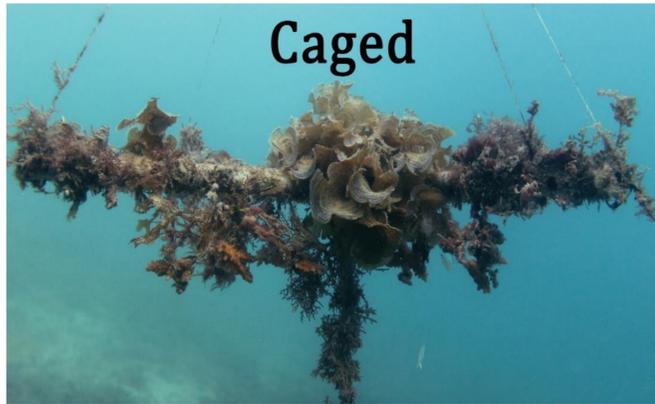




# Benefits of herbivorous fish outweigh costs of corallivory in coral nurseries placed close to a Kenyan patch reef

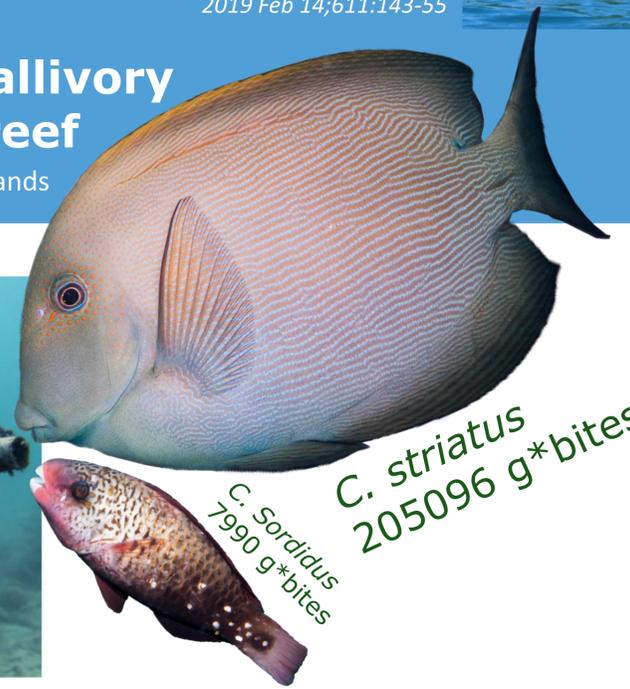
E.G. Knoester\*, A.J. Murk, R. Osinga; Marine Animal Ecology Group, Wageningen University, the Netherlands



