

Friday, 27 January 2006, 02:04 GMT

Sea level rise 'is accelerating'

"There will be increased flooding of low-lying areas when there are storm surges"

Dr John Church

Global sea levels could rise by about 30cm during this century if current trends continue, a study warns.

Australian researchers found that sea levels rose by 19.5cm between 1870 and 2004, with accelerated rates in the final 50 years of that period.

The research, published in the journal *Geophysical Research Letters*, used data from tide gauges around the world.

The findings fit within predictions made by the Intergovernmental Panel on Climate Change (IPCC).

The IPCC's Third Assessment Report, published in 2001, projected that the global average sea level would rise by between 9 and 88cm between 1990 and 2100.

In an attempt to reduce the scale of uncertainty in this projection, the Australian researchers have analysed tidal records dating back to 1870.

The data was obtained from locations throughout the globe, although the number of tidal gauges increased and their locations changed over the 130-year period.

These records show that the sea level has risen, and suggest that the rate of rise is increasing.

Over the entire period from 1870 the average rate of rise was 1.44mm per year.

Over the 20th Century it averaged 1.7mm per year; while the

figure for the period since 1950 is 1.75mm per year.

Although climate models predict that sea level rise should have accelerated, the scientists behind this study say they are the first to verify the trend using historical data.

Floods and surges

If the acceleration continues at the current rate, the scientists warn that sea levels could rise during this century by between 28 and 34cm.

Dr John Church, a scientist with the Commonwealth Scientific and Industrial Research Organisation based in Tasmania and an author of the study, said that higher sea levels could have grave effects on some areas.

"It means there will be increased flooding of low-lying areas when there are storm surges," he told the Associated Press.

"It means increased coastal erosion on sandy beaches; we're going to see increased flooding on island nations."

There is now a consensus among climate scientists that rising atmospheric concentrations of greenhouse gases such as carbon dioxide are the major factor behind rising temperatures.

Increased temperatures can lead to higher sea-levels through several mechanisms including the melting of glaciers and thermal expansion of sea water.

Through the 1997 Kyoto protocol, industrialised countries have committed to cut their combined emissions to 5% below 1990 levels by 2008-2012. But the US and Australia have withdrawn from the treaty.

Dr Church urged: ""We do have to reduce our emissions but we also have to recognise climate change is happening, and we

have to adapt as well."