

AmphiMove: Examinations of movement patterns of European anurans in the agricultural landscape

Jan Sadowski*, Hansen, SC, Esther A.

JKI, Institute for Plant Protection in Horticulture and Forests, Vertebrates, Topphaideweg 88, 48161 Münster, Germany

*corresponding author: jan.sadowski@julius-kuehn.de

Study aim and background

Studying movement in intensively agriculturally used landscape for habitat selection analysis and risk evaluation.

- Amphibians are key species of intact food webs and consume invertebrates, but are also prey for other vertebrates.
- Amphibians are the most threatened animal group in the EU (Temple and Cox, 2009).
- Amphibians changing habitat preferences which make them vulnerable to agriculture activities.

Materials & Methods

We conducted a radio-telemetry approach in north-west Germany (Fig. 1) with common toads (*Bufo bufo*) which were caught around ponds and set up with transmitters. In a daily procedure the location, biotic & abiotic parameters of occupied microhabitats were recorded once per individual.

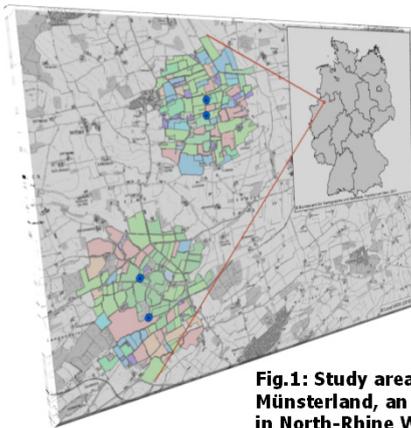


Fig.1: Study area with four ponds in Münsterland, an agriculture-dominated region in North-Rhine Westphalia (Germany)

Results

38 common toads were observed in the period of March till October 2017. Individuals did not change mostly their position (Fig. 2).

First results indicated that fields were rarely used in 6% of the observations (Fig.3).

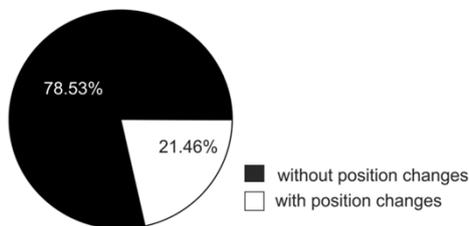


Fig. 2: Movement frequency of common toads (n=332)

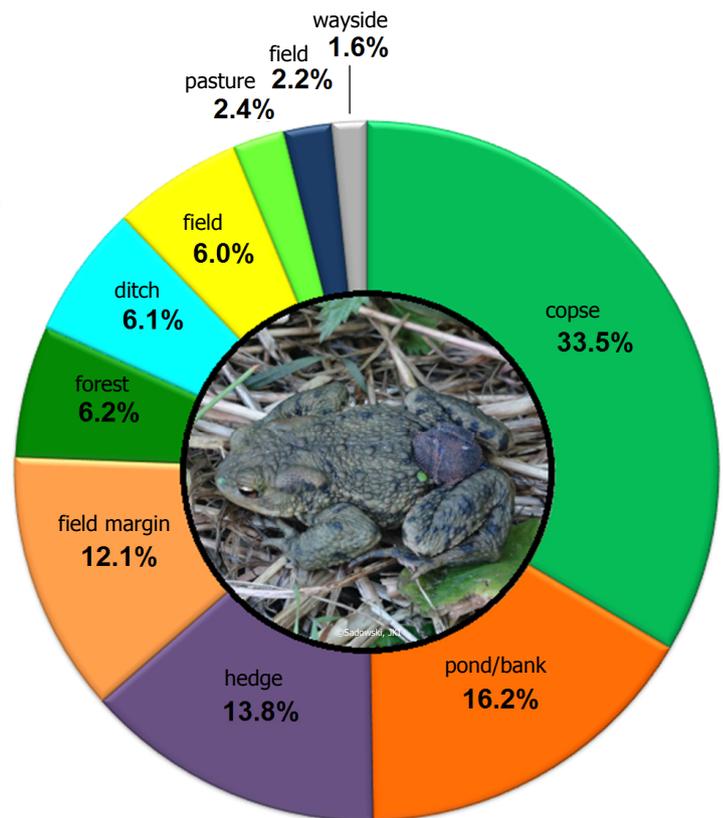


Fig. 3: Occupied habitats of common toads based on stationary and changed positions (n=1912)

Conclusion

- Common toads are moving from ponds to prefer habitats other than fields as daytime shelters.
- Movement patterns can be described by mostly stationary phases and rare position changes.
- Data collection is going on for analysis of seasonal impacts and habitat availability on movement.

References: Temple, H.J. and Cox, N.A. (2009). European Red List of Amphibians. Luxembourg: Office for Official Publications of the European Communities

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