Caged



Uncaged

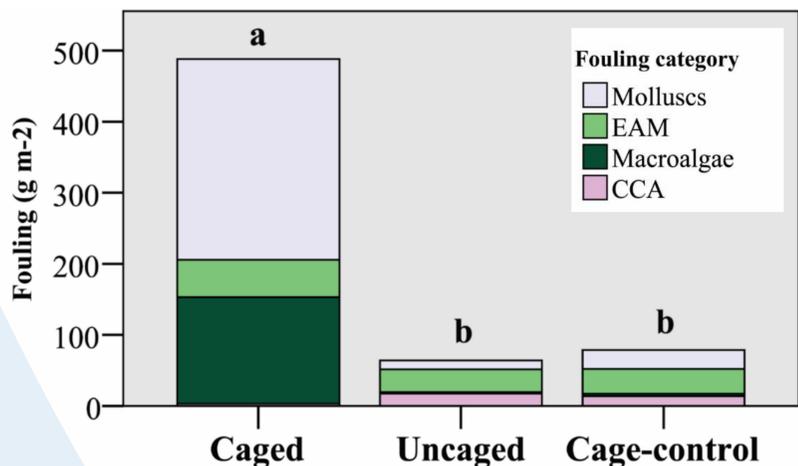


*C. striatus*  
205096 g\*bites  
*C. sordidus*  
7990 g\*bites

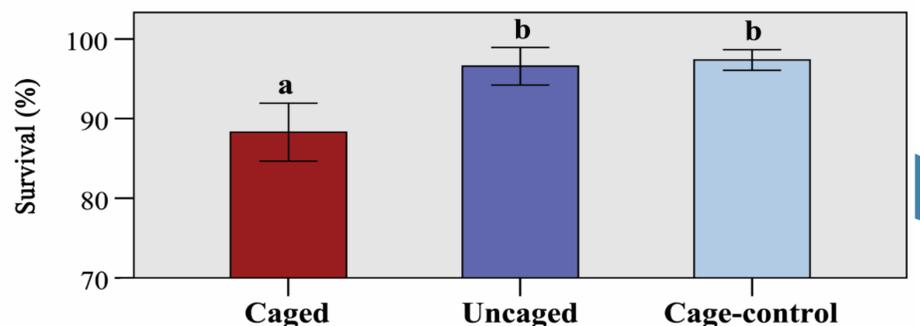
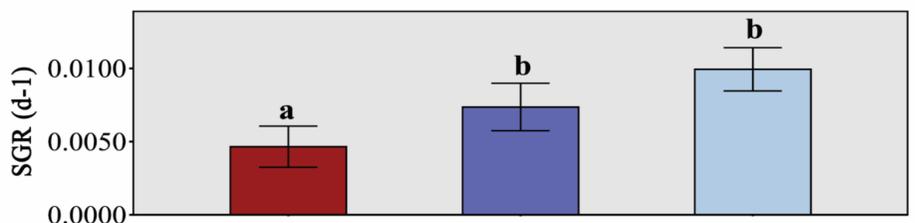
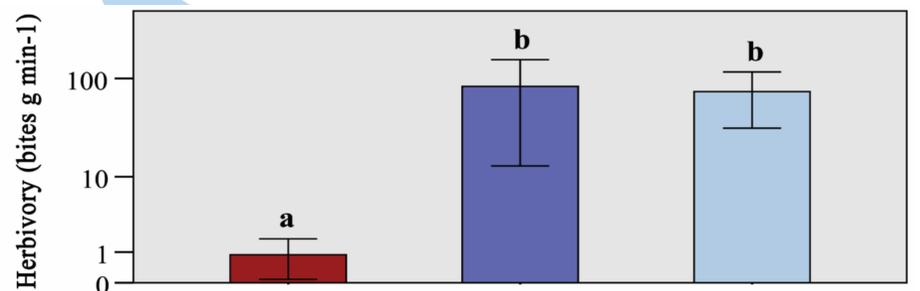
Caged nursery:  
100-fold increase  
macroalgae

*C. trifasciatus*  
100 g\*bites  
*C. kleinii*  
52 g\*bites

Uncaged nursery:  
High grazing pressure  
Limited coral predation



Mean fouling (g m<sup>-2</sup>) per treatment at end of 100-d experiment. N = 15. Differing letters note differences (p < 0.05) between sum of fouling



Herbivory (n = 30), coral growth (n = 15) and survival (n = 15). Herbivory expressed as fish bites scaled to body mass and divided by duration of video. SGR = specific growth rate. Bars are ± 2 se

Uncaged nursery:  
Better growth  
Higher survival

## Objective

To determine the net effect of herbivory and corallivory by fish on the growth and survival of coral in mariculture

## Background

- Coral nurseries plagued by fouling
- Manual fouling removal is expensive
- Natural reef has free cleaning by grazers
- Natural reef hosts coral-predating fish

## Conclusion

Benefits of fouling control by herbivorous fish outweigh costs of incidental corallivory

Recommended to place coral nurseries near natural reef

## Acknowledgments



We are much indebted to **Pilli Pipa** for their logistic support, **Yatin Patel & Rianne Laan** for their fieldwork assistance and we applaud the **REEFolution Foundation** for their commitment to restore Kenya's coral reefs

## Methods

- Caged, uncaged and cage-control nurseries (n = 15)
- Each nursery: 10 *Acropora verweyi* fragments
- Coral monitored on growth, survival and bite marks
- Fouling collected and weighed at end of experiment
- Remote video recording rates of herbivory and corallivory (n = 30)