A Comparison of Coral Transplantation Methods in Recruiting Fishes

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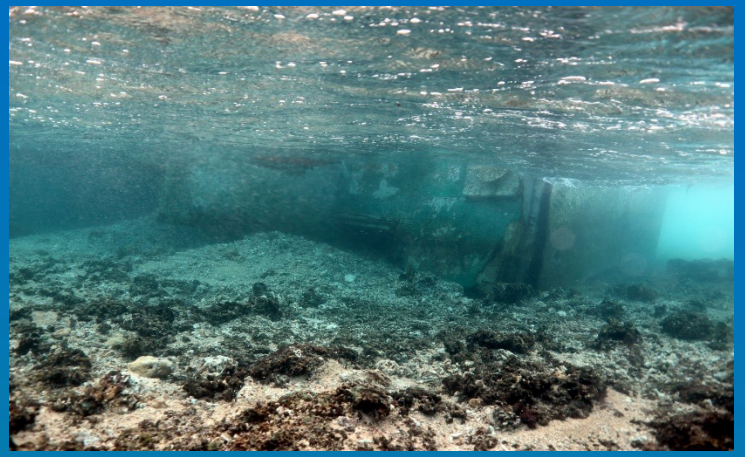
PACIFIC STEP-UP

Introduction



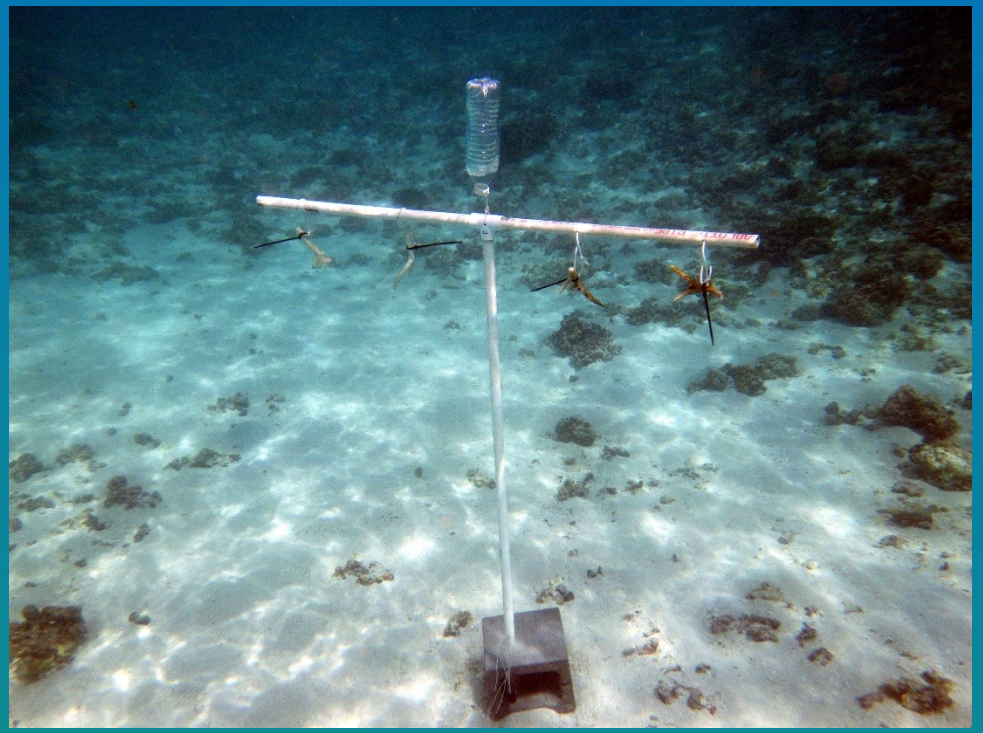
- Coral reefs are declining worldwide
- Reefs serve as an important habitat for fish species
- Coral transplantation can partially restore coral reefs and habitats for fishes
- The purpose of this project was to determine which coral transplantation method recruited more fish

Which method will recruit more fishes?

