

The following supplement accompanies the article

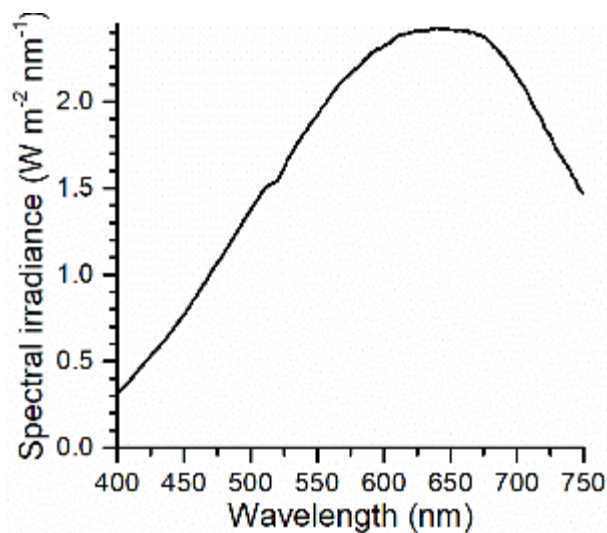
Bio-optical properties and radiative energy budgets in fed and unfed scleractinian corals (*Pocillopora* sp.) during thermal bleaching

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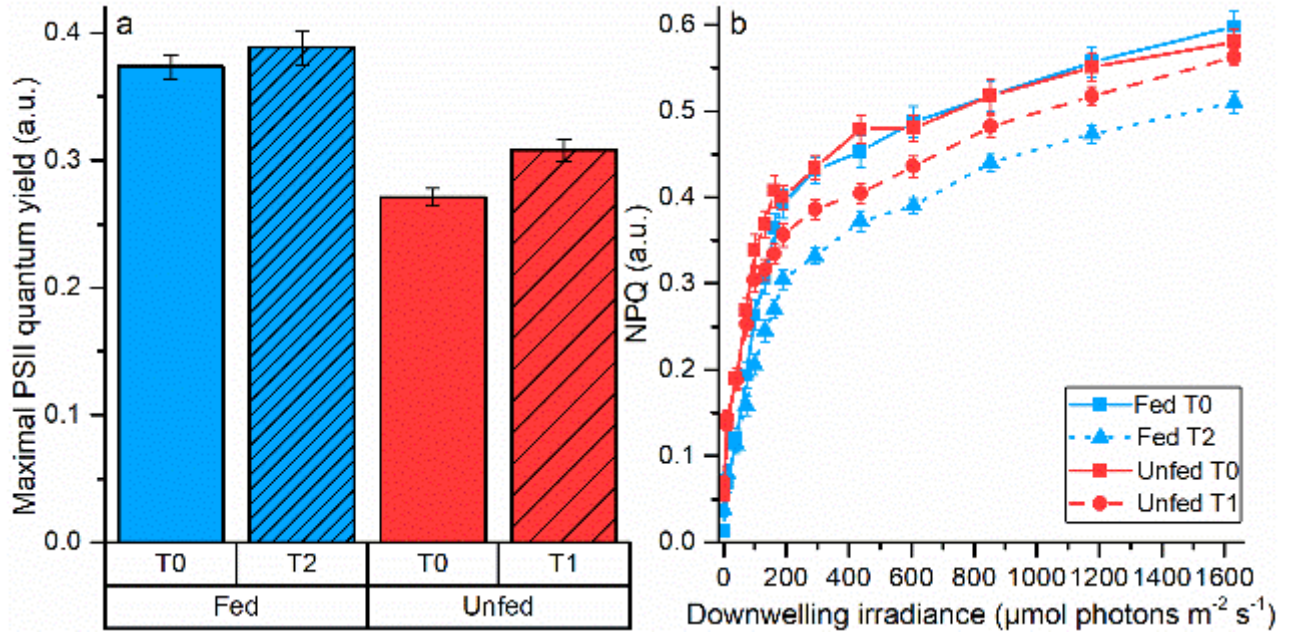
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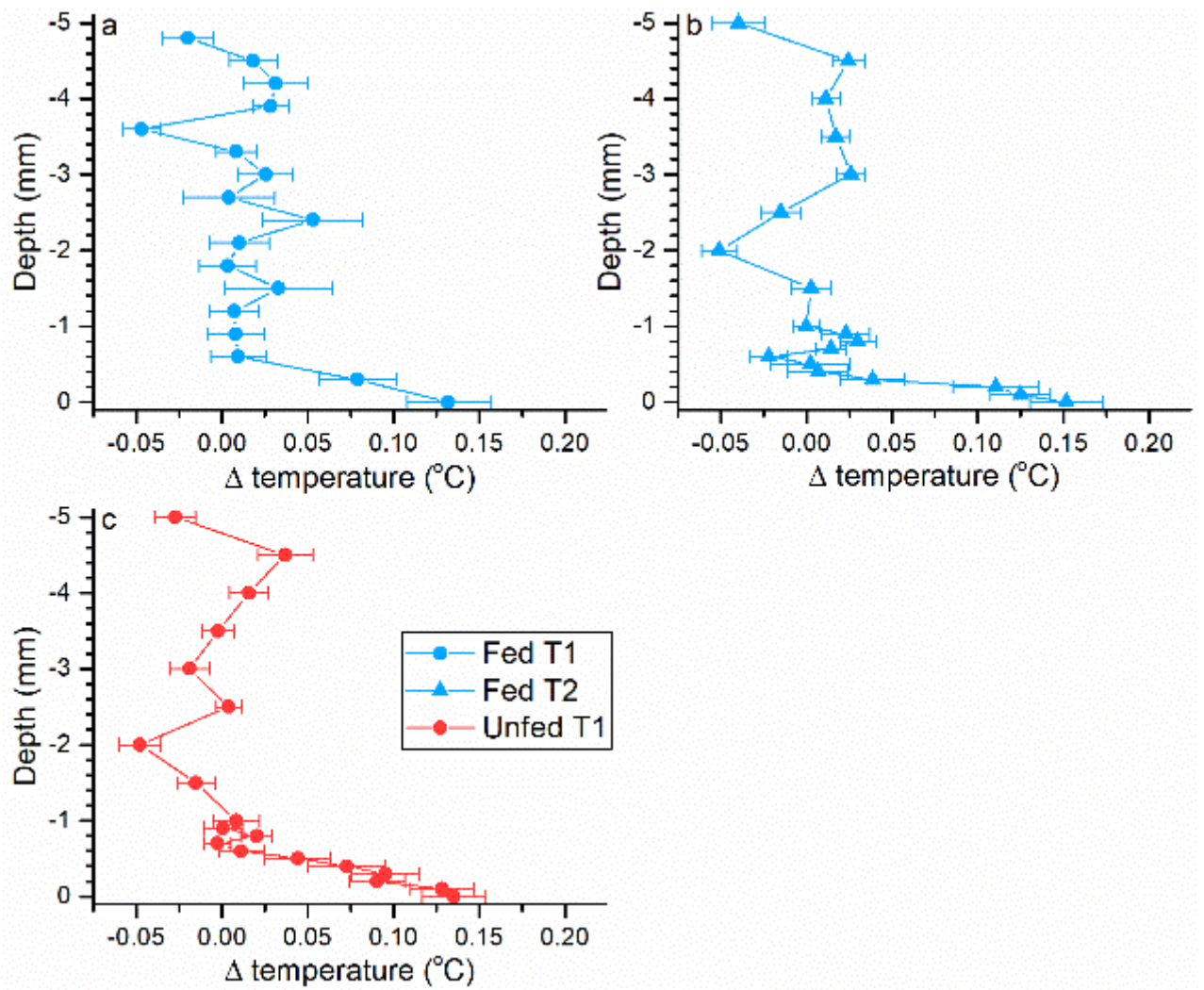
Supplementary information



