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Testing the effect of live oyster presence and structural diversity on nekton abundance and diversity

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Biogenic reefs formed by the eastern oyster (*Crassostrea virginica*) provide structurally diverse habitat which supports high densities and diversity of nekton communities relative to other habitat types within estuarine systems. Past studies suggest that the presence of structure alone may be the most important factor in attracting nekton species to reef formations and that increased structural complexity is not a limiting factor for provision of nekton habitat. Few studies, if any, have directly examined the effect of live oyster presence on nekton habitat use. We used a quantitative sampling technique to examine the effect of live oyster presence and structural complexity of experimental reef units on nekton abundance and diversity. Specifically, we created four reef complexity treatments by placing 5 L of substrate collected on-site in sample trays. Treatments consisted of 4 replicate trays each of no shell (control), loose shell, live single oysters, and live oyster clusters only, placed over reef and mud habitat in Sabine Lake, LA. Trays were sampled 3 weeks later. We found significantly higher nekton abundance and diversity for all treatments holding shell or oysters as compared to empty control treatments, but found no significant differences in abundance or diversity among experimental units that varied in live oyster presence and structural composition. The presence of reef material had the greatest effect on nekton support.