

# Obliteration and repopulation: Growth and succession in coral reef ecosystems

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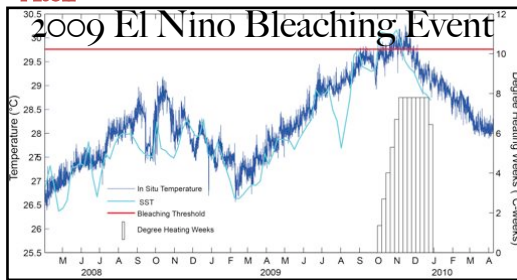
## Introduction

Anthropogenic stressors, such as pollution, sedimentation, gradual rise in sea surface temperature (SST), are chronic disturbances that can interact to negatively impact overall reef resilience.

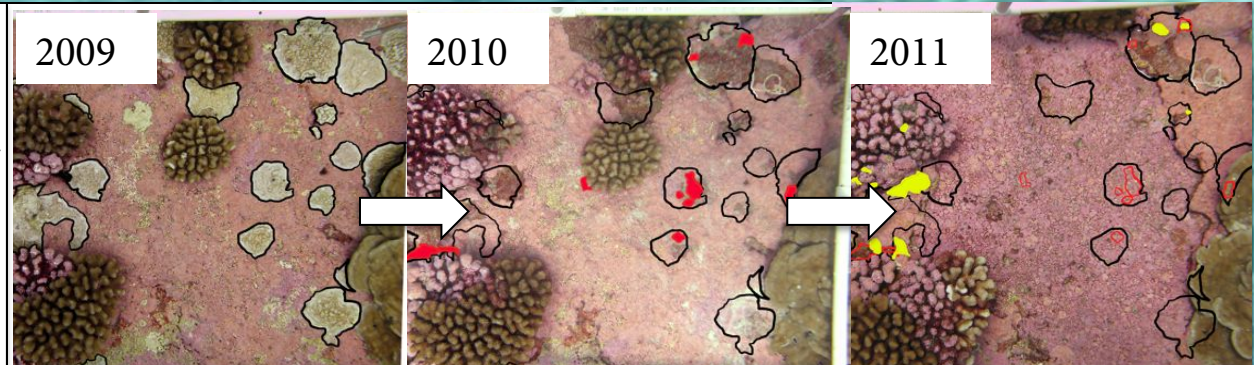
Coral reef research has primarily focused on the decline of corals due to chronic anthropogenic impacts. However, understanding why corals are less able to recover following acute disturbance is also important.

### OBJECTIVE:

Determine relative significance of rates of recovery and decline of certain corals at Palmyra Atoll

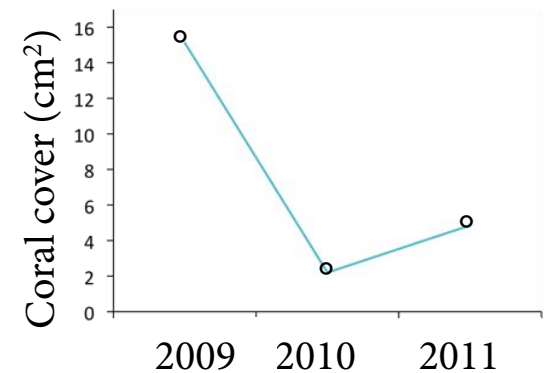
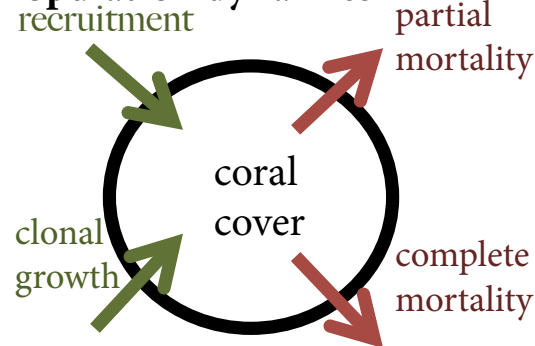


study sites: Palmyra Atoll



Example of one photographic time series of Palmyra Atoll sites. *Porites superfusa* outlined in black and digitally tagged in 2009. 2010 has live tissue highlighted in red, 2009 outlines show previous mortality. 2011 live tissue in yellow - outlines show previous mortalities.

## Population dynamics



## Conclusions

It is vital to understand the recovery mechanisms implicit to each coral reef in order to adapt management techniques accordingly. Re-growth requires a number of adult colonies to survive, but may play a key role in recovery. Corals have evolved to survive changing environments, but human impacts have increased the speed with which these changes take place.

## References / Acknowledg.

Brown and Suharsono 1990, *Coral Reefs* 8:163.  
Connell 1997, *Coral Reefs* 16: 101.  
Rogers 1993, *Coral Reefs* 12:127  
Diaz-Pulido et al. 2009, *PLoS ONE* 4:e5239.

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