Fingerprints of Climate Change



Melted asphalt, New Delhi, India, 2015

Because climate change can be gradual and influenced by natural as well as human causes, it is difficult to say whether a particular event was "caused" by human-induced climate change. But we can examine how the likelihood of an extreme event changes. Heat waves like the one in Europe in 2003, responsible for as many as 70,000 deaths, were rare during the last century. Unabated warming increases the odds that summers could egularly become as hot as the summer of 2003.

Highest temperature during recordbreaking 2015 heat wave in India



CLIMATE CHANGE **IN NEW YORK CITY**

TURN THE DIAL tO SEE how New York City is planning for the future



Melting glacier, Prince Christian Sound, Greenland

Why Are Seas Rising? Globally, average sea level rose 21 centimeters (8.2 inches) between 1880 and 2009. Why? Water takes up more space as it warms, causing oceans to expand. In addition, mountain glaciers have melted, adding water from the land to the sea. The great ice sheets on Greenland and Antarctica are also shrinking rapidly, which suggests that over the next 100 years, sea level rise will take place even faster than in the 1900s.

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Climate Change and Risk

We can see that climate is changing, but specific consequences are still unknown—for example, precisely how much sea level will rise. This means climate change presents risks that are uncertain, but potentially devastating. Efforts to curb emissions and adapt to a rapidly changing climate can help safeguard society against this uncertain future.





Illustration from 1627 depicting strife during the Thirty Years' War (1618–1648)

PAST EVENTS AND FUTURE RISK

Natural changes in climate can also have severe nsequences. In the late 1500s, a cool period nown as the Little Ice Age began in the Northern emisphere. The 1600s, when temperatures were at their lowest, was marked by famine, migration and conflict. Today it is warming, not cooling, that hreatens food production and could increase the risk of widespread strife.

Drought-damaged corn

EXTREME WEATHER

As warming progresses, severe weather events that were once rare, such as heat waves, droughts and floods, will become more common. What's more, the most extreme events of the future will be considerably more severe than they are today, posing serious risks to society.

Indiana, 2012

HOW WILL OUR LIVES CHANGE?

TURN THE DIAL tO explore risks posed by climate change

Next Steps

The most dire consequences of climate change are not inevitable. Society can make choices now that reduce the chances of catastrophe in the future. Cutting CO₂ emissions will lessen the likelihood of some of the gravest potential consequences. Preparing infrastructure for sea-level rise and extreme heat now can help people and communities manage immediate impacts.

A worldwide shift to renewable energy sources like wind and solar power could limit the risk posed by climate change.