The impact of climate change on casualty and professional lines

Lisa Simon, JD, RPLU, CPCU, ARe
Claims Expert - Swiss Re
May 2022

ARIAS U.S.

It’s getting hot out there…

The world is on track to warm at least 1.5° Celsius above pre-industrial levels.

Heat waves are occurring more often, lasting longer and becoming more intense.

Transportation infrastructure is being damaged

Roads are buckling.

Tarmacs are melting.

Train tracks are distorting.

Steel bridges are expanding.

Permafrost is thawing

Permafrost is made of a combination of soil, rocks and sand that is held together by ice.

It supports some 120,000 buildings, 40,000 kilometers of roads and 9,400 kilometers of pipelines.

Thaw can cause collapse and landslides.

It can also release ancient bacteria and viruses.

Car accidents are increasing

Auto-related fatalities increase when temperatures rise.

Extreme heat increases the risks of tire blowouts, engines overheating and other equipment malfunctions.

Because extreme heat makes individuals more tired, there are more accidents due to drowsy driving.

Workers are at risk

Hotter temperatures increase the likelihood of injury on the job.

Heatstroke risk rises, not just for agricultural and construction workers but also for those in manufacturing and warehouses who work indoors without climate-controlled environments.

So are manufacturing processes

Heat can affect a product's integrity. Products most at risk include food, medications and tech devices.

Heat also lowers worker productivity.

The water is rising

As the world gets warmer, the rate of evaporation from the ocean is increasing (because water expands as it gets warm), which leads to more frequent and intense storms and flooding.

In the United States, almost 40 percent of the population lives in relatively high-population-density coastal areas, where sea level plays a role in flooding, shoreline erosion and hazards from storms.

Glaciers are melting

Over the past two decades meltwater accounted for 21% of global sea level rise.

By 2050, the expected relative sea level will cause tide and storm surge heights to increase, and major and moderate high tide flood events will occur as frequently as moderate and minor high tide flood events occur today.

Increased precipitation is causing landslides

The most common driver for landslides worldwide is rainfall.

It reduces the strength of the soil, and when that soil strength decreases, it can reach a point where it fails, and naturally just slides away.

Impact on shipping

Rising sea levels can damage ports, cause coastal erosion and close shipping channels.

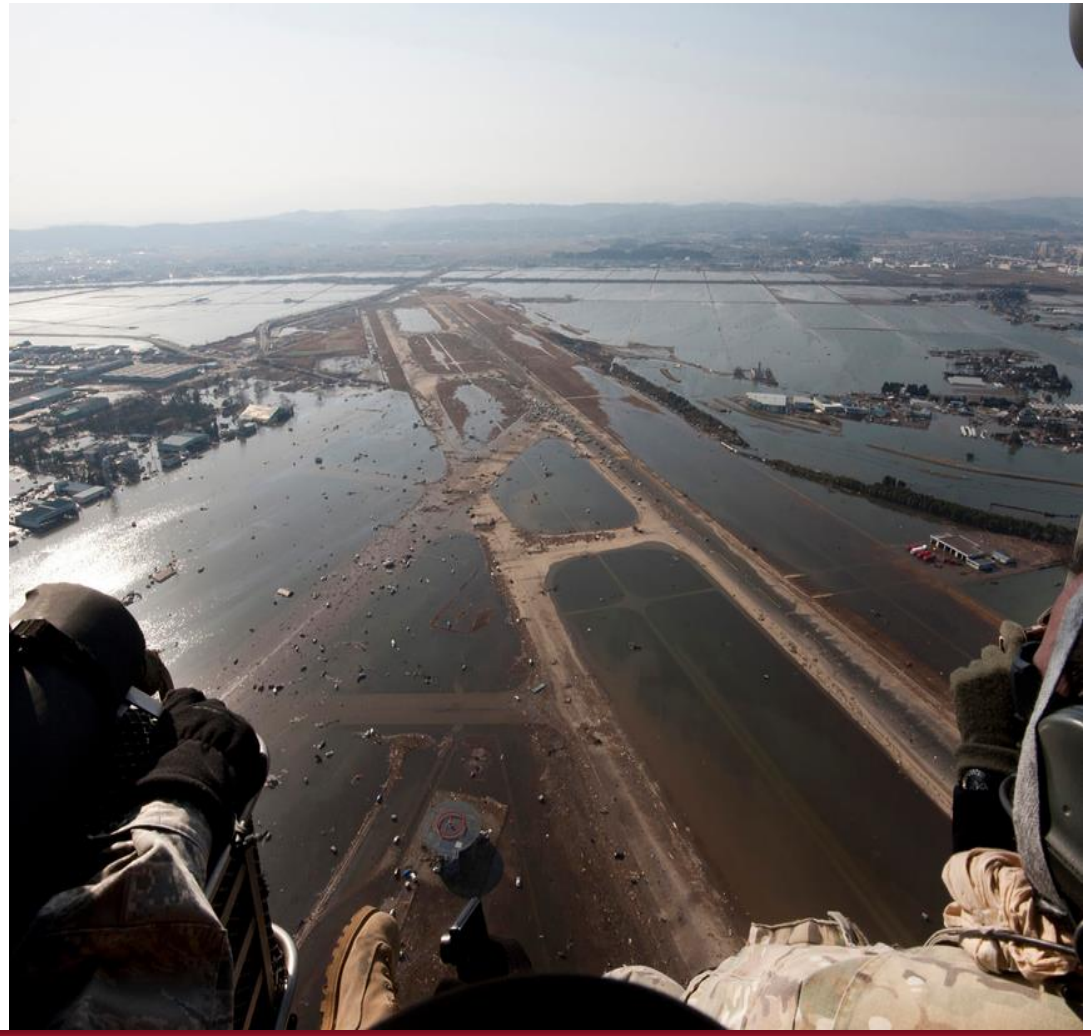
Hurricane Katrina is estimated to have caused $2.2b in damages to ports in Louisiana.

