

Records show more floods across Europe over past 150 years, but fewer deaths and financial losses

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A team of researchers at Delft University has found that while the

number of floods across Europe over the past century and a half has increased, the number of resulting deaths has decreased, as have financial losses. In their paper published in the journal *Nature Communications*, the group describes studying flood records and what they found. Brenden Jongman with the University of Amsterdam offers a Comment piece on the work done by the team in the same issue.

Europe, like most other places on Earth, has a long history of flooding due to a variety of circumstances. That trend has changed only slightly, the researchers with this new effort note, as even more flooding has occurred over the past 150 years.

To learn more about flooding trends in Europe, the researchers conducted searches on a database called the Historical Analysis of Natural Hazards in Europe. It holds information about floods going back to 1870, among other things. In all, they found information on 1,564 floods and the impact of those floods on the people that experienced them.

The researchers found that the number of floods has been climbing, though they were not able to confirm whether that was due to better reporting. They also noted that Europe's population has increased substantially over the past century and a half. They found that in spite of such increases, the number of people killed in floods has actually been decreasing. From the period 1870 to 1950, they found that the number of people dying in floods decreased by approximately 1.4 percent each year. From 1950 to 2016, the percentage improved more, decreasing by 4.3 percent each year. They note that along with an expanded population came a huge increase in wealth, but still, [financial losses](#) due to floods fell, most particularly since 1950.

The researchers suggest the reasons for the decline in deaths and property damage are likely due to people moving to cities and living in

much sturdier structures. They note that their data does not take into account regional variations or small floods that may not have been reported.

More information: Dominik Paprotny et al. Trends in flood losses in Europe over the past 150 years, *Nature Communications* (2018). [DOI: 10.1038/s41467-018-04253-1](https://doi.org/10.1038/s41467-018-04253-1)

Abstract

Adverse consequences of floods change in time and are influenced by both natural and socio-economic trends and interactions. In Europe, previous studies of historical flood losses corrected for demographic and economic growth ('normalized') have been limited in temporal and spatial extent, leading to an incomplete representation of trends in losses over time. Here we utilize a gridded reconstruction of flood exposure in 37 European countries and a new database of damaging floods since 1870. Our results indicate that, after correcting for changes in flood exposure, there has been an increase in annually inundated area and number of persons affected since 1870, contrasted by a substantial decrease in flood fatalities. For more recent decades we also found a considerable decline in financial losses per year. We estimate, however, that there is large underreporting of smaller floods beyond most recent years, and show that underreporting has a substantial impact on observed trends.

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