



National Environmental
Research Program

Down and staying down?

signs of recovery in GBR corals

Hugh Sweatman

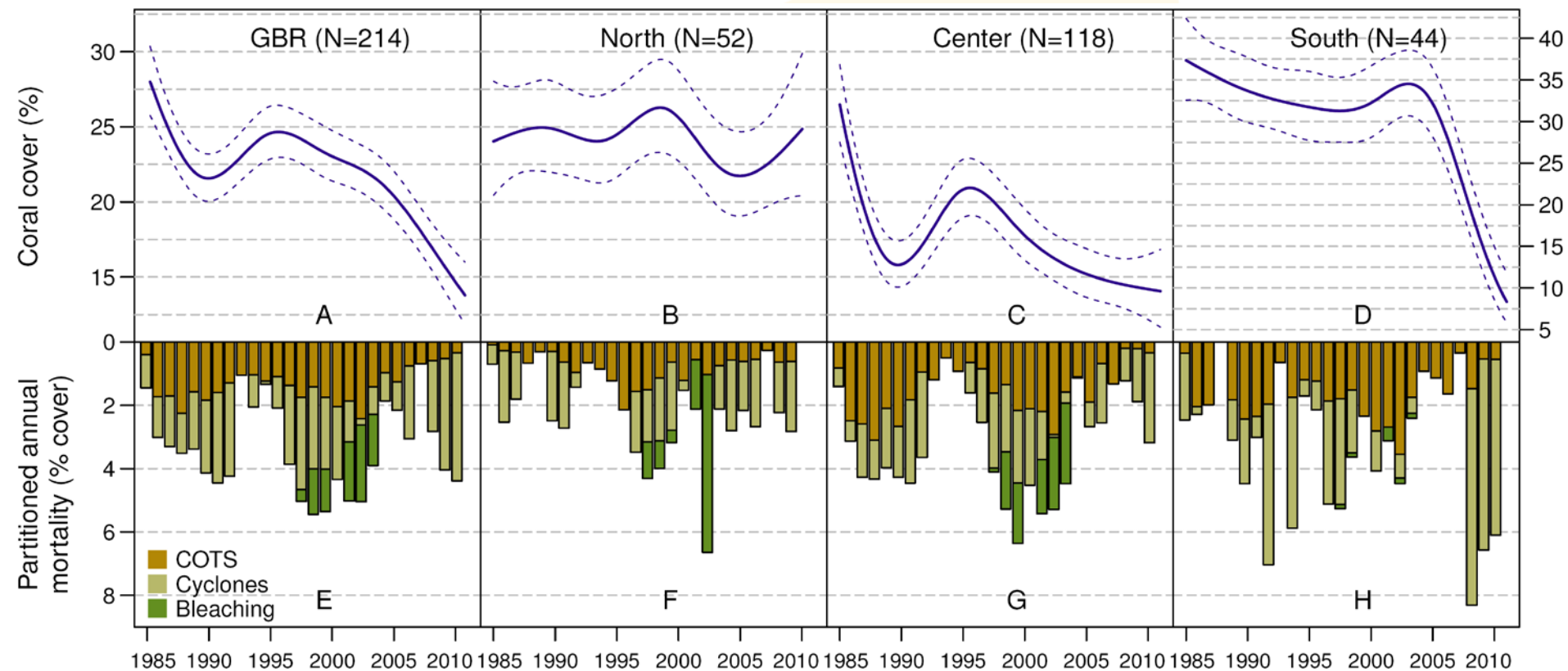


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CHANGE IN CORAL COVER ON GBR REEFS 1985 - 2012

