



**Figure S3.** a. Regional-scale remotely sensed kelp canopy chlorophyll *a* to carbon ratio (Chl:C) for each 1 km coastline segment versus adjacent (5km radius) sea surface temperature (SST) estimates for each hyperspectral image date shown as colored points and best fit lines. Solid black curve represents the mean non-linear relationship for across image dates, grey shaded area represents 2x standard error. b. Remotely sensed kelp canopy Chl:C versus seawater nitrate concentration estimated from SST using empirical seawater temperature to nitrate relationships for each hyperspectral image date.