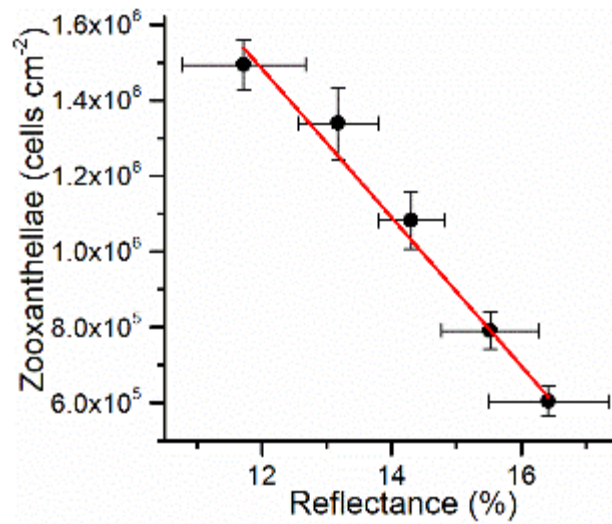
Supplementary Fig. S1 | Irradiance spectrum of incident downwelling light (equivalent to a photon irradiance of PAR integrated over 400-700 nm of 2400 $\mu\text{mol photons m}^{-2} \text{s}^{-1}$) from the tungsten halogen lamps used to illuminate the flow chambers for all measurements (n=2).



Supplementary Fig. S2 | Variable chlorophyll fluorescence imaging of polyp tissue in fed and unfed *Pocillopora damicornis* corals during thermal stress treatment. (a) Mean maximal PSII quantum yield (F_v/F_m) measured before (T_0) and after (T_1 - T_2) thermal stress was induced in fed and unfed specimens of *Pocillopora damicornis*. (b) Non-photochemical quenching (NPQ) as a function of incident photon irradiance (PAR; 400-700 nm) before (T_0) and after thermal stress (T_1 - T_2). Columns and symbols with error bars indicate means \pm SE (n=23-36).



Supplementary Fig. S3 | Temperature depth profiles of fed (a-b) and unfed (c) thermally stressed fragments (see T_0 in Figure 8a). X-axis indicate the difference between heat dissipated from coral and the mean ambient water temperature creating a TBL under a downwelling irradiance of $2400 \mu\text{mol photons m}^{-2} \text{s}^{-1}$. Error bars indicate means \pm SE ($n=9-12$).



Supplementary Fig. S4 | Density of zooxanthellae in coral tissue (Figure 3a) as a function of coral fragment surface reflection (Figure 5a). R^2 of linear fit = 0.99. Error bars indicate means \pm SE (n=9-23 for reflectance, and n=4-5 for zooxanthellae).