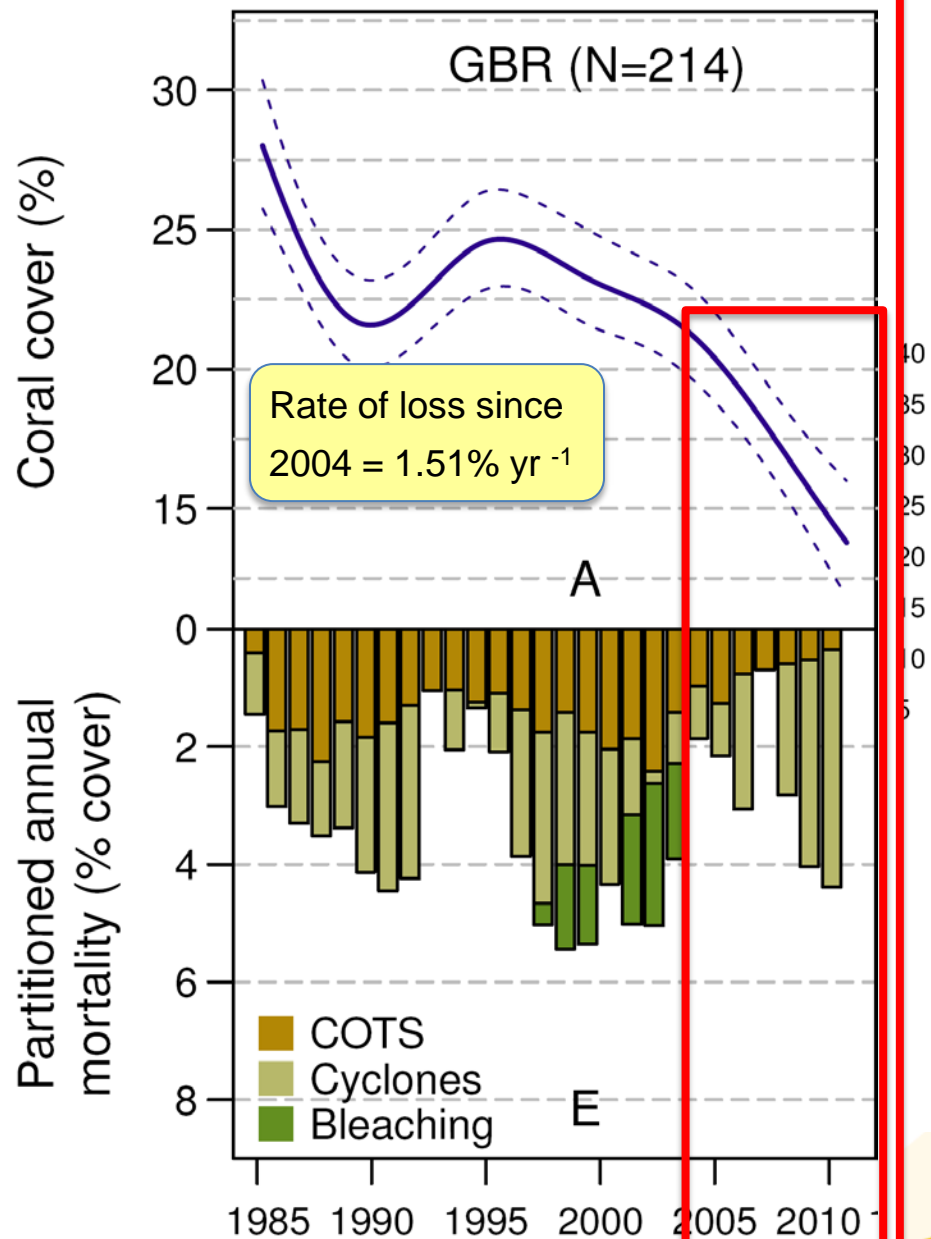
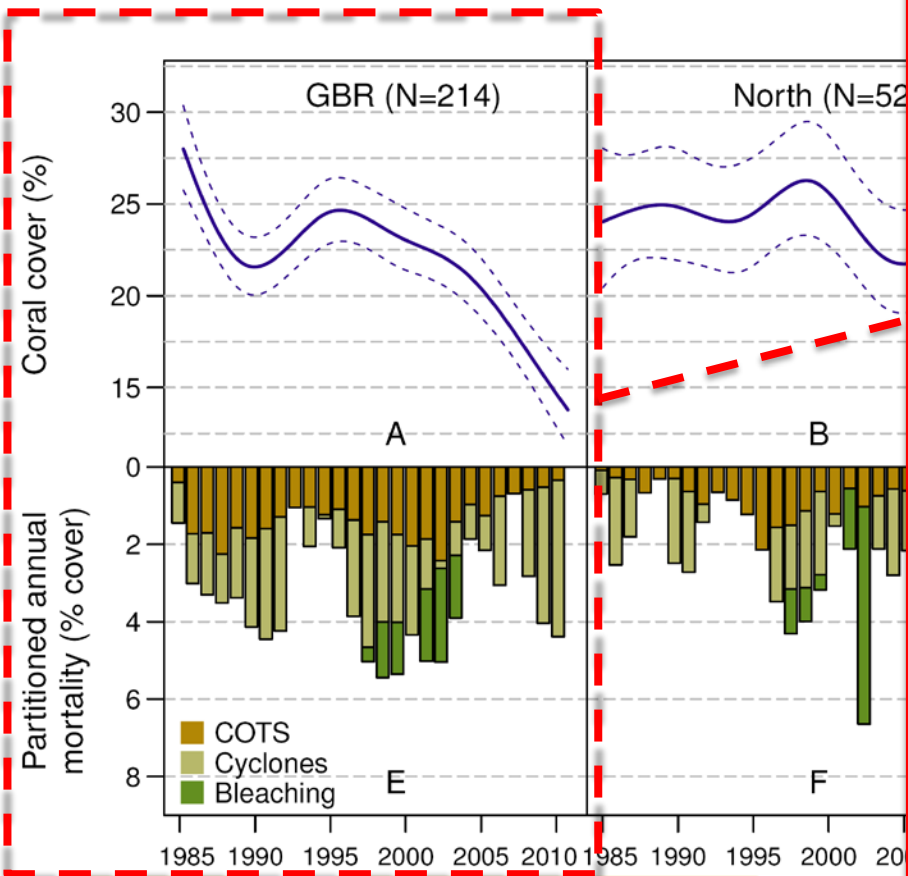


from De'ath et al. 2012

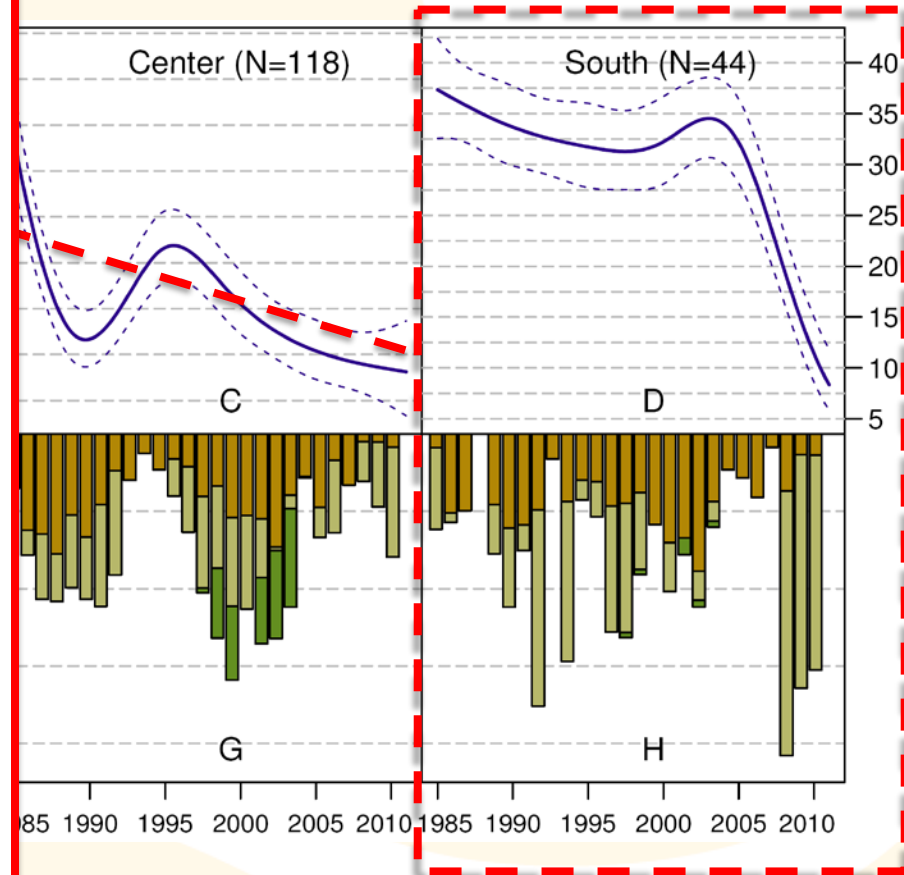
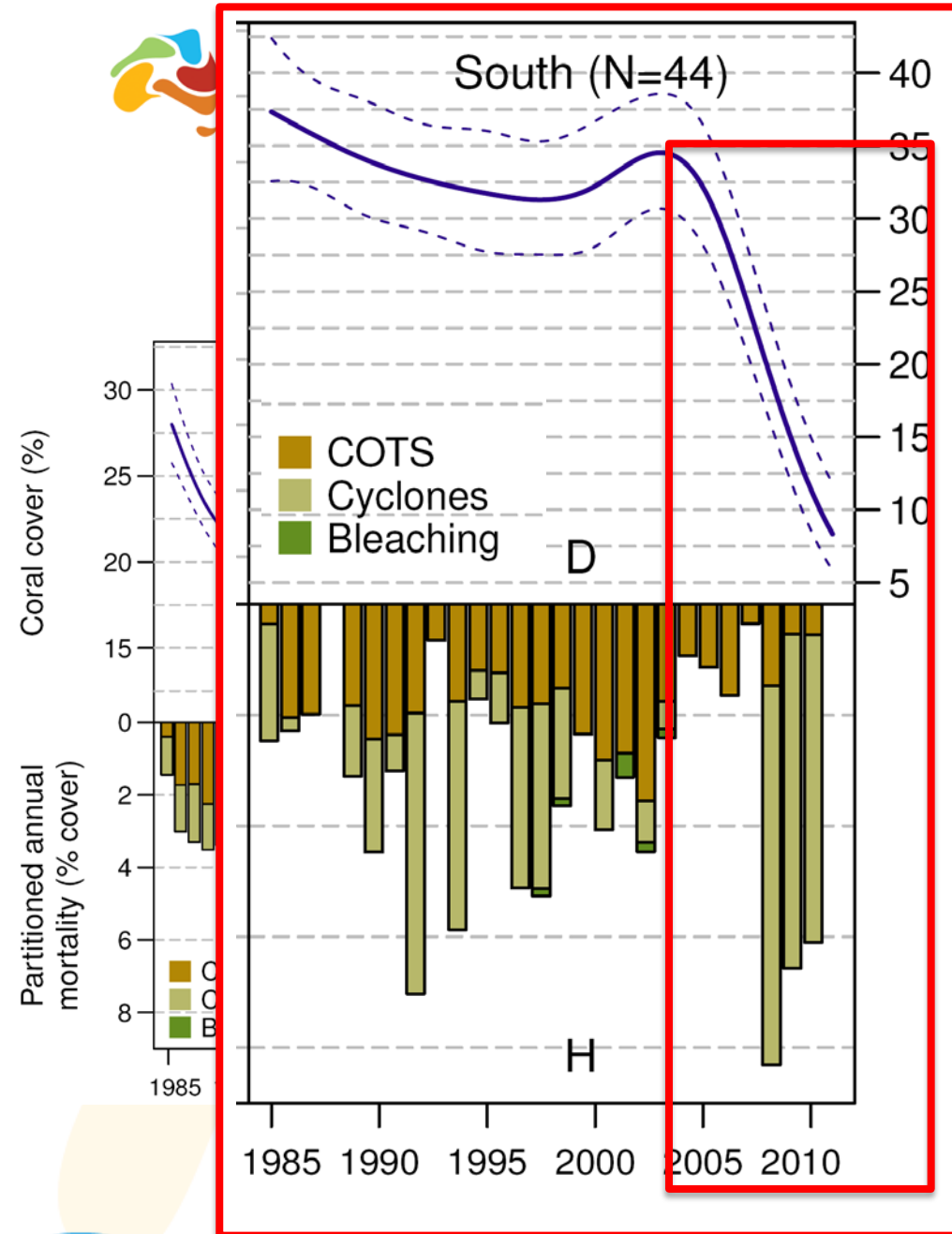


