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Risk, ecosystems & robust power-law scaling of wildfires

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The quantification of wildfire regimes, especially the relationship between the frequency with which events occur and the area they burn, is of particular interest to both ecologists and wildfire managers. Many recent wildfire studies have shown a robust inverse power-law (heavy-tailed) frequency-area distribution. This distribution reduces the description of a wildfire regime to just two parameters, allowing comparisons between different regions. We explicitly compare these parameters from recent studies of wildfire regimes in various regions and ecosystems of the world. In particular, we highlight a study for the USA that compares 18 regions, each with distinct climate, vegetation, and topography, using a data set consisting of 88,916 wildfires for the period 1970-2000. We believe that studies such as this, using statistical models to examine potential ecological (or other) processes and factors influencing wildfire regimes, are likely to prove fruitful in the future.