



## Evaluating the frequency of high-mortality flash floods in the Eastern Mediterranean region

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Despite advancements in flood risk mitigation, many regions globally still experience severe flood disasters leading to significant loss of life. Estimating the frequency of such catastrophic events is challenging, particularly in areas with limited disaster and instrumental records. Nevertheless, accurate frequency estimates are crucial for preparedness and civil protection, especially in the context of climate change and the projected increase of such events. This study presents a comprehensive database of high-mortality floods in the Eastern Mediterranean from 1882 to 2021, enabling a detailed analysis of the deadliest events and their seasonal, temporal, and spatial characteristics. The database identifies 132 flood events (causing 10 or more fatalities), occurring on average every 1.56 years. While less frequent, high-magnitude events (above the 85th percentile) were observed to have a return period of 9.1 years in the region. The analysis indicates an increase in high-mortality flood events in recent decades and highlights distinct seasonal and spatial patterns. The findings provide a basis for an improved understanding of catastrophic flood occurrences in the region and specifically on how common such events can be. Additionally, this research represents a significant step towards comprehensively understanding historical trends in extreme floods and their potential future trajectories.