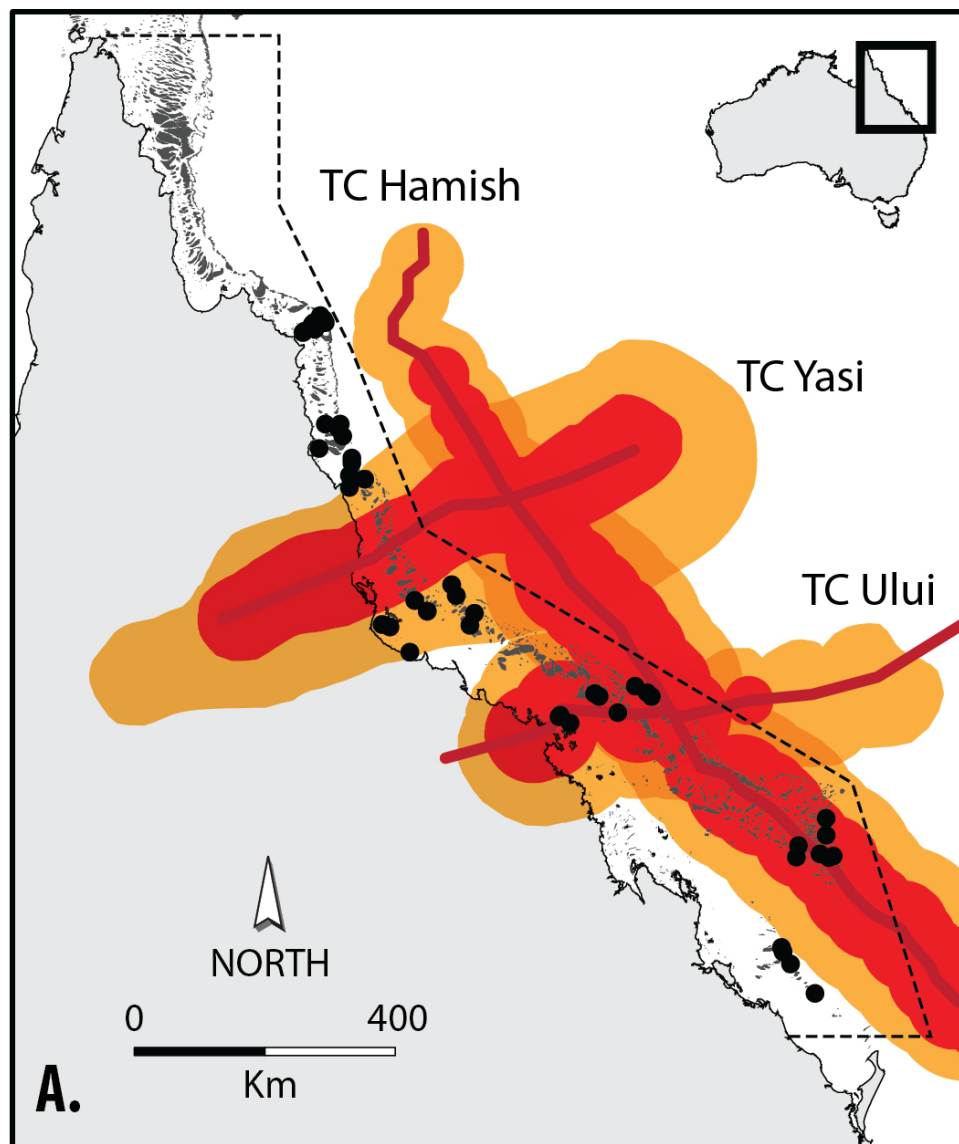
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ROLE OF CYCLONES



