

Hurricane Data Sheet — Strength

Earth and Space Science
Unit 4

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Is global warming affecting hurricanes?

We know that hurricanes form above warm ocean water. And it's thought that warmer water can lead to stronger hurricanes. The Earth warmed one degree Fahrenheit over the 20th Century. Warming is causing sea surface temperatures to climb. Has global warming had an impact on hurricanes? This is an area of active research. One way that scientists are trying to answer this question is by looking at the history of hurricanes.

The top table shows the total number of hurricanes that happened in each region during two time periods. The lower table shows the number of very strong hurricanes that happened over the same two time periods. Researchers at Georgia Tech and the National Center for Atmospheric Research examined this data to learn more about whether hurricanes have changed in recent decades because of global warming. Take a look at the numbers and answer the questions below.

Total Number of Hurricanes:

Hurricane Region	1975-1989	1990-2004
East Pacific Ocean	144	140
West Pacific Ocean	340	283
North Atlantic	80	100
Southwestern Pacific	83	79
North Indian Ocean	13	28
South Indian Ocean	128	147

Questions:

1. Has the total number of hurricanes increased, decreased, or stayed about the same? Is the trend the same for all regions?

Number of Strong Hurricanes:
(Category 4 and 5 storms)

Hurricane Region	1975-1989	1990-2004
East Pacific Ocean	36	49
West Pacific Ocean	85	116
North Atlantic	16	25
Southwestern Pacific	10	22
North Indian Ocean	1	7
South Indian Ocean	23	50

2. Has the number of strong (category 4 and 5) storms increased, decreased, or stayed about the same? Is the trend the same for all regions.

Data from Webster, et al. (2005) *Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment*. Science 309, 1844-46.

Hurricanes and Climate- A Window to the Universe Classroom Activity
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Are hurricanes getting stronger?

How many strong hurricanes were there a few decades ago? How many are there today? Make small bar graphs on the map below using the data on the previous page to show whether there has been a change in the number of strong hurricanes in the six regions of the world where tropical cyclones occur.



What do you think?
 Are there more strong hurricanes now? (Take a look at the bar graphs of strong hurricanes you made above. Do they show a trend?)

YES NO

