminants can accumulate in the sediment, so the sediment is useful to study the contamination level of aquatic environment. The study of contamination level of oxbows is an important subject from conservation aspect of wetlands. The aim of our study was to analyses the metal concentrations in sediment cores to assess the contamination level in the Upper Tisza region, in Hungary. Protected (Foltos-kerti Holt-Tisza), fishing oxbow 1 (Vargaszegi Holt-Tisza) fishing oxbow 2, (Szabolcsi Holt-Tisza), fishing oxbow 3 (Tuzséri Holt-Tisza) and sewage contaminated oxbow (Tímári Morotva-tó) were studied. The following elements were measured with MP-AES in sediment cores: Cu, Cr, Ba, Fe, Mn, Pb, Sr and Zn. The pollution index (PI) was used to characterize the sediment enrichment of metal elements in core sediments.
Based on the metal concentrations of sediment the studied fishing, sewage contaminated and protected oxbows were entirely separated from each other using canonical discriminant analysis (CDA). The values of pollution index suggest that there were low level contamination for Ba and Cr in the core sediments of the studied oxbows. The contamination level of Sr was low in the protected oxbow and two fishing oxbows, while in the case of one of fishing oxbows (Szabolcsi Holt-Tisza) and sewage contaminated oxbow moderate level of contamination was found for the Sr. The contamination level of Cu was high in the protected and fishing oxbows and moderate level of contamination was found in the sewage contaminated oxbow. In case of Zn the contamination level was high in two fishing oxbows. Moderate level of contamination was found in protected, fishing (Vargaszegi Holt-Tisza) and sewage contaminated oxbow for Zn. Based on the Mn and Fe contamination level all oxbows were characterized with moderate level of contamination. The contamination level of Pb was high in the studied oxbows, except the protected oxbow which was moderately contaminated.
Our findings demonstrated that the effects of anthropogenic activities are caused markedly differences in the contamination level of oxbows based on sediment cores. Our result demonstrated that the sediment is a useful tool to assess the effects of anthropogenic activities on toxic element concentrations of oxbows.

46-P Lake Narlay (Jura Mountains) a paleolimnological reconstruction over the last 1200 years based on algal pigment and fossil diatoms.

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Lake Narlay (46°64N, 5°91E) is located in the Jura Mountains of France at 748 m a.s.l. It is a small, hard-water lake with a maximum water depth of 40 m. The bedrock of the drainage area is composed of Jurassic and Cretaceous carbonate. The catchment area is relatively small and consist of forest (62%), agriculture (34 %) and urban area (5 %). It lacks a permanent inlet and loses water to underground seepage. Water-column circulation is not complete every year, and consequently the lake bottom water have extended anoxic condition. The lake has become eutrophic, with bloom of *Oscillatoria rubescens* because of direct wastewater discharge that occurred in the period 1920-1980.
Previous results on sediments analysis have documented a differential response of the lake to the environmental changes that occurred in AD 1600 when major shift in the trophic reliance on methane of the benthic food web were observed. In the early twentieth century, an intensification of modern agriculture, including construction of a piggery and establishment of a cheese making facility, contributed to the more recent change. However, the lake showed pronounced changes in an earlier stage that remained unanswered. In this poster we aim at reconstructing in more detail the limnological conditions of this Lake over the last 1200 yrs. using combined analyses of specific algal carotenoids and subfossil diatom remains. A comparison with other proxies (chironomid, pollen, and instrumental climatic reconstruction) will be used to better identify, between the complex combination of climate and anthropogenic pressure, the driving factors that determined the ecological trajectory of Lake Narlay.