

## ASSESSING AGRICULTURAL DAMAGE BY WILD BOAR USING DRONES

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**Abstract:** In Flanders (northern Belgium), wild boar (*Sus scrofa* L.) returned in 2006 after more than 50 years of absence. Since the recolonisation, the population has been increasing, both in numbers and in geographic extent. During its absence, Flanders' landscape structure changed into a dense, mosaic-like pattern of agricultural, natural and urban areas. The return of the wild boar increasingly leads to human-wildlife conflicts, mainly linked to damage in agriculture. Hence, there is a growing need for a time-efficient, standardized and accurate method to assess crop damage. We present a drone based method, using Geographic Object-Based Image Analysis (GEOBIA) and Random Forests to calculate the damaged area and associated yield losses in individual fields. Our approach resulted in a 84.50% overall accuracy in calculating damaged area for maize fields, and 94.40% for grasslands. Damage levels ranged between 14.3% and 20.2% in maize fields and between 16.5% to 25.4% in grasslands. Our method can provide objective base data for a compensation schemes and can guide impact management strategies based on damage assessments.