



Research assistants Lionel Ng (far left) and Daisuke Taira at the outdoor aquarium of the Tropical Marine Science Institute (above) on St John's Island. They are part of a team of eight marine biologists tending to the two coral nurseries off Lazarus Island and Kusu Island. ST PHOTOS: LIM YAOHUI

Coral nurseries bloom under special care in waters off the coast

MPA-funded NUS project part of efforts to protect marine life as new port is built

Audrey Tan

In the waters off Singapore's southern coast lie two coral nurseries that are blooming under the tender loving care of a team of eight "gardeners".

The gardeners – marine biologists from the National University of Singapore's Tropical Marine Science Institute (TMSI) – are tending to tiny fragments of coral, each barely the length of a human finger, with the hope of raising them into

larger colonies that can be used for reef rehabilitation.

These fragments were sourced from coral which was in the way of a port development in Tuas. At the nurseries off Lazarus Island and Kusu Island, they are mounted on frames made using PVC pipes and stiff mesh nets.

Loose coral fragments can be shifted about by currents, which puts them at risk of abrasion by sand. The structures help prevent this, and also elevate the fragments off the seabed, preventing sedi-

ment from accumulating there.

After about six months, when the corals have grown to a suitably large size that allows them to better withstand stress, they are moved out of the nursery and attached to new sites on Kusu Island and Lazarus Island using marine epoxy, a type of glue. Scientists monitor their growth at the transplanted sites for at least two years.

Healthy coral reefs not only draw in marine life, but they are also effective buffers against strong waves and can help filter pollutants from

the water, said coral expert Chou Loke Ming, who is heading the project.

Since the project, funded by the Maritime and Port Authority of Singapore (MPA), started in 2013, more than 800 coral fragments have been transplanted to the reefs off Kusu Island and the seawalls of Lazarus Island, both of which are south of the mainland.

About 80 per cent of the transplanted corals have survived, said Mr Lionel Ng, a research assistant at TMSI who is part of the coral nursery team. This is within the expected survival range for transplanted corals, as some may be eaten by predators or die due to stress from the move, he added.

The coral nurseries are part of MPA's efforts to protect Singapore's marine life, even as a new port is being built in Tuas. Between September 2013 and August 2014, MPA also relocated more than 2,000 coral colonies from Sultan Shoal – located south of Tuas – to the waters off St John's Island and Sisters' Islands.

"Coral fragments were inevitable from the major translocation and were a good source of material for research to determine whether they could be used to improve degraded reefs and also to create new reef communities," said Dr Chou, an adjunct research professor at TMSI.

Mr Stephen Beng, chairman of

the marine conservation group of the Nature Society (Singapore), welcomed the science-backed marine conservation efforts.

"Singapore is at a stage where agencies, including MPA, are taking positive steps to address the impact of development on the environment. Through consultation with subject-matter experts, any efforts to do this is good."

Dr Song Tiancheng, deputy director of engineering at MPA's technology division, said: "We want to make Singapore a world-class port, but this has to be done in a sustainable way, with minimal environmental impact."

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TWIN PRIORITIES

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