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Alexandria, Va. — You have probably heard of “100-year floods” and “500-year droughts,” and perhaps you’ve seen signposts near rivers showing when the last big flood was or statements about when the last severe drought occurred. But do you really know what those terms mean, or what your likelihood is of experiencing such a hazard in any given year? Probably not, according to Richard Vogel of Tufts University, because although such terms have long helped policymakers and the public try to make sense of severe weather, they may confuse the issue more than clarify it.

Return periods refer to the amount of time that passes on average between consecutive events of similar magnitude for a given location. “The famous 100-year flood is the flood that’s exceeded on average once every 100 years,” meaning “it has a 1 percent chance of occurring in any given year,” Vogel told EARTH. But when it comes to communicating potential risk from flooding, Vogel says, return periods give many people a false sense of security, partly because they are often mistaken as absolutes instead of averages.

So what does the “100-year flood” actually mean, and how can people get a better sense of what their risks actually are? Read more in the January issue of EARTH magazine: http://bit.ly/1x5HFov.

For more stories about the science of our planet, check out EARTH magazine online or subscribe at www.earthmagazine.org. The January issue, now available on the digital newsstand, features stories on whether the iceberg that sunk the Titanic was anomalous, where ash from a Yellowstone supervolcano eruption would likely settle, and how huge shell piles from the Incan period in Peru offer clues to past El Niño events, much, much more.

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