

MonViA - Development of a concept for a national trend monitoring of the earthworm community

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Objective

The National Monitoring of Biodiversity in Agricultural Landscapes "MonViA" is a joint project of the Julius Kühn Institute, the Thünen Institute and the Federal Agency for Agriculture and Food with the aim of developing a modular monitoring system for agricultural landscapes. A crucial part of this monitoring is the earthworm community, which is essential for high and stable soil fertility. The aim of this project is to identify "Comfort zones" for earthworms where habitat functions are assumed to be normal and intact in order to observe the anthropogenic effects of agricultural use on the diversity and function of earthworms.

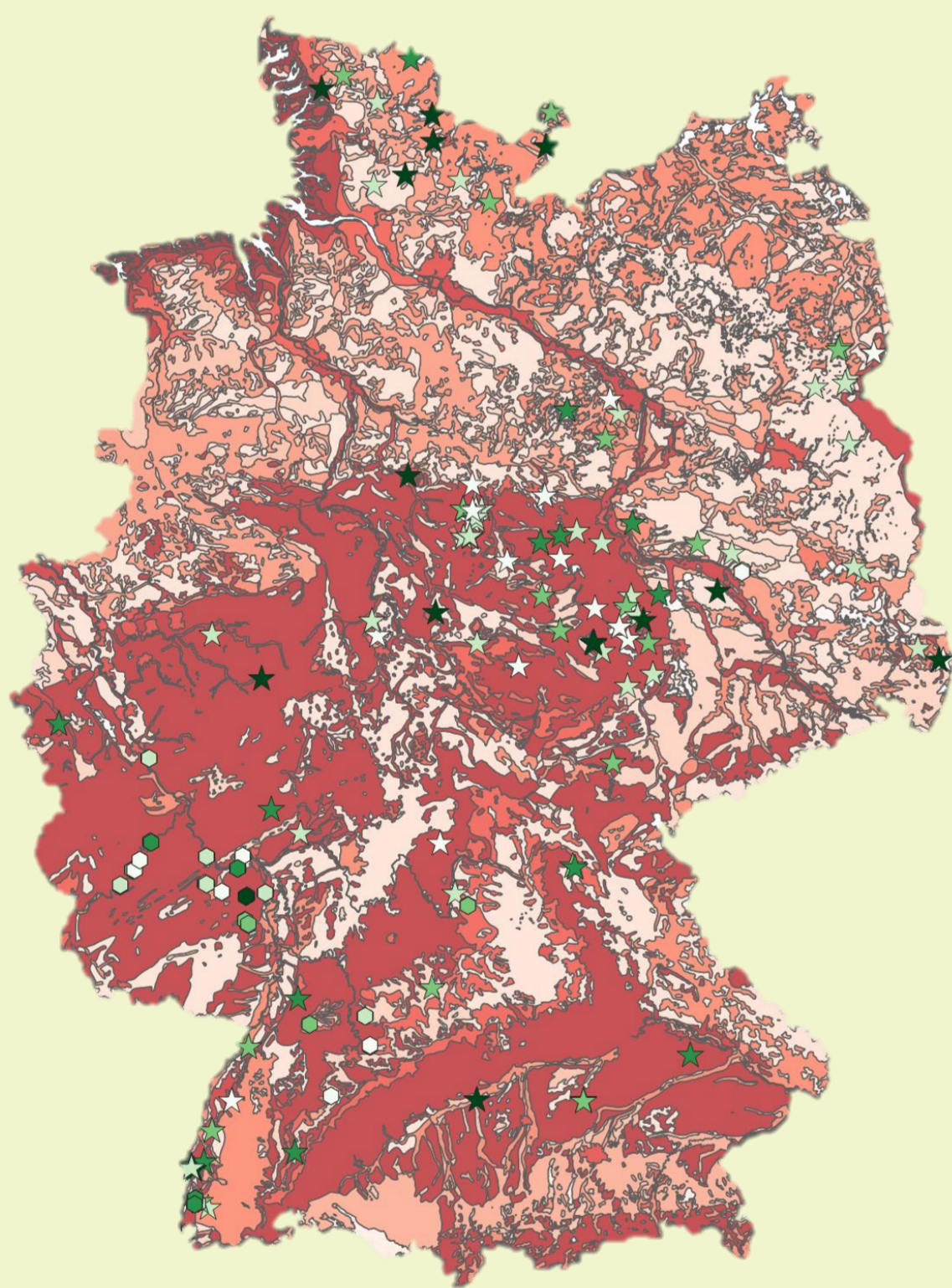
Meta-analysis



- Meta-analysis using existing databases and literature data
- Characterisation of arable land with regard to their relative performance for earthworms
- Species with high or low tolerance
- Identification of typical earthworm species for site-specific comfort zones

Species	pH-value	Sand [%]	Clay [%]	Silt [%]	C _{org} [%]	AP [mm]	C/N
Range	4 7	10 70	10 30	10 80	1 3	625 840	10 20
<i>APORCA</i>							
<i>LUMBTE</i>							
<i>APORRO</i>							
<i>LUMBRU</i>							
<i>APORLO</i>							
<i>OCTOTY</i>							
<i>ALLOCH</i>							

Geomaps



- Transmission of results to soil property maps
- Identification of "comfort zones" for earthworms in Germany
- Development of a web GIS application



Validation

- Soil analyses and earthworm surveys
- Detection of the abundance and activity of earthworms
- Focus on the bioindicator species

Monitoring concept

- Development of a cost- and personnel-effective monitoring concept
- Basis for a national trend monitoring of earthworm diversity

Output

- Effects on the diversity and abundance of earthworm communities and their ecological services
- Identification of long-term trends for example in the event of a change in management methods

