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Global warming affects the world's coral reefs

By [Tzafrir Rinat](#)

For coral researchers, global warming is not just a forecast. For years they see how climate change become reefs marine Lshmmot Eden Gardens. New Israeli research sponsored by European Union for Jacob now also changes in Eilat

Tags: Coral

[עקבו אחרי אתר הארץ בטוויטר](#)

Coral reef before - on the right, in 1997 - and after - down in 2006 - the last 'white', Japan's Okinawa island. Global warming causes sea corals to consume more energy to breathe, and harms the balance between photosynthesis respiration

Towards climate conference in Copenhagen again made headlines in world media claims that cast doubt about climate change really happening and that man is responsible for them. These claims were strengthened after the exposure of e-mail correspondence between researchers in England, which was alleged evidence they intend to divert data related climate change. No provision nicknamed "Climategate."

Photos: Yossi Loya Those who need further proof that they are a real

threat to coral researchers. Those watching anxiously for some years after continuing decline in coral reefs, and a broad consensus among them global warming is one of the key factors in this deterioration. American Institute Worldwatch Environmental Affairs reported last week that today are all the coral reefs around the world at risk of infection because of the occurrence of climate change. It was based on data gathered by a group of scientists a comprehensive survey about the state of coral reefs around the

world.

"In many areas of environmental research, the threat of climate change is still ethereal," says



Prof. Yossi Loya of Tel Aviv University, the most senior researchers in coral recently elected Israeli Academy of Sciences. "Coral researchers already see in how corals are injured. Within a decade became extinct about 19% world's coral reef damage was difficult in many areas. The researchers feel that my

generation particularly intense. We we got to see the reef as they were before we see now the change , which shows very sad ". Loya began to explore coral reef of Eilat four decades ago and in recent years is also the editor of Studies in Okinawa island in Japan. He made a number of reefs within a few years from heaven marine animals and plants almost total wilderness.

Coral reefs around the world have evolved in a relatively narrow strip on either side of the equator rather limited range of constant temperature changes. Therefore a change of a degree may be the most significant to them and cause the collapse of the system.

Following the trend of global warming victims of algae that maintain life in association with the coral. Seaweed are found in cells having a vital role coral reefs and their primary food provider. "Corals become white and soon they die," says Loya, "the place of the dead coral realize larger algae choking the reefs. In 1998, she was a particularly warm year, the white mass occurred in various areas of coral reefs and more than a tenth of the world were hit.

"Coral Island accept most of their energy through photosynthesis process algae dancing," explains Prof. Zvi Dubinsky from Bar Ilan University, "If the sea warmed they consume more energy to breathe. It affects the balance between photosynthesis respiration necessary for coral.

Whitening phenomenon caused by direct damage of global warming is just one of the threats facing coral climate change. Another threat severity is not yet clear increase in acidity of the sea as a result of absorption of greenhouse gas oxide which is a two - carbon dioxide, accumulated in the atmosphere due to human activity.

"Increase in acidity may lead to water Imiso the skeleton made from coral limestone," explains Garland. "We know that the trend of increase of water acidity past two decades, but a long-term process. The study is being conducted in Australia in which drilling operations in dozens of species of coral limestone skeleton and examining within the temperature and acidity changes occurred in the past. Limestone skeleton develops rings like trees so you can follow Other changes.

Developing coral reefs at the top level of the sea and need the light to get the energy they need. "Increase in acidity may make it difficult to reef growth," adds Dubinsky, "As a result they will be hard to deal with a possible rise in sea level also occur as a result of climate change."

Impact climate change is another link in the chain of blows absorbed reefs for decades due to human activity. These make them weak and vulnerable even before global warming reached levels which scientists predict later this century - a rise of 2-4 degrees average temperature on Earth.

In recent decades many reefs were damaged as a result of extensive development of coastal areas and fishing. Unaudited. Worldwatch reports that the Caribbean region, close to 40% of reefs were lost or are at risk critical. The situation is even worse in South East Asia, where the richest variety of reef species. These areas already destroyed 40% of reefs.

Even the world's most northern reef, is in the Gulf of Eilat, human activity has caused pollution of the bay and reef concern for the future. "We are now in better shape," says Loya. "Most sources of pollution including sewage Eilat fish cages operated in the Gulf, has already been addressed". However, recently released a group of scientists from Israel and Australia call to action to ensure the reef would also prevent future exposure to infections. "This is indeed a small reef but in terms of relative species richness of the area is among the most diverse in the world", highlights Loya.

Loss of coral reefs will cause serious damage to one of the rich and varied ecosystems in the world. "Coral reef is the equivalent of rain forest species richness that is why her nickname is sub tropical forest - the days", says Loya. Coral reefs around the world covers an area of 284 thousand square kilometers. A total of less than a tenth of percentage of days, but in this area are more than fifteen species of fish in the world.

Damage to reefs, also expressed severe economic damage. Fish and other animals reefs help support hundreds of millions of people; at least 30 million people depend almost entirely on them to get the protein needed to supply them. According to various estimates, revenues and economic activity associated with coral reefs now reaches 40 billion dollars every year, in part because of tourism. "Only the Great Reef of Australia's annual revenues reach billions of dollars," says Loya.

In addition, reefs are in many places the beaches natural protective layer against storms and waves tsunamis. Protective role as a barrier may be crucial if it would be a significant increase in ocean level, as scientists watch.

Located in an area where Israel has not yet occurred phenomena like mass of white coral. However, scientists already are preparing for the study of possible effects on reef in Eilat. Last week the EU announced Dubinsky he won a research grant given to outstanding scientists and dedicated research study aimed Coralwarm called climate change effects on coral.

In the study, which also partners University of Bologna in Italy, will be a track in the Mediterranean coral reefs do not create, and creators of coral reefs in the Gulf of Eilat. To elaborate aquariums at Bar Ilan University will follow Dubinsky coral followed another researcher, Dr. Oren Levy. Then the coral skeletons will be sent to Italy will be tested using special equipment to see if they are to the effects of changes in acidity of the water.

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