1 **Supplementary Materials**

2 # Photochemical reflectance index (PRI) for detecting
3 # responses of diurnal and seasonal photosynthetic
4 # activity to experimental drought and warming in a
5 # Mediterranean shrubland

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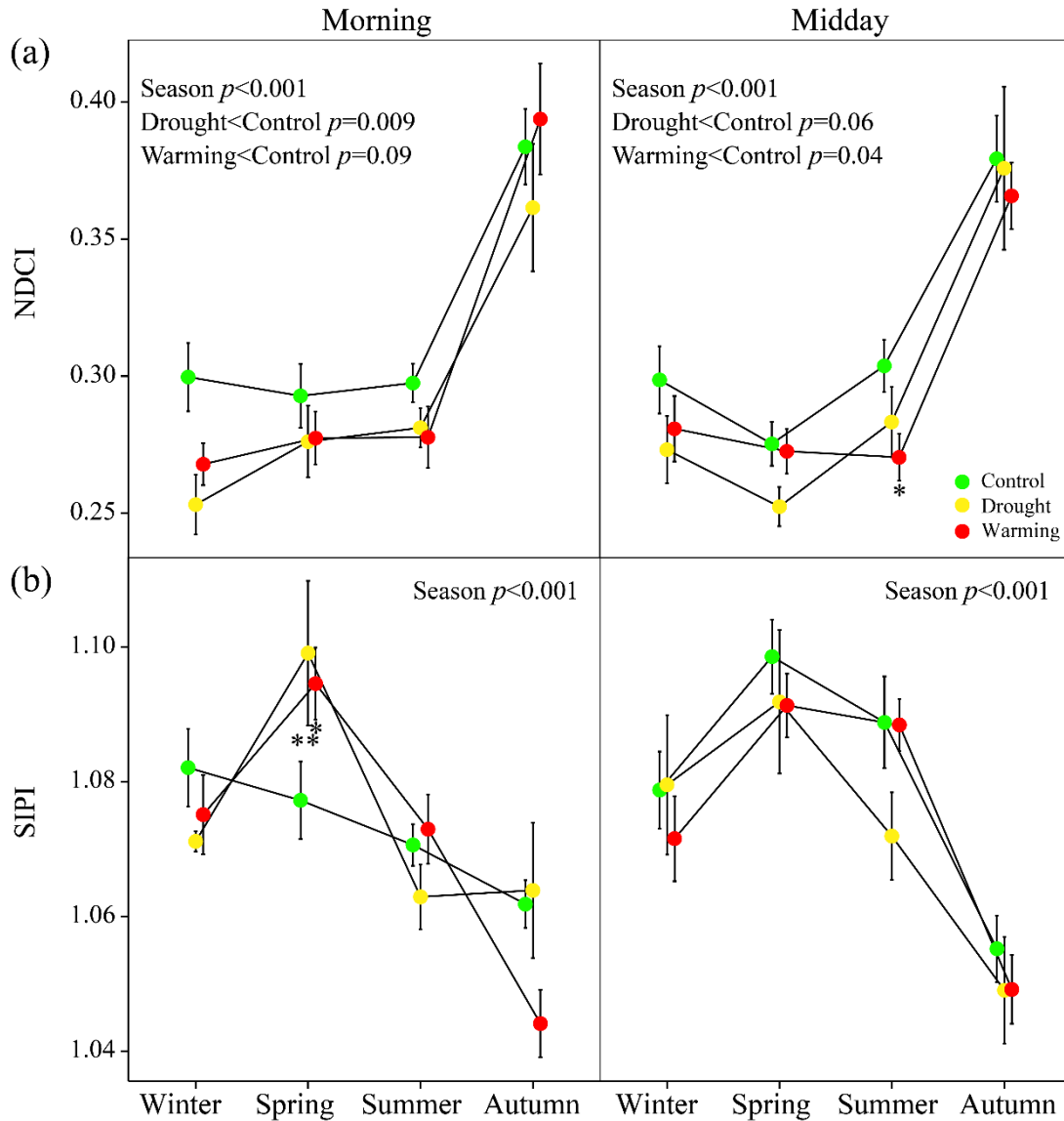
13

14 **Figure legends**

15 **Figure S1**. Seasonal variation of the normalized difference chlorophyll index (NDCI) (**a**)
16 and the structure-independent pigment index (SIPI) (**b**) for *Erica multiflora* in 2014.

17 **Figure S2**. Relationships of CO_2 assimilation rate (*A*) with water content (WC) (**a**) and
18 the water index (WI) (**b**) for *Erica multiflora* in 2014.

