GEOGRAPHIC INFORMATION SYSTEM (GIS) ANALYSIS OF PIPING PLOVER (*Charadrius melodus*) MACROHABITAT ON THE GULF OF MEXICO COAST. Olivia LeDee[1,2] and Francesca J. Cuthbert[1]. [1]Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota, Twin Cities, MN. [2] lede0025@umn.edu.

Piping Plovers (PIPL) (*Charadrius melodus*) are gradually losing significant portions of their historic wintering habitat to land conversion and degradation, recreational activities, inlet and shoreline stabilization, dredging of inlets, beach maintenance, and pollution (UWFWS 2001). From 1780 to 1980, the total wetland loss for the five Gulf of Mexico states is estimated at 40 million km^2 (50%) (EPA 1999). Observations indicate that Piping Plovers exhibit wintering ground site fidelity (Eubanks 1994, Wemmer 2000, Drake et al. 2001, Stucker, per. comm.). Knowledge of site fidelity patterns is valuable because it demonstrates the importance of site specific habitat protection for this species. Prior to concluding the impact of habitat loss or alteration to the non-breeding PIPL population, more data on macro-habitat characteristics, local distribution, and abundance are essential. Digital Orthographic Quadrangles (DOQs) of thirty-two Gulf of Mexico sites with known plover usage were analyzed for habitat characteristics (e.g. intertidal area, beach area, lagoon area, and lagoon perimeter) within a 3.5km buffer around a known PIPL census point/location. Preliminary analysis suggests a positive correlation between PIPL abundance and intertidal area; notably, the results indicate there is no correlation solely between PIPL abundance and beach area. This analysis provides critical information for habitat restoration/alteration projects in close proximity to wintering plovers and also implies a utility of GIS analysis to habitat studies, especially for populations distributed in remote locations.