

Climate change could pose 'existential threat' by 2050: report

By [Julia Hollingsworth](#), CNN

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Climate change is "defining issue" of our time, says UN Secretary General 03:18

(CNN) Twenty days of lethal heat per year. Collapsed eco-systems. And more than one billion people displaced.

Those are all probable scenarios that could devastate societies by 2050 if swift and dramatic action isn't taken to curb [climate change](#), according to a think tank report backed by a former Australian military chief.

The [paper](#), by the Melbourne-based Breakthrough National Center for Climate Restoration, is not a scientific study, but an attempt to model future scenarios based on existing research.

It paints a bleak future in which more than a billion people are displaced, food production drops off and some of the world's most populous cities are left partially abandoned.

Its foreword is written by Chris Barrie, a retired admiral and former head of the Australian Defense Force, who said that "after nuclear war, human-induced global warming is the greatest threat to human life on the planet."

"A doomsday future is not inevitable," he notes. "But without immediate drastic action our prospects are poor."

Andrew King, a climate science lecturer at the University of Melbourne who was not involved in the report, said its findings were "plausible," although he did not expect human civilization to end in 2050.

"Without a doubt (climate change) is a huge threat to human civilization," he said. "It's the details that we need to pin down."

King said that while he expected all of the issues mentioned in the paper to be occurring by 2050 -- such as displacement of people and food shortages -- it remained to be seen how widespread they would be.

He noted that there were many factors aside from climate change that could have an impact on global security and how humans react to altered conditions, such as population growth and inter-governmental action.

Dire warnings

The future predicted by the report is one of potential global catastrophe.

Authors David Spratt and Ian Dunlop, both longtime climate researchers, warn that climate change at present poses a "near-to-mid-term existential threat to human civilization."

They drew on existing scientific research and "scenario planning" to forecast that if global temperatures rise 3 degrees Celsius (37.4 Fahrenheit) by 2050, 55% of the world's population across 35% of its land area would experience more than 20 days of lethal heat per year, "beyond the threshold of human survivability."



Global sea levels could rise 2 meters by 2100, study finds 02:57

In that scenario, many ecosystems -- including those in the Arctic, the Amazon rainforest and the coral reef systems -- would collapse.

Across West Africa, tropical South America, the Middle East and Southeast Asia, there would be more than 100 days a year of deadly heat, leading to over 1 billion people being displaced.

Food production would drop off due to the "catastrophic decline" in insect populations, weather too hot for humans to survive in significant food-growing areas and chronic water shortages. With not enough food for the world's population, prices would skyrocket, the paper's authors argue.

Rising sea levels would cause people to abandon parts of Mumbai, Jakarta, Guangzhou, Hong Kong, Ho Chi Minh City, Shanghai, Bangkok and Manila, among other cities. Around 15 million people in Bangladesh would be displaced.

"The social consequences range from increased religious fervor to outright chaos," the paper said. "In this scenario, climate change provokes a

permanent shift in the relationship of humankind to nature."

Potential disaster

The latest report is not the first time researchers have warned of major social problems. In March, a landmark United Nations (UN) [paper](#) found that humankind's window for action was closing fast.

The UN said that -- under a business-as-usual scenario -- millions of premature deaths could be expected due to air pollution, mass species extinction affecting the ability to meet human food and resource needs, and freshwater pollutants making antimicrobial-resistant infections a major cause of death by 2050.

In May, IPBES, a UN-affiliated climate research group, [released](#) a damning report on global biodiversity, which found that 75% of the planet's land surface has been "significantly altered" and 1 million species already face extinction.

Another [report](#) out this week, from environmental risk management firm CDP, warned that the world's biggest companies could face up to \$1 trillion in losses due to climate change.

"The goalposts for climate action have never been clearer for companies," Nicolette Bartlett, CDP's director of climate change, said in a statement, warning that many costs could kick in within the next five years.

Climate change doomsday scenario could start by 2050 if we don't act, report warns

Elizabeth Weise

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RNZ

A climate change think tank is warning of an environmental catastrophe within three decades, saying we need to take the issue more seriously.

A chilling Australian policy paper outlining a doomsday scenario for humans if we don't start dealing with climate change suggests that by 2050 we could see irreversible damage to global climate systems resulting in a world of chaos where political panic is the norm and we are on a path facing the end of civilisation.

