

Climate change may doom 1 in 3 species of plants and animals in the next 50 years

By Allen Kim, CNN

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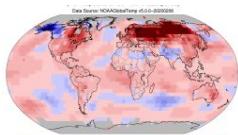


(CNN) — Take a moment to cherish your plants and appreciate the animals you see around you.

In 50 years, a third of them may no longer exist.

Using data from surveys that studied 538 animals, insects and plants from 581 sites across the globe, researchers John J. Wiens and Cristian Román-Palacios from the University of Arizona found that approximately one in three plant, insect and animal species could face extinction by 2070. However, things could be even worse if emissions continue to rise as rapidly as they have in recent decades.

In a worst-case scenario, that number could rise to over 55%.

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Of the 538 species studied, 44% of them have already experienced an extinction in a particular local area. The researchers found that local extinction sites had larger and faster changes in the hottest yearly temperatures than those that did not.

While many species were able to tolerate a moderate increase in maximum temperatures, 50% of the species had local extinctions if maximum temperatures increased by more than 0.5 degrees Celsius. That number rose to 95% if temperatures increased by more than 2.9 degrees Celsius.

The researchers found that the key to predicting whether a population will go extinct is the maximum annual temperature, as opposed to the average yearly temperature. This is notable because average temperatures are typically used as markers in measuring climate change.

With January going in the record books as the warmest January in 141 years and statistical analysis done by NOAA scientists predicting 2020 to be one of the five warmest years on record, the researchers believe there will be more local extinctions across the globe. And with summer heat waves potentially becoming more dangerous in the coming decades, the potential for loss of life will likely only grow from here.

However, that number could drop if we make a collective effort to address climate change, they say.

If we stick with the Paris climate agreement

The Paris Agreement was signed in 2015 by ministers from 195 countries from around the globe.

It committed these countries to keep global warming below 2 degrees Celsius above pre-industrial levels and below 1.5 degrees, if possible.

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The researchers found that achieving the Paris goals could be the difference between extinction and survival for many species.

"Based on our sample of 538 species, we projected a loss of 30% of the species under a more extreme warming scenario, but only about 16% if we stick to the Paris Agreement," Wiens told CNN. "So, think in 1 in 6 species, not 1 in 3."

The researchers believe that some species loss is inevitable at this point, no matter what we do to curb greenhouse gas emissions. However, it is still possible to protect biodiversity and prevent massive species loss.

"I think that we should focus on preserving forests and other habitats in tropical areas, and this is part of the Paris Agreement," Wiens said. "Preserving forests protects biodiversity and can help reduce or even reverse global warming. It's a win-win."

If we don't stick with the Paris climate agreement

The Paris Agreement is an international pact aimed at curbing global emissions of heat-trapping gases.

Unfortunately, studies have shown that so far, many countries are failing to meet the emissions cuts they set to limit climate change.



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Making matters worse, President Trump formally notified the United Nations that the U.S. would be pulling out of the Paris climate agreement in November. While it will take a full year for the U.S. to withdraw, losing the world's second-largest contributor of greenhouse gas emissions makes it more difficult to reach the agreement's goals.

"Some researchers have estimated that two-thirds of all species of plants and animals could be lost due to tropical deforestation alone," Wiens said. "If you combine that with climate change (which can impact species in protected forests and other reserves), then it really is terrible. Even from our data alone, there are extreme warming scenarios where 55% of the species would be lost from intact habitats. And note that deforestation also increases global warming. It is a double whammy against biodiversity."

Species that are in tropical regions are two to four times likelier to face extinction than those in

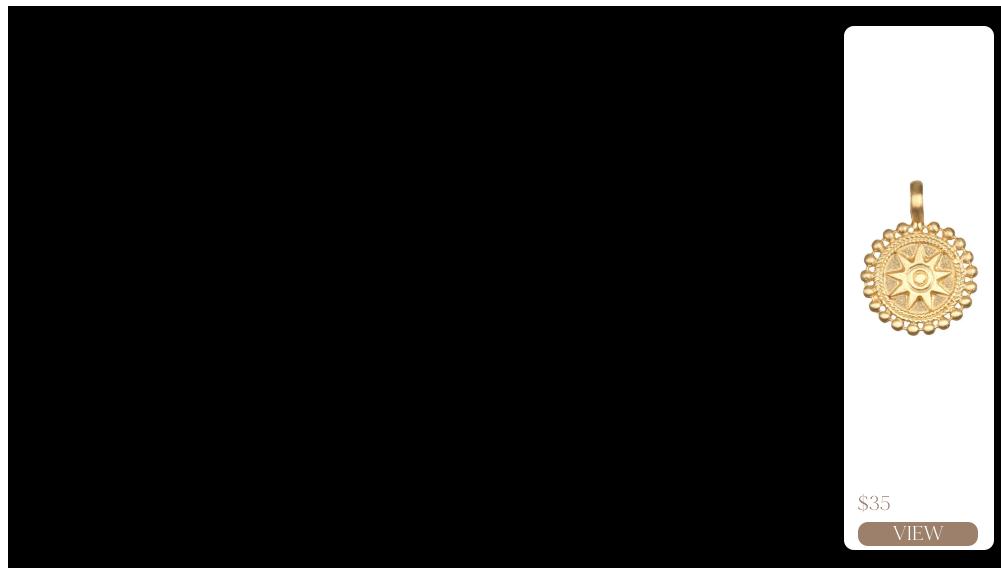
temperate regions.

"This is a big problem, because the majority of plant and animal species occur in the tropics," Román-Palacios said.

Many species have migrated to cooler habitats to escape the warming temperatures, but the researchers found that most will not be able to disperse quickly enough to avoid extinction.

"In a way, it's a 'choose your own adventure,'" Wiens said. "If we stick to the Paris Agreement to combat climate change, we may lose fewer than two out of every 10 plant and animal species on Earth by 2070. But if humans cause larger temperature increases, we could lose more than a third or even half of all animal and plant species, based on our results."

CNN's Drew Kann, Brandon Miller, Hannah Levy and Rob Picheta contributed to this report.



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