Block Structure

Surface Area: 4,986 cm^2

VS



Tree Structure

Surface Area: 5,110 cm^2

Hypothesis

- The tree structure will recruit more fishes than the block

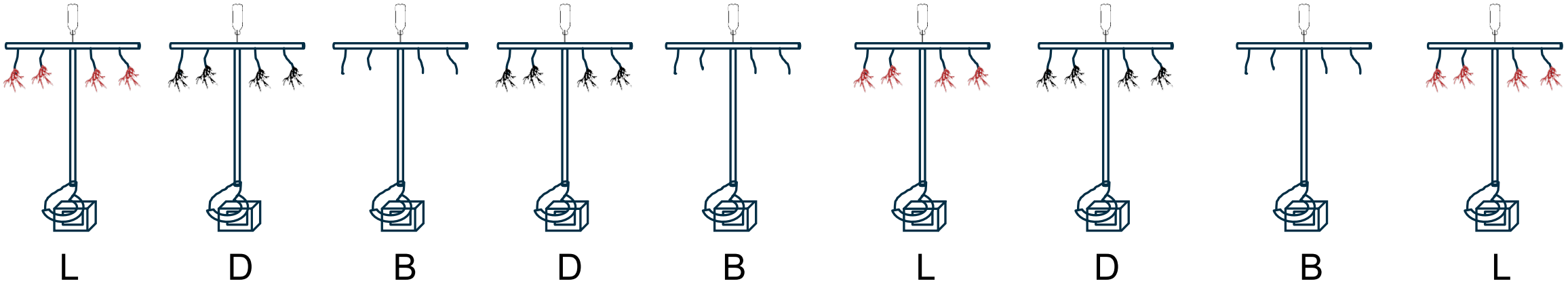
N

Pago Pago

Aua

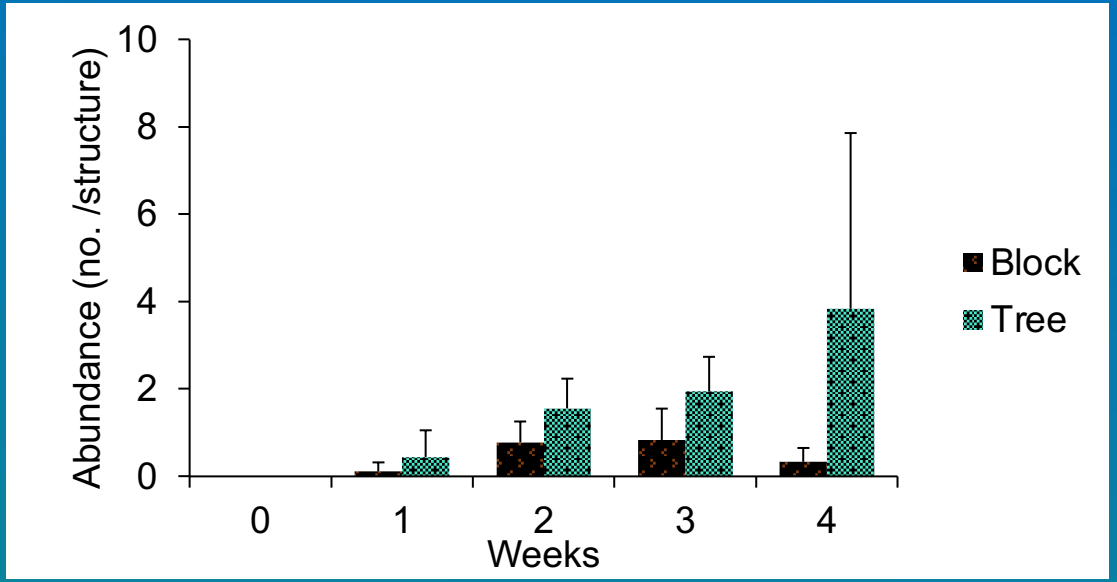