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March 2009 – Feb 2011

- 59% of GBR reefs experienced sustained winds $>89 \text{ km.h}^{-1}$
- Overall cover on AIMS monitoring transects dropped 29.4 – 22.5%
- Central & southern reefs lost 40% of coral

Rebe Reef Site 1 transect 4; 24 March 2007



Rebe Reef Site 1 transect 4; 5 April 2009



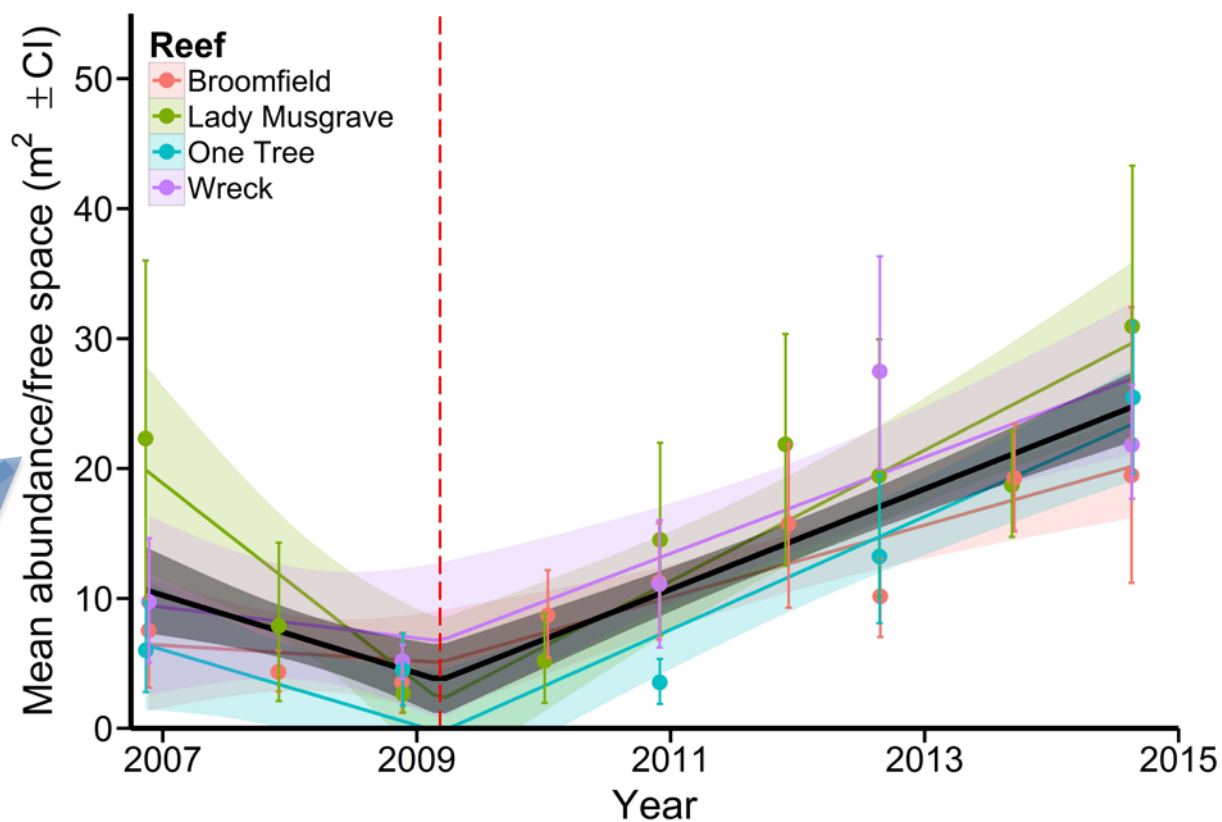
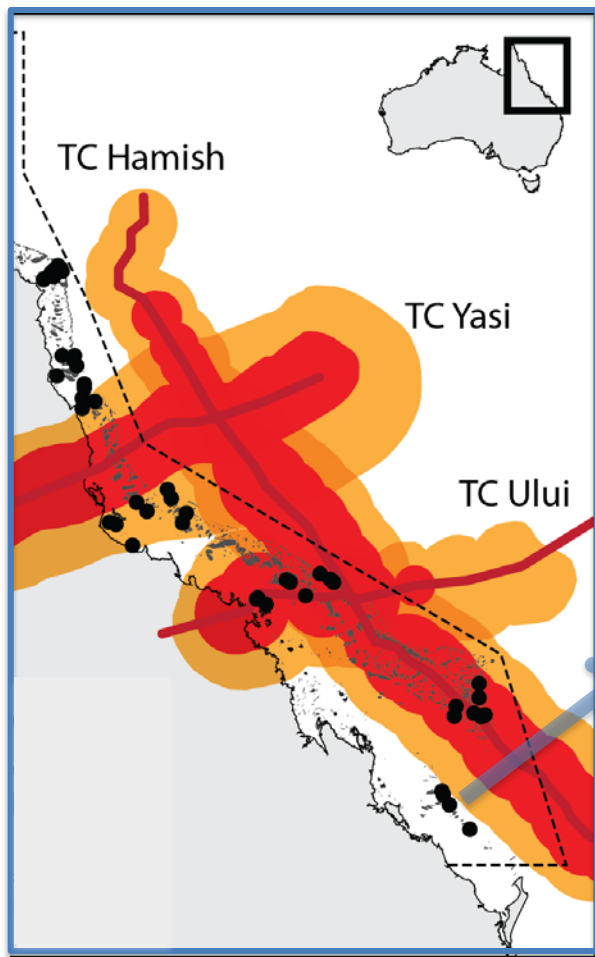


DOES THE GEOGRAPHIC SCALE OF THE DAMAGE RECOVERY WILL BE COMPROMISED?

- While some corals can regrow from fragments, larval recruitment is thought to be very important for recovery.
- If coral populations have been decimated over a huge area, will supply of larvae be substantially reduced?

