Abstract

Over the last two decades, more than 10 major vessel groundings have occurred on coral reefs offshore southeast Florida. Lack of any published information on coral settlement, post-settlement survival, and juvenile coral growth in the southeast Florida region inhibits efforts to determine if coral populations will be able to effectively re-establish themselves. The goal of this study was to examine these processes to obtain background data needed to determine the potential for natural recovery. Over a three year period annual coral recruitment, juvenile growth, and mortality rates were measured in 20 permanent quadrats at each of two ship grounding and two control sites. The density of new recruits was generally low, ranging from 0.2±0.1 (SE) to 7.1±1.0 recruits m-2. Although the density of coral recruits was generally higher at the grounding sites, mortality rates were high at all sites during the study period. Growth rates of individual colonies were highly variable, and many of the colonies shrank in size due to partial mortality. Results indicate that corals are able to recruit to the damaged reefs but that slow growth rates and high mortality rates may keep these areas in a perpetual cycle of settlement and mortality with little or extremely slow growth to larger size classes, thus inhibiting recovery.

Keywords

Recruitment, reef recovery, vessel groundings, growth rates, post settlement survival.