

The importance of Natura 2000 for the implementation of Biodiversity Monitoring



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Problems for conservation monitoring arising from the federal structure in Germany

Situation	Problems
Subjects of monitoring differ between Länder	Problems with data aggregation, statistics and reporting on national level
Field methods differ between Länder	
Different monitoring data	
High efforts for political agreements to implement joint monitoring programmes	Set up of nationwide programmes takes place rarely
Few funding on national level for monitoring programmes (except for short term research)	
Spatial scale of monitoring programmes strongly depends on political rather functional borders	Results and conclusions often scope on smaller areas than recommended



Introduction

Natura 2000 and monitoring

- **Habitats Directive** (since 1992): in Germany: surveillance obligation for conservation status of 258 species and 91 habitat types of the annexes
- **Birds Directive** (since 1979): no explicit monitoring duties, but treated like Habitats directive (LANA decision)



Monitoring under the Habitats Directive

EU guidelines

- Member states are forced to build up a systematic system of surveillance for the species and habitat types of the annexes to assess conservation status
- Reporting every six years (last report 2007, next 2013)
- Document of the Habitats Committee („DocHab“) lists criteria for assessment of conservation status
- Assessment is done with „traffic light“ scheme
- Field methods, spatial design and monitoring intensity are in responsibility of the member states

► **guidelines are not detailed**



Germany as an example

Natura 2000 initializes enhances the

- development of nation-wide standardized monitoring methods and programmes in a methodically splitted federal country
- nationwide surveillance and assessment of many rarely recorded animal and plant species as well as habitat types (e.g. fishes, marine mammals, caves, springs, floodplain forests)
- development of policy indicators for simple but reliable statements on conservation status and trends of an important part of biodiversity



„Traffic light“ assessment

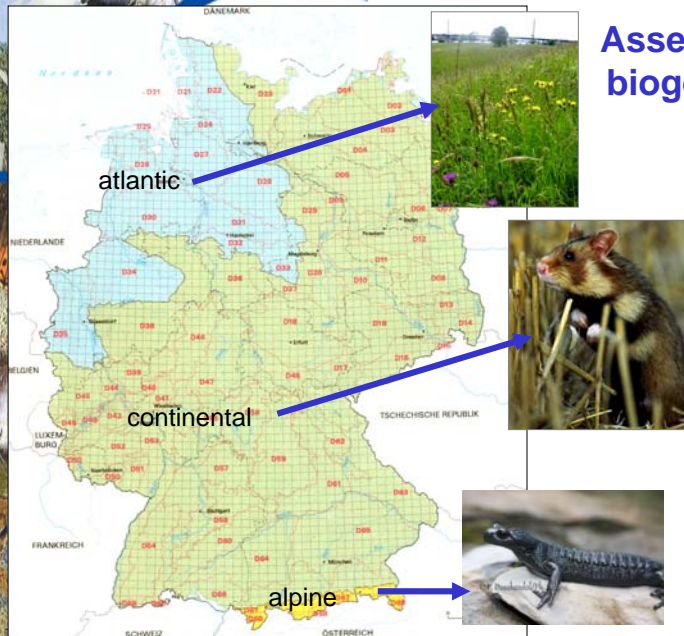
Assessing conservation status of a SPECIES

General evaluation matrix (per biogeographic region within a MS)

Parameter	Conservation Status			Unknown (insufficient information to make an assessment)
	Favourable ('green')	Unfavourable - Inadequate ('amber')	Unfavourable - Bad ('red')	
Range¹	Stable (loss and expansion in balance) or increasing AND not smaller than the 'favourable reference range'	Any other combination	Large decline Equivalent to a loss of more than 1% per year within period specified by MS OR more than 10% below favourable reference range	No or insufficient reliable information available
Population	Population(s) not lower than 'favourable reference population' AND reproduction, mortality and age structure not deviating from normal (if data available)	Any other combination	Large decline Equivalent to a loss of more than 1% per year (indicative value MS may deviate from if duly justified) within period specified by MS AND below 'favourable reference population' OR More than 25% below favourable reference population OR Reproduction, mortality and age structure strongly deviating from normal (if data available)	No or insufficient reliable information available
Habitat for the species	Area of habitat is sufficiently large (and stable or increasing) AND habitat quality is suitable for the long term survival of the species	Any other combination	Area of habitat is clearly not sufficiently large to ensure the long term survival of the species OR Habitat quality is bad, clearly not allowing long term survival of the species	No or insufficient reliable information available
Future prospects (as regards to population, range and habitat availability)	Main pressures and threats to the species not significant, species will remain viable on the long-term	Any other combination	Severe influence of pressures and threats to the species; very bad prospects for its future, long-term viability at risk.	No or insufficient reliable information available
Overall assessment of CS²	All 'green' OR Three 'green' and one	One or more 'amber' but no 'red'	One or more 'red'	Two or more 'unknown' combined with green or all



