

Symposium 19

Approaches to monitoring biodiversity for nature conservation

Short title: Monitoring Biodiversity

Chairs: *Ulrich Sukopp & Annette Doeringhaus*

From monitoring to indicators – the German sustainability indicator for species diversity

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Monitoring data on changes of populations build an essential basis for the calculation of highly aggregated indicators such as the German sustainability indicator for species diversity [1]. As one out of 21 head indicators of the national sustainability strategy, it indicates the state and quality of nature and landscape in Germany resulting from sustainable land use, which is an essential precondition for the conservation of biodiversity. The indicator has three aggregation levels: (1) at the base, the population numbers of 51 representative bird species indicate the quality of habitats and ecosystems, (2) aggregated habitat indicators provide information on the main habitat types (farmland, forests, settlements, water bodies, coast/sea and – in future – the Alps), (3) at the top level, a single highly aggregated indicator value is calculated. The population numbers of the 51 selected bird species are monitored within nationwide bird monitoring programmes since 1990 carried out especially by the Federation of German Avifaunists (Dachverband Deutscher Avifaunisten, DDA). Based on historical population trends, a target value for the population size in 2015 for each bird species was determined by an expert panel of 30 ornithologists using the Delphi technique [2]. The target value is considered as an “optimistic-realistic estimation” of the total population size that should be reached by a certain indicator species in 2015 assuming that all existing guidelines of sustainable development and all existing nature conservation laws and regulations are rapidly put into action. Second level indicator values are calculated as mean values of the percentage shares of the actual values related to the target values for each species in one of the main habitat types. The top level indicator value is the mean of the second level indicator values weighted by the area proportion of the corresponding main habitat type in Germany.

The temporal development of the highly aggregated indicator value from 1990 until 2002 shows a rather constant curve around 70% of the target value. Hence, overall quality of nature and landscape, as measured by the indicator, neither declined nor improved. If this trend continues, the aims of sustainable use to conserve nature and biological diversity will not be achieved.

The indicator is part of the first progress report 2004 of the German sustainability strategy. It was developed in charge of the Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN) and financed by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

References

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- [2] Stickroth H, Schlumprecht H, Achtziger R (2005) Zielwerte für den „Nachhaltigkeitsindikator für die Artenvielfalt“ – Messlatte für eine nachhaltige Entwicklung in Deutschland aus Sicht des Natur- und Vogelschutzes. *Berichte zum Vogelschutz* 41 (in press).

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