



BIODIVERSITÄTS-MONITORING SCHWEIZ BDM MONITORING DE LA BIODIVERSITÉ EN SUISSE MBD

The contribution of a nationwide baseline monitoring

The Biodiversity Monitoring in Switzerland (BDM), a program of the Federal Office for the Environment (FOEN), makes use of 33 indicators, which are grouped according to the Pressure-State-Response-Model of the OECD and are designed to show long-term development in terms of biological diversity. The main focus is on species trends, including threatened species in special habitats as well as widespread ones in the wider countryside. Six years after beginning fieldwork, the BDM has furnished a qualitatively and quantitatively unique data set describing the current state of biodiversity in Switzerland. In the coming years, even more valuable information will be provided by the possibility of assessing biodiversity trends.^{1,2}

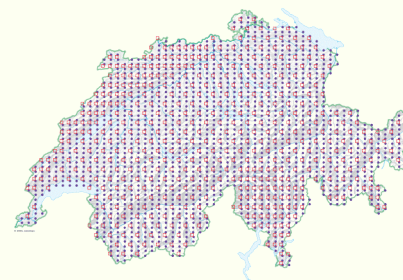
Main characteristics of the BDM-samples:

- two systematic sample grids to measure biodiversity at different scales
- highly standardised field methods with quality assurance
- representative for Switzerland and its biogeographical regions
- a selection of whole taxonomic groups complementing one another
- updated with a staggered survey

The two sample grids of the BDM.

Red: ~ 500 1km² squares measuring species diversity in landscapes.

Blue: ~ 1600 10m² plots measuring species diversity in habitats.



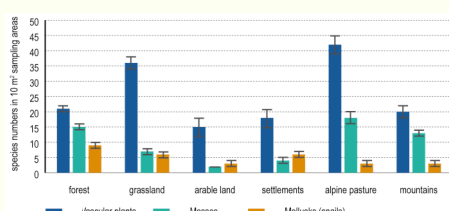
Contributions of the BDM:

1. Illustrating how biodiversity changes over time

The BDM complements the findings of effectiveness monitoring programs in high nature value habitats by showing the trends in Switzerland as a whole and the overall effects of nature conservation policy with its various programs. Until now, only state data has been recorded; first trend data is expected in the coming years.

Example 1: Indicator comparing species diversity in different habitats³

The mean number of species in different habitats of 10m² with a 95% confidence interval.



Example 2: Indicator comparing species diversity in different biogeographical regions³

The mean number of diurnal butterfly species in 1km². Mean of CH: 33

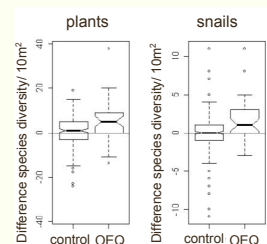


2. Yielding background information and reference values

To determine the success of individual projects, they must be compared to the long-term and overall trend.

Example: Farmers get subsidies if they cultivate meadows and pastures of high ecological value (ordinance of ecological quality, OEQ). With a data set of a monitoring program similar to the BDM (LANAG) it was possible to evaluate how species diversity developed at sites receiving and sites not receiving the payments.⁴

Comparison between the change over time in species diversity at sites receiving (OEQ) and sites not receiving the payments (control).

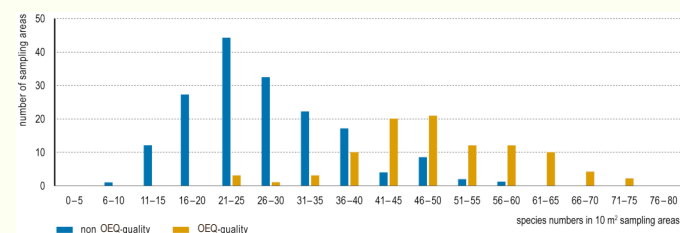


➔ For further information see the poster of Weber (Long-term monitoring of biodiversity in the canton Aargau)

3. Offering a unique data set for special analyses

The data set allows further scientific analyses, predictive models and a basis for future questions.

Example: Evaluation of ecological quality sites criteria³



The ecological value of an agricultural site receiving payments (OEQ) is determined using a selection of plant species. With the BDM data set it was possible to evaluate whether the selection of plant species is well chosen for this task.

A comparison of the mean number of plant species in meadows and pastures for BDM-sites achieving and BDM-sites not achieving the ecological quality. The overall mean of species number is 27 where as the mean of ecological quality sites is 40.

➔ For further examples see the posters of Nobis & Kohli (From systematic samples to model-predicted richness maps and Swiss biodiversity hotspots) and Bühler et al. (Does forest structure indicate biodiversity?)