



Could the Great Barrier Reef be gone in 35 years?

Video transcript: Need for speed

PROF MADELEINE VAN OPPEN:

I might sort of summarise the approaches that we are proposing.

And one is to selectively breed corals.

We would like to selective breed corals for increased tolerance to high temperatures, perhaps faster growth rates, more dense skeletons so they can withstand heavy storms better.

So by crossing two different species, you instantaneously create the new genetic diversity. And we will then let natural selection pick the traits of the coral that will perform best under predicted future ocean conditions.

The other one – the corals live in symbiosis, we call it, in this close association with very small algae and with bacteria.

In other systems we know that we can manipulate those microbial communities – we can change some of the traits of the corals, for example their tolerance to cold or heat and so on. So that's another avenue to try.

A third approach is where we like to see if we can induce non-genetic changes – epigenetics.

It's now known that some changes in the organisms that are acquired during a lifetime of an organism can be passed on to the next generation.

So we're trying to find out whether that's the case in corals and whether we can use that mechanism to help them become more tolerant to environmental change.

Audio of Prof Madeleine van Oppen from the Australian Institute of Marine Science (AIMS), courtesy of Science in Action (BBC World Service, 2015).

First five images courtesy of AIMS; remaining images courtesy of Getty.