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Region's coral reefs in 'alarming' decline, study finds

By [Robert Nolin](#), Sun Sentinel

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The region's coral reefs, including those off South Florida, have ceased growing at an "extremely alarming" rate and may be poised for massive erosion, a new study has determined.

A recent report by an international group of scientists concluded that coral reef growth, especially reefs in shallow water like that offshore South Florida, has declined by as much as 70 percent.

"Reefs have gone downhill all over the place and this study has added more evidence," said Professor Richard Dodge, director of the National Ocean Reef Institute at Nova Southeastern University in Davie. "We're in a period of slow to no growth here in Southeast Florida's coral reefs."

Reefs matter to local economies, Dodge said. A 2000 study by the National Oceanic and Atmospheric Administration found that through boating, diving, fishing and related activities, reefs fuel a \$6 billion annual economic boost to Broward, Palm Beach, Miami-Dade, Monroe and Martin counties. They account for some 71,000 jobs.

"If you understand it's an economic engine and creates an economy, it becomes even more important," Dodge said.

Coral reefs stretch offshore from Palm Beach to Miami-Dade counties, and extend out from a quarter mile to three miles. Their depth ranges from about 15 feet near shore to 100 feet farther out.

Scientists from universities in Maine, Canada, Australia and New Zealand participated in the study, which examined coral reef growth in the Caribbean region. Their conclusion, published in "Nature Communications," found coral in the region has stopped growing to a large degree and may begin eroding.

"Our estimates of current rates of reef growth in the Caribbean are extremely alarming," said Professor Chris Perry of Britain's University of Exeter, lead researcher in the study. "If these trends continue, reef erosion looks far more likely."

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The study credits the slowed growth to a drop in the coral's production of calcium carbonate, or limestone, which forms the foundation upon which coral grows. That production has declined most dramatically in shallow water reefs, the study found.

"It almost certainly applies to our reefs, they're not in a high production mode of calcium carbonate," Dodge said.

Reefs need a delicate balance of growth and erosion, the scientists said. If that balance becomes upset, deterioration is inevitable, because the coral has no firm foundation, or substrate, upon which to grow.

"Some of us are quite worried about what happens when the substrate itself starts to deteriorate," said John McManus, marine biology professor with the University of Miami's Rosenstiel School of Marine & Atmospheric Science.

Climate change and pollution are the main culprits, Dodge said.

But reef erosion can take a hundred years. "Within a hundred years you're going to be worried about sea level rise here," McManus said. "We're going to either have to build dikes or start moving."

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