

**BioAssess- Detailed summary**  
**Biodiversity assessment – soil macrofauna**

1. A total of 908 soil macrofauna species were recorded from 17 orders and 131 families. Several hundred more species were probably present in the groups and countries where identifications have not been conducted to the species level.
2. The most important taxon was the Lumbricidae, comprising 39% of the total abundance of the samples. The other major taxa were Formicidae (13%), larvae (Coleoptera + Diptera) (13%), Coleoptera (11%), Arachnidae (8%), Gastropoda (4%), Diplopoda and Chilopoda (7%). Hemiptera, Isopoda, Dictyoptera, Orthoptera, Isoptera, Dermaptera and others made up the remaining 4.5% of individuals.
3. Family richness and abundance were greatest in Ireland, Switzerland and France. Portugal and Spain had a limited number of individuals distributed among a relatively large number of families. Finland, Hungary and United Kingdom were poor in individuals and families.
4. The mean family richness does not vary significantly across the land use gradient. Land use type explained 10.84% of the overall variation of the Lumbricidae data set 14.02% of total variation of the coleopteran macrofauna data set.
5. It is recommended that the assessment of soil macrofauna is done by the species richness of earthworms (Lumbricidae) and ants (Formicidae), together with the number of other families present. Since many macrofauna species tend to have rather restricted areas of distributions and/or low densities that make their discovery rather infrequent, families appeared to be the best indicator of diversity, especially when comparison have to be made over large geographical areas. Ants and earthworms, however, may be identified to species because they are less speciose than other families and because their grouping into a single unit ignores their functional diversity. In addition, practical keys exist for the identification of these invertebrates.