

## INTRODUCTION

Air, water, soils, living organisms and their habitats are the main components of the environment. They interact continuously. Each one, taken in isolation or in an integrated system, plays a major role in life on earth (e.g. habitat for wild fauna and flora, the production of resources which are essential for life, ecosystem services). Their status is mainly the result of natural phenomena (biogeochemical cycles, water cycle, etc.) and various pressures exerted by human activities (land use, production, consumption, etc.). The assessment of the state of the components of the environment makes it possible to identify ongoing deterioration and degradation, monitor the evolution of this degradation, implement appropriate responses or estimate the effectiveness of measures already taken.

The components air, water, soil, fauna, flora and habitat are evaluated here in succession:

- Air carries elements and pollutants in solid, liquid or gaseous form over very long distances. This characteristic and the impacts of air quality on climate (e.g., the greenhouse effect), ecosystems (e.g., acid deposits) and human health (e.g., respiratory and cardiovascular conditions related to particulate matter in ambient air) make air quality a major environmental and public health concern.
- Groundwater and surface water are abundant and highly exploited resources in Wallonia. Their quality (ecological, chemical and/or morphological) is influenced by atmospheric deposition, the volumes and nature of sediments, as well as by the quality of soils or artificial coverings on which rainfall flows, or through which it filters. On the other hand, it is degraded by domestic, agricultural and industrial inputs of organic matter, various nutrients (nitrogen, phosphorus, etc.) and multiple micropollutants (trace metals, pesticides, hydrocarbons, etc.). These degradations can affect aquatic ecosystems and human health. They also have an impact on the costs associated with water resource management (e.g., drinking water treatment).
- Soils, slowly formed by the weathering of geological materials, represent a non-renewable resource, or only slightly renewable. They fulfil environmental functions (the regulation and filtration of water flows, the regulation and sequestration of carbon, as a habitat and biodiversity reservoir, as a seat of biogeochemical nutrient cycles, etc.), economic (biomass production, source of raw materials, support for human activities, etc.), social and cultural (a major element of the landscape, conservation of archaeological heritage, etc.). Various degradations (decreases in organic matter content, water erosion, local and diffuse pollution, compaction and sealing problems, etc.) currently threaten the ability of soils to perform these functions.
- Fauna, flora and natural habitats constitute biological resources with which various essential values are associated, whether they are exploitable (agronomics, food, tourism, etc.) or non-exploitable (intrinsic and heritage values). These elements of biodiversity are, or have been, degraded by a range of factors, namely the intensification of agricultural practices, the artificialisation of the territory, the impact of various types of pollution, etc. Loss of biodiversity raises the question of the sustainability of ecosystem services. Achieving the targets set in the Biodiversity Strategy to 2020 must make it possible to halt the decline, preserve and improve ecosystems and their services, and halt the deterioration of habitats and species of community interest, and improve their status in a significant and measurable way. The set of indicators presented below provides an overview of the state of biodiversity in Wallonia and provides insight into the main trends.

The compartmentalised approach to the environment presented in this report facilitates its analysis, and presents coherence based on very different properties and functions of the air, water and soil environments, but should not overlook the constant exchanges between these environments and their interactions with living organisms.