Tutuila

Experimental Design



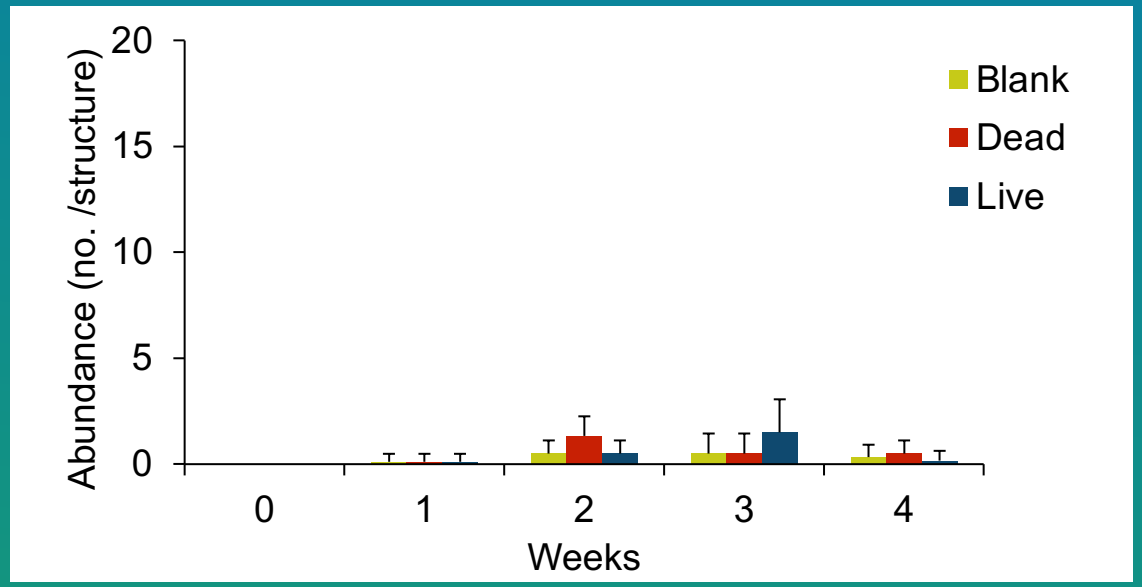
L- Live *Acropora muricata* fragments D- Dead *A. muricata* fragments B- Blank

Results – Abundance

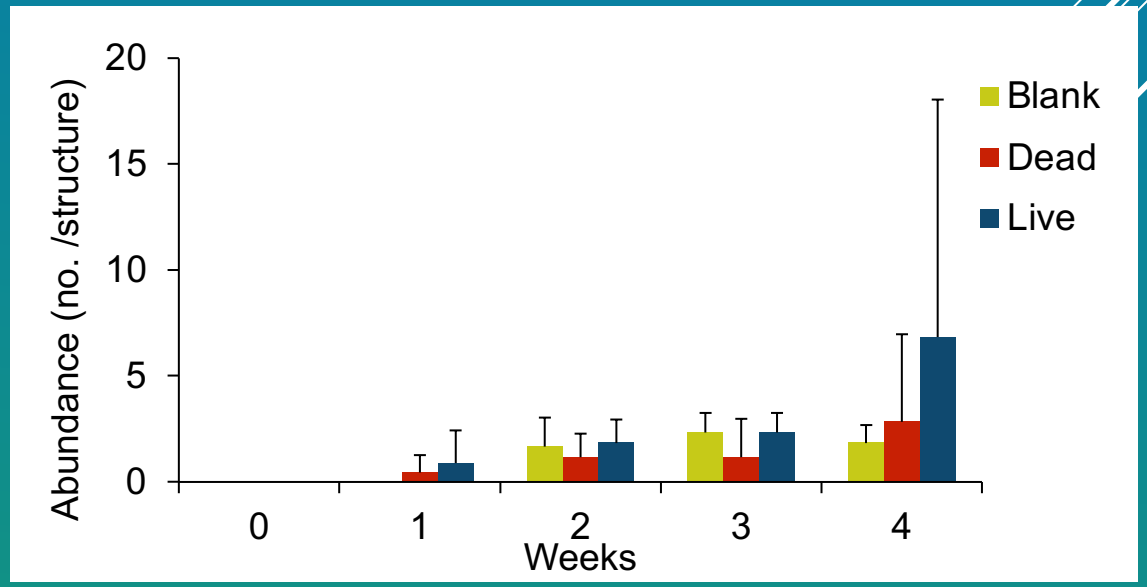


$\bar{x}$ ± 95% C.I.

