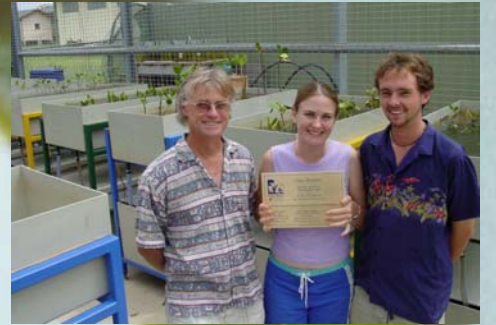




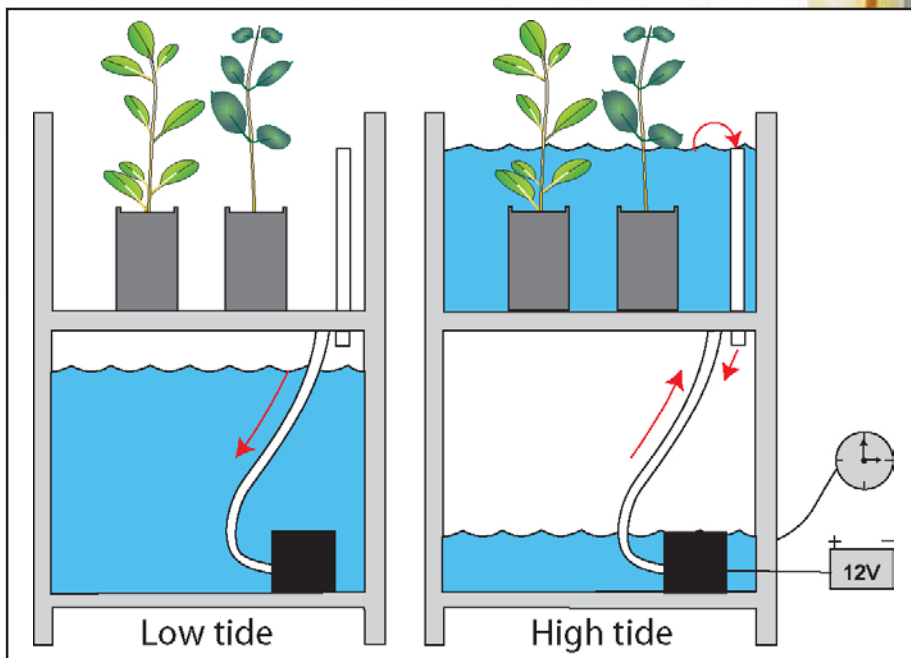
Casa Manglar

A place to test impacts on mangrove plants

The chief purpose of the mangrove planthouse is to test impacts of various factors on mangrove plants. Two chief benefits include: a focus on specific factors likely to affect plant growth by their experimental manipulation while controlling other influences; and the safe and contained experimental application of toxic compounds in the controlled conditions. The artificial system is not expected to replicate the complexity of natural environments, and assessments are also limited mostly to seedlings rather than trees and forests. However, it is essential to isolate and quantify key factors, and combinations of factors, influencing plant growth and condition if we are to preserve and protect our tidal wetlands.



'Casa Manglar' officially opened on 9th December 2001



The tidal system

In Casa Manglar, there are 15 independent tidal tank systems. Each system comprises 2 tanks together holding around 400 litres of salty water. The upper tank contains around 30 potted seedlings, and the lower tank is a water reservoir. High tide is simulated when water is pumped up into the seedling tank using a 12 volt bilge pump for approximately 2 hours per day, depending on experimental specifications. The upper tide level is fixed by the overflow outlet level. Low tide is simulated when the pump is turned off and water drains down into the holding tank.



Planthouse projects

The types of projects by students and other researchers making use of the mangrove planthouse include:



Ecological assessments of growth, phenology and general tolerances of different mangrove species to natural factors like, salinity, temperature, light and nutrients.



Ecotoxicology trials and assessments of different mangrove species testing impacts by different concentrations of different chemicals from petroleum, herbicide and heavy metal products – chemicals might be applied to sediment, water or foliage.



Physico-environmental stress trials of factors experienced from severe storm damage, impoundment flooding, smothering of respiratory surfaces with sediment and wrack, and sediment deposition on photosynthetic surfaces.



Germination trials and development of nursery propagation techniques for large-scale restoration projects.

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Text: Norm Duke
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Further information:
www.marine.uq.edu.au/marbot



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