

## ТЕЗИ ДОПОВІДЕЙ

### **Ground beetles (Coleoptera, Carabidae) as indicators of the quality of terrestrial ecosystems**

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Modern approaches to the assessment of environmental quality are very diverse. Quality of the environment and the ecosystem, which provides a quality — different things. It is obvious that the modern idea of the quality of the environment is increasingly looking to the quality as a function of the ecosystem. This in turn causes the change of the concept of protection of fauna and flora on the concept of the protection of habitats of animals, plants and other living things. Humanity at a frantic pace reduce biodiversity on the planet; simplify ecosystems and food webs for the sake of getting the maximum production. At present, it is obvious that the increase in production is inconsistent with the maintenance of environmental quality. Mankind is forced to condition quality of the environment, spending money for energy-intensive technologies for water treatment, waste processing, and so on. All this — the consequences of degradation of natural ecosystems. Today, great efforts are aimed not only at protecting the natural environment but also at the early detection of negative processes. To optimize the biological monitoring developed various methods and approaches, one of which is the use of biomarkers as indicators and forecasters of negative processes. Ground beetles are one of the most widely used in Europe invertebrate groups to assess the quality of terrestrial ecosystems.

Thus significant ground beetles diversity and a wide range of adaptations at the population of species level allows to evaluate the quality of the environment in a wide range — from intact ecosystems to ecosystems under critical anthropic load. Among this group members of the genus *Carabus* are the most sensitive to the early stages of violations of environmental quality. All species of this genus are protected today in most European countries. According to our research, many of the species of the genus *Carabus* can be used as biomarkers of landscape integrity. For example, *Carabus excellens* is a good marker of undisturbed landscape elements in the forest-steppe.