



# Continuous Need to Update Survey Methods as Ornithological Knowledge Advances

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Poster

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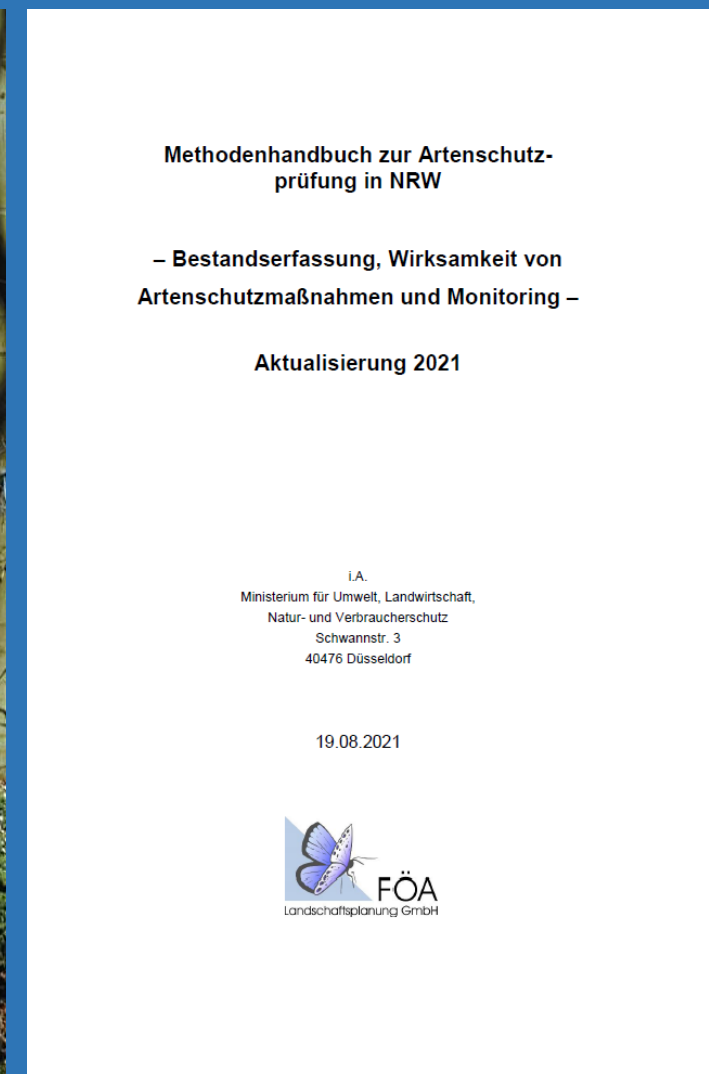
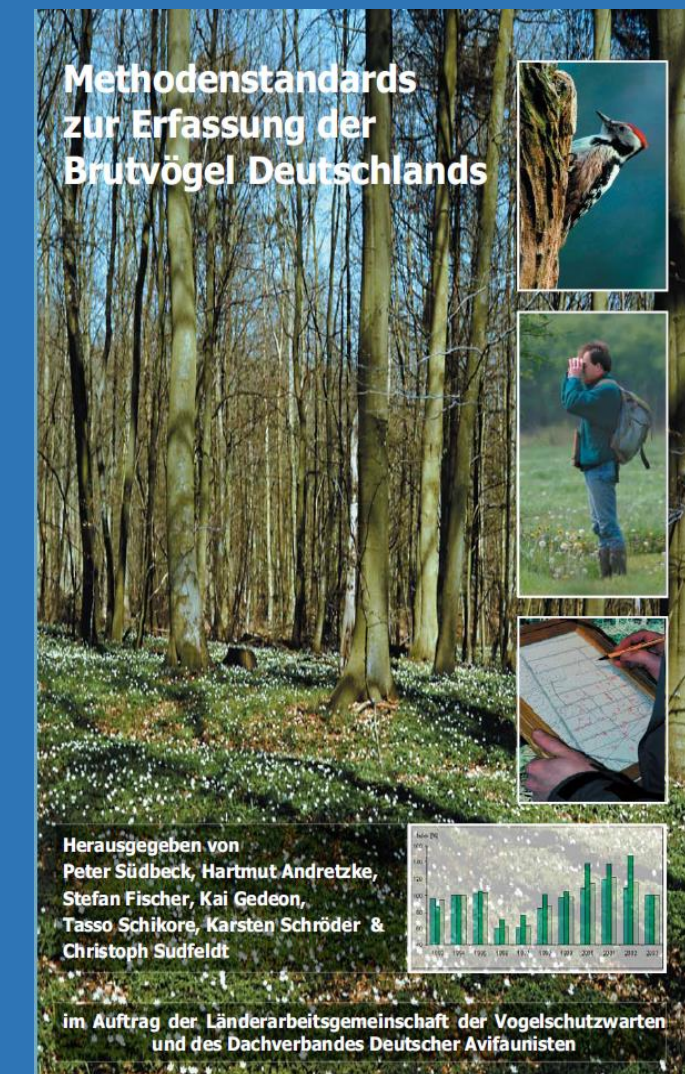
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## About