19 **Figure S3**. Relationships of CO_2 assimilation rate (*A*) with maximum (F_V/F_M) (**a**) and
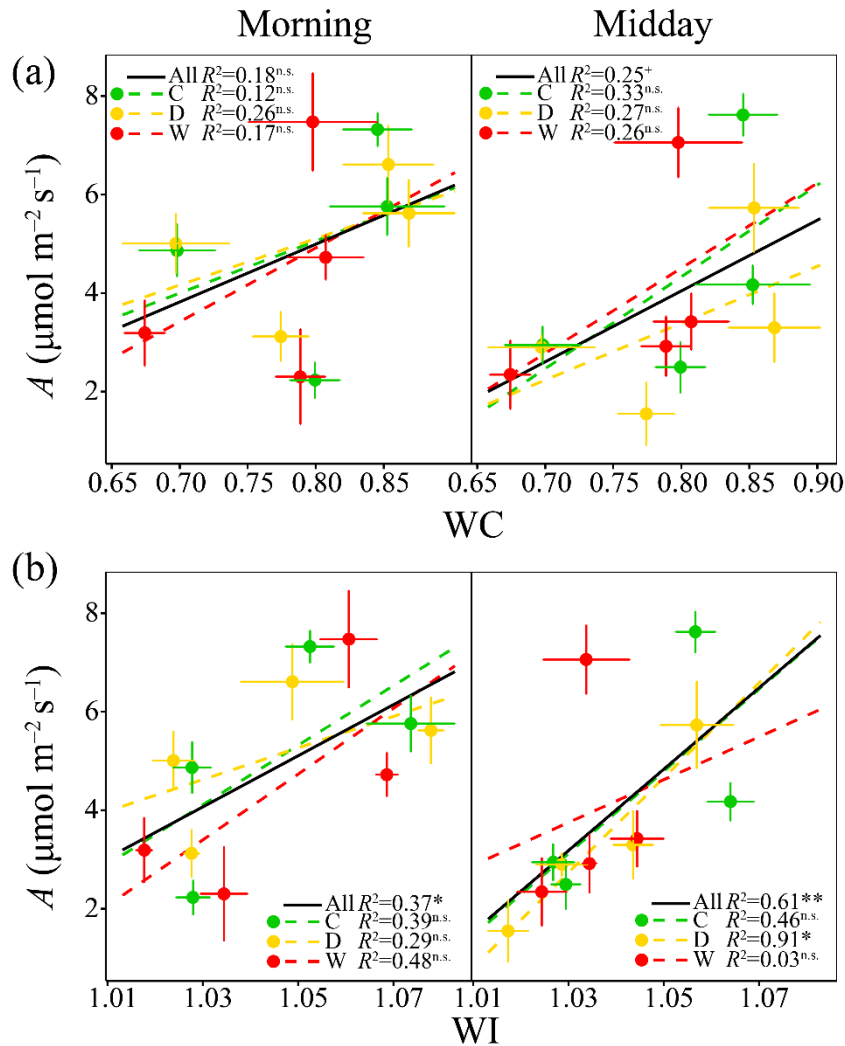20 actual (Yield) (**b**) photochemical efficiency of PSII for *Erica multiflora* in 2014.

21 **Figure S4.** Relationships of CO_2 assimilation rate (*A*) with the normalized difference
22 chlorophyll index (NDCI) (**a**) and the structure-independent pigment index (SIPI) (**b**)
23 for *Erica multiflora* in 2014.

