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Wildlife conservation

The use of non-invasive sampling in population estimates of wild boars (*Sus scrofa*) in Rhineland-Palatinate

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Population estimates of wild boar are usually based on a capture-mark-recapture (CMR) approach. However, trapping wild boar is not only costly and time consuming but also age class biased, because capture probability of experienced adult females is low. This weakens population estimates significantly. Nowadays, methods in DNA-analysis offer the possibility to use non-invasively obtained tissue samples to identify individuals via genotyping by single hairs or scats. If such method is integrated in a capture-mark-recapture approach, capturing and marking animals could be simply replaced by non-invasive sampling, e.g. by use of hair catcher. As it has been demonstrated in other studies this could mean that population estimates will be more robust because heterogeneity of capture probability will be reduced. Moreover, the use of non-invasive sampling renders CMR-studies less time consuming and more flexible. Thus, in 2003 we started a pilot study to test in a first step the applicability of microsatellite based genotyping for wild boar. We used hair follicles of 35 individuals of which DNA was isolated. The 5 polymorphic loci we found allowed us to identify each individual. An additional SRY-marker was applied for sex determination. In a second step we started to test barbed wire as hair catcher. This was done by luring wild boar onto a patch of spread maize surrounded by a wire rectangle with an approximate side length of 5 m. To equally catch hairs of small and larger individuals, the wire was stretched at different heights between 45 cm and 65 cm. Tests in enclosures were conducted under visual observation and in the field by use of a 12 h-tape recorder and IR-lights. We will present first results of the field experiments and discuss the use of this method to obtain data on population size in wild boar.