

**Recent changes to *Montastraea annularis* and *M. faveolata* populations in southwestern Puerto Rico and associated islands from disease and bleaching**

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Over the last decade, reefs off southwest Puerto Rico and the associated islands have experienced losses in live coral cover in excess of 50%, primarily due to the decline of *M. annularis* and *M. faveolata*. These species were formerly the largest and most abundant corals remaining on these reefs. Outbreaks of coral disease, especially white plague and yellow band disease, affected over 50% of the colonies in some sites during the late 1990s; disease prevalence declined between 2002-2004 and then increased immediately following a 2005 mass bleaching event. These diseases have caused unprecedented rates of mortality, with cumulative losses exacerbated by bleaching and parrotfish predation. In both species, a lack of recruitment and only limited recovery through resheeting have been observed, and exposed skeletal surfaces are being colonized by macroalgae, bioeroding sponges, hydrozoans, and other scleractinian coral recruits (primarily *Porites* and *Agaricia*). Unlike acroporids, which have the potential for rapid growth and recovery, *M. annularis* and *M. faveolata* are unlikely to recover in our lifetimes and are being replaced by shorter-lived brooding species and other massive and plating species with faster growth and higher recruitment rates. The impacts of these shifts on coral community structure and reef fisheries are unknown. Approaches undertaken to recover acroporids, such as propagation through fragmentation and grow-out of sexual recruits, are less likely to work for *M. annularis* (complex) - species with slow rates of growth and limited recruitment. To avoid a catastrophic and permanent shift in coral community composition, research needs to be directed towards an improved understanding of the causes and impacts of diseases and bleaching, and possible control mechanisms. Managers and policy makers must take steps to mitigate environmental and anthropogenic stressors that increase the spread and severity of disease.