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CAMERA TRAPPING – HOW TO ESTIMATE ROE DEER DENSITY USING PHOTOGRAPHIC CAPTURES

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Summary: Reliable estimates of abundance are essential for both science and management of European roe deer (*Capreolus capreolus*) but traditional survey methods are often cost and time intensive. The rapid advance of camera trapping technologies and new analytical approaches like REM (Random Encounter Method) might potentially lead to more precise estimates at lower costs.

We tested the applicability of REM in a free ranging roe deer population in Styria, Austria. Camera trapping included traditional Capture-Mark-Resight (CMR) and the new REM. At the same time two well established pellet count methods (Faecal Accumulation Rate and Faecal Standing Crop) were used as a density baseline. First results indicate strong differences between the estimates of the various approaches.

In a follow-up study we will test the results using an experimental setting. The testing will take place at a forested 60ha enclosure with a comparable roe deer density. Six roe deer are equipped with GPS collars and additionally animals are marked using ear tags. We deploy a dense camera trap array that will allow a stepwise comparison between different levels of capturing effort. With the help of a new analytical approach photographic captures will be summarised as Spatially Explicit Capture-Recapture (SECR) histories. The aim of this study is to evaluate the reliability and accuracy of different camera trapping methods and sampling designs in order to improve density estimates of roe deer populations in the wild.

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