

An underwater photograph showing a large, vibrant purple sea fan (Gorgonia ventalina) in the center. To the left is a rocky area covered in yellowish-green algae or sponges. To the right and in the background are patches of green seagrass. The water is clear and blue.

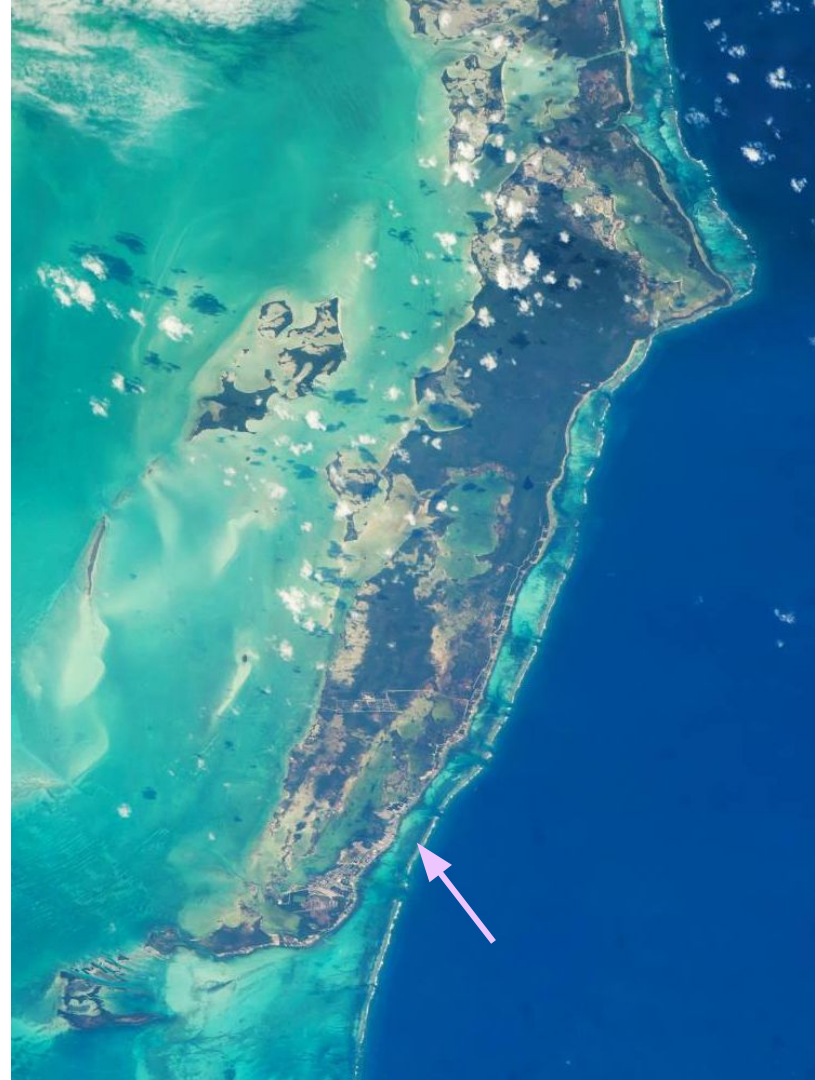
Fish Species Richness around Common Sea Fans (*Gorgonia ventalina*)