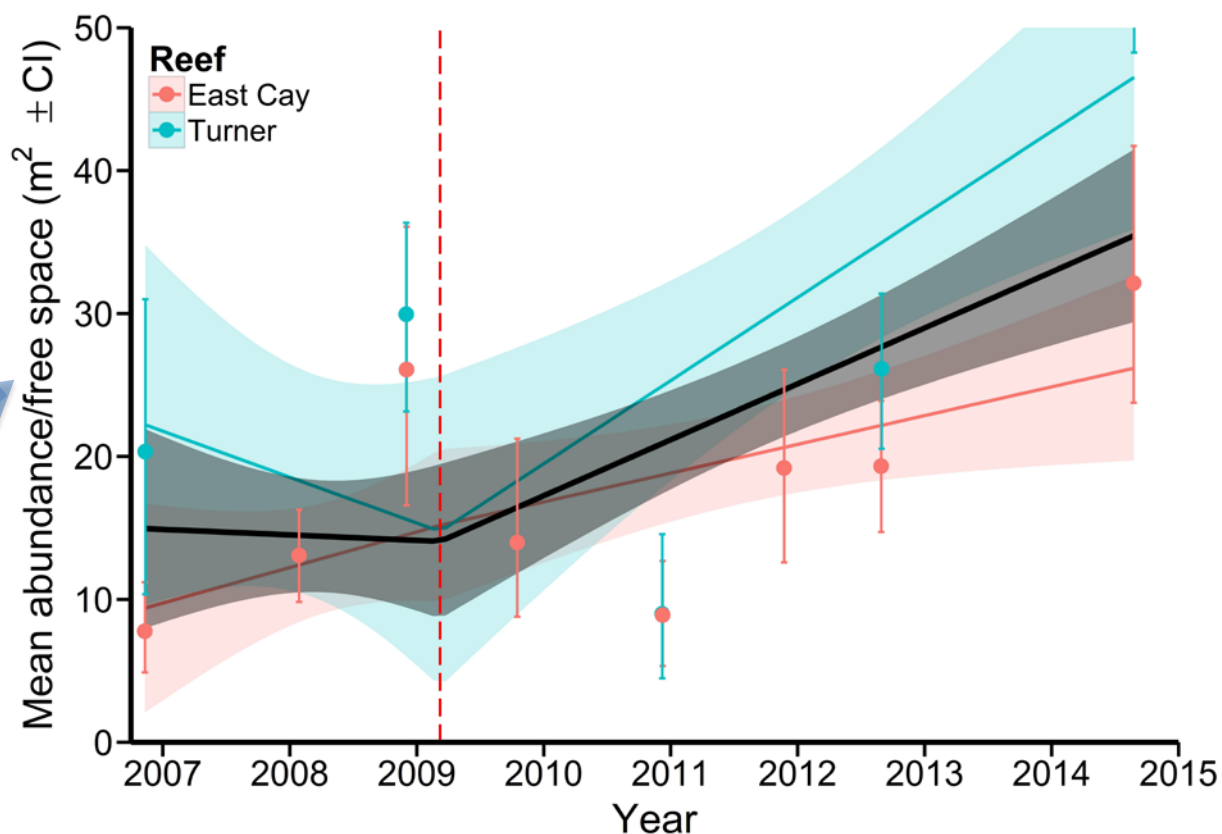
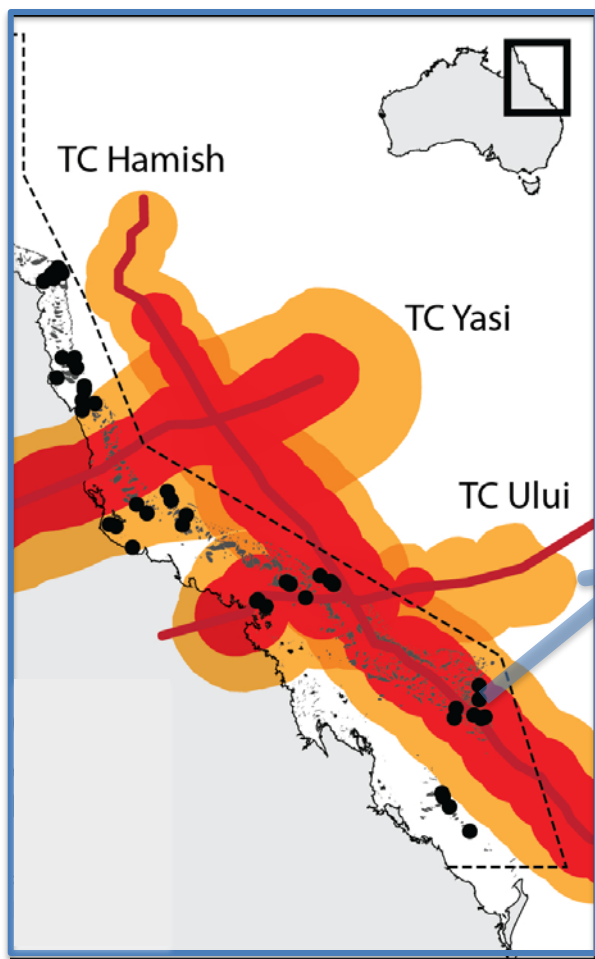
ABUNDANCE OF JUVENILE CORALS

