



## **Locust outbreaks, invasions and weather in the Carpathian Basin: a millennial overview**

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Due to their Biblical context, locust invasions played an especially important role among documented natural hazards throughout the last millennium. In the Carpathian Basin up to the 1880s, migratory locusts, reported to be coming from the Black Sea area, played a leading role, while after the 1880s they were replaced by other locust types (Morroccan, Italian). As a result of recent investigations, in contemporary documentary evidence over a hundred years of mass locust outbreaks and invasions could be detected so far. While several mass locust outbreaks and invasions occurred in the Carpathian Basin (especially after the mid-18th century) only some of them continued towards the west, southwest. In the presentation an overview is provided on a new, millennial database of locust outbreaks and invasions referring to the Carpathian Basin, with regards to the origin and length of outbreaks and invasions. For measuring intensity and magnitude of invasion events and their consequences, a four-scale index-system was initiated and will be presented.

Apart from human intervention (or non-intervention), prevailing weather conditions before and during the invasion event had great impact on the outbreak, length, intensity and extension of locust invasions. Mass locust outbreaks and invasions are traditionally associated with specific weather preconditions (e.g. heat, drought). Moreover, some other specific weather conditions, such as hard but snowy winter or early spring may have supported, and prolonged rainy weather, hails or late spring frosts may have caused great damages and resulted (together with other reasons) a decline of the invasion. In the presentation, when weather information is available, an overview is provided over the weather events and weather conditions which could have influenced (supported or obstructed) the invasions in the last millennium, with special emphasis on the pre-instrumental period.