

## **THE IMPACT OF MAPPING ERRORS ON THE RELIABILITY OF LANDSLIDE HAZARD MODELS**

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For the Staffora basin, which extends for almost 300 km<sup>2</sup> in the northern Apennines, three landslide inventory maps were independently produced by three groups of geomorphologists appertaining to the National Research Council, the University of Milan and the Province of Pavia, respectively. By confronting each map with the others, large positional discrepancies arise (in the range of 55-65%). When all three maps are overlain, the locational mismatch of landslide deposit polygons eventually increases to over 80%. Such outcomes confirm that the identification and mapping of landslide deposits are an intrinsically difficult and subjective operation that requires a great effort to minimise the inherent uncertainty.

To assess the impact of these errors on predictive models of landslide hazard, for the study area three discriminant models were built up using the same set of geological-geomorphological factors, as predictors, and the occurrence of landslide deposits within each terrain-unit, derived from each inventory map, as dependent variable. The comparison of these models indicates that, although the statistical modelling minimises input data errors, their relevance on model reliability remains of major importance.