Stronger waves can threaten the safety of crews and increase the risk of cargo loss.

Impact on airports

Many airports are at risk because they are frequently located near bodies of water.

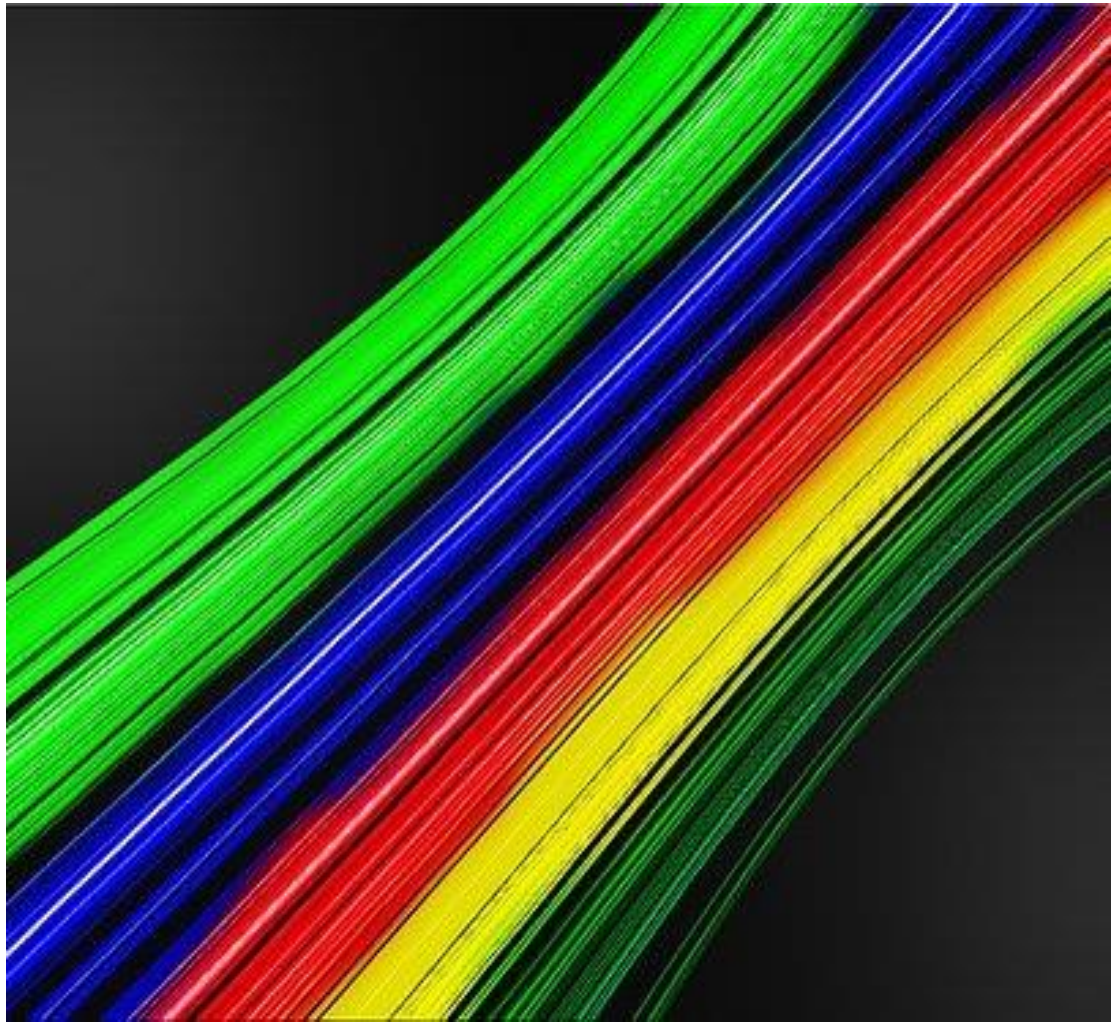
With 1 meter (3.3 ft) of sea level rise, an estimated 80 airports globally would be swamped by 2100.



Impact on electrical infrastructure

Storms and flooding can damage or destroy our electrical transmission and distribution infrastructure.

A 2021 report titled “The 3rd National Risk Assessment: Infrastructure on the Brink” found that 25 percent of critical infrastructure facilities are at risk of being affected by worsening flood events.



Impact on data centers

A 2018 study found that by 2030 hundreds of data centers will be severely impacted by a one foot rise in sea level.

Within fifteen years, more than four thousand miles of fiber optic cable necessary to transmit data across the US will be underwater. These fiber optic cables span much of the country from Los Angeles to Seattle, and New York City to Miami.

Impact on agriculture

Flooding can destroy crops and kill livestock.

Flooding will wash fertilizer, manure and pesticides into water sources and onto crops, causing an increase in food and water contamination claims.

Natech

Natech is when a natural event, such as a flood, triggers a technological malfunction that leads to the release of hazardous materials. For example:

- Katrina caused one of Murphy Oil's storage tanks to float off its foundation, which caused more than a million gallons of crude oil to escape.
- Flooding from Hurricane Harvey triggered a loss of power to an Arkema chemical plant in Texas, which resulted in toxic chemicals being released into the surrounding area.

Natech

More than 800 hazardous Superfund sites near the Atlantic and Gulf coasts are at risk of flooding in the next 20 years, even with low rates of sea level rise.