**Supplementary Table 1.** Summary offunctional groupbenthic community patterns and variations in individual taxa at Kingman Reef and Palmyra Atoll across reef habitats (patch reef, backreef, forereef, reef terrace) and depths (5, 10, 20 m). Mean +1 standard error (se) percentage cover values are shown. A blank cell indicates 0.0% cover. *Pachy/Stereo* = *Pachyclavularia*/*Stereonephthya*.



**Supplementary Table 2.** Results of CAP analyses examining within-island variations in benthic communities at three taxonomic resolutions at Kingman Reef and Palmyra Atoll. m, the number of principal coordinate (PCO) axes used in the CAP procedure; %Var, percentage of the total variance explained by the first *m* PCO axes; allocation success, the percentage of points correctly allocated into each group; δ2, squared canonical correlation.

