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Monitoring and role of terrestrial invertebrates in bioindicatory evaluation of environment condition and changes

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Abstract. The paper presents the object of monitoring and the role of invertebrates in bioindicatory evaluation of environment condition and changes.

The authors define the concept of bioindicator and its main characteristics. They also point out the main problems of invertebrate monitoring in Poland.

Diversity of reactions of insect communities as a response to anthropogenic pressure

Key words: terrestrial invertebrates, monitoring, bioindication, environmental pollution, insect communities.

by

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Monitoring of environment condition and changes is one of the basic subsystems of environmental protection. In the field of monitoring of abiotic elements, the methods of monitoring of air, water, soil, etc., are well developed. In contrast, the methods of monitoring of biological elements (plants, animals, especially, etc.) invertebrate monitoring still remains at the initial stage, mainly at the conceptual and experimental stage. Therefore, both the theoretical assumptions and the methods of data collection and analysis should be tested, repeated and perfected in detail.

So far, the fauna has frequently been used in monitoring studies and used as an indicator of environmental pollution. Most often it is based upon accumulation of heavy metals (Cd, Zn, Pb, Co, Cu, Ni, Cr, Hg, Cd, Pb, Cd, Hg). Indeed, these elements accumulate in tissues and occasionally exceed the limits of tolerance much higher than those in the environment – in the soil, water or air. This makes the interdependence simple. The content of heavy metals in animal tissues depends on a number of factors that are not necessarily influenced by the degree to which any environment is polluted. For instance, an analysis of earthworms shows the accumulation of heavy metals in the tissue of these animals depends on both factors as size, activity and structure and that is connected with the characteristics of the type of habitat on the surface of soil particles. Moreover, the amount of heavy metals in the body depends on the type of compound on which they are bound – organic or inorganic.

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