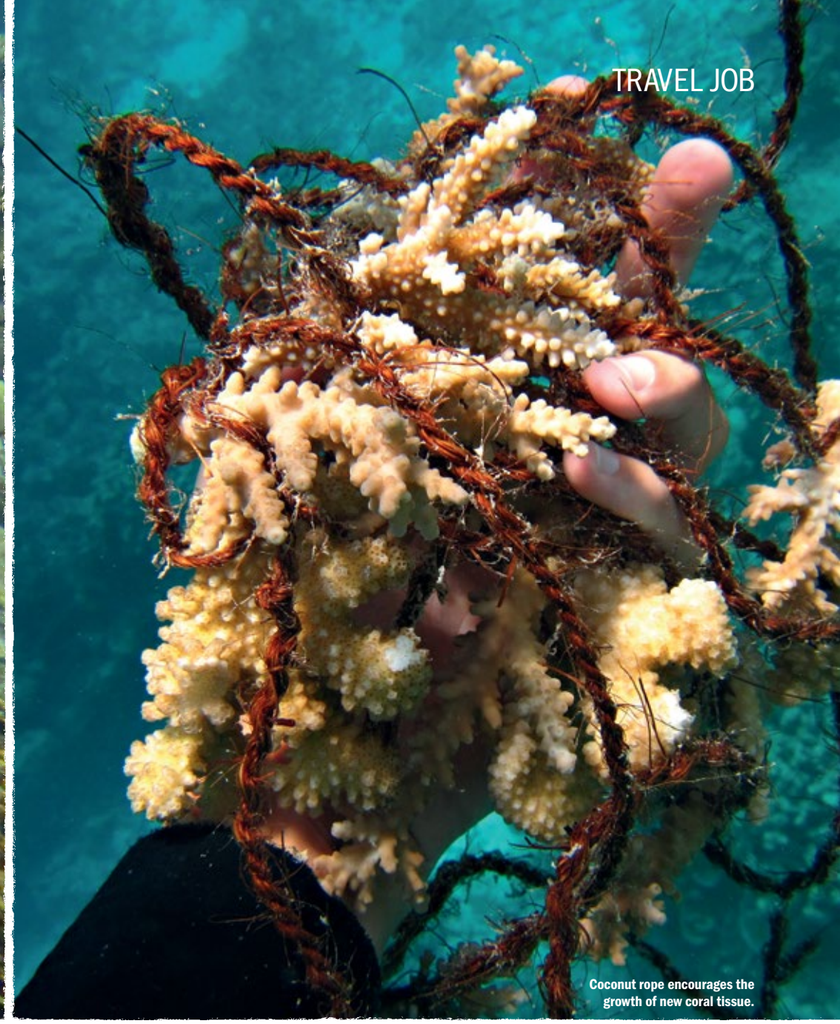
CORAL CRUSADER

Marine biologist Caterina Fattori in her underwater office.



Coconut rope encourages the growth of new coral tissue.

She grew up near Verona, home to Shakespeare's *Romeo and Juliet*, but, as **Christine Retschlag** discovers, it was a move to the Maldives that revealed Caterina Fattori's one true love – saving coral reefs.

SHE'S THE UNLIKELY SUPERHERO OF the Indian Ocean, but rather than finding Caterina Fattori dressed in a Wonder Woman outfit, on any given day she'll be wearing a rashie, snorkel and fins as she swims beneath the waves. The Outrigger Konotta Maldives Resort is situated on Gaafu Dhaalu, one of 26 atolls in the Maldives and some 450 kilometres north of the equator in the Indian Ocean. And it is the backdrop to what might just be the world's greatest job.

"When you go diving it is the best activity in the world," Caterina explains. "Once you go underwater you forget everything." But this marine biologist, who spends much of her time taking resort guests on dive trips, can easily identify her kryptonite: climate change. She's on a mission to save the reef from its wrath.

The ocean surrounding the Maldives is one of the most biodiverse ecosystems in the world. It may only take up 0.1 per cent of the ocean's surface, but it is home to 25 per cent of all marine species. There are 258 types of coral found here, and some of the growth is thought to be more than 300 years old. The 28-year-old tells visitors all of this, educating them about the importance of the reef and the impact of climate change. To thrive, she tells them, a coral reef needs ideal conditions: clear water, light, salinity, wave movement to create oxygen and temperatures of around 25 to 28°C.

It's that final factor that has her most worried. Coral coexists with a microalgae that becomes stressed when things heat up. The algae then starts to produce toxins and the coral expels it. Without colourful organisms inside, the coral turns white, in what is known as coral bleaching. In early April last year, the temperatures on the east side of the resort island rose to about 35°C. Within weeks a catastrophic bleaching event occurred, and it wasn't the first time it had happened in these parts.

"I was really upset," she says. "The coral is still alive at this stage, but it is bleached." Studies have shown that in certain conditions it can stay that way for several months, but if temperatures stay high and the algae doesn't return, it becomes so stressed it dies.

"Here, luckily, compared to other areas of the Maldives, the temperature dropped to 29 degrees again," she explains. "Around 80 per cent of the reef on the east side of the island was bleached, and around 60 per cent of that is still white."

Caterina studied biology with a vision of somehow becoming connected to the sea, and even moved to Venice to "breathe the smell of the fish".

She arrived in the Maldives wanting to complete a second master's degree, but it was postponed. Instead, she began working as a dive instructor, and the job took her to Egypt and Thailand, where she worked on coral restoration projects.

It is these skills she now brings to the Maldives, a place she loves despite some of its drawbacks: "Some days I crave just being able to go out for a good coffee. But I cannot complain. I live on a really small island in the middle of the ocean."

As well as educating guests and resort staff about dangers to the surrounding reefs, Caterina has devised several strategies to help restore them. One involves building a simple metal structure to which she fixes small fragments of coral bound on coconut rope 'necklaces'. Attached well, the coral will start to form new tissue in as little as one or two months.

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"The aim is not only that the coral grows, but that some fish start to find a new home," she says. "It will take a long time – five to 10 years – especially after the bleaching."

Climate change is not the only threat to the archipelago's reefs. The crown-of-thorns starfish and a small snail known as a drupella both eat coral polyps. Then there are all the other threats and concerns: tsunamis, cyclones, diseases, bacteria, viruses, mining, fishing, pollution, coastal development and damage from divers and snorkellers.

"I would like people to understand the ecosystem and what they are doing [to it]," she says. "My Maldivian colleagues still need to learn this. It is their future – their salaries come from this coral.

"I am not a heroine. My job is to assist the recovery of the reef. I know I can't bring the ecosystem back like it was before, but we are seeing small recoveries and this gives us hope."

get in the know Kiritimati, also known as Christmas Island, is the world's largest coral atoll.

get in the know Most coral polyps are transparent; the beautiful colours come from the algae living in the tissue.