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Divers checking out a newly placed Aquascape artificial reef. Each unit of the cement mound weighs 400kg and is designed to resemble natural seascape. — Picture by Trinna

Coaxing corals to grow

By TAN CHENG LI

TO THE untrained eye, the Aquascape artificial reef does not appear terribly impressive, considering that they have spent some two years in the sea off Pulau Tioman, Pahang.

It looks like not much has grown on them, with the exception of oysters which smother some of the cement structures, built to resemble a mound with three ridged peaks of varying heights.

But then again, corals are slow-growers. These marine organisms live in colonies consisting of many individual coral polyps, and some grow a mere 1cm a year. In fact, 10 years can pass before structures dumped into the sea to form reefs can take semblance of the real thing, says environmental science graduate Wong Leong Sze of Universiti Putra Malaysia (UPM).

Having kept a close watch on the Aquascape reef, he is optimistic and happy with the coral growth so far. Coral fragments which he had transplanted onto the cement mounds in September as part of his masters research programme, have grown between 1mm and 8mm. A few have sprouted an impressive 2cm.

But what satisfies him most is the large

number of coral juveniles which have settled on the Aquascape, most of which are too tiny to be discernible to non-scientists. After all, this was the whole reason behind placing the Aquascape in the sea — to provide a hard surface or substrate for coral larvae to attach themselves to and grow.

Apart from corals, various species of marine invertebrates such as sea urchins, sea cucumbers, crinoids and cushion stars, as well as marine snails and fish have sought refuge at the Aquascape reef.

Damsel fish, butterfly fish, wrasses and groupers dart around the structures while schools of breams, snappers, fusiliers and barracudas swirl above. Moray eels, hawkbill turtles and even a nurse shark have made the occasional appearance. A species of shellfish has even laid eggs inside the cavity of one Aquascape.

"There is a lot of positive results," says UPM marine scientist Dr H.M. Ibrahim, who is supervising Wong's research on marine ecology. "Coral growth has been quite good and the artificial reef is not only able to support diverse reef life, but is attracting other reef dwellers."

The promising results have prompted courier company DHL Malaysia, which had sponsored 10 Aquascape in June 2004, to add another 58 units two weeks ago. "After placing the 10 Aquascape, we watched carefully their development to see whether they deliver the promise to grow and form part of the reef. They did, so we are adding more," says DHL chief

executive officer Scott Price.

The Aquascape units sit on the fringes of Pirate Reef, an undersea rainforest of corals sited 500m off the beach at Tekek Bay. Price and some 25 DHL staffers dived at the site two weeks ago to see how the artificial reef was shaping up. Buoyed by the success of the Tioman Reef Restoration Project, Price says the company plans to expand it to other countries.

Man-made seascape

DHL is the first corporate sponsor of Aquascape artificial reef which was designed by Daniel D'Orville, creative director of an advertising agency.

Being Malaysian-made, the Aquascape does not require royalty fees like other foreign-designed artificial reef systems. However, its usage is still limited as D'Orville wants more tests done.

The only other corporate sponsor is Hilton Petaling Jaya, which funded 15 Aquascape units at Tioman in 2004.

With almost 20 years of scuba diving behind him, D'Orville has seen much destruction of reefs as a result of development and pollution.

"I've always wanted to do something to restore degraded coral reefs. Corals take a long time to grow, probably 1cm a year. To help the reef expand and regenerate, they need a stable base to grow on."

Anything that is dumped into the sea, be it rocks, rubble, wood, concrete slabs, ships, old cars, tyres, coconut fronds or