Fiona Melady

Location of Study

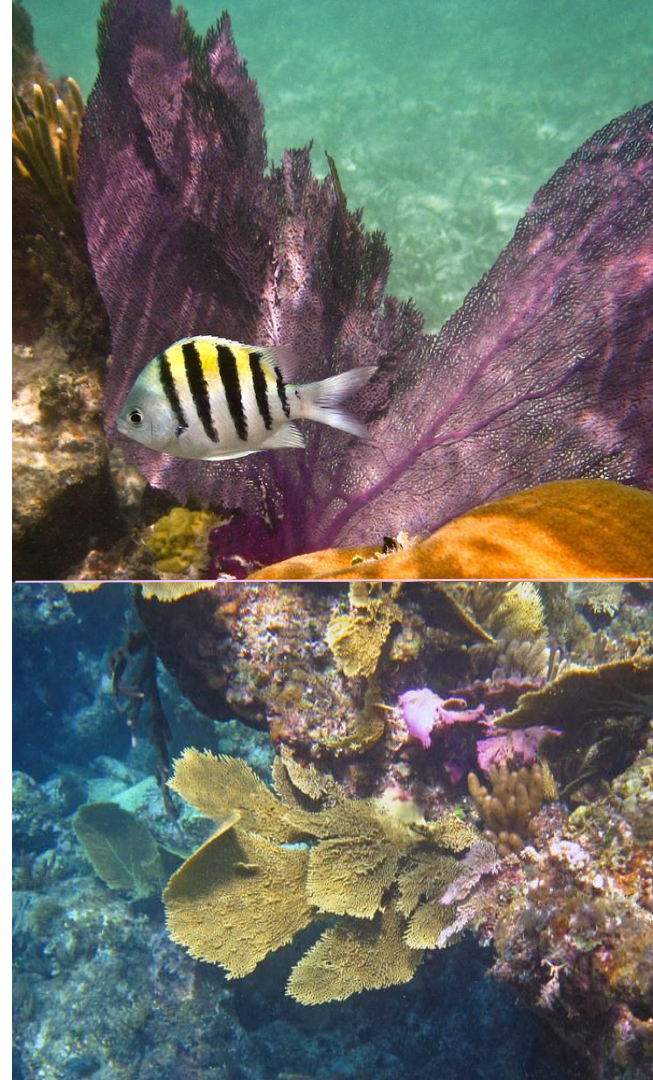
Ambergris Caye, Belize, Central America

Snorkel site: Tuffy Rocks (pink arrow)



Hypotheses

- **Main Hypothesis:**
 - There will be higher fish species richness around larger sea fans ($\geq$ avg 8x11" notebook size) than around smaller sea fans ($<$ avg 8x11" notebook) within 3 slate lengths ($\sim 18"$) of the fan due to increased surface area.
- **Additional Hypothesis:**
 - There will be higher fish species richness around clustered sea fans (2+ fans within 1 slate length of each other) than single sea fans.