Assessment in biogeographic regions

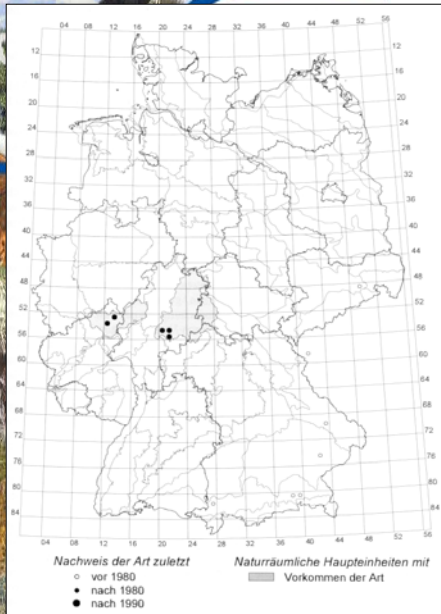


Implementation in Germany

Development of a draft monitoring scheme by a research project in cooperation with Länder authorities 2005-2008 including.....

-agreements of field methods for each species and habitat type between Länder
-agreements on spatial design and amount of samples between Länder to assure representativeness
-recording sites (taken from the same place each time, permanent sampling units)
-recommendations on how samples are to be drawn from known occurrences to assure representativeness
-agreements on recording intervals for each species and habitat types between Länder





Census size

Rare species : **all known occurrences are sampled**

Example: a rare hornmoss (*Notothylas orbicularis* <50 cereal fields in Germany)



Frequent to common species and habitats: **sample** (at least 63)

example: Sand lizard
>> 10,000 Localities in Germany



Data analysis, aggregation and reporting

- Analysis can be done with numerical field data or with assessments of conservation status from each site
- Assessments of sites are put together to assess conservation status on biogeographic level
- Additional data from other monitoring schemes will be included, e.g. data on fish species from the waterframework directive obligations or data on forest habitat types from the national forest inventory
- Reporting format (example: amphibians):

TAXTYP	ART_Code	Species	Habitat	Range	Population	Habitat	Zukunftsaussichten	Gesamtbewertung
AMP	ALYTOBST	Alytes obstetricans	Geburtshelferkröte	U1	U1	U1	unzureichend	U1
AMP	BOMBBOMB	Bombina bombina	Rotbauchunke	U1	U1	U1	schlechte Aussichten	U2
AMP	BOMBVARI	Bombina variegata	Gelbbauchunke, Bergunke	U2	U2	U2	unzureichend	U2
AMP	BUFOCALA	Bufo calamita	Kreuzkröte	U1	U2	U2	unzureichend	U2
AMP	BUFOVIRI	Bufo viridis	Wechselkröte	U1	U2	U1	unzureichend	U2
AMP	HYLAARBO	Hyla arborea	Laubfrosch	FV	U1	U1	unzureichend	U1
AMP	PELOFUSC	Pelobates fuscus	Knoblauchkröte	U1	U1	U1	unzureichend	U1
AMP	RANAARVA	Rana arvalis	Moorfrosch	U1	U1	U1	gute Aussichten	U1
AMP	RANADALM	Rana dalmatina	Springfrosch	FV	FV	FV	gute Aussichten	FV
AMP	RANAESCU	Rana kl. esculenta	Wasser-, Teichfrosch	FV	FV	FV	gute Aussichten	FV
AMP	RANALESS	Rana lessonae	Kleiner Wasserfrosch	XX	XX	XX	unbekannt	XX
AMP	RANARIDI	Rana ridibunda	Seefrosch	FV	U1	U1	gute Aussichten	U1
AMP	RANATFMP	Rana temporaria	(Gras-, Taufrosch	FV	FV	FV	gute Aussichten	FV

