

Biodiversity in crisis

Biodiversity is essential for functioning, stable ecosystems and the wellbeing of the human race. Despite conventions, resolutions and action plans for the protection of biological diversity at all political levels, the decline of species diversity is increasing dramatically all over the world, including Germany. Targeted projects and funding measures have been put in place with the objective of stopping this deadly trend.

In 1962, Rachel Carson's book "Silent Spring" first raised public awareness of the earth's ecological crisis and the concomitant depletion of our planet's animal and plant species, but it was another thirty years before the Earth Summit was held in Rio de Janeiro.

A large-scale biodiversity research project is carried out in the Swabian Alb Biosphere Reserve

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The international community expected the summit to lead to a breakthrough in the management of sustainable development goals. Signed in 1992, the Convention on Biological Diversity (CBD) had, amongst other things, the objective of conserving biological diversity and the sustainable use of its components. Almost all nations in the world, including Germany, committed themselves under international law to implementing the convention. However, there is no way to enforce implementation of the convention. In the same year, the EU adopted the Habitats Directive (Council Directive 92/43/EEC) on the conservation of natural habitats and of wild fauna and flora.

Twenty years after Rio and the Convention on Biological Diversity, the situation in terms of biodiversity is worse than ever. Although "Conferences of the Parties" (COP) are held every two years, critical observers believe that they are becoming more unwieldy and more ineffective each time they are held. However, at the COP 11 in October 2012, which brought together more than 20,000 participants in Hyderabad, India, the developed countries agreed to double funding to support efforts in developing states towards meeting the internationally agreed biodiversity targets.

What does biodiversity mean?

The Botanic Garden of the University of Heidelberg, which was established in 1593 and is thus one of the oldest in Germany, is a centre of biodiversity research.

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In general, biodiversity is the diversity of nature formed by all living organisms, i.e. all animals, plants, microorganisms as well as their genes and habitats which are formed by the organisms in interaction with their non-biological environment. From this definition it follows that species are the basis of biodiversity, as it is in species that genetic diversity manifests itself. The interaction of activities and impacts of animal, plant and microbe species leads to the establishment and maintenance of habitats.

Therefore, the identification and recording of species is of central importance. Protection of biodiversity is closely linked with the conservation of species and the crisis of biodiversity with a decline in species diversity. The International Union for Conservation of Nature draws attention to the crisis in biodiversity through Red Lists, which list endangered species and the reasons for them being endangered with the aim of initiating protective measures. These lists provide federal and state governments in Germany with information about the country's 25,000 known species of snails, spiders, from insects to vertebrates, and fungi, algae and lichen to flowering plants. When looking at the decline of species, one must differentiate between the final extinction of previously rare species and the local, regional and national loss of otherwise widespread species.

However, the number of Red Lists has since increased so sharply that it is impossible to maintain an overview. It is thought that over 350 Red Lists exist. The flood of publications on the subject of biodiversity is itself an expression of the crisis. It shows just how insufficient – or vain – all the declared measures and intentions have been so far.

Since 1992 and increasingly over the last five years, countless conferences have been held, action plans developed, speeches made and measures adopted with the common goal of protecting biological diversity. The term biodiversity has become a buzzword. The United Nations proclaimed 2010 to be the International Year of Biodiversity with the objective of considerably reducing biodiversity loss. After many years of international negotiations, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was established in 2012 with the aim of "providing the latest science and knowledge to support more informed decisions on how biodiversity and ecosystem services are conserved and used around the world" and to play a key role in providing this science and knowledge. The IPBES secretariat is headquartered in Bonn.

Loss of species and measures to protect biodiversity

Elements of the Baden-Württemberg government's Biological Diversity Action Plan.

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Despite all this, the loss of biodiversity has not slowed. Exactly the opposite; it has increased dramatically, including in Germany, a country that is proud of its long-standing nature conservation practices. "With an average of 50% of all plant and animal groups listed as endangered species, Germany is top of the list in

Europe. This shows that the extinction of species does not only happen in exotic faraway places, but on our own doorstep," wrote Prof. Peter Berthold (director emeritus of the Max Planck Institute for Ornithology in Radolfzell), a committed advocate of nature conservation and biodiversity (Max-Planck-Forschung 4, 2010). As a measure of biodiversity, Germany developed a "sustainability indicator" with the objective of returning to the 1975 value by 2015. In fact, it is at present 30% lower and Berthold believes that the goal is utopian, frighteningly naive and about as likely as bringing light to the dark side of the moon.

However, he is not about to give up and is calling for activities to maintain biodiversity, which are funded and closely scrutinised for their effectiveness. Back in 2007, the German government adopted a National Strategy on Biological Diversity in which around 430 measures for achieving a sustainable use of natural resources and stopping the loss of biological diversity were agreed upon. These measures were to be implemented under the 2011 National Biodiversity Programme. The responsibility for nature conservation in Germany lies with individual states, which are therefore in charge of the further planning and implementation of the strategy. The Baden-Württemberg government has implemented a Biodiversity Action Plan in compliance with the federal programme. The German Research Foundation (DFG), which has established a Senate Commission for Biodiversity Research, is also supporting measures taken by the German state and federal governments with the establishment of a "German Centre for Integrative Biodiversity Research" (iDiv) and the targeted funding of projects focussing on research into basic aspects of biodiversity or practical measures for counteracting an ecological crisis. The current dossier will present some of the biodiversity projects that are being carried out at Baden-Württemberg institutions.

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