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Estimating roe deer density using DNA from faecal pellets, and mark-recapture-analysis

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Our objective was to develop a mark-recapture approach based on DNA analysis from faecal pellets to estimate abundance and density of a free ranging roe deer (*Capreolus capreolus*) population in a forest dominated landscape in central Palatinate Forest, South West Germany. In March 2011 we collected daily, over a five day period, roe deer pellets on 20 line transects, each ca. 5,5 km long. The size of the study area was approximately 36 km².

We extracted DNA from the surface of faecal pellets, and used a set of 8 microsatellite markers to identify individual roe deer. We collected 2.011 faecal samples. In order to reduce laboratory costs we took a subsample of 400 samples in a first step for genotyping. Results of population estimate will be presented.

In a next step we will verify our estimation result by collecting tissue samples and conducting DNA analyses of harvested roe deer in the study area. Finally we compare the estimated population densities to the actual roe deer harvest in the study area helping to evaluate the effectively/efficiency of the roe deer management.