

Project Update: May 2014

1. Mapping of the invaded sites in Todos os Santos Bay (TSB)

The invasive coral *Tubastraea* spp. is widely distributed in the TSB and six invaded sites have been mapped (Fig. 1). In these sites the invasive coral is encrusted in different substrate types as coral reefs, piers, shipwreck, rocks and oil platforms. In the Cascos reef (black arrow in the map), the population of invasive coral is aggregated over approximately 800 m² and their colonies are close to each other forming small patches, occupying about 27% of the substrate affecting coral community. About eighth native coral species occur on the Cascos reef and four are endemics of Brazil.

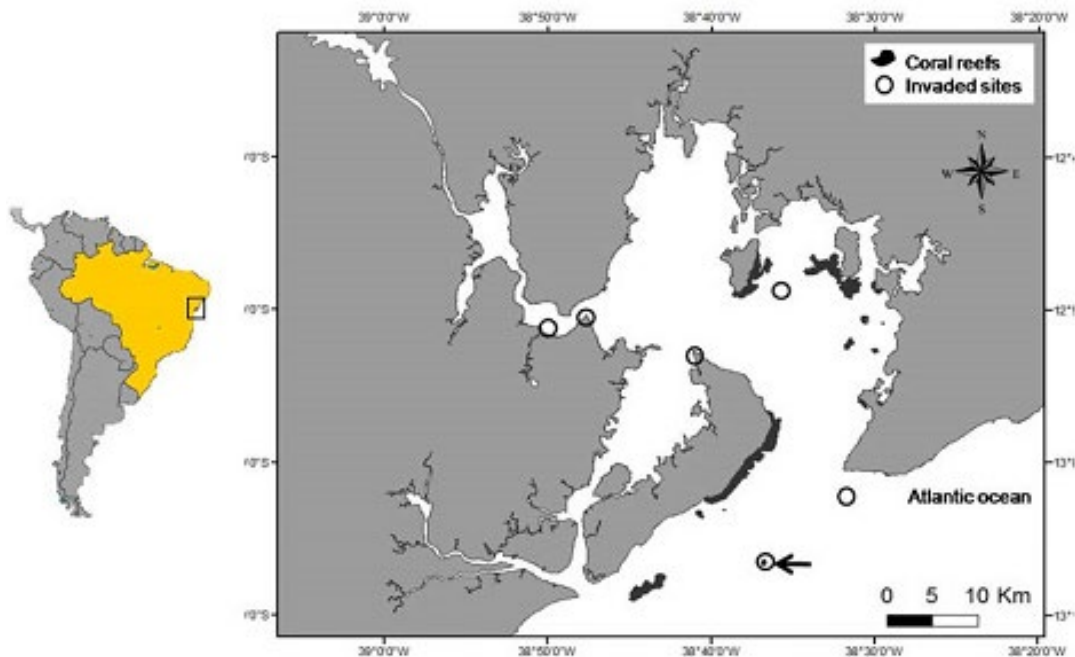


Figure 1. Sites at Todos os Santos Bay (northeastern Brazil) with the invasive coral *Tubastraea* spp. presence. Black arrow: Cascos reef.

2. Natural experiments (manipulative and mensurative)

The natural experiments conducted on the Cascos reef showed that the invasive coral *Tubastraea tagusensis* appears to be reducing the survival and abundance of the native corals of reef community by space competition. The two most abundant native coral species (*Siderastraea stellata* and *Montastraea cavernosa*) showed tecidial necrosis in short term on manipulated direct contact with invasive coral (Fig. 2A). Moreover, a high proportion of natural events competition between invasive and native coral was found with a high percentage of mortality on native species. In the invaded zone (Fig. 2B) the benthic community structure was significantly different than non-invaded zones due high cover of invasive coral and low cover of native corals and turf algae.

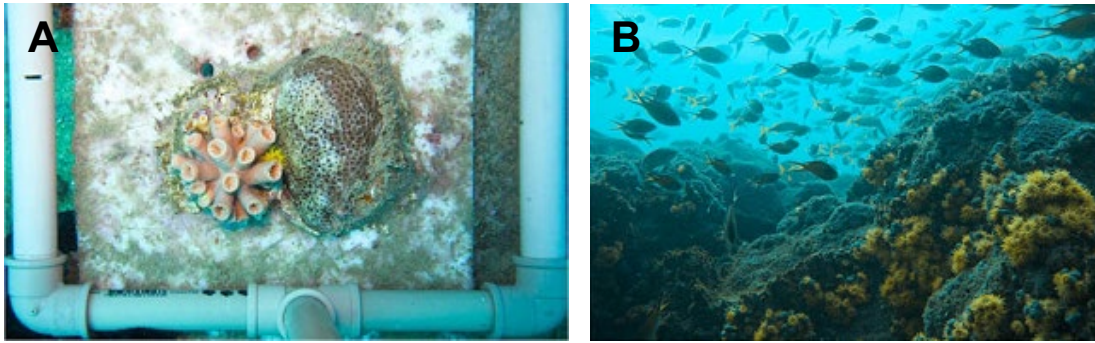


Figure 2. Natural experiments at Cascos reef: A) experimental competitive contact between *T. tagusensis* and *Siderastraea stellata* resulting in tecidual necrosis on native coral, B) Invaded zone.