Figure S1. MCMC chains for some main parameters in the model. The three chains (red, blue and green chains) mixing well is an indication that the chains converged. These are the MCMC steps which are used for the analyses and the burn-in steps are not included. Thinning is done every three MCMC steps to reduce the autocorrelation of the chains.
Figure S2. The posteriors of the parameters at the micro-site scale ($\theta_2$ for dummy variable representing medium oiled location and $\theta_3$ for dummy variable representing heavy oiled location) and temporal scales ($\theta_1$) (also note: $\theta_0$ represents the global intercept; In the subfigure for $\theta_1$, the grey, black and thick black lines represent the temporal trend at the control, medium and heavy locations, respectively)
Figure S3. The posterior of the parameters (no intercept) at the individual scale.
Figure S4. The posterior of the parameters (no intercept) across PAR intensities at the leaf scale.
Figure S5. The posteriors of the precision at the leaf scale (grey), individual scales (black), and micro-site scales (thick black).