

## **The Big Melt Coming Faster Than Expected**

### **By Stephen Leahy**

BROOKLIN, Canada, Apr (IPS) - Beaches, islands and even continents are shrinking as ocean levels rise ever higher due to the accelerating meltdown of the world's glaciers and polar ice due to climate change.

Many of the world's major cities, including Bangkok, London, Miami and New York, could be flooded by the end of the century, according to a new analysis of current temperatures in the Arctic region published in the journal *Science*. By then, global temperatures will be an average of three degrees C. higher than now -- or about as hot as it was nearly 130,000 years ago, when ocean levels were four to six meters higher.

"Probably our estimates of sea-level rise even five years ago were too small, too conservative," Jonathan Overpeck, a University of Arizona researcher who helped lead the study, was reported as saying.

Previous studies had predicted sea level rise of less than one meter by 2100.

Overpeck's study found that rising temperatures are on track to melt much of the Arctic ice, including the Greenland Ice Sheet, plus melting and collapse of parts of the less stable Antarctic Ice Sheet.

The new data should serve as a wake-up call to reduce emissions of carbon dioxide into the air, he said.

"More than 100 million people could be affected by a three-foot increase in sea

level," said Gary Griggs, director of the Institute of Marine Sciences at the University of California, Santa Cruz.

"There is no practical hope of saving small island states like the Maldives Islands (in the Indian Ocean)," Griggs told IPS. "This is a hugely important new issue."

The impacts of rising sea levels are already a near and present danger. South Pacific islands like Tonga and Tuvalu have reported sea level rises of 10 centimeters in just the past dozen years, according to the South Pacific Sea Level and Climate Monitoring Project.

Unprecedented tidal flooding in the Solomon Islands last February forced 2,000 people to evacuate. Much of the islands' arable land is now contaminated by salt. Over the past 20 years, the white sandy beaches on some islands have been eroded and washed away by ocean currents, high waves and rising seas levels, reports Loti Yates, director of the National Disaster Management Office of the Solomon Islands.

In late March, 3.48-metre record high tides swamped most of Tuvalu, a collection of Pacific Ocean atoll islands where the highest point is 4.5 meters above sea level. Many of the palm-treed beaches have vanished and the higher sea levels make storms more dangerous. Relocation of the country's entire population is being discussed and several hundred have already left.

Some 1,200 kilometers away in Fiji, a group of Pacific islands comprising

18,250 sq kms, sea level has risen by eight centimeters and will be at least another 30 centimeters higher by 2050. Flooding has been an ongoing, multi-million-dollar problem for the last few years.

Due to its geography, the entire Asia-Pacific Region is particularly vulnerable to the impacts of climate change such as rising sea levels, more intense storms and greater extremes of droughts and floods, according to a recent report from the World Bank.

"Most of its (the region's) GDP and its mega-cities, especially in China, are located on the coast -- prime candidates to be impacted by sea level rise and weather-related disasters," it said.

Vietnam, Thailand, Indonesia and Cambodia, along with China, could suffer sharp cuts in their gross domestic product as a result of a rise in sea level, it added.

On the other side of the world, rising waters will drown many beaches on Canada's Atlantic coast by 2030, says John Shaw, a research scientist with the Geological Survey of Canada. Adding to the problem is the fact that much of the eastern North American continent is subsiding as a result of the last ice age.

"The beaches are quite low and so with this rapid sea level rise they're going to just go underwater," Shaw said in an interview.

Storm surges are resulting in record-breaking flooding in the area, he said. Those same storms are eroding shorelines and moving the coastline inland as much as 12 meters per storm.

That's particularly bad news for property owners drawn to the coast for the magnificent views.

Coastlines and beaches are always moving, but today they are moving faster than ever, he said.

Since the last ice age, global sea levels have been slowly rising, Griggs explains. That allowed coastal development to proceed in much of the world without too much difficulty. But the rate of sea level rise has become very fast in the past few decades, and that poses a multi-billion-dollar problem as shorelines move inland, storms increase flooding, and beaches vanish, he said.

Cities and towns in low-lying coastal areas are going to face major disasters from storm surges, predicted Griggs, adding that, "We can't just tough this out or engineer our way to a solution."

Last year's eight-meter surge that hit the U.S. Gulf Coast during Hurricane Katrina killed 1,400 people and caused 200 billion dollars in damages. Recently announced plans to build dykes to protect the devastated city of New Orleans will cost 10 billion dollars and will not even protect all of the city.

"I would not rebuild New Orleans where it is," said Griggs.