Geophysical Research Abstracts
Vol. 12, EGU2010-3499, 2010
EGU General Assembly 2010

Recent development of shallow landslide susceptibility for two alpine catchments with different land use history, Switzerland

Katrin Meusburger and Christine Alewell
University of Basel, Institute of Environmental Geosciences, Basel, Switzerland (katrin.meusburger@unibas.ch)

Worldwide inventories conducted between 1964 and 1999 show a steady increase in the number of landslide disasters. The alpine valleys of Switzerland have always been subject to landslides, however, the recent development of landslide susceptibility is unknown. In this study we aim to evaluate and compare the development of shallow landslide susceptibly and its possible causes for two alpine valleys. Assessment of the shallow landslide incidence over time is done by aerial photograph interpretation using photos of several years since 1959. Based on these inventory maps shallow landslide susceptibility maps are constructed using multivariate logistic regression. An increasing trend of shallow landslide incidence could be observed for the alpine valley Urseren (30 km2; Central Swiss Alps) during the last 45 years. The valley is characterized by susceptible geology and rapid land use change that increased landslide susceptibility. The second site is the neighboring valley of Obergoms (65 km2). The Obergoms was chosen because it is characterized by a similar geological situation as the Urseren valley but a differing land use and land cover development. The Obergoms also showed an increase in shallow landslide incidence of 62% since 1967. Compared with the Urseren Valley the Obergoms is generally less affected by shallow landslides. This might be due to the fact that the highly susceptible geological formations in the Obergoms are forested and not pastured (as in the Urseren valley). The spatial pattern- and development of shallow landslide susceptibility will be discussed in connection with documented land use- and climate changes. Further the comparison between the valleys points to potential drivers for the increased shallow landslide incidence.