

**Table S1** – Trait values for five native and five invasive species grown at 300  $\mu\text{mol photon m}^{-2} \text{s}^{-1}$  and high nutrient availability. Values are means with SE in parentheses. Trait values not connected by the same letter (A-F) are statistically different at  $P < 0.05$ . ANOVA results are presented in Table 2 in the manuscript. Species and trait abbreviations are provided below. Sample sizes for each species (n) are provided next to species names. (NA) denotes no data collected. <sup>l</sup> denotes legume.

	Native species					Invasive species				
	acko <sup>l</sup> (n=6)	dovi (n=6)	osan (n=6)	pial (n=3)	soch <sup>l</sup> (n=6)	famo <sup>l</sup> (n=6)	lele <sup>l</sup> (n=6)	psca (n=6)	pyan (n=6)	scte (n=3)
A <sub>area</sub>	14.3 (1.4) AB	10.9 (0.8) ABC	17.5 (1.6) A	10.5 (1.6) ABC	9.4 (1.5) BC	10.1 (1.1) BC	13.6 (1.7) AB	7.0 (0.7) C	13.4 (1.3) AB	8.3 (0.9) BC
A <sub>mass</sub>	388 (59) AB	132 (16) D	269 (34) BCD	384 (17) ABC	214 (73) CD	272 (47) BCD	464 (56) A	134 (16) D	465 (116) A	139 (26) CD
V <sub>max</sub>	113 (10) A	98.6 (10.0) AB	120 (7) A	66.3 (0.1) ABC	106 (17) AB	92.1 (12.1) AB	116 (13) A	48.6 (4.0) C	77.8 (4.2) ABC	58.8 (7.3) BC
J <sub>max</sub>	187 (20) AB	131 (9) BC	229 (23) A	108 (3) BC	209 (29) AB	134 (16) BC	155 (22) ABC	104 (5) C	148 (11) ABC	114 (13) BC
$\Phi\text{PSII}$	0.27 (0.03) A	0.25 (0.02) AB	0.26 (0.02) A	0.19 (0.02) AB	0.17 (0.03) AB	0.25 (0.02) AB	0.27 (0.03) A	0.15 (0.02) B	0.23 (0.02) AB	0.15 (0.02) AB
C <sub>i</sub>	200 (11) A	192 (8) A	223 (15) A	212 (26) A	188 (17) A	210 (13) A	195 (23) A	215 (15) A	255 (14) A	232 (21) A
N <sub>area</sub>	2.36 (0.45) A	2.32 (0.37) A	1.48 (0.09) AB	0.86 (0.07) B	1.56 (0.11) AB	1.53 (0.19) AB	1.38 (0.04) AB	1.60 (0.09) AB	1.03 (0.13) B	1.17 (0.10) B
N <sub>mass</sub>	58.5 (4.0) A	26.3 (1.4) DEF	22.6 (2.0) EF	31.7 (0.7) BCDEF	31.9 (2.9) CD	37.7 (2.1) BC	47.1 (2.4) AB	29.9 (1.0) CDE	30.5 (0.8) CDE	19.6 (3.3) F
PNUE	99.6 (19.4) ABCD	72.3 (10.1) CD	168 (19) AB	170 (12) ABCD	87.9 (20.6) BCD	103 (20) ABCD	139 (18) ABC	62.1 (6.3) D	215 (54) A	99.0 (3.9) ABCD
LMA	40.7 (5.8) BCDE	87.4 (11.0) A	66.6 (3.2) AB	27.3 (2.9) CDE	52.3 (7.3) BCDE	40.5 (4.3) BCDE	29.4 (1.0) E	53.6 (2.7) ABCD	33.8 (4.2) DE	64.0 (12.4) ABC
P <sub>sol</sub>	25.3 (2.8) A	7.0 (2.8) CDE	4.2 (1.2) DE	12.0 (0.1) ABCD	7.9 (1.9) CDE	20.0 (2.3) AB	15.6 (2.4) ABC	8.6 (1.0) BCD	6.7 (0.7) CDE	2.3 (1.2) E
P <sub>mem</sub>	13.4 (1.8) A	14.6 (2.2) A	7.8 (0.9) AB	14.3 (2.4) A	8.0 (1.0) AB	11.8 (3.6) A	14.6 (2.1) A	7.0 (0.6) AB	9.1 (1.7) AB	2.8 (0.8) B
P <sub>cw</sub>	2.11 (0.36) AB	2.66 (0.46) A	2.03 (0.25) AB	2.92 (0.76) A	1.38 (0.22) BC	2.86 (0.69) A	2.06 (0.22) AB	1.32 (0.13) BC	1.36 (0.26) BC	0.94 (0.23) C
A/P <sub>sol</sub>	19.0 (5.5) BCD	30.5 (6.9) ABCD	94.1 (23.5) A	32.0 (1.7) ABCD	32.6 (9.0) ABCD	15.1 (3.3) D	34.4 (7.5) ABCD	16.5 (2.4) BD	75.3 (23.6) AC	83.4 (23.5) ABC