Bird surveys are carried out for various purposes. For multi-year monitoring programmes, a point sampling or a line-transect method is applied, while territory mapping is a standard method for annual population surveys in the context of projects that pose a threat to the environment, such as solar power plants, infrastructure or wind farms. In 2005, Südbeck et al. published a mapping guide explaining methodology and providing species-specific guidelines for all breeding birds in Germany. This has since become the standard and is used for planning ornithological surveys in Germany and Luxembourg.

In the almost 20 years since then, there have been advances in the knowledge of several species (e.g., seasonal and diurnal variations, behaviour towards song decoys). The ongoing climate change is also causing seasonal phenology to change. Therefore, in 2017, the Ministry of the Environment - North Rhine-Westphalia (NRW)<sup>[1]</sup> published an update for planning-relevant bird species in NRW, including more recent sources and a state-wide expert survey. The methodological guide also included mapping instructions for stop-over and wintering birds, and also for numerous species other than birds that are relevant to planning. These mapping instructions were updated<sup>[2]</sup> in 2021 and are currently valid for NRW. The authors of this poster are also co-authors of the methodological guidelines for NRW.

The German Avifaunist Association (DDA) has also provided updated mapping instructions with assessment periods for some species in the context of the nationwide "Monitoring of rare breeding birds"<sup>[5]</sup>. Some of these periods partially differ from those in Südbeck et al. (2005). This poster examines the current adaptation needs and makes some exemplary proposals for updating the methodology and the assessment dates for the mapping of birds in Luxembourg.



## Breeding Birds - Differences in the Proposed Survey Periods<sup>[2, 4, 5]</sup>

Common name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Sources
Little Grebe	<i>Tachybaptus ruficollis</i>				1.	2.	3.	4.			NRW (2021) Südbeck (2005) DDA (2022)
Grey Heron	<i>Ardea cinerea</i>			1.	1.						NRW (2021) Südbeck (2005) DDA (2021) DDA (2021)
Eurasian Eagle Owl	<i>Bubo bubo</i>	1.	2.	3.							NRW (2021) Südbeck (2005)
European Honey Buzzard	<i>Pernis apivorus</i>					1.	2.	3.	4.		NRW (2021) Südbeck (2005) DDA (2024) Own Suggestion
Eurasian Sparrowhawk	<i>Accipiter nisus</i>			1.	2.	3.					NRW (2021) Südbeck (2005) DDA (2024)
Middle Spotted Woodpecker	<i>Dendrocopos medius</i>			1.	2.	3.					NRW (2021) Südbeck (2005) DDA (2023) Own Suggestion
Woodlark	<i>Lullula arborea</i>		1.	2.	3.						NRW (2021) Südbeck (2005)
European Stonechat	<i>Saxicola rubicola</i>			1.	2.	3.					NRW (2021) Südbeck (2005)
Red-backed Shrike	<i>Lanius collurio</i>				1.	2.	3.				NRW (2021) Südbeck (2005)
Great Grey Shrike	<i>Lanius excubitor</i>			1.	2.	3.					NRW (2021) Südbeck (2005)
Grey Partridge	<i>Perdix perdix</i>		1.	2.	3.						NRW (2021) Südbeck (2005)
Eurasian Skylark	<i>Alauda arvensis</i>				1.	2.	3.				NRW (2021) Südbeck (2005)
Meadow Pipit	<i>Anthus pratensis</i>				1.	2.	3.				NRW (2021) NRW (2021) Südbeck (2005)
Cirl Bunting	<i>Emberiza cirlus</i>				1.	2.	3.				NRW (2021) Südbeck (2005)

