

**Baums, I. B., C. R. Hughes, and M. E. Hellberg. 2005. Regionally isolated populations of an imperiled Caribbean coral, *Acropora palmata*. Mol. Ecol. 14: 1377-1390.**

The movements of larvae between marine populations are difficult to follow directly and have been the subject of much controversy, especially in the Caribbean. The debate centres on the degree to which populations are demographically open, such that depleted populations can be replenished by recruitment from distant healthy populations, or demographically closed and thus in need of local management. Given the depressed state of many tropical reef populations, the understanding of these movements now bears critically on the number, placement, and size of marine reserves. Most genetic analyses assume that dispersal patterns have been stable for thousands of generations, thus they commonly reflect past colonization histories more than ongoing dispersal. Recently developed multilocus genotyping approaches, however, have the demonstrated ability to detect both migration and population isolation over far shorter timescales. Previously, we developed five microsatellite markers and demonstrated them to be both Mendelian and coral-specific. Using these markers and Bayesian analyses, we show here that populations of the imperiled reef-building coral, *Acropora palmata*, have experienced little or no recent genetic exchange between the western and the eastern Caribbean. Puerto Rico is identified as an area of mixing between the two subregions. As a consequence of this regional isolation, populations in the western and eastern Caribbean should have the potential to adapt to local conditions and will require population-specific management strategies.