

## **Supervisor's opinion to bachelor thesis Bioinformatic determination of the contamination in environmental DNA from water written by Max Höller**

The aim of the bachelor thesis was to determine different taxa from environmental DNA water samples collected in different waterbodies and seasons in Czechia. This aim was based on a practical need for comparison the results to verify the trustfulness of eDNA metabarcoding for ecological studies. The samples were originally dedicated only to fish monitoring. However, because of the used primers, DNA fragments of other taxa were amplified. This is a common case and most scientists do not care for the “bycatch” as it is difficult to prepare reference databases for many taxa and evaluate the proportions of target and non-target sequences. This issue was the in the centre of Max work.

I highly appreciate Max orientation in all aspects of bioinformatic workflow. Max significantly improved the reference databases and processed huge datasets by application of the Tapirs pipeline to assign the sequences to fish, non-fish vertebrates including humans, and bacteria. The results were plotted in an informative style and critically discussed in the context of the community characteristics, environmental variables, laboratory workflow and the bioinformatic pipeline characteristics. The cited literature covers nearly 40 sources composed mainly of scientific literature and the whole computer processing is well documented in supplementary materials.

As the supervisor of the submitted thesis, I am proud, the thesis exceeds in many aspects the minimum requirements of Bachelor thesis at the Faculty of Science, University of South Bohemia in České Budějovice.

Therefore, I recommend the thesis for acceptance with excellent evaluation.

In České Budějovice, December-19 2022

RNDr. Petr Blabolil, Ph.D.