Yellow lines = Recommended survey schedule for Luxembourg

## More on the Methodology<sup>[2]</sup>

- As a general rule, each species should have at least three standard days of monitoring.
- For large woodpeckers it is recommended to map related tree holes. Otherwise, it is not possible to adequately define the territory centres.
- Some species (e.g., Middle Spotted Woodpecker in March) still show sufficient activity in the afternoon at the beginning of the survey periods.
- In the case of non-migratory species that are loyal to their habitat (e.g., Middle Spotted Woodpecker, Grey Partridge, Barn Owl), a single detection may be sufficient to define a territory.
- For most owls (e.g. Tawny Owl) and Woodcock start mapping at dusk. According to Südbeck<sup>[4]</sup>, mapping could start an hour before sunset for Woodcock or at the sunset for Tawny Owl, which means it is still bright outside.
- Specifications for playing calls: for example, every 500 m in forests / every 1 km in open land for Tawny Owl as a rule of thumb instead of every 2 km according to Südbeck<sup>[4]</sup>.
- For the Little Owl, even if one bird is already calling, the song decoys should still be used to encourage more individuals to call.
- For owls, predator and prey perspective should be taken into account in the sequence of calls played on decoys, that is from smaller to larger species (start with Eurasian Pygmy Owl and end with Tawny Owl).
- The Eagle Owl should be recorded on separate nights from those when other owls are being surveyed.

## Proposed Survey Periods for Stop-Over and Wintering Birds<sup>[2]</sup>

Common name	Scientific name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sources
Great Grey Shrike	<i>Lanius excubitor</i>											Semi-monthly survey		NRW (2021)
Long-eared Owl	<i>Asio otus</i>											Survey per decade (10 Days)		NRW (2021)
Northern Lapwing	<i>Vanellus vanellus</i>											Survey per decade (10 Days)		NRW (2021)
Eurasian Dotterel	<i>Charadrius morinellus</i>											11 surveys		NRW (2021)
European Golden Plover	<i>Pluvialis apricaria</i>											Survey per decade		NRW (2021)

- Südbeck<sup>[4]</sup> suggests that winter territories for the Great Grey Shrike may exist, but does not provide guidance on how to map them.
- For a set of resting or roosting species such as Northern Lapwing, Eurasian Dotterel, European Golden Plover or Red Kites, mapping methods have been compiled for the first time in the NRW guidelines<sup>[2]</sup>.

## Conclusion / Take Home Message

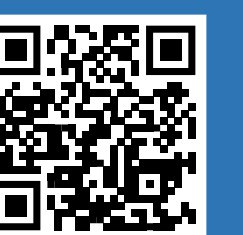
- The guidelines for territory mapping as described by Südbeck et al. (2005)<sup>[4]</sup> should be updated for some species.
- Updated proposals on survey periods, times of day, sound decoys, etc. are available for some species, in particular for North Rhine-Westphalia and Germany in general.
- In the context of projects that pose a threat to the environment, a general update of the survey guidelines on breeding, stop-over and roosting sites is desirable for Luxembourg / Germany (also for species not included in NRW guidelines<sup>[2]</sup> or DDA<sup>[5]</sup>).
- There is a need to update mapping methods in the light of the constant advances in knowledge (research, acoustic monitoring with artificial intelligence<sup>[3]</sup> and climate change), for example at intervals of approx. 10 years.



Proposed Survey Periods, NRW<sup>[2]</sup>



Nature Conservation, NRW



German Avifaunist Association (DDA)

## Sources

[1] MKULNV NRW (2017)

[2] MULNV & FÖA (2021)

[3] Singer, D.; Hagge, J. (2024)

[4] Südbeck, P. et al. (Hrsg. 2005)

[5] DDA, Dachverband Deutscher Avifaunisten (2024)