Bid to repopulate giant clams on S’pore’s reefs

Team of biologists aims to put back hundreds to add to marine diversity

By JOSE HONG

BEFORE dawn broke last Monday, Ms Neo Mei Lin and Ms Kareen Vicentuan set off on a yacht from Sentosa on a 45-minute journey.

Taking advantage of the low spring tide, they anchored just off Terumbu Pem- pang Tengah, a submerged reef near the southern islands, before piloting a rubber dinghy onto the reef flat.

Their mission? To search for a creature once abundant in Singapore but now rarely seen – the giant clam.

Ms Neo, 25, a PhD student, and Ms Vicentuan, 31, a research assistant, both from the National University of Singapore (NUS), are part of a small team of biologists that wants to repopulate Singapore’s coral reefs with hundreds of giant clams, organisms which contribute to the reefs’ complexity.

But to do this, the biologists need to spawn clams of local origin. To do that, they first need to find them.

This project is funded by the National Parks Board, and its principal investigator, Dr Peter Todd, said that the results are important for Singapore’s marine biodiversity.

“From the evidence of our research, we are certain that giant clams were once abundant in Singapore,” said Dr Todd, 45, an assistant professor in the NUS’ department of biological sciences.

Old records dating back to the mid-1850s indicate that the waters around Singapore used to have five species of giant clam, he said. In the 1990s, the clams could still be easily seen from the shore.

“We have lost a lot of reefs, where the clams live, due to land reclamation. Furthermore, the waters around Singapore have more sediment in them than they used to, which reduces light penetration,” Dr Todd explained.

“As the clams photosynthesise, they need light, so that may have contributed to their decline.”

Another problem of sedimentation on the reefs, he added, was that it could cover up solid substrate, which clam larvae need to attach themselves to as they develop.

Lastly, he noted that the harvesting of clams for food likely contributed to their decline.

When Ms Neo surveyed 87,500 sq m of Singapore’s coral reefs in 2009 and 2010, she found only 59 individual clams of two species.

“The aim of the project is to put back what we lost,” said Dr Todd.

Last Monday, using GPS coordinates from previous expeditions, the two researchers found one small specimen of Tridacna squamosa, otherwise known as the fluted giant clam for the leaf-like projections on its shell, but left it alone as it was too young to breed. After another 20 minutes, they found another fluted giant clam large enough to be brought back to the Tropical Marine Science Institute on St John’s Island. Marking it, they went to look for others.

In the 1 1/2 hours of remaining low tide, two Tridacna crocea, otherwise known as the burrowing giant clam, were found, and their locations recorded. But when the tide came in, the duo returned to the marked fluted giant clam.

Soon, they separated the giant clam from its base and put it into a container, ready to be transported to the lab.

There, giant clams, some local and some from overseas, will be induced to breed, their offspring raised, and experiments conducted to see how they can be transplanted onto Singapore’s reefs.

It will, however, be a long time before the team knows if the placement of giant clams has been successful. Said Ms Neo: “Realistically, it will take seven to 10 years to know if this will work.”

But as long as giant clams can grow once again on the reefs, the team will be happy. “The wait will definitely be worth it,” she said.

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