Monitoring under the Birds Directive

- No direct monitoring duty resulting from the Directive
- In Germany: agreement between Länder, that assessment of bird species should be done comparably to that of Habitats Directive
- Monitoring should take all native bird species into account with special attention to the species of annex I



Monitoring under the Birds Directive

Three main monitoring schemes

- Monitoring of common breeding bird species
- Monitoring of rare birds/protected bird species
- Monitoring of waterbirds

Background:

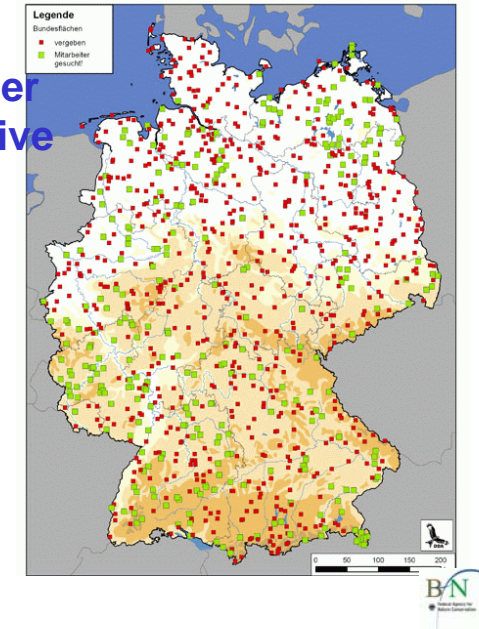
- Field work and data collection is done mainly by volunteers under coordination of the DDA;
- Since 2007 the federal agency for nature conservation and the Länder authorities fund the coordination with 250,000 € per year



Monitoring under the Birds Directive

Monitoring of common breeding bird species - Methods -

- 1000/1500 sites, located using stratified random sampling scheme
- Sample-size: 1 km²
- Mapping methods: Line Transect Counts

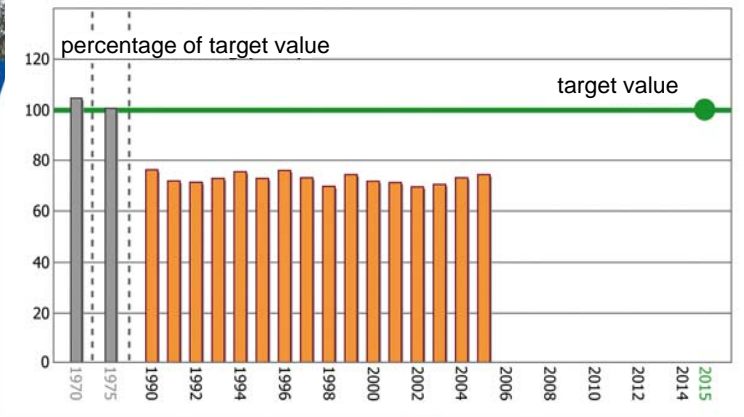


Monitoring under the Birds Directive

- Monitoring of common breeding birds is a good example of a fruitful cooperation of volunteers and governmental authorities towards nation wide biodiversity monitoring
- Monitoring data can be used to satisfy monitoring duties for the Birds Directive
- Beyond this, the high quality data allow the computation of policy indicators



Building nation wide indicators: Progress report on sustainability strategy as an example



The trend is constant.



The actual value is far from the target.



Success und shortcomings

- International reporting duties for Natura 2000 strongly enhance nation wide data collection and partly overcome problems with federal structure in Germany
- This development is an important step towards the implementation of a wider biodiversity monitoring in Germany
- Nation wide data recording is an important requirement for the setup of policy indicators
- Natura2000 only covers relatively few but popular species and habitat types which are not representative for biodiversity as a whole in Germany
- Funding for nation wide monitoring has to be improved to assure a continuous cooperation of volunteers and official authorities



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