

Parrotfish to aid reef repair
By Rebecca Morelle

BBC News

A vividly coloured fish could be the key to saving the Caribbean's coral reefs from plummeting into terminal decline, scientists claim.

Their research forecasts that reefs risk being damaged beyond repair by the influx of seaweed.

But urgent action such as protecting parrotfish, which graze upon the floral invaders, may prevent the ecosystems from reaching this tipping point.

The research is published in the journal Nature.

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Professor Peter Mumby

Professor Peter Mumby, a marine ecologist from Exeter University and lead author of the paper, said: "We are seeing more and more coral reefs becoming just overgrown with seaweed."

Reefs in the Caribbean are among some of the most heavily affected. They are rapidly transforming from coral-dominated domains into algal-flooded havens.

The seaweed growth is boosted by human activity, such as fertilizers washing off from agricultural land into the coastal waters, and over-fishing, Professor Mumby explained.

"Then to compound these problems you have the climate stresses that are more and more inevitable now, which cause major problems with warming waters and hurricanes," he added.

Cruising around

Professor Mumby and colleagues used computer simulations to predict whether reefs could bounce back once the seaweed had taken hold, especially if some of the pressures upon them were removed.

He told the BBC News website: "A reef can become almost permanently unhealthy.

"We found you can push a reef so far and then it becomes extremely difficult for a reef to recover - it's like the straw that broke the camel's back."

The ability of a reef to recover is much more difficult if you remove parrotfish

Professor Peter Mumby

This would be devastating to the hundreds of species that reefs play host to, as well as the millions of people who rely on them for their livelihoods, he added.

The team said that urgent action needed to be taken to prevent the reefs from reaching this tipping point.

Professor Mumby said: "The key message is that you have to act fast.

"It is not OK to wait until a reef is in a degraded state and to say: 'now we are going to act'; we need to stop these reefs getting unhealthy in the first place."

One simple measure to prevent reefs from becoming damaged beyond repair, he said, would be to protect parrotfish that live around the reef.

"Parrotfish cruise around, grazing away much of the seaweed. They play a very important role in the ecosystem," the researcher explained.

However, these tropical fish are under threat. They are a sought-after delicacy in many parts of the Caribbean and are susceptible to becoming caught in fish traps.

Professor Mumby said: "We need to manage them as a fishery and maintain large numbers of these fish.

"The ability of a reef to recover is much more difficult if you remove parrotfish."

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