, and a critical element of reef resilience [@Van\_Oppen2006-qf]. The coral holobiont responds to environmental conditions, and is the unit that interacts with the broader reef community [@Gates2011-zy]

, and this genus is subdivided into nine “clades” and further into hundreds of “types”

We document, for the first time, corals that were able to visually recover from bleaching, and to regain their *Symbiodinium* communities during the course of an extreme heat stress event

Mechanisms of thermal tolerance vary among coral taxa due to the variability in symbiotic flexibility between symbiotic generalists (coral species that associate with several *Symbiodinium* partners through space and/or time) and specialitsts (coral species that consistently associate with one or a limited number of *Symbiodinium* types).

Thermal stress can be exacerbated by other environmental stressors (Cooper et al 2011, BÃ©raud et al 2013, Maina et al 2008).

Our results suggest that some coral species may have the capacity to experience evolutionary rescue, defined as adaptation at a rate that allows an endangered population to survive the rate of environmental change (Orr & Unkless 2014, Carlson 2014).

… Recent advances in next-generation sequencing techniques have revealed cryptic genetic diversity within symbiotic *Symbiodinium* [@Quigley2014-zj; @Arif2014-kx; @Green2014-az], and has allowed for long-term genetic and ecological comparisons of symbiont community structure [@Edmunds\_undated-fd].