

USING PROXIES OF ANTHROPOGENIC DISTURBANCE TO ESTIMATE THE DISTRIBUTION OF WINTERING PIPING PLOVERS (*Charadrius melodus*). Olivia LeDee^{1,2} and Francesca J. Cuthbert¹. ¹Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota, Twin Cities, MN. ² lede0025@umn.edu.

Humans and domesticated animals are known disturbances to wintering Piping Plovers (PIPL) (*Charadrius melodus*); disturbance reduces time spent foraging (Burger 1991), increases energy expenditure (Zonick and Ryan 1995), and may ultimately reduce survivorship. On wintering grounds in Texas, Zonick and Ryan (1995) observed that human disturbance appears to limit local Piping Plover abundance; in addition, vehicle use displaces Piping Plovers from preferential habitat. By 2025, nearly 75% of Americans are expected to live in coastal counties; Florida will have > 16 million residents by 2010—a 200% increase from its 1960 level. The projections are similar for California and Texas (Hinrichsen 1998). Prior to concluding the impact of anthropogenic disturbance to the non-breeding PIPL population, more data on disturbance mechanisms, local distribution, and abundance are needed. Digital Orthographic Quadrangles (DOQs) of thirty-two Gulf of Mexico sites with known plover usage were analyzed for proxies of human disturbance (urban area, roads, beach access points, marinas) within a 3.5km buffer around a known PIPL census point/location. Preliminary analysis indicates a negative correlation between PIPL density and all four proxies of disturbance. This analysis provides critical information regarding disturbance to wintering plovers and also underscores the importance of considering projected human demographics in long-term, coastal estuarine management.