

2023-2024 Cairns-Port Douglas

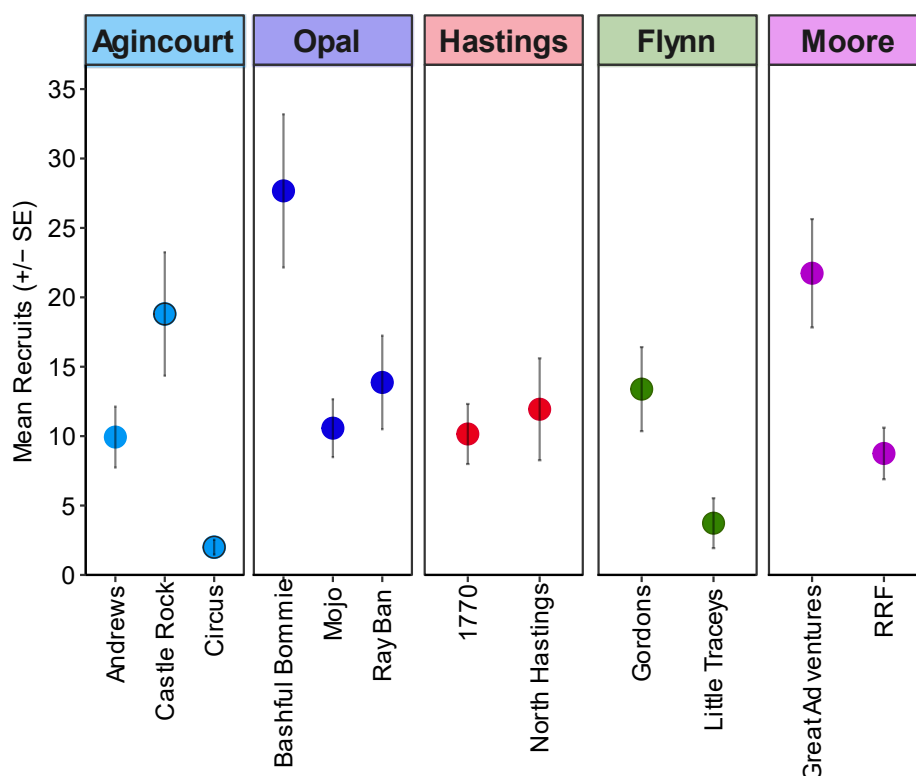
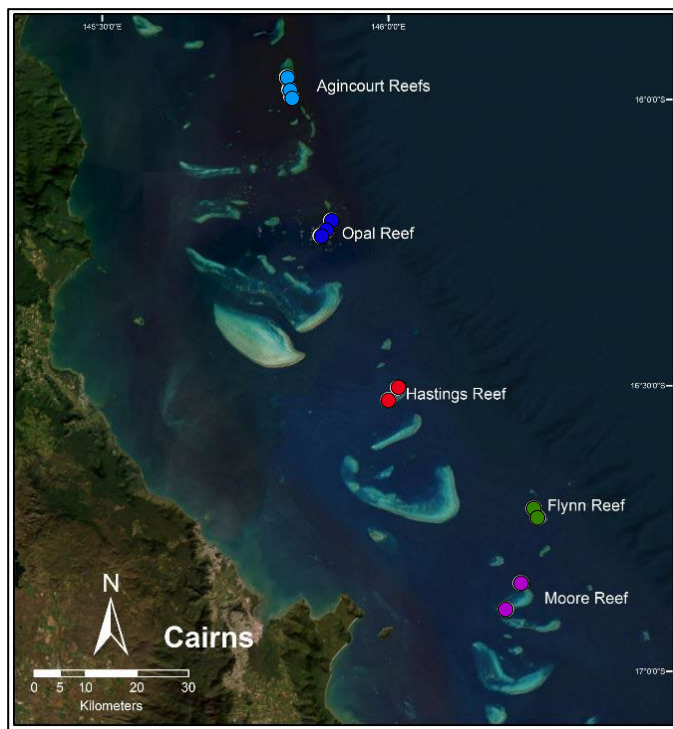
Coral Recruitment Study: Key Takeaways

- In late 2023, the Cairns-Port Douglas Reef Hub led a collaborative study with 5 local organisations to explore coral recruitment rates following coral spawning over the early summer months.
 - Down Under Cruise & Dive
 - Reef Restoration Foundation
 - Passions of Paradise
 - Wavelength Reef Cruises
 - Quicksilver Group
- The study aimed to help tourism operators, non-profits and the broader scientific community better understand and make decisions about local reefs.
- Five reefs in the local region were selected to assess coral recruitment both within and among reefs after spawning.
- Each organisation deployed 15 limestone recruitment tiles (9 x 9 x 1.5 cm) at 2-3 sites per reef.
- Recruitment tiles, temporarily placed on reefs, then taken back to the lab, help estimate coral recruitment, as new coral offspring are not visible to the naked eye until nearly 12 months old.
- Temperature loggers were also deployed at each site to track local temperature trends over time.
- Tiles were fixed at reef sites in early October and left for 10-12 weeks post-spawning.



- After retrieval, tiles were treated with a mild bleach solution to reveal the coral recruit skeletons on top, side and bottom surfaces.
- The tiles were analysed at JCU, where Reef Hub participants learned how to identify coral recruits and record data from the 180 deployed tiles.

- Recruitment patterns varied within and among reefs, but clearer trends may emerge with continued monitoring in future years.
- This was the first step in what we hope is a long-term study of coral recruitment in the region.
- The study will be repeated and expanded in 2024 to assess how extreme conditions may have impacted coral recruitment over the last year.
- Stress in adult colonies can reduce egg and sperm production, negatively affecting recruitment and potential coral recovery from disturbances (e.g cyclones or bleaching related losses) [1-3].
- Ongoing temperature logging will help correlate temperature with recruitment patterns, especially after the 2024 mass bleaching event.
- All data will be open-source and accessible through the eAtlas online portal.



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1. Hughes, T.P., et al., *Nature*, 2019. **568**(7752): p. 387-390.
2. Edmunds, P.J., *Limnology and Oceanography*, 2021. **66**(4): p. 1394-1408.
3. Morais, J., et al., *Ecology Letters*, 2024. **27**(1): p. e14332.