The worst thing about it, say experts, is that it's actually a fairly calm and rational look at just how bad things could get - and how quickly - if humans don't stop emitting greenhouse gases into the environment.

The scenarios "don't seem that far-fetched to me. I don't think there's anything too crazy about them," said Adam Sobel, a professor of applied physics and mathematics at Columbia University in New York City who studies atmospheric and climate dynamics.

Existential climate-related security risk:

A scenario approach

MAY 2019

Written By: David Spratt & Ian Dunlop

Foreword By: Admiral Chris Barrie AC RAN Retired

Breakthrough - National Centre for Climate Restoration | breakthroughonline.org.au

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FOREWORD

Admiral Chris Barrie, AC RAN Retired

In 2017-18, the Australian Senate inquired into the implications of climate change for Australia's national security. The Inquiry found that climate change is "a current and existential national security risk", one that "threatens the premature extinction of Earth-originating intelligent life or the permanent and drastic destruction of its potential for desirable future development". I told the Inquiry that, after nuclear war, human-induced global warming is the greatest threat to human life on the planet. Today's 7.5 billion human beings are already the most predatory species that ever existed, yet the global population has yet to peak and may reach 10 billion people, with dire implications absent a fundamental change in human behaviour. This policy paper looks at the existential climate-related security risk through a scenario set thirty years into the future. David Spratt and Ian Dunlop have laid bare the unvarnished truth about the desperate situation humans, and our planet, are in, painting a disturbing picture of the real possibility that human life on earth may be on the way to extinction, in the most horrible way. In Australia recently we have seen and heard signals about the growing realisation of the seriousness of our plight. For example, young women speak of their decisions to not have children, and climate scientists admitting to depression as they consider the "inevitable" nature of a doomsday future and turn towards thinking more about family and relocation to "safer" places, rather than working on more research. Stronger signals still are coming from increasing civil disobedience, for example over the opening up of the Galilee Basin coal deposits and deepwater oil exploration in the Great Australian Bight, with the suicidal increase in carbon emissions they imply. And the outrage of schoolchildren over their parent's irresponsibility in refusing to act on climate change. As my colleague Professor Will Steffen has said of the climate challenge: "It's not a technological or a scientific problem, it's a question of humanities' socio-political values... We need a social tipping point that flips our thinking before we reach a tipping point in the climate system." A doomsday future is not inevitable! But without immediate drastic action our prospects are poor. We must act collectively. We need strong, determined leadership in government, in business and in our communities to ensure a sustainable future for humankind. In particular, our intelligence and security services have a vital role to play, and a fiduciary responsibility, in accepting this existential climate threat, and the need for a fundamentally different approach to its risk management, as central to their considerations and their advice to government. The implications far outweigh conventional geopolitical threats. I commend this policy paper to you.

Admiral Chris Barrie, AC RAN Retired, is Honorary Professor, Strategic & Defence Studies Centre, Coral Bell School of Asia Pacific Affairs, Australian National University, Canberra. He is a member of the Global Military Advisory Council on Climate Change and was Chief of the Australian Defence Force from 1998 to 2002.

The paper was written by an independent think-tank in Australia called Breakthrough National Centre for Climate Restoration. It offer a scenario for 2050 in a world where humans didn't lower carbon emissions enough to keep the global temperature from rising.

Last year's United Nation's Intergovernmental Panel on Climate Change report said the world's nations must quickly reduce fossil fuel use to keep the rise in global temperatures below 1.5 degrees Celsius. The transitions, the report said, must start now and be well underway in the next 20 years.



KEVIN FRAYER/GETTY IMAGES

The paper details a very grim future for humanity.

The Australian report imagines a world where that didn't happen and global temperatures warmed by 3 degrees Celsius or even more. While that may not seem like a lot, on a worldwide scale it is expected to result in massive, catastrophic shifts to the weather, agriculture and even the habitability of some areas.

"Three degrees Celsius by 2100 is a pretty middle-of-the-road estimate. It's not extreme and it's totally believable," if serious action isn't taken, said Sobel.

The writers say their scenario offers a "glimpse into a world of 'outright chaos' on a path to the end of human civilisation and modern society as we have known it, in which the challenges of global security are simply overwhelming and political panic becomes the norm."