24 **Figure S5.** Relationships of the normalized difference chlorophyll index (NDCI) (**a**) and
25 the structure-independent pigment index (SIPI) (**b**) with the photochemical reflectance
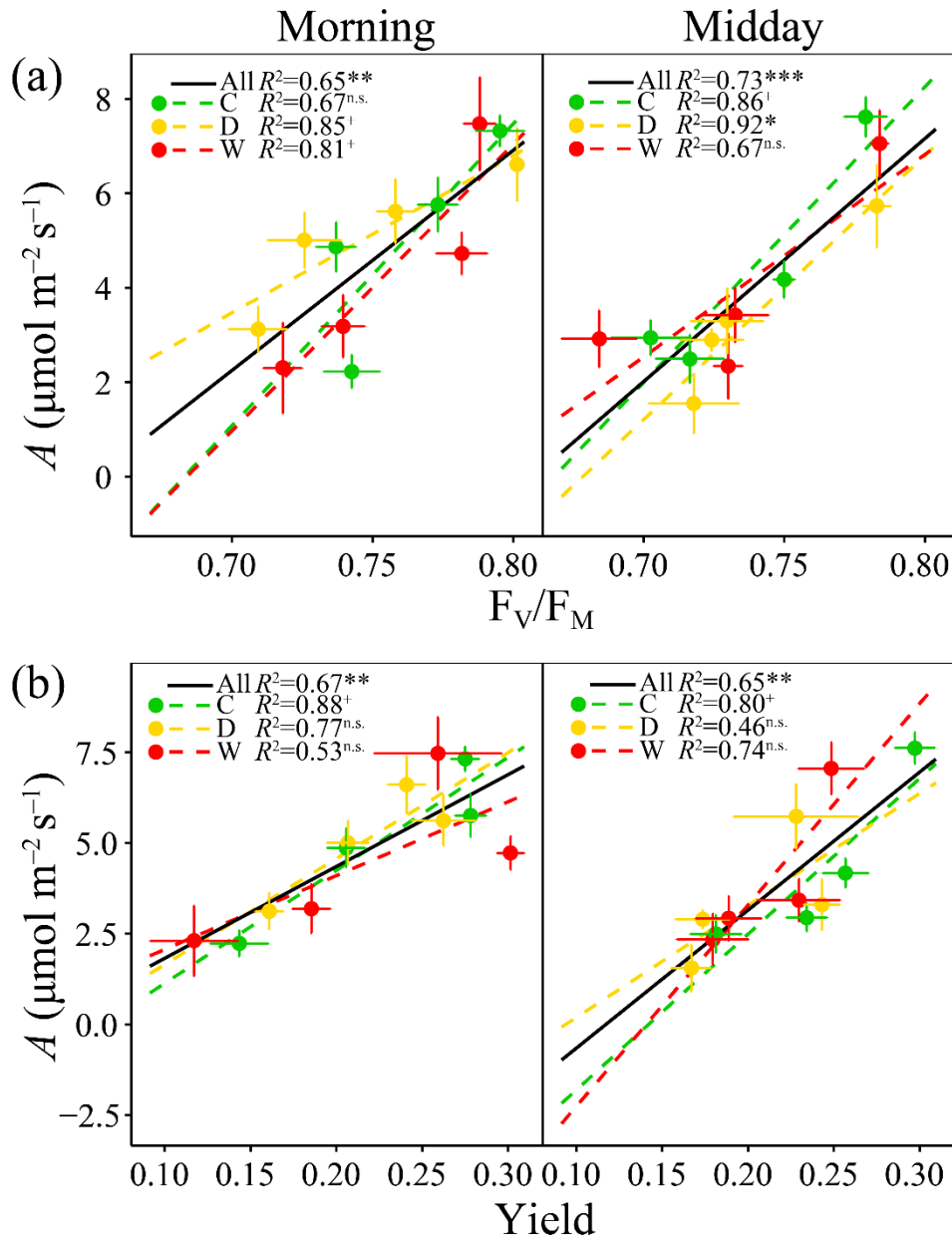26 index (PRI) for *Erica multiflora* in 2014.

27

Morning

Midday

(a)

Season $p<0.001$
Drought<Control $p=0.009$
Warming<Control $p=0.09$

Season $p<0.001$
Drought<Control $p=0.06$
Warming<Control $p=0.04$

NDCI

0.40

0.35

0.30

0.25

Control
Drought
Warming

*

(b)

Season $p<0.001$

Season $p<0.001$

SIPI

1.10

1.08

1.06

1.04

**
*

Winter   Spring   Summer   Autumn

Winter   Spring   Summer   Autumn

Figure S1. Seasonal variation of the normalized difference chlorophyll index (NDCI) (**a**) and the structure-independent pigment index (SIPI) (**b**) for *Erica multiflora* in 2014. Error bars are standard errors of the mean (n=9 for the drought and warming treatments, and n=18 for the control treatment). The significances of overall repeated-measures ANOVAs are depicted. *$p<0.05$ and **$p<0.01$ between treatments for each seasonal measurement.

