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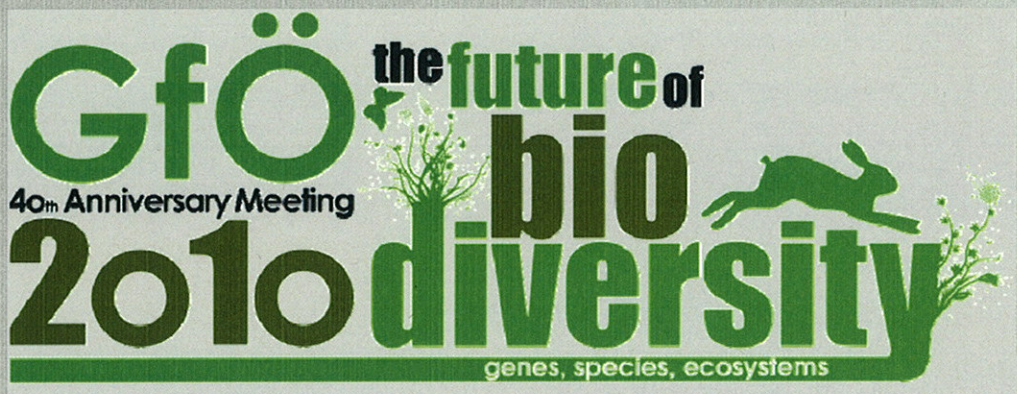

JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN

Monitoring of large mammals with a combination of aerial infrared and high resolution RGB images in forested areas – A status report

Monitoring von Großsäugern in Waldlandschaften mittels Luftbildern

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The use of cost effective and silent light aircrafts and the increased availability of infrared cameras on the civil market made the aerial surveys with IR cameras an interesting option. We want to present our results of aerial counts of larger mammals in forested areas using a combination of IR and RGB true colour images. The IR images are being used for detection whereas the high resolution RGB images are being used for species-specific identification. The aircraft was equipped with a computer linked camera system consisting of a JENOPTIC® infrared camera (640*480 Pixel) and a Canon 5D Mark 2® high resolution RGB camera. The aim of the 3 year project (Oct. 2008 – Sept. 2011) which is sponsored by the Deutsche Bundesstiftung Umwelt (DBU) is to establish a new monitoring method for larger mammals (especially ungulates) in forested areas. Until April 2010 we flew 21 missions over the national parks Bayerischer Wald, Hainich, Kellerwald-Edersee and the biosphere reserve Pfälzer Wald-Vosges du Nord. We overflew each investigation area of about 6000 ha in linear transects. Flying in altitudes of approximately 450 m above ground level the cameras scanned an area of 1.200-2.000 ha per flight, thus covering 20-30% of the investigation area. Depending on the area up to 19 larger mammals per 100 ha were detected. Furthermore we accomplished a study to test the detection rate in relation to the coverage (different type and density of the vegetation). Further flights are being planned for 2010/2011.