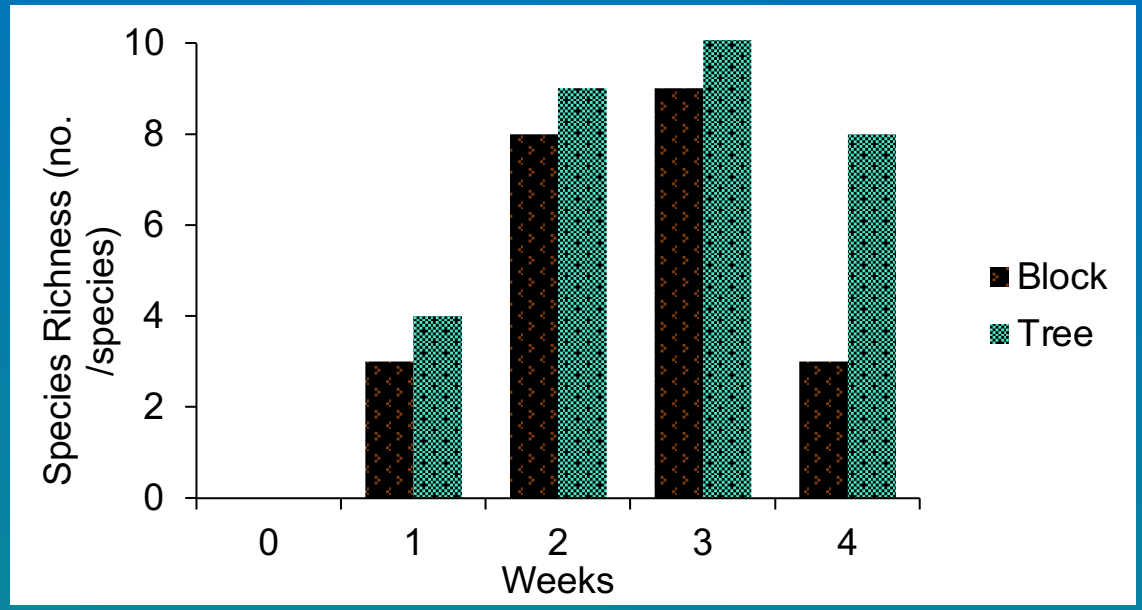
Block Method



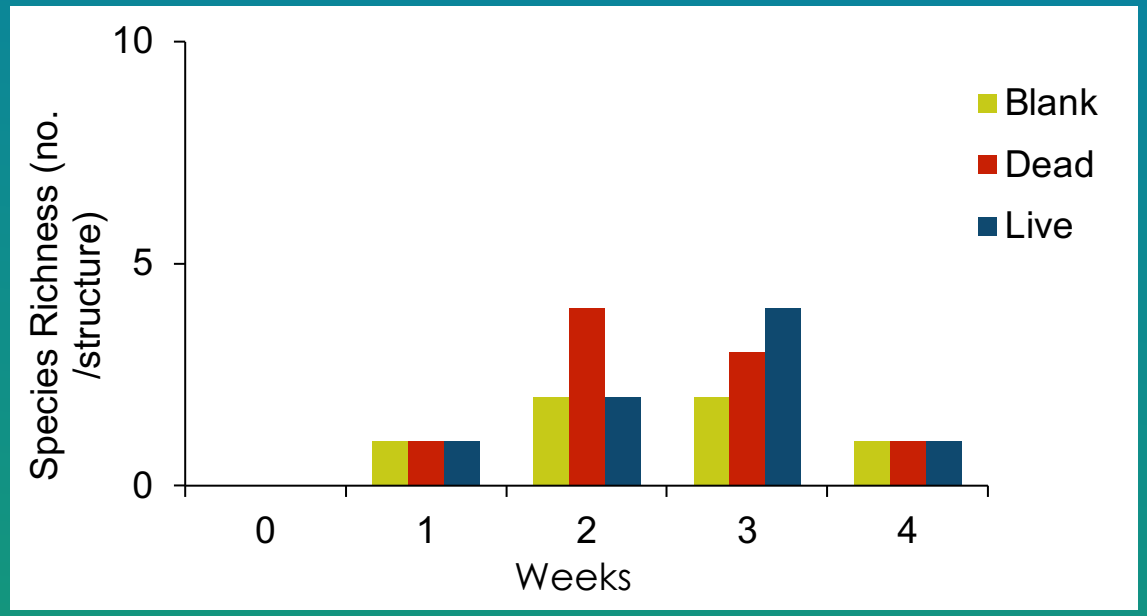
Tree Method



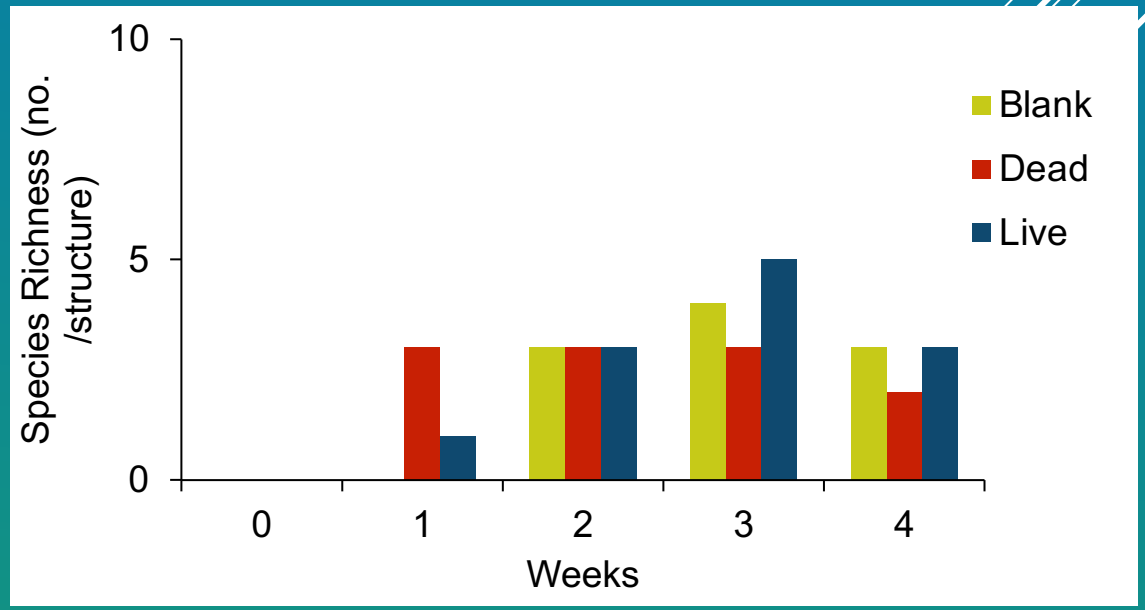
Results – Species Richness



Block Method



Tree Method



Common Species Present

Blenny (*Salarias sp*)

Floral fangblenny (*Petroscirtes xestus)*

Sixspot Goby (*Valenciennea sexguttata)*

Squid

Nudibranch

Conclusions

- Hypothesis was correct. The tree method recruited more fish than the blocks
- Tree method also recruited more fish species
- No difference in fish recruitment between live coral, dead coral, and no coral
- Fish recruited to the structures within 1 week

Significance

- Structures are important for fishes
- Humans can successfully intervene to improve fish populations

Future Improvements

- Increase sample size and duration
- Make more complex trees
- Adjust spacing intervals
- Experiment with alternative methods (e.g., Rope, Nail)
- Survey fish on adjacent natural reefs

Acknowledgements

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Thanks!!!
Any question?