1. Introduction
Reef-dwelling invertebrates play a symbiotic role in the persistence of coral reefs. These organisms are relatively unstudied, in part because the ecosystem is so diverse and complex. Echinoderms fill a variety of ecological niches, so the echinoderm community is likely to reflect effects of a range of human-induced risk factors. In this study, I attempt to establish a correlation between the echinoderm and arthropod community compositions to investigate whether echinoderm communities can be proxy indicators for invertebrate communities.

2. Methods
Moorea Biodiversity Survey protocol
• Dead Pocillopora coral heads (fit in a 5 gal bucket)
• Collected from a depth of 10-12 m
• Total of 36 dead coral heads from three sites:
  • Pemuteran #1 (11)
  • Pemuteran #2 (10)
  • Lembongan (5)
• Coral heads were dismantled and all arthropods and echinoderms were recorded and sampled

Analysis
• Specimens identified to lowest taxa
• Echinoderm morphospecies compared to arthropod families pending the completion of DNA sequencing

3. Results
Community composition
We collected a total of 82 echinoderm morphospecies, N=531, and 30 arthropod families, N=1693. The average Shannon-Weiner diversity indices for echinoderms and arthropods were 3.17 and 2.38 respectively.

Significant Associations
Arthropod and echinoderm diversity indices were positively correlated, (R²=0.60, p=0.03, N=26) and abundance, (R²=0.07, p=0.19, N=26). Echinoderm richness was correlated with the abundance of the three next most common families, Piliomidae, Porcellanidae and Xanthidae, (R²=0.29, p=0.07, N=26). Echinoderm SWI diversity was correlated with mid-abundance families, Diogenidae, Hippolytidae, Majidae and Palaemonidae, (R²=0.33, p=0.09, N=26).

4. Discussion
Comparisons between echinoderm morphospecies and arthropod families are suboptimal because they have very different measures of diversity. The fact that total abundance and richness were not significantly correlated indicates that there may be additional factors that we cannot account for in this experiment, such as interspecific commensalism or predator-prey interactions.

5. Conclusion
Echinoderms communities may serve as indicators of corresponding arthropod diversity, richness and abundance. Hopefully, these correlations will be strengthened with more extensive research. In the future, we would like to collect more extensive field data, obtain the sequencing results for both the echinoderm and arthropod specimens and rerun the analysis with the species data to obtain more exact results.

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