Figure S2. Relationships of CO_2 assimilation rate (A) with water content (WC) (**a**) and the water index (WI) (**b**) for *Erica multiflora* in 2014. The black lines represent the linear relationships over all three treatments. n.s. $p > 0.1$, $^+p < 0.1$, $^*p < 0.05$, $^{**}p < 0.01$ and $^{***}p < 0.001$ between variables. C, D and W indicate the control, drought and warming treatments, respectively.
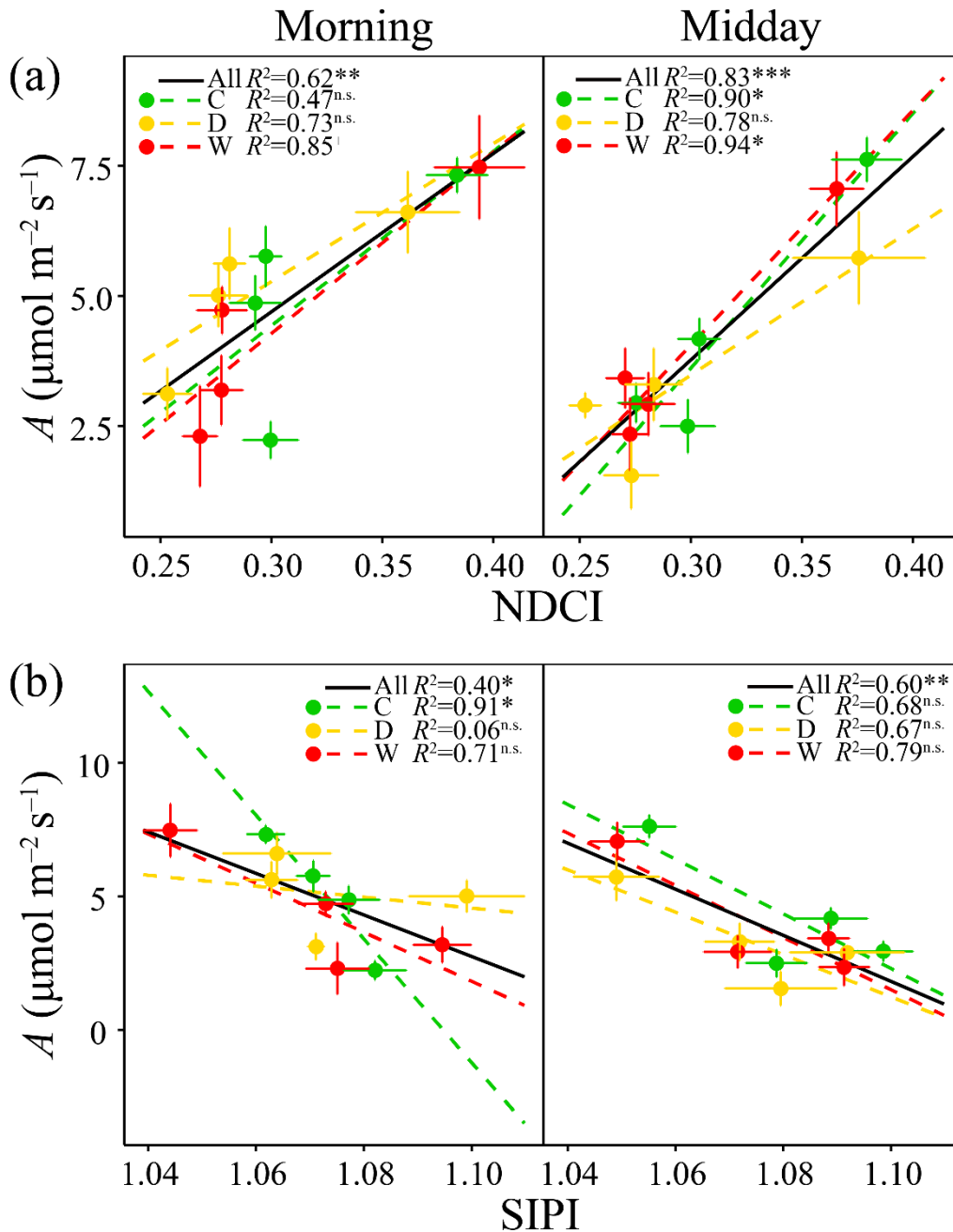
Figure S3. Relationships of CO_2 assimilation rate (A) with maximum (F_V/F_M) (**a**) and actual (Yield) (**b**) photochemical efficiency of PSII for *Erica multiflora* in 2014. The black lines represent the linear relationships over all three treatments. n.s. $p>0.1$, $+p<0.1$, $*p<0.05$, $**p<0.01$ and $***p<0.001$ between variables. C, D and W indicate the control, drought and warming treatments, respectively.

