WASHINGTON - The planet's temperature has climbed to levels not seen in thousands of years, warming that has begun to affect plants and animals, researchers report in Tuesday's issue of Proceedings of the National Academy of Sciences.

The Earth has been warming at a rate of 0.36 degree Fahrenheit per decade for the last 30 years, according to the research team led by James Hansen of NASA's Goddard Institute for Space Studies in New York.

That brings the overall temperature to the warmest in the current interglacial period, which began about 12,000 years ago.

The researchers noted that a report in the journal Nature found that 1,700 plant, animal and insect species moved poleward at an average rate of about 4 miles per decade in the last half of the 20th century.

The warming has been stronger in the far north, where melting ice and snow expose darker land and rocks beneath allowing more warmth from the sun to be absorbed, and more over land than water.

Water changes temperature more slowly than land because of its great capacity to hold heat, but the researchers noted that the warming has been marked in the Indian and western Pacific Oceans. Those oceans have a major effect on climate and warming that could lead to more El Nino episodes affecting the weather.

"This evidence implies that we are getting close to dangerous levels of human-made pollution," Hansen said in a statement.

Few scientists doubt that the planet has warmed, though some question the causes of the change.

Hansen, who first warned of the danger of climate change decades ago, said that human-made greenhouse gases have become the dominant climate change factor.

The study said the recent warming has brought global temperature to a level within about one degree Celsius - 1.8 degree Fahrenheit - of the maximum temperature of the past million years.

"If further global warming reaches 2 or 3 degrees Celsius, we will likely see changes that make Earth a different planet than the one we know. The last time it was that warm was in the middle Pliocene, about 3 million years ago, when sea level was estimated to have been about 25 meters (80 feet) higher than today," Hansen said.