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### INTRODUCTION.

Greenhouse gases act similarly to the glass roof of a greenhouse, trapping heat and warming the planet. The rising temperatures leads to climate change which includes effects such as sea level rise, changes in rainfall patterns that produce floods and droughts, as well as causing the extinction of hundreds of species of reptiles and amphibians such as our famous golden toad which was an indicator that something was wrong. The following is an excerpt of the negative consequences that have had global warming in our country directly.



**160.000 PLANTS AND ANIMALS  
MAY DISAPPEAR**

“Providing our small contribution to environmental conservation”



# Newsletter

MARCH 2012



EL TRAPICHE tour

## CONSECUENSES OF GLOBAL WARMING

### 160.000 PLANTS AND ANIMALS MAY DISAPPEAR

**T**he natural landscapes of Costa Rica them not enjoy our grandchildren and great-grandchildren, due to the effects of climate change on biodiversity. According to the latest global forecasts, over the next 90 years the temperature of the country could rise 3 degrees Celsius and the sea level would rise one meter more than at present. This death threat against 30% of the species in the country and involves 160,000 plants and animals could disappear. Many of the amphibians, corals and reptiles will not survive with the rising temperatures.

ty of Costa Rica. To raise the temperature of the sea, the water becomes 'acid' and kills the algae they need to be able to breathe and live corals. "Ticos corals..."

they already live in the maximum temperature support (28 degrees Celsius). If the temperature rises one degree, "between 50% and 82% of corals would die", said Fonseca. With the loss of coral, coasts will be more vulnerable to hurricanes and many marine species lose their habitat.

The environment is another. One by one. With only a two degrees Celsius increase in sea temperature, between 97% and 100% of coral reefs it will perish, according to an analysis of Ana Fonseca, biologist of the center of research of marine sciences and Limnology (Cimar) of the Universi-

Temperature rise also kill the reptiles since they will no longer reproduce. First, the population will stagnate because only individuals of a single gender will be born. Carlos Drews, head of the marine program of the World Fund for nature, explained that the temperature in the nest determines the sex of rearing. When the temperature reaches

the 29.4 degrees Celsius, only eggs they are buying birth female turtles or crocodiles males, for example. If the nest temperature reaches 30 degrees Celsius, the situation gets worse: the eggs of both species harden and does not originate any animal. This phenomenon was already found in the intense summers of the past five years in Playa Ostional, where thousands of turtles, but not eclosionó nested no egg, said Wagner-Quirós, Coordinator of the national network for the conservation of turtles.

The worst part will go to the amphibians, animals more vulnerable to changes in its ecosystem. These frogs, toads and salamanders are used by ecologists as a "thermometer" of the environment, which are the first to suffer the consequences of alterations in their habitat.

"Providing our small contribution to environmental conservation"



Figure 1. With only a two degrees Celsius increase in temperature of the sea, between 97% and 100% of coral reefs will perish.

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## CONSECUENSES OF GLOBAL WARMING

### 160.000 PLANTS AND ANIMALS MAY DISAPPEAR

Report IPCC scenario.

Experts said in May that increased temperature and the level of the sea under the ORB will cause the extinction of 30% of the species on the planet, starting for which have already been weakened by hunting, deforestation and pollution.

**Warning at sea.** The oceans are already in deep trouble because since the 1970s have absorbed 80% of the heat and they have warmed up to 3,000 meters in depth.

**Danger.** If the temperature rises beyond 3 degrees Celsius, ecosystems could emit more carbon dioxide than absorbed, which amplify climate change.



Figure 2. By the heat, only male crocodiles are born.

**T**he golden toad and the Harlequin frog disappeared from Monteverde, Puntarenas, due to the attack of a fungus that emerged due to the rise in temperature there. Scientists from the University of Costa Rica agree that there are 21 species of amphibians that are already extinct in some parts of the country.

**Ecosystems that change.** Carmen Hidalgo, ornithologist of the National University, said that climate change alters the natural processes of the forest for the production of flowers, fruits and seeds, and that equally affects resident and migratory birds. In total, there are approximately 870 species of birds in Costa Rica. This has led to more than 221 species of migratory birds that fly through our territory are altering their bio-

logical cycles. Some even lose their direction of flight due to these changes. Marine Habitat also suffers from the changes imposed by global warming. Images of NASA and the European Space Agency (ESA) satellites reflect that as it increases the temperature of the seabed, the shoals are migrating towards cooler waters. So do the whales and dolphins, which feed on these fish. In addition, the increase in the level of the oceans will bring consequences for several species. If the sea moves outward, the beaches will be lost and with it, the nesting sites of five species of sea turtles in the world. That would be a death knell for the leatherback turtle of the Pacific, who already lost 90% of its population and which nests here for 60 years. Land inside, the forest also

suffer. If the temperature goes up to 3 degrees Celsius, the cloud forest will disappear by the lack of moisture in the atmosphere. "Clouds will scarce and trees and the species that live there will be exposed to the direct light of the Sun and will die," said Nelson Zamora, botanist of the Instituto Nacional de Biodiversidad (INBio). The rainforest won't be her best. A study of the scientists David and Deborah Clark, the University of Missouri, USA., Concluded that if the temperature goes up 3 degrees Celsius at La Selva, Sarapiquí, is stop the growth of the thickness of the trees by up to 75%.

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