Exploring carbon dynamics in connected mangrove forests and seagrass beds: How important is it?

Daniel Saavedra, Lucy Gwen Gillis & Martin Zimmer

Aims

The importance of isolated mangroves forests and seagrass beds for carbon sequestration has been reported extensively; however there are large knowledge gaps in the global database of carbon cycling in connected mangrove forests and seagrass beds.

This research aims of this project is to enhance understanding of carbon accumulation and CO_2 release in connected and isolated ecosystems of the tropical coastal seascape at the global scale.

Our main questions are :

What is the role of connected mangrove forests and seagrass beds vs. isolated ecosystems in carbon supply, quantity of carbon and the source of carbon?

What are the drivers for carbon dynamics across tropical latitude in connected and isolated ecosystems?

Will CO_2 release change across tropical latitude gradients or at the regional scale (i.e. connected and isolated ecosystems) and how is this related to carbon accumulation in the surface sediment?

Location

Adelaide (Australia), Florida (United States of America), Singapore (Singapore), and Zanzibar (Tanzania).

Approach

We will use a combination of field and laboratory experiments to :
Monitor carbon accumulation and supply, primary production, plant/tree traits and origin of carbon in the sediment and in suspended particulate matter as well as CO_2 release from the sediments across connected and isolated mangrove forests and seagrass beds.

Duration

This project started in 10.2016 and will run until 10.2019.

Need more information?

Please contact lucy.gillis@leibniz-zmt.de, or visit our webpage at ZMT.

ZMT LEIBNIZ CENTRE for Tropical Marine Research

Leibniz Association