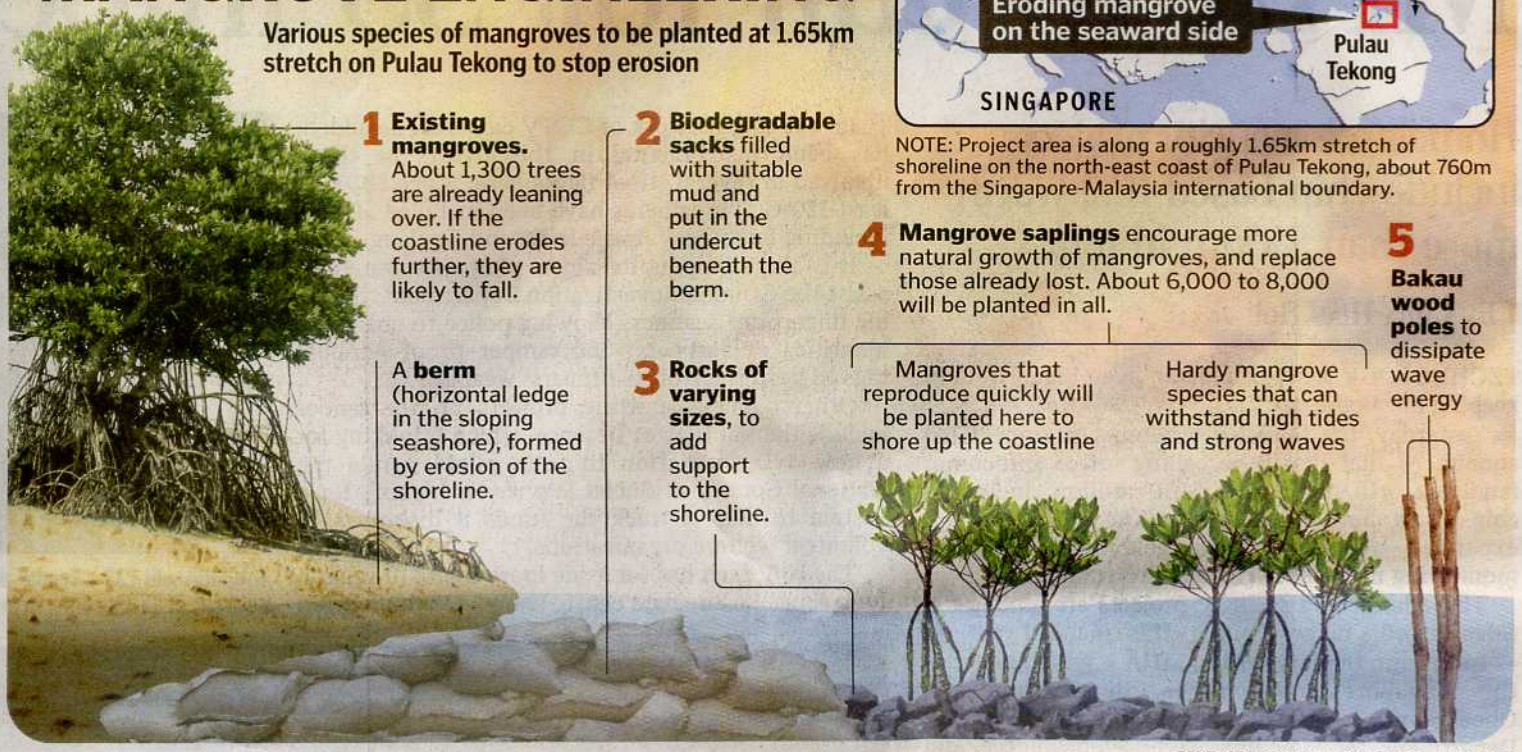
MANGROVE ENGINEERING

Various species of mangroves to be planted at 1.65km stretch on Pulau Tekong to stop erosion



NOTE: Project area is along a roughly 1.65km stretch of shoreline on the north-east coast of Pulau Tekong, about 760m from the Singapore-Malaysia international boundary.

TEXT: GRACE CHUA GRAPHICS: LIM YONG

Saving Tekong's coastal greenery

By Grace Chua

THE north-east coast of Pulau Tekong is being swept away by the sea, and taking a stretch of pristine mangroves with it.

To stem the erosion, the National Parks Board (NParks) is planting more mangroves in a pilot project on the military island off Singapore's east coast. And if it succeeds, the same methods could be used in other threatened coastal areas here.

The 92ha, 3km-long stretch of mangrove swamp is home to rare birds and mangrove trees. But strong waves from passing vessels have scooped out chunks of the coast to form horizontal berms (see graphic) held in place only by the mangrove roots. In 2006, NParks found that a number of trees had fallen along a 1.65km stretch of coastline. Another 1,300 were in danger of toppling.

It began collecting data on the site, and in February last year started work on modelling the area's wave movements and investigating the soil.

With development consultants Surbana, NParks designed a set-up of mud-filled bags, rocks, mangrove seedlings and poles to not only replace lost mangroves but also stop repeat erosion. NParks also plans to plant certain hardier species of mangroves farther out to sea to stymie the waves.

In their assessment, environmental consultants DHI assured that the project would not cause the coastline to creep outwards towards international boundaries, and there would be no cross-border physical or ecological impact. The site is just 760m from the Singapore-Malaysia boundary.

Construction is expected to begin in the middle of this year and take about 12 months. The same methods may one day be applied to other eroded areas like Sungei Buloh near Kranji.

"We hope this will be a good test-bedding site, though conditions might be different at different areas. But this is a good model for areas that have mangroves and are eroded," said NParks' National Biodiversity Centre deputy director Lena Chan.

Even though the Tekong mangrove area is off-limits to the public, it remains an important part of Singapore's natural heritage and a source of genetic diversity, reminded Dr Chan.

National Institute of Education plant biochemist and mangrove expert Jean Yong said it was important to plant multiple tree species on such engineered structures to boost biodiversity.

The public can view the project's environmental impact assessment report till next month – by appointment with NParks – when a tender for the project will be put up.

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