**INTRODUCTION**

Coral reef habitats are among the most biologically diverse ecosystems on the planet. They provide essential services such as protecting the shoreline, serving as vital habitat for fish and other organisms and acting as a tourist destination with economic value. The unique growth forms that provide the structural framework and rugosity of coral reefs are due to the calcification of stony corals in the order Scleractinia. Such calcification is made possible by the formation of a mutualistic endosymbiosis with photosynthetic dinoflagellates in the order Symbiodinium, in which the coral host relies on photosynthate from the symbiont (Baker 2003). Nine divergent clades (A-I) exist among *Symbiodinium* spp. based on the internal transcribed spacer (ITS) region on nuclear ribosomal DNA (Stat et al. 2011). This diversity results from factors such as host species, depth and irradiance (Rowan et al. 1995). Bleaching, the stress-induced breakdown of the symbiosis via the mechanism of symbiont expulsion, has become an increasingly common phenomenon resulting from climate change. Elevated temperatures and higher irradiance are the more devastating anomalies that cause bleaching (Weis 2008). By understanding the symbiont community composition, the susceptibility to climate change may be more readily understood.

*Symbiodinium* clades C and D are the dominant clades observed in Kāne’ohe Bay and are both observed in *M. capitata*. Each symbiont clade has characteristic levels of stress-tolerance and physiological optima (Boulotte et al. 2016). Clade D, for instance, has shown higher levels of thermal tolerance, yet growth rates of clade D-dominated corals can be depressed, posing a cost-benefit analysis of harboring different symbiont strains (Stat et al 2013). Not much is known about the environmental factors contributing to symbiont variation and distribution however. Evidence of biogeographic patterns across latitudinal gradients, inshore and offshore reefs and even within the same reef environment exists, and the factors driving these patterns are important for understanding coral response to climate change (LaJeunesse et al. 2004; Garren et al. 2006).

*M. capitata* is atypical in its harboring of both *Symbiodinium* clades C and D because the majority of coral species tend to be quite specific, relying on a single symbiont type (Goulet 2006). While colonies are typically dominated by one clade over the other, the presence of heterogeneous mixtures of multiple symbionts suggests the potential for symbiont shuffling or switching in response to climate change (Jones et al. 2008). Few studies have investigated the patterns of association between the two symbionts, especially when considering differences in habitat. *M. capitata* is an essential study species in Hawai’i because it is a dominant reef-builder on the local reefs with the ability to host multiple symbionts.

The patch reef and fringing reef systems of Kāne’ohe Bay are quite shallow; some sections of the reefs can be exposed during low tides (Bahr et al. 2015). Shallow depths, along with restricted circulation throughout the bay, pose negative implications for thermal stress, which has been observed in successive bleaching events in 2014 and 2015. Despite the seemingly intolerable physiognomies of Kāne’ohe Bay, there exists high coral coverage and rapid recovery rates from stress events. This study aimed to characterize the spatial patterns of *Symbiodinium* clades C and D to investigate the potential stress-response of the Kāne’ohe Bay population of *M. capitata* in light of recent bleaching anomalies.