

**NATURAL DISASTER
EVENTS BY DECADE**



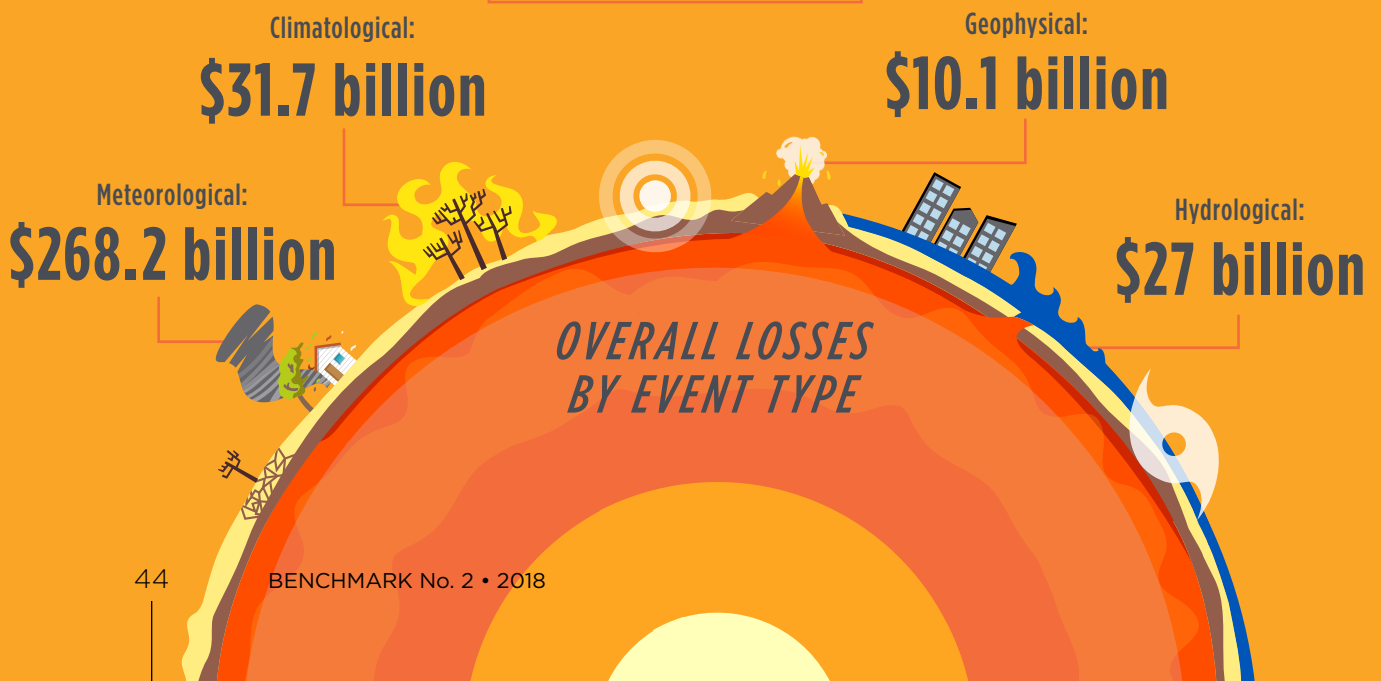
	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950
Total # of Events	82	65	102	106	147
Average Per Year	8	6	10	10	14

NATURE'S NEXT MOVE?

FOR THE PAST CENTURY, THE AVERAGE NUMBER OF NATURAL DISASTERS AROUND THE WORLD HAS STEADILY INCREASED.

2017
AT A GLANCE

**TOTAL:
\$337 billion**



1951-1960

1961-1970

1971-1980

1981-1990

1991-2000

2001-2010

2011-2017

334

625

963

1,980

3,203

4,388

2,464

33

62

96

198

320

438

352

Data published by EMDAT International Disaster Database, 2017

As populations grow and migrate toward coastal cities, the risk of exposure to weather-related events increases. Additionally, because technology is connecting populations to each other and to worldwide media, the occurrences of events* are more widely reported.

and consequences — total monetary losses came to \$337 billion in 2017 alone. In such a future, understanding preparedness and mitigation tactics will be key for keeping populations safe, critical assets intact and utility services ready to withstand the coming storm.

Regardless of the reasons, the trend is pointing toward a future with more natural disasters. This uptick in frequency of events intensifies the devastation

TURN PAGE

MOST DEVASTATING NATURAL DISASTER EVENTS WORLDWIDE



Wildfire, USA

Fatalities: 25
Losses: \$10.5 billion



Drought, Europe

Fatalities: 0
Losses: \$3.8 billion



Earthquake, Mexico

Fatalities: 2,700
Losses: \$6 billion



Flood & Landslide, China

Fatalities: 56
Losses: \$6 billion



Flood, South Asia

Fatalities: 2,700
Losses: \$3.5 billion



Typhoon Hato, China, Vietnam

Fatalities: 22
Losses: \$3.5 billion



Hurricane Harvey, USA

Fatalities: 88
Losses: \$85 billion



Hurricane Irma, USA, Caribbean

Fatalities: 128
Losses: \$67 billion



Hurricane Maria, Caribbean

Fatalities: 108
Losses: \$63 billion

Data from Munich Re, NatCatSERVICE

* "Events" include disasters of geophysical (earthquake, tsunami, volcanic activity), meteorological (tropical storm, extratropical storm, convective storm, local storm), hydrological (flood, mass movement), and climatological (extreme temperature, drought, wildfire) types.

THE FUTURE OF DISASTER PREPAREDNESS

It often takes a major event to change regulations and laws that protect disaster-prone areas. A few have brought about change — and continue to do so today.



LOS ANGELES, CALIFORNIA, EARTHQUAKES, 1971-PRESENT

The Los Angeles City Council unanimously voted in late 2015 to require retrofitting for an estimated 15,000 wood and concrete buildings to better withstand seismic activity. (*The LA Times*)



JOPLIN, MISSOURI, TORNADO, 2011

Local, state and federal governments worked together with emergency agencies to introduce land use controls and new building codes that strengthen construction and reduce risk. (*The Geographical Review*)



TOHOKU, JAPAN, EARTHQUAKE AND TSUNAMI, 2011

A series of regulations were created for all of Japan, establishing standards for radiation levels in foods and a new nuclear regulatory agency to push changes in reactor installation, plans for construction works and operational safety programs. (Library of Congress)



HURRICANE HARVEY, TEXAS, 2017

Officials in Harris County, Texas, approved new regulations on building construction in flood-prone areas, increasing the elevation for new homes and structures, which is up to 8 feet in some areas. (*The Associated Press*)