$P_{sol}/P_{mem}$	2.16 (0.45) AB	0.50 (0.18) C	0.56 (0.16) C	0.86 (0.15) BC	0.94 (0.15) C	2.48 (0.75) A	1.24 (0.30) BC	1.28 (0.19) BC	0.89 (0.22) C	0.75 (0.19) C
TNA	3.71 (0.34) AB	1.35 (0.20) DE	1.33 (0.17) DE	3.91 (0.80) AB	1.68 (0.28) CDE	5.14 (0.45) A	2.88 (0.54) BC	23.9 (0.14) BCD	1.20 (0.25) EF	0.50 (0.17) F
AA	2.07 (0.36) A	0.33 (0.08) CD	0.52 (0.11) C	0.51 (0.26) BCD	0.47 (0.07) CD	1.07 (0.14) AB	1.42 (0.16) A	1.72 (0.19) A	0.22 (0.02) D	0.24 (0.04) CD
$NH_4^+$	0.05 (0.01) DE	0.18 (0.02) ABC	0.07 (0.02) CDE	0.17 (0.01) ABCD	0.06 (0.01) DE	0.03 (0.01) E	0.07 (0.02) DE	0.38 (0.05) A	0.13 (0.01) BCD	0.44 (0.19) AB
$NO_3^-$	0.23 (0.03) BC	0.20 (0.03) BC	0.18 (0.03) BC	0.38 (0.04) ABC	0.80 (0.58) ABC	0.15 (0.06) C	1.17 (0.21) A	0.37 (0.06) AB	0.23 (0.03) BC	0.16 (0.06) BC
Chl	NA	9.4 (0.7) ABC	8.3 (0.2) C	15.1 (2.0) AB	8.2 (0.8) AB	10.7 (0.7) AB	10.2 (0.6) A	8.8 (0.5) A	9.4 (0.4) ABC	8.3 (0.8) BC

Trait abbreviations:  $A_{area}$ , photosynthetic rate ( $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ leaf s}^{-1}$ );  $A_{mass}$ , photosynthetic rate ( $\text{nmol g}^{-1} \text{ s}^{-1}$ );  $V_{max}$ , maximum rate of carboxylation ( $\mu\text{mol CO}_2 \text{ m}^{-2} \text{ leaf s}^{-1}$ );  $J_{max}$ , maximum electron transport rate ( $\mu\text{mol electrons m}^{-2} \text{ s}^{-1}$ );  $\Phi_{PSII}$ , effective quantum yield of PSII, ( $\Delta F/F_m'$ );  $c_i$ , internal  $\text{CO}_2$  concentration (ppm);  $N_{area}$ , leaf N ( $\text{g N m}^{-2}$ );  $N_{mass}$ , leaf N ( $\text{mg N g}^{-1}$ ); PNUE, photosynthetic nitrogen use efficiency ( $\mu\text{mol CO}_2 \text{ mol}^{-1} \text{ N s}^{-1}$ ); LMA, leaf mass per area ( $\text{g m}^{-2}$ );  $P_{sol}$ , soluble protein ( $\text{mg N g}^{-1}$ );  $P_{mem}$ , membrane-bound protein ( $\text{mg N g}^{-1}$ );  $P_{cw}$ , cell wall protein ( $\text{mg N g}^{-1}$ ); AA, amino acid ( $\text{mg N g}^{-1}$ ); TNA, total nucleic acid ( $\text{mg N g}^{-1}$ );  $NH_4^+$ , ammonium ( $\text{mg N g}^{-1}$ );  $NO_3^-$ , nitrate ( $\text{mg N g}^{-1}$ ); Chl, Chlorophyll A +B ( $\mu\text{g g}^{-1}$ ).

Species abbreviations are: *Acacia koa* (acko), *Dodonaea viscosa* (dovi), *Falcataria moluccana* (famo), *Leucaena leucocephala* (lele), *Osteomeles anthyllidifolia* (osan), *Pipturus albidus* (pial), *Psidium cattleianum* (psca), *Pyracantha angustifolia* (pyan), *Schinus terebinthifolius* (scte), and *Sophora chrysophylla* (soch).