Capricorn - Bunker reefs



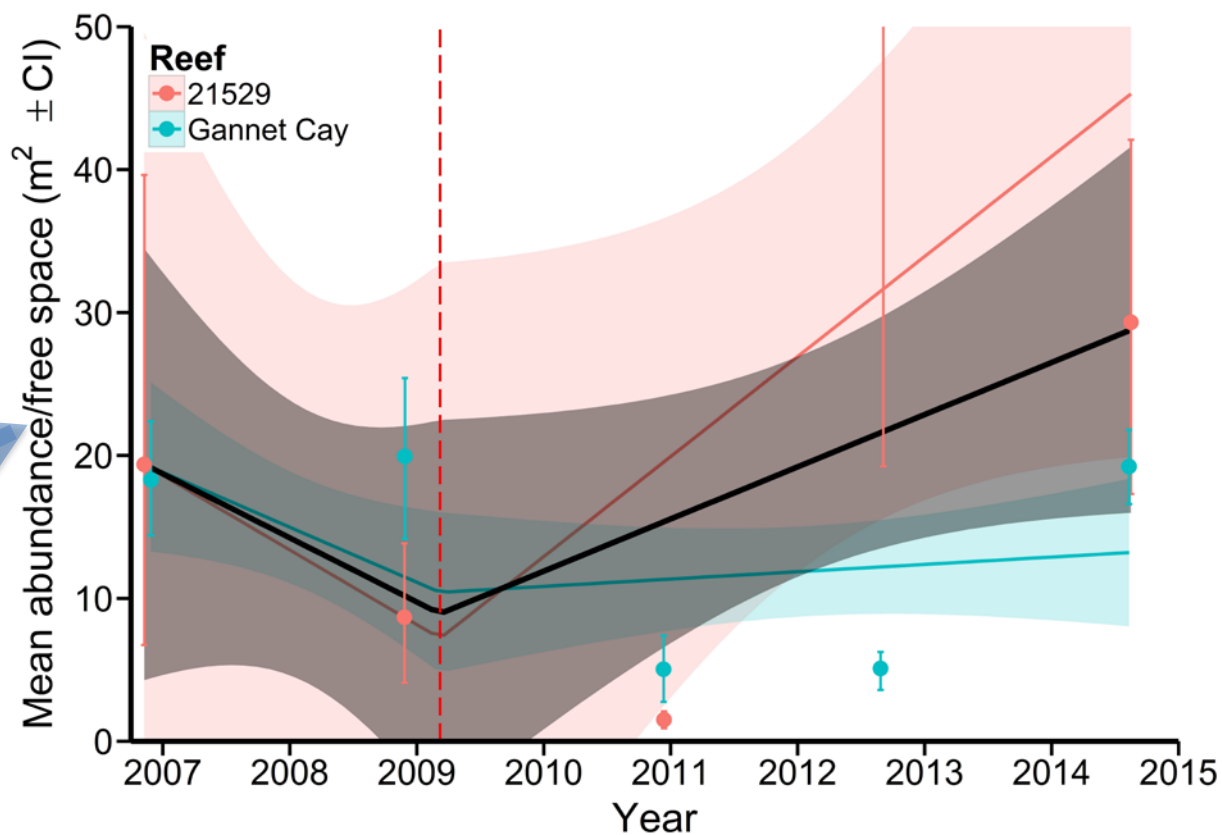
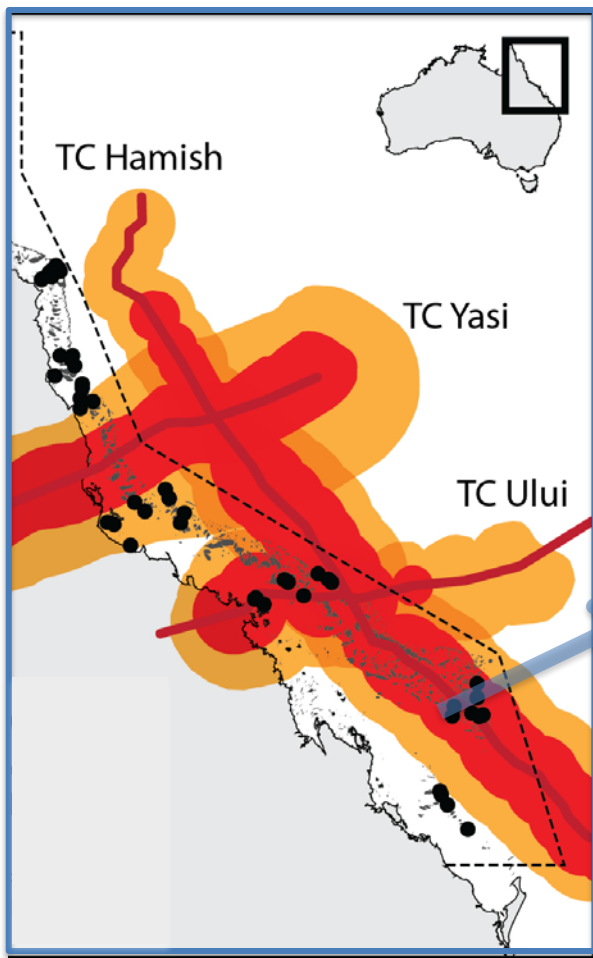
ABUNDANCE OF JUVENILE CORALS

Outer-shelf reefs, Swains sector



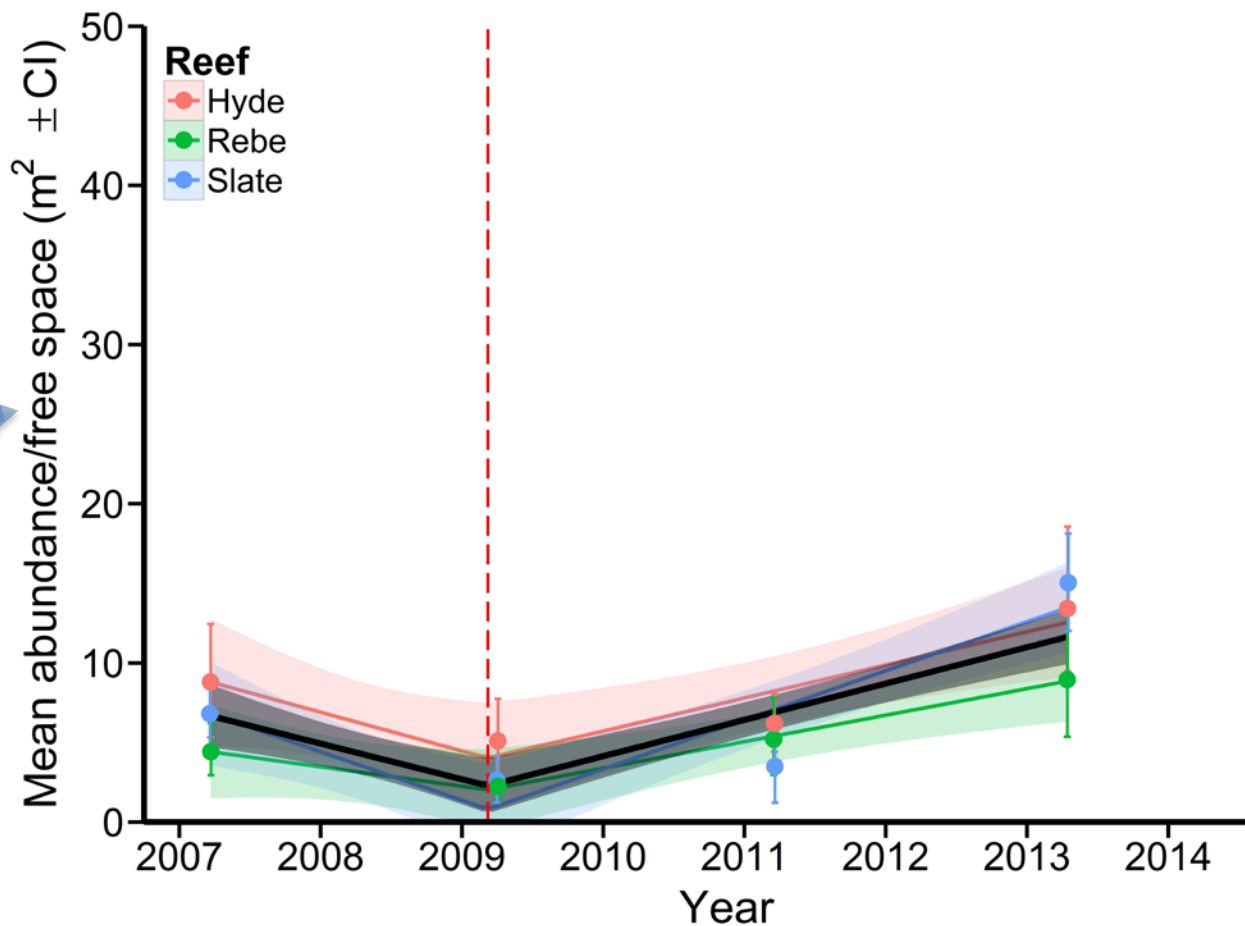
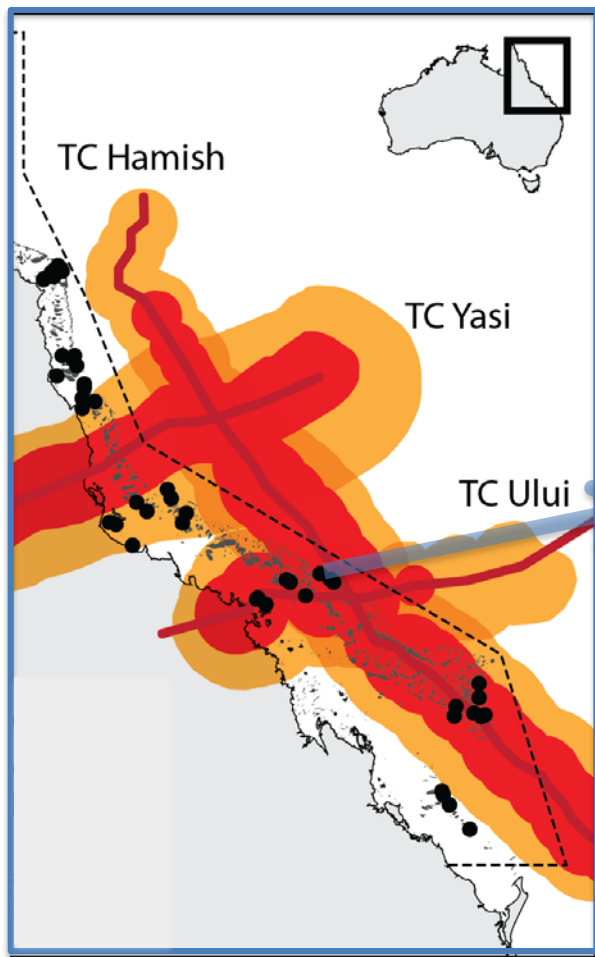
ABUNDANCE OF JUVENILE CORALS

