

General conclusions

This country study is the first comprehensive overview of the biological diversity in Belgium. It is based on original data provided by a wide range of experts. Attention is focused on the species level of biodiversity and we have provided information on major aquatic and terrestrial habitat types. Biodiversity at the genetic level, and agricultural or horticultural biodiversity are not dealt with, as we feel that these subjects deserve separate accounts.

The geographical and geological characteristics of Belgium, together with long-standing human impact in land use, resulted in an amazing diversity of habitats for such a small territory, many of which are of European importance. No less than 58 of them are listed in the EU Habitats Directive, which includes 198 entries. When granted protection status, they form the backbone of the Natura 2000 network, which also comprises the Special Protection Areas designated under the EU Birds Directive. At the end of December 2002, this network already totalised 401,021 ha, representing 12-14% of the regions' territories and 5% of the Belgian marine areas. It is a major step towards an ecosystem approach for biodiversity conservation, i.e. the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. The Biological Evaluation Map of Belgium, a project set up nationally in 1978 and transferred to the regions in 1986, offers a valuable tool for enhancing the network. It is based on a standardised, uniform survey and assessment of our country's biotic environment.

The Belgian diversity of life forms comprises around 36,300 recorded species of micro-organisms, plants, fungi and animals. However, expert extrapolations suggest that the actual number should range between 52,000 and 55,000 species. Bacteria and blue-green algae are not included in these numbers. Roughly 6,000 species of bacteria are known worldwide, but this is supposed to be only a fraction of the real number. As many bacteria species are cosmopolitan, we assume that at least a few thousand of them occur in Belgium. In addition, some 300 species of blue-green algae have been found in Belgium, and many more are expected to be discovered. Hence, the total number of species living in Belgium probably amounts to over 55,000 species. This figure exceeds all previous estimates. It indicates that at present less than two-thirds of the species living in our country have been recorded.

Our knowledge of the taxa is unbalanced. The best known are the vascular plants (flowering plants, conifers, ferns, horsetails, quillworts and clubmosses), vertebrates (lampreys, fish, amphibians, reptiles, birds and mammals), carabids (ground beetles), butterflies, and dragon- and damselflies. They are often used to underpin and justify conservation measures and many species are well-known bio-indicators. Yet they represent less than 4% of the species living in Belgium. Obviously, expanding our knowledge of the remaining 96% of organisms is urgently required if we are to improve, refine and optimise Belgian conservation policies and actions.

Detailed monitoring and thorough comparisons of old collection and observation data with more recent ones show that many species in Belgium are in decline or even have disappeared. In Flanders, at least 7% of formerly recorded species are extinct, 20% are endangered and 27% are vulnerable to near threatened; only 43% are considered safe or at low risk. A similar situation exists in Wallonia, as, depending on the taxonomic group, between 40 and 83% of the species show an obvious population decline, with an average of 57%. In the Brussels Capital Region, 187 higher plant species (out of the ca. 580 indigenous ones recorded before 1950), some 15 to 20 bird species (out of 90) and half of the six or seven amphibian species have disappeared. Today, dozens of plant and animal species in Belgium are only known from fewer than five populations and are therefore in critical danger. Many hundreds, probably thousands of species are at risk. The loss of local populations implies a loss of genetic diversity, which in turn may result in a loss of resilience to environmental change, i.e. the ability to resist to, or recover from, natural and human-induced pressures. Hence, urgent conservation measures are needed to protect vulnerable and endangered species and populations against extirpation. Threatened species should benefit from adequate long-term policy, and the restoration of degraded habitats should favour the re-establishment of species that had disappeared from our country. To this end, a National Biodiversity Strategy would be a most helpful tool to support the integration and the fine-tuning of regional action plans. Unfortunately, such a strategy is still lacking although it is an obligation under the Convention on Biological Diversity.

Proximate causes of biodiversity loss are mostly man-induced. Land conversion -whether for urban and industrial expansion, agriculture, infrastructure or tourism- is undoubtedly the main cause in our country. It results in the loss, degradation or fragmentation of habitats, and currently affects all habitat types. In Flanders, changes in environmental quality due to eutrophication also impose a heavy pressure on the fauna and flora. This problem is probably less acute in Wallonia, but pollution (including eutrophication) is nevertheless considered as the second threat to biodiversity in the region. The urban nature of the Brussels Capital Region leads to specific problems, such as a very high recreation pressure on green areas. Cities are also important introduction points for alien plants and animals. Marine biodiversity is particularly threatened in our coastal zone and shelf sea, where direct and indirect disturbances are concentrated. Threats include the overexploitation of marine resources, adverse effects of fishing methods on the sea bottom, the introduction of alien species, and land-based and marine pollution such as eutrophication and the spilling of hazardous substances.

Invasive alien species are currently a major focus of international conservation concern. It is generally admitted to be the second cause of biodiversity loss worldwide, after the degradation and fragmentation of habitats. In Belgium, there appears to be a growing attention to this issue, especially given the rapid expansion of introduced plants, fish, frogs, turtles, geese, and of invertebrates such as insects, crayfish, mussels, land slugs, etc. Specific information on this issue is provided throughout the present work. Several alarming conclusions emerge with regard to the highly predatory nature of some exotic species, and the colonising and competitive potential of others. Hence, the monitoring of aliens is imperative in order to cope adequately with them. Moreover, the general public should be duly informed of potential risks resulting from exotic species released in the wild, and raising awareness should be common policy.

Taxonomy and systematics provide the basic framework for the whole field of biology. Together with ecology they are the most fundamental disciplines for biodiversity studies. As very basic data are still lacking for the vast majority of taxa in Belgium, systematic and ecological research should be stimulated and should receive much more support. This would allow, among others, intensified and innovative sampling and the compilation of revisions, checklists and identification keys. Especially the latter are poorly targeted in Belgium.

Biological diversity has many dimensions, the importance of which is still not adequately addressed. In view of the many gaps identified in this synopsis, it is imperative to complete the inventory of Belgium's biodiversity and to improve the understanding of the role of biodiversity in ecosystem functioning. Bridging the gaps between existing knowledge and information needs for enhanced conservation policies can only be undertaken by close co-operation between all biodiversity partners in Belgium. One of *our* main objectives is to produce additions and regular updates of the present information, and to ensure that it reaches the widest possible readership, as biological diversity concerns us all.