

	<b>Coral Holobiont Performance</b>	<b>Coral Symbiont Performance</b>	<b>Energetic Trade-off</b>	<b>Regenerative Capacity</b>
<b>Response Variable(s)</b>	Respiration rate	Photosynthesis rate and photosynthetic efficiency (Fv/Fm)	Growth rate	Percent wound closure and signs of healing
<b>Details</b>	Respiration rate is a measurement of coral holobiont metabolism (host, symbiont, bacteria). Respiration consumes resources produced by photosynthesis and is sensitive to factors that are energetically costly.	Photosynthetic rate is a measurement of symbiont productivity which is the primary source of oxygen and nutritional energy for the coral host to fuel metabolic processes. Photosynthetic efficiency is the capacity of light-harvesting machinery to capture and convert light energy into photosynthetic products.	Growth rate is a measurement of skeletal accretion. Growth is posited to compete for energy with reproduction and regeneration.	Percent wound closure and signs of healing (1. repair of radial corallite structure(s), 2. presence of radial polyp(s), 3. repair of apical corallite) are indicators of regeneration. Damaged or lost tissue and skeleton removes surface area available for energy acquisition. Regeneration requires energy to fuel repair processes including wound closure, reconstructing corallites, and new polyp formation.
<b>Rationale</b>	Increased respiration will indicate a colony-level stress response, placing energetic constraints on regeneration and/or growth.	Reduced photosynthesis and photosynthetic efficiency (Fv/Fm) lowers productivity and threatens symbiosis. Acquisition of new energy to support regeneration is lowered and/or compromised, especially if respiration rates are increased with stressors.	Synchronous growth between unwounded and wounded corals indicates no apparent trade off with regeneration. Asynchronous growth among unwounded and wounded corals with the addition of elevated temperature indicates a temperature mediated trade-off.	Synchronous wound closure and signs of healing between wound types indicates no difference in regeneration capacity. Asynchronous wound closure and signs of healing between wound types with the addition of elevated temperature indicates a temperature mediated regeneration capacity.
<b>Hypotheses</b>	If stressors increase respiration, then energetic constraints will be placed on regeneration and/or growth.	If stressors decrease photosynthesis and/or photosynthetic efficiency, then energetic constraints will be placed on regeneration and/or growth.	If energetic constraints are placed on growth, then growth rates between unwounded and wounded corals will be asynchronous.	If energetic constraints are placed on regeneration, then wound closure or signs of healing between unwounded and wounded corals will be asynchronous.