SS14 - Oral

BIOINDICATION OF STREAM INTERMITTENCY BY MACROINVERTEBRATES IN TEMPERATE STREAMS – RESULTS OF THE BIODROUGHT PROJECT

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The effect of stream intermittency is frequently studied in Mediterranean countries but studies considering 'drought filter' impact on macroinvertebrate community in Central Europe are scarce. Regardless of the causes of dry episodes, which may originate from climate change or human activities, we hypothesise that drought induces structural changes in the macroinvertebrate community that last for a specific period. This 'drought footprint' is detectable by macroinvertebrate analysis during the recolonisation and its readability depends on both the duration and the spatial extent of the drought. In the BIODROUGHT project (www.biodrought.eu , grant TA02020395) we are developing a map of drought risk and a bioindication method for practical use in water management. We employed Linear Discriminant Analysis to find a combination of metrics that best discriminates among three stream classes (permanent, irregular drought, annual drought). The recent season specific method (for spring/autumn) combines metrics of three types: (i) representation of taxonomic groups (important are EPT taxa or Oligochaeta), (ii) species traits (rheophily, reproduction) and (iii) the presence of indicator taxa characteristic for permanent or intermittent streams (expressed by developed BIODROUGHT index). This approach was successfully tested for its discrimination accuracy on the Czech national database, which contains data from streams with known history.