

Tracking natural and anthropic risks from historical maps as a tool for cultural heritage assessment: A case study

Nicu I.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© Springer-Verlag Berlin Heidelberg 2017. In this study, historical maps and orthophotos were used as a baseline to establish the vulnerability of cultural heritage (CH) sites to natural and anthropic elements as a tool for cultural heritage management in Valea Oii river basin (north-eastern Romania). Starting from the nineteenth century, a series of natural hazards began to have a frequent occurrence and with a higher degree of destruction as a consequence of anthropic pressure—village extension, connecting the human settlements by a network of roads, and building ponds to save water resources. The main indicators used were derived from cartographic digitisation: landslides, gullies, villages, roads and ponds. GIS integration and mapping allowed the creation of maps with both natural and anthropic factors. Following the GIS analysis of CH sites located within a 50-m distance from the roads, landslides, and gullies, 5 m for ponds, and inside villages, results that the highest number of CH sites (26) was affected by the development of road networks in 2012, while in 1894 only a number of three sites were affected. The creation of vulnerability maps (divided into three classes: low, moderate and high) was undertaken by overlaying the cultural heritage data with the information collected from the historical maps; these maps will then provide a comprehensive database to help local stakeholders, policy makers and local authorities to adopt proper protection and mitigation measures.

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Keywords

Cultural heritage, GIS, Historical maps, Mitigation, North-eastern Romania, References

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