Mid-shelf reefs, Swains sector



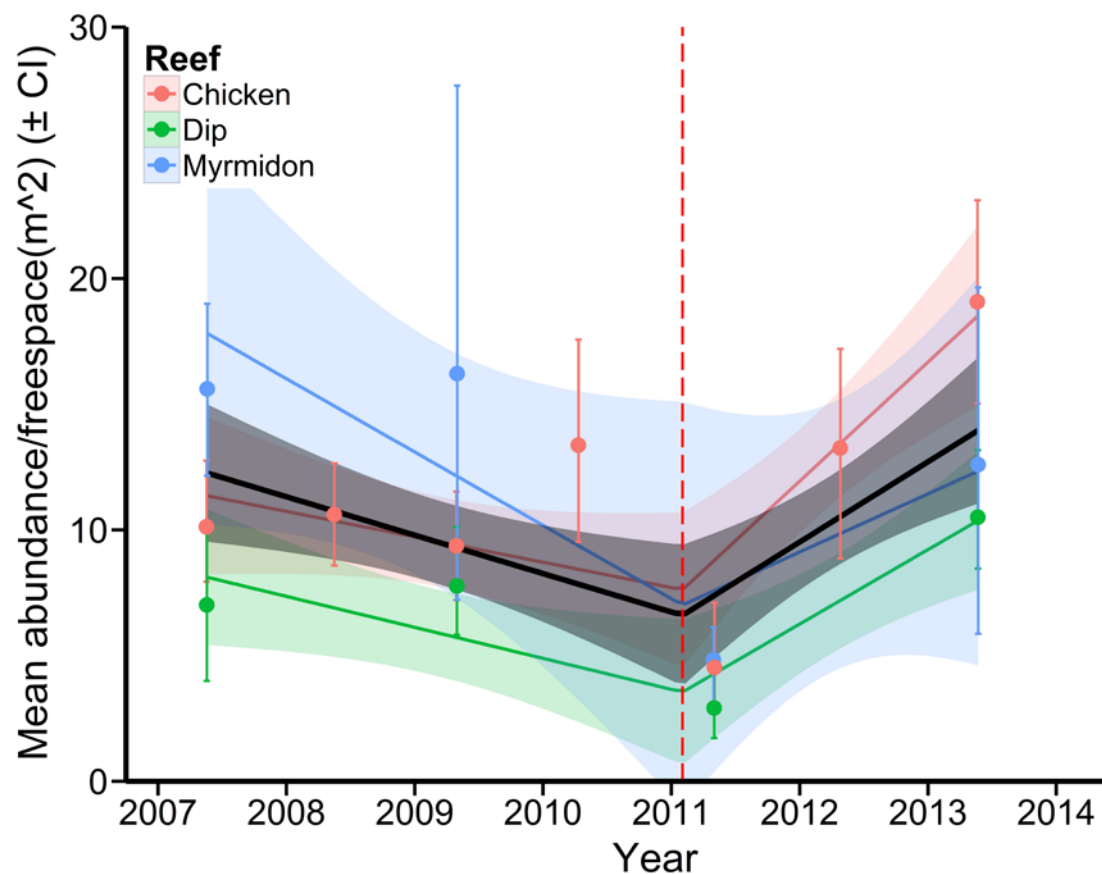
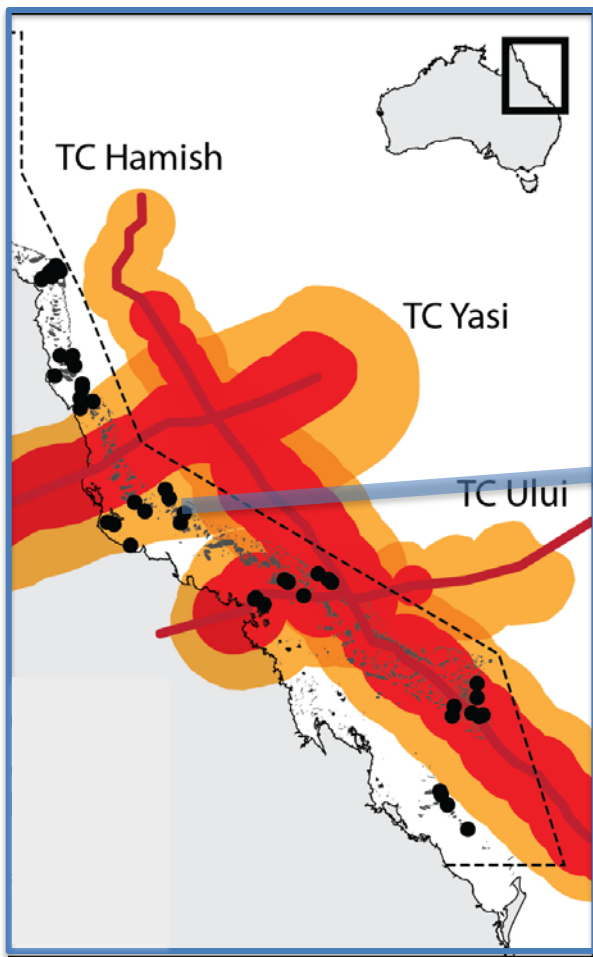
ABUNDANCE OF JUVENILE CORALS

