D1. Evidence Cards Extreme Weather

#### **EW-Evidence #1**

Since 1958, Earth's atmosphere and oceans have changed. The amount of carbon released to the atmosphere has risen. Dissolved carbon in the ocean has also risen. More carbon has increased ocean acidity and coral bleaching.

#### **EW-Evidence #2**

From 1910 to 1995, record rainfall events increased across the United States. Over the same time period, there was a sharp increase in the amount of carbon released to the air. Much of this carbon comes from fossil fuel use.

# **EW-Evidence #3**

Ocean surface temperatures have increased since about 1970. In the North Atlantic, tropical storm power has also increased over this same time period. A storm's power depends on its strength and how long it lasts.

# **EW-Evidence #4**

Since 2012, there have been more intense, extreme weather events around the world. Europe had the second-highest yearly temperature on record. The South Central United States had the costliest cold wave on record. The decade from 2013 to 2023 was the warmest ever since pre-industrial times.

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# **EW-Evidence #5**

Since 1983, the number of fires each year in the U.S. has not changed. The number of acres burned by those fires has increased. Also, since 1983, the average annual temperature in the U.S. has increased.

#### **EW-Evidence #6**

In the last 100 years, global temperatures have increased. In that same time period, heavy precipitation events have also increased.

#### **EW-Evidence #7**

The amount of ocean ice has declined, with the Arctic warming at a pace two to three times the planet's average. At the same time, record cold temperatures and snowfall have occurred in Europe and Asia.

# **EW-Evidence #8**

Earth's orbit is elliptical. But, the shape of the ellipse is almost a perfect circle. In the Northern Hemisphere, Earth is slightly closer to the Sun in winter than in summer. Earth's surface receives more sunlight in summer than in winter.