

Changing mangroves

Mangroves can store more carbon than many other natural ecosystems. Their ability to keep carbon in the soil and out of the atmosphere could help reduce global warming, but these habitats are often lost to human activity. A new study led by researchers in Singapore, however, has found some silver linings.

Environment Correspondent Audrey Tan examines their findings.

MANGROVE COVER

By comparing the global mangrove cover in 1996 and 2006, the scientists found that:

The loss of **8,050.4 sq km** of mangroves had been partially offset by natural or human forestation of **2,243.3 sq km**

Mangrove loss did not mean immediate carbon loss. If mangrove forests were converted into agriculture or aquaculture, for example, the soil could still hold the carbon. Models showed that only a net

1.8% of the 1996 carbon stock was lost over the years.

In 2016

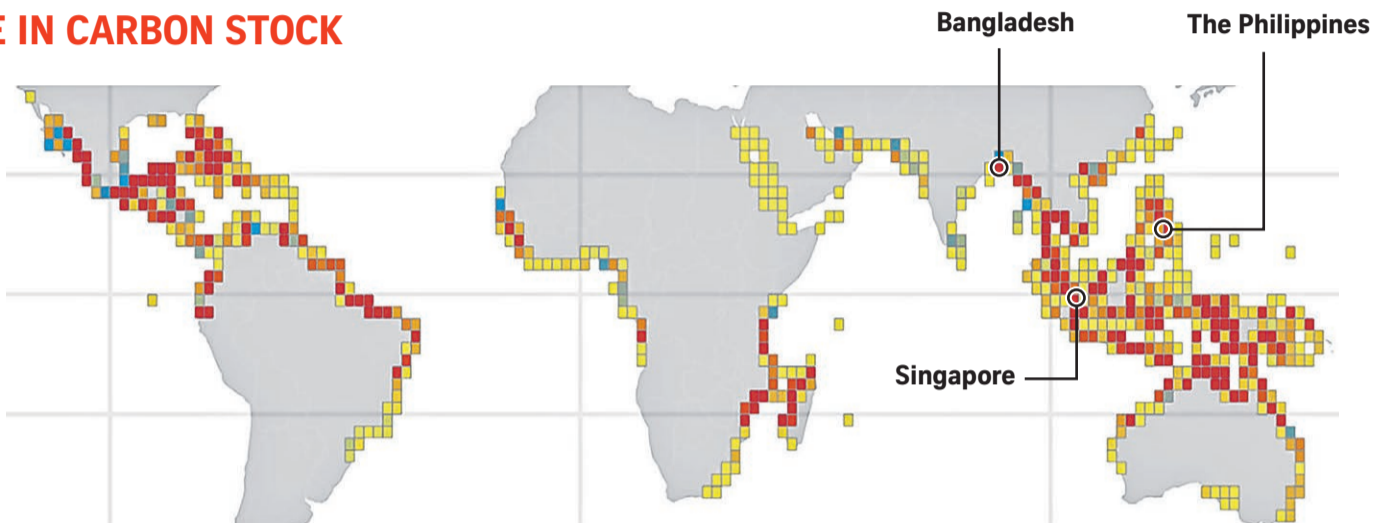
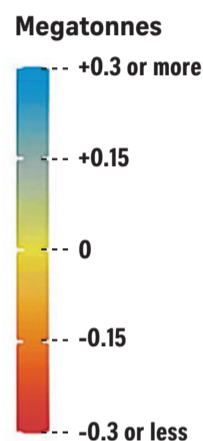
136,717 sq km



In 2006

142,865 sq km

NET CHANGE IN CARBON STOCK



Singapore



Bangladesh



The Philippines

A NATURE-BASED SOLUTION

Sequestration

Mangrove plants take in carbon dioxide from the atmosphere in a process known as photosynthesis. The carbon is locked up in the leaves, branches and roots of the plants.

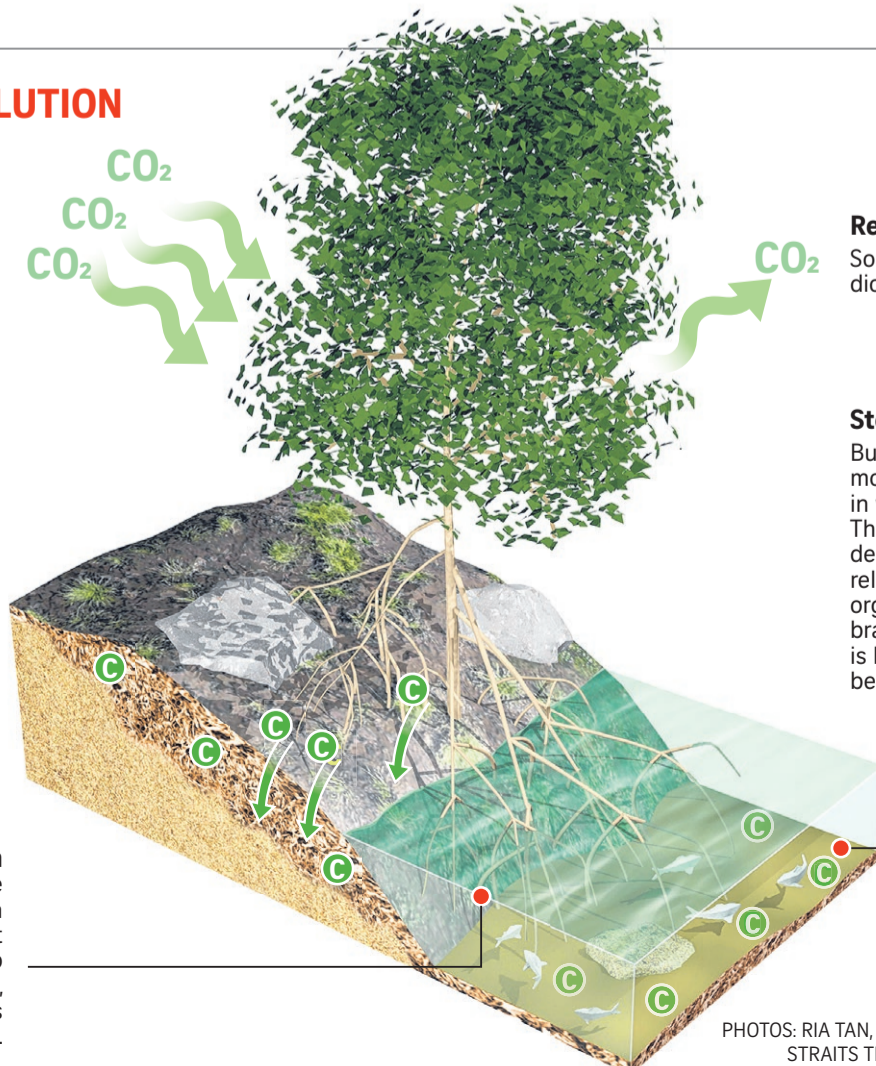


Respiration

Some carbon is released as carbon dioxide when trees respire.

Storage

But in mangrove habitats, there is more carbon stored underground in wet soil than above ground. The water slows down the rate of decomposition – a process that releases carbon dioxide. When organic matter, such as leaves or branches fall into the soil, the carbon is locked in its depths instead of being released into the atmosphere.



CO₂ Carbon dioxide

C Carbon

Reclamation

Mangroves have the unique ability to help reclaim land from the sea due to their complex root systems which can trap sediment. Without these habitats, the area covered by mangroves today would be part of the sea.