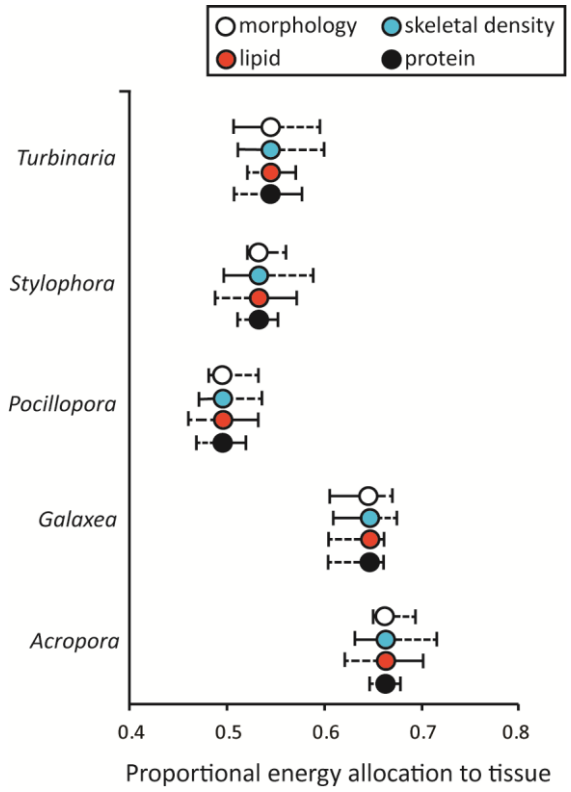
Figure S1: Sensitivity analysis showing effects of variation in tissue and skeletal properties on calculated values for proportional energy allocation to tissue versus skeleton for five coral genera. Filled circles show 'baseline' values for energy allocation to tissue (as shown in Figure X of the manuscript) and error bars show the change in average energy allocation to tissue (pooled across fed and unfed colonies) given variation in; branch diameter or plate thickness (white circles); skeletal density (blue circles); tissue lipid content (red circles; or tissue protein content (black circles). Dashed lines indicate the change in average energy allocation to tissue given a 25% decrease in each parameter and solid lines indicate the change in average energy allocation to tissue given a 25% increase in each parameter.



Overall, each parameter had approximately equivalent influence on calculated energy allocation to tissue, and that the effects of variation in each parameter were broadly consistent among genera. Across all parameters and genera, a 25% change in parameter values resulted in a change in the calculated value for proportional energy allocation between 0.0003 and 0.053. Decreasing skeletal density (dashed lines in Fig S1) increased energy allocation to tissue because for a fixed weight of skeleton produced a lower density generates a greater volume (and surface area) of new skeleton that must then be covered in new tissue. Similarly, decreasing branch radius increased energy allocation to tissue because for a fixed increase in skeleton volume a thinner branch must have a greater linear extension and, consequently, a greater surface area. In contrast, decreasing tissue lipid and protein content decreased energy allocation to tissue because these parameters directly affect tissue energy content. Given that carbohydrate typically contributes > 10% (by weight) to coral tissue, including carbohydrates in these calculations would have a smaller influence on calculated energy allocation to tissue compared with the effects of changing lipid or protein content by 25%.