Module P.GRK2300.D2:
Concepts and tools for collecting and analyzing spatial data in animal ecology (2025)

Module content (according to the module catalogue)

Learning outcome core skills
This module will enable students to gather, handle, analyze and interpret data for various research questions related to spatial animal ecology. For this, the module will first cover the most important theories, concepts and methods for sampling and analyzing spatial animal data. These topics will then be illustrated through practical analytical exercises.
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1. **Course: Introduction to spatial data and analyses in animal ecology** (lecture)

   Contents: Overview of most important theories and concepts in spatial (animal) ecology, summary of data types, how to sample them and methodological approaches to analyze them.

2. **Course: Introduction to spatial data and analysis in R F** (exercise)

   Contents: Hands-on exercises in R to demonstrate the concepts, data and methods covered in the lecture.

3. **Course: Applying and evaluating spatial analytical tools in animal ecology** (seminar)

   Contents: Discussion of concepts and tools covered in 1.) and 2.) and critical review of their advantages and limitations for the students' own data and research questions

Examination: Completion of exercises, not graded
Examination requirements: Understanding of basic theories and concepts in spatial (animal) ecology; general knowledge of data types, sampling procedures and analytical approaches for spatial data; basic abilities in using the statistical software environment R to handle, manipulate and analyze spatial ecological data.

Lecturers:	Prof. Niko Balkenhol & Dr. Johannes Signer (Wildlife Sciences)
Dates:	see schedule
Place	Seminar room Wildlife Sciences: room 0.134 in Büsgenweg 3 (for in-presence meetings, see schedule)
Credits:	2 ECTS (attendance of seminar (June 11th) and final meeting (June 27th), completion of exercises)

Language of instruction is English

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Detailed schedule
The course will include recorded lectures for self-directed study, reading of assigned papers and completion of exercises. In addition, a seminar and a final meeting will take place:

- April & May 2025 = posting of lecture videos on stud.IP (self-directed study)
- May & June = hands-on exercises in R (self-directed study based on lecture videos)
- June 11th 10am to 1pm = seminar
- June 12th -June 26th = solving of examination exercises
- June 27th 10-12am = meeting to discuss solution of examination exercises

Registration: Please register by sending an email to serena.mueller@forst.uni-goettingen.de by April 21st, 2025