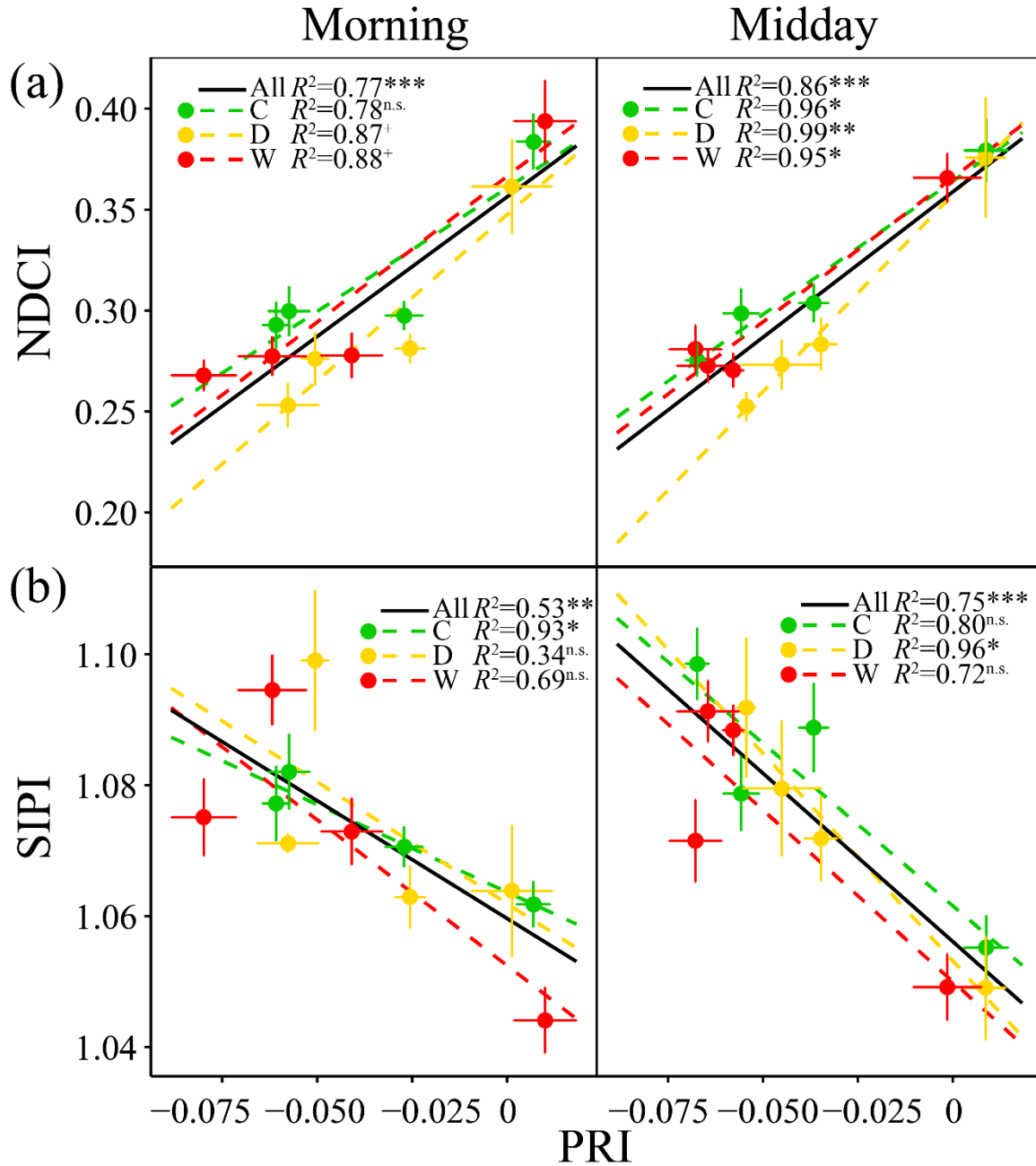**Figure S4.** Relationships of CO_2 assimilation rate (A) with the normalized difference chlorophyll index (NDCI) (**a**) and the structure-independent pigment index (SIPI) (**b**) for *Erica multiflora* in 2014. The black lines represent the linear relationships over all three treatments. n.s. $p>0.1$, $^+p<0.1$, $^*p<0.05$, $^{**}p<0.01$ and $^{***}p<0.001$ between variables. C, D and W indicate the control, drought and warming treatments, respectively.

Figure S5. Relationships of the normalized difference chlorophyll index (NDCI) (**a**) and the structure-independent pigment index (SIPI) (**b**) with the photochemical reflectance index (PRI) for *Erica multiflora* in 2014. The black lines represent the linear relationships over all three treatments. n.s. $p>0.1$, $^+p<0.1$, $*p<0.05$, $**p<0.01$ and $***p<0.001$ between variables. C, D and W indicate the control, drought and warming treatments, respectively.