**Abstract**

This bachelor thesis summarizes the effects of heavy metals on freshwater invertebrates in post-industrial areas. There are heavy metals of dual origin in nature, essential and non-essential. Non-essential heavy metals which get to nature by human activities can have a negative impact on lives of organisms in the ecosystem. If the organisms can't cope with and adapt to heavy metals, it can be lethal for them. Some organisms are more tolerant than others and can survive in heavy metal concentrations which would be a big fatal to other organisms. In case of dangerous concentration for more resistant species, the resistant species create special adaptations which help them survive and prosper in the polluted areas. Mechanisms and adaptations that prevent the body from damaging cell structures and organs in the body can be of different nature. Morphological changes consist of changing the color, shape of the body or removing parts where heavy metals accumulate. Physiological mechanisms help to modify the metabolism and mode of accumulation of substances in the body. Many mechanisms, as well as the consequences of heavy metals, can be used to bioindicate polluted waters. Such observation can then be used in other disciplines, for exampl in environmental protection. Study of documents from professional world databases and professional literature was used tu fulfill the aim of this thesis.

**Key words:**

Heavy metals, Heavy metal pollutin, Industrial areas, Freshwater invertebrates, Defence mechanisms, Adaptations