SCOTT HAMMOND/STUFF

Youth around the world have been striking to protest inaction over climate change.

Their scenario follows this outline:

2050

In the years leading up to 2050, policy-makers fail to cut greenhouse gas emissions. The case for the global climate-emergency mobilisation necessary to keep temperatures from rising is "politely ignored." Global greenhouse gas emissions peak in 2030 and begin to fall due to a drop in fossil fuel use but damage has been done and warming reaches 3 degrees Celsius.

By 2050, sea levels have risen 1.6 feet and are projected to increase by as much as 10 feet by 2100.

Globally, 55 per cent of the population lives in areas subject to more than 20 days of lethal heat a year, beyond the human threshold of survivability.

North America suffers from devastating weather extremes including wildfires, heatwaves, droughts and flooding. China's summer monsoons fail and water in Asia's great rivers are severely reduced from the loss of more than one-third of the Himalayan ice sheet.

A BILLION PEOPLE DISPLACED

Within 30 years from today, ecosystems in coral reefs and the Amazon rainforest collapse, affecting fishing yields and rainfalls.

Deadly heat conditions turn many areas unliveable, resulting in more than a billion people being displaced in West Africa, tropical South America, the Middle East and South-East Asia.

Two billion people globally are affected by lack of water. Food production falls by one-fifth as droughts, heat waves, flooding and storms affect crops.

Rising ocean levels make some of the world's most populous cities uninhabitable, including Mumbai, Jakarta, Canton, Hong Kong, Shanghai, Lagos, Bangkok and Manila. Billions of people must be relocated.

This leads to fights over land, resources and water and potentially to war and occupations.

ALL TOO POSSIBLE

The scenarios given in the paper are all too likely, say experts. Jonathan Patz is a physician and director of the Global Health Institute at the University of Wisconsin-Madison. He's been studying the health effects of global warming for two decades.

"There are studies showing a doubling of the number of people at risk for hunger by mid-century because of droughts. And a wider prevalence of infectious diseases like malaria, Dengue and the Zika virus. It could result in forced migrations and massive refugee problems," he said.

He noted that just before the Syrian civil war began in 2011, one of the area's most severe droughts on record pushed rural to urban migration rates to four times normal and resulted in food riots.

We're already getting a taste of what's to come, said David Doniger who directs the climate program at the Natural Resources Defense Council, an environmental non-profit based in New York City. He cited this year's extreme weather that's resulting in historic flooding in the Midwest, as well as last year's giant wildfires and severe storms nationwide. Imagine that on a global scale, he says.

This past December, a record-shattering heat wave in Australia caused temperatures to soar above 120 degrees in some spots.

"All of these things are going to compound. People are going to be forced to migrate or die. All of this is going to get worse and combine in ways that worsen political tensions and create instability," he said.

The United States is not immune to any of this, said Solomon Hsiang, who studies climate change economics and directs the Global Policy Laboratory at the University of California-Berkeley. His research has found that colder countries such as Canada and Russia may benefit from warming because they'll have more arable land. But not the United States, which "is already too warm to be a big winner," he said.

The southeast and the Midwest will fast bigger, stronger storms and wilder weather, causing flooding, damaging businesses and homes and disrupting farming. The West will have more droughts and wildfires.

Hsiang's research shows a roughly 20 per cent chance that conditions not unlike the Dust Bowl could be almost continuous, he said. That was a four-year period from 1935 to 1938 when a severe drought and dust storms swept from Texas to Nebraska, killing livestock and destroying crops. Dust from the storms reached as far as New York City.

WE HAVE THE TECHNOLOGY

The good news, say scientists, is that we have the technology to shift to a carbon-neutral energy system today.

"We're not waiting for solutions. We're simply waiting for the political will to understand that the solutions are here. Clean energy is not a matter of waiting, it's a matter of implementing," said Patz.

Such enormous undertakings are not unprecedented. Hsiang cites the tremendous economic shifts that helped fight World War II. "When we've faced real threats we've been willing to make these kinds of large-scale changes," he said.

The decisions we make will be ones future generations will remember us for, Hsiang said.

"The same way we look back today and have pride in the things our grandparents did to defend democracy -- our grandchildren are going to look back and have feelings about what we did today," he said.
"What those feelings are," he said, "will depend on what we decide to do."
- USA Today