INTRODUCTION
Stingrays belong to an ancient lineage of cartilaginous fishes, evolving over 450 million years ago. With over 600 extant species, stingrays inhabit every bioregion on earth (McEachran and Dunn 1998, McEachran and Fechhelm 1998, Frisk 2010, O’Shea et al. 2012) and typically characterize shallow and near shore environments of the tropics.
Stingrays are demersal mesopredators known for determining and influencing the biological, physical and chemical characteristics of their habitat by excavating via feeding (Egglishaw et al. 1992, O’Shea et al. 2012). Due to this, it is hypothesised that rays could be considered a keystone species (O’Shea et al. 2012) meaning that they provide functions critical to ecosystem health and possibly, diversity. They are also an indicator of overall ecosystem health (e.g. Tilley et al. 2013) and need to be considered when decisions regarding management of coastal ecosystems are made. Although their importance is becoming more apparent, there is still very little known about these animals. This research aims to address these needs.

OBJECTIVES
1. To determine if southern stingrays (D. americana) and whiptail stingrays (H. schmardae) partition spatial resources.
2. Understand how juvenile and adult Southern stingrays stingrays, including differences in sex abundance and possible seasonality and site fidelity.
3. Assess basic demographic information for these subpopulations.

RESULTS
The mean disc width of female D. americana and H. schmardae was found to be statistically greater at offshore locations when compared to inshore (Figure 6) which was determined by a t-test resulting in a significance level of P=0.001. The mean disc width of males at inshore versus offshore locations tested non-significant to a level of P=0.264

METHODS
1. Rays were caught from eight sites across two locations - inshore and offshore.
2. Fourteen morphometric data were recorded to the nearest mm
3. Disc width (Fig. 4) data were sorted into two size classes for sexually maturity according to Grubbs and colleagues (2006).
4. Size classes between and among species were then tested statistically using pairwise T-tests.

DISCUSSION
The significant difference between larger mean disc widths of female rays of both species at offshore locations supports our hypothesis that rays are partitioning space according to life-history stage (ontogeny). These data support the notion of mature individuals occupying habitats that differ from juveniles, in order to avoid competition. Furthermore, these data suggest inshore sites may be acting as nursery grounds for juvenile and sub-adult individuals of both species. The singularity of H. schmardae sampled offshore compounded with the higher abundances of D. americana at the offshore location supports the hypothesis that the two sample species are avoiding competition by occupying different habitats.

CONCLUSION
This study has demonstrated that D. americana and H. schmardae separate themselves and partition their resources. Also juvenile and mature D. americana and H. schmardae do indeed segregate across multiple spatial scales, likely in order to avoid competitive exclusion.

FUTURE DIRECTIONS
This study has provided baseline data that could be expanded upon through a final scale study possibly utilizing satellite and acoustic tagging to assess the fine scale resolution of their habitat use. In addition since spatial segregation of the rays has been confirmed it would be interesting to understand how rays are partitioning other resources such as nursery grounds or food using stable isotopes.

REFERENCES