

## Assessing health status of corals at a tropical marginal reef site through bleaching and decadal change in population parameters

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Scleractinian corals are key organisms in structuring reef habitats and coral cover is being lost due to local and global stressors caused and/or exacerbated by anthropogenic activities. Despite being hardly touched upon, studies of size-frequency distributions serve as snapshots of coral populations' status and provide information on population decline or growth over time. In our study we have intermittently monitored two Brazilian scleractinians species, the endemic *Mussismilia hispida* and *Siderastrea stellata*, since 2000 in an important coral marginal reef site at Armação dos Búzios, Rio de Janeiro, Brazil. We measured length, width and arc of all colonies from both species found across transects at eleven sites. In total, over 5,000 colonies have been measured over the past 17 years. Although the frequency of small and medium colonies remained relatively constant, we observed a clear decline in the frequency of larger colonies (> 30 cm) for both species, particularly the most common *S. stellata*. Additionally, we have been monitoring colonies for bleaching in five of these sites throughout 2017 to assess health status. The relationship between observed bleaching prevalence/intensity and environmental variables (temperature, light availability and sedimentation) may elucidate how changes in local conditions influence coral health.

**Key-words:** bleaching; colony size; population dynamics, Southern Atlantic subtidal communities