

MS Thesis Defense

Candidate: Anne Hansen

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Title: Early Life History, Habitat Use, and Microsatellite Allele Frequency of Two Common Reef Fishes (*Stegastes partitus* and *Thalassoma bifasciatum*) in Marine Protected Areas of the Northwestern Gulf of Mexico

Thesis Director: Dr. Pat Gillevet

Committee Members: Dr. Richard Kraus (USGS), Dr. Chris Parsons

ABSTRACT

Two common reef fishes, bluehead wrasse (*Thalassoma bifasciatum*) and bicolor damselfish (*Stegastes partitus*), are used as model species for understanding the function of marine protected areas (MPAs) in the northwestern Gulf of Mexico. These species have contrasting life histories, which represent a spectrum of common life histories of reef fish. Here, the early life history, habitat associations, and population genetics of these two common reef fishes, in the northwestern Gulf of Mexico are examined to help acquire a better understanding of the region. Examining the recruitment structure and metapopulation dynamics can help to evaluate the nursery value of this region and others like it where any degree of marine protection may not yet be established. In the northwest Gulf of Mexico, pelagic spawners (bluehead wrasse) likely exhibit more external recruitment than do demersal spawners (bicolor damselfish). Further microsatellite or other genetic research on these or similar species could further support this hypothesis. There does not appear to be a clear substrate preference for either species in this region, post-settlement.