Outer shelf reefs, Whitsunday sector

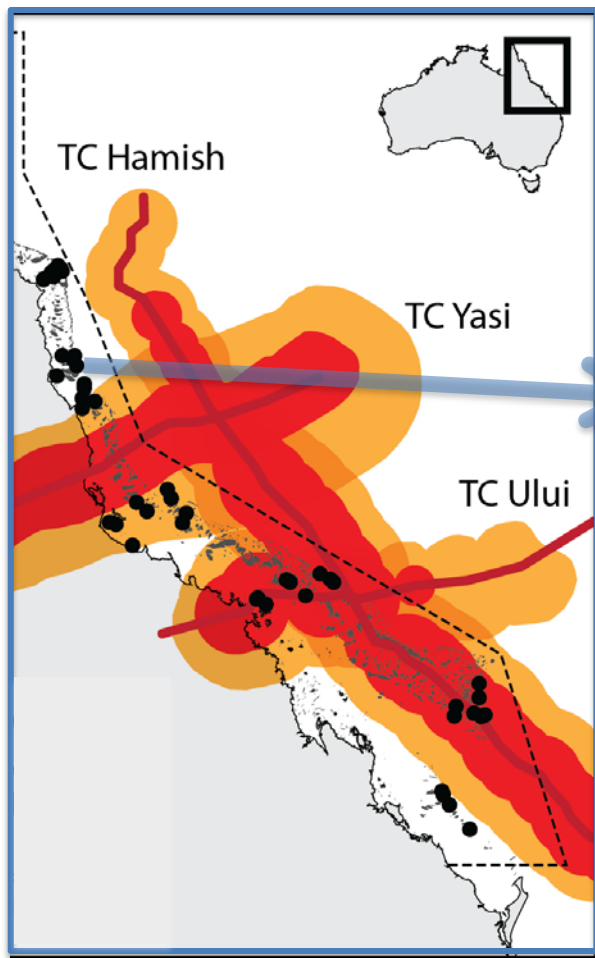


ABUNDANCE OF JUVENILE CORALS

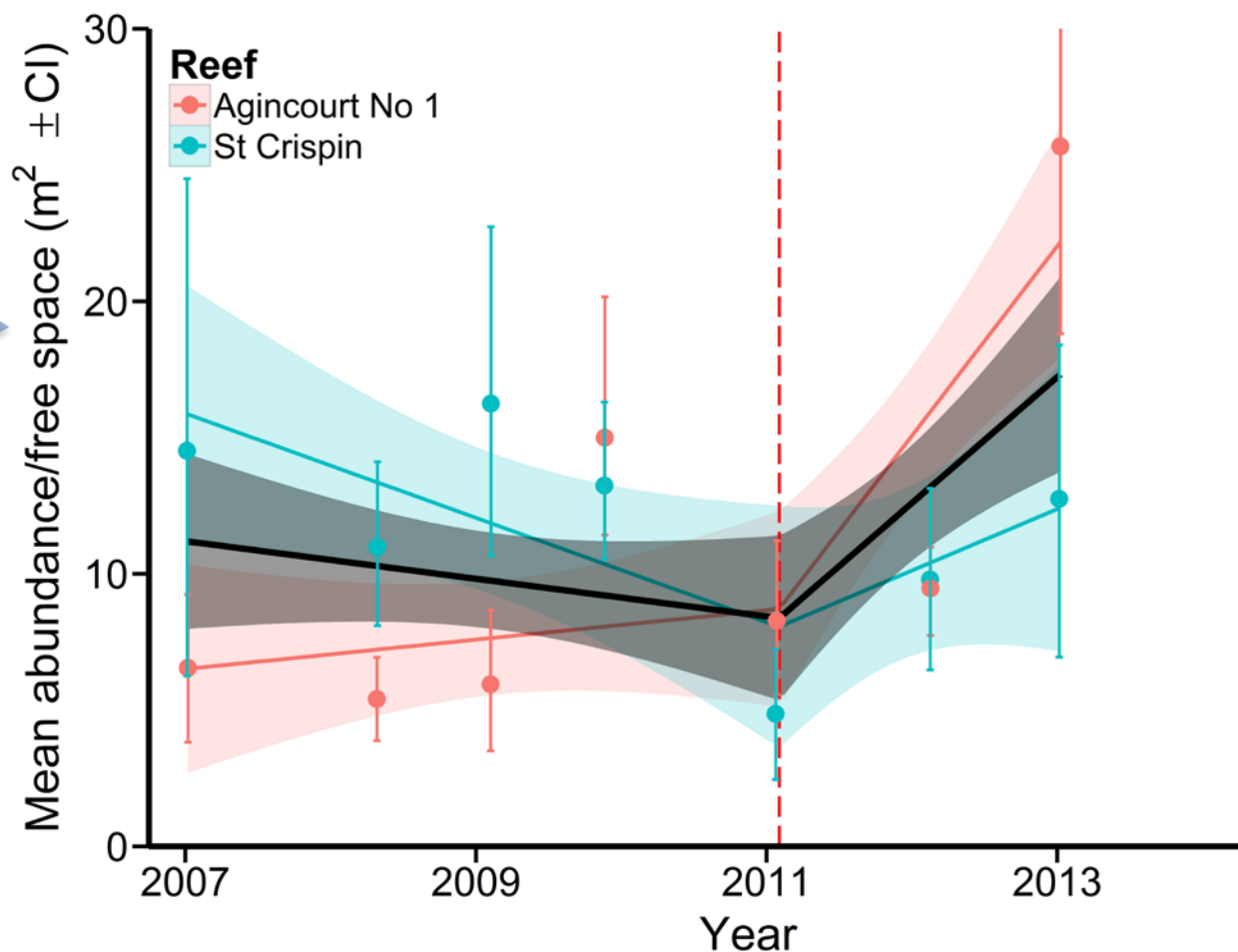
Outer shelf reefs, Townsville sector



ABUNDANCE OF JUVENILE CORALS



Outer shelf reefs, Cairns sector





CONCLUSIONS

- As suggested by De'ath et al. (2012), corals on mid-shelf and outer reefs of the GBR retain capacity to recover from acute disturbances.
- BUT, much depends on the interval between disturbances.
- More recently there has been another intense cyclone (TC Ita).
- The fourth documented wave of *Acanthaster* appears to be moving south past Cairns.



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