Figures

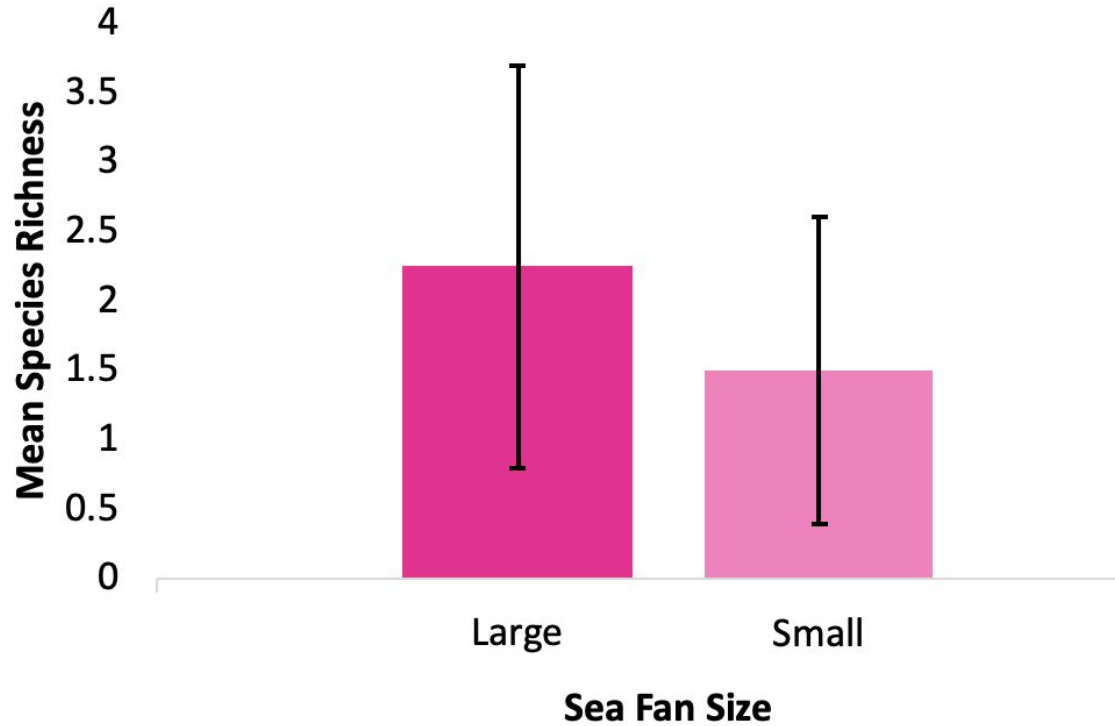


Figure 1. Average fish species richness around large versus small sea fans. Bars indicate standard deviation. P-value =0.095.

Figures (continued)

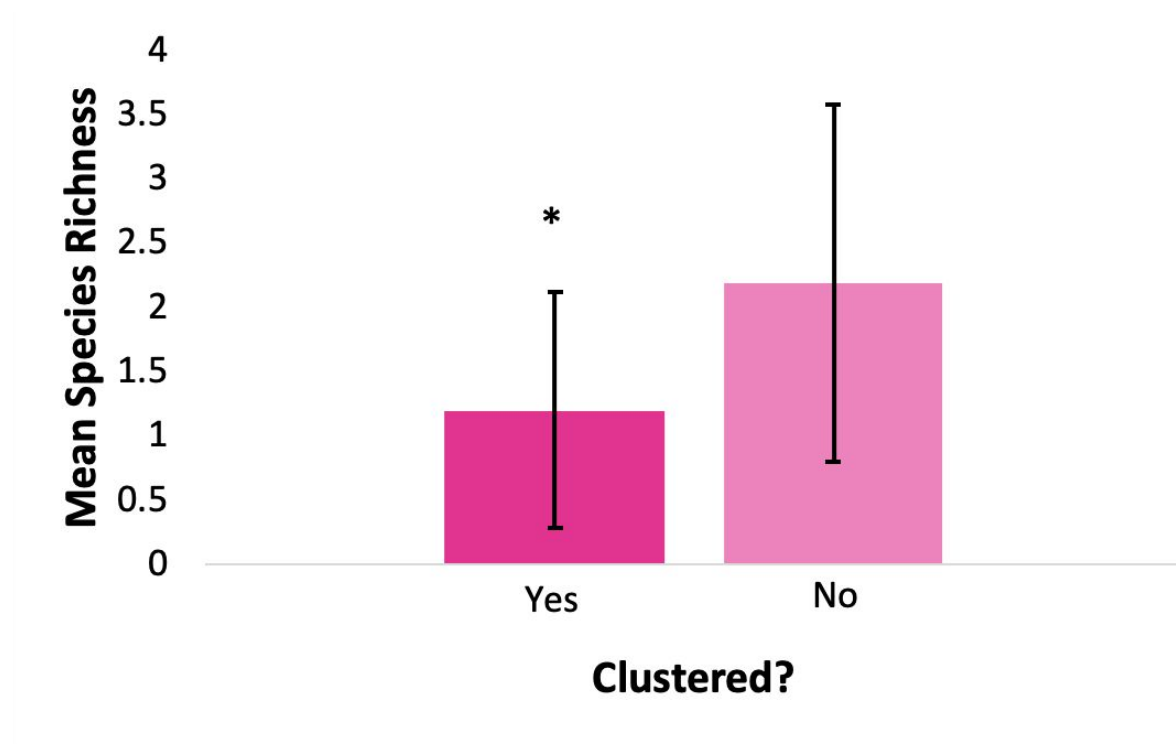


Figure 2. Average fish species richness around clustered versus single sea fans. Bars indicate standard deviation, * indicates statistically significant difference. P-value = 0.0447.

Conclusions

- Positive correlation between fan size and fish species richness, but data do not show statistically significant difference between large and small fans
 - Main hypothesis not supported
- Negative correlation between fan clustering and species richness, i.e. clustered fans show lower species richness than single fans
- Data for second hypothesis were technically statistically significant ($P < 0.05$), meaning there is a difference between cluster vs single and spp. richness
 - Second hypothesis ($\uparrow$ richness around clusters than single) not supported