

Table S1 Tests of between-subjects' effects of *R. aureum* biomass, height and leaf area

Source	Dependent Variable	Type III		Mean Square	F	Sig.
		Sum of Squares	df			
Corrected Model	RLB	4.786 ^a	23	0.208	6.558	0.000
	RSB	20.644 ^b	23	00.898	7.053	0.000
	RFRB	1.684 ^c	23	0.073	5.004	0.001
	RMRB	4.144 ^d	23	0.180	6.923	0.000
	RCRB	41.497 ^e	23	1.804	0.998	0.022
	RH	8290.345 ^f	23	360.450	24.804	0.000
	RAR	14782.310 ^g	23	642.709	12.710	0.000
Intercept	RLB	55.848	1	55.848	1760.069	0.000
	RSB	110.716	1	110.716	869.976	0.000
	RFRB	2.595	1	2.595	177.320	0.000
	RMRB	13.960	1	13.960	536.923	0.000
	RCRB	343.842	1	343.842	158.598	0.000
	RH	53171.119	1	53171.119	3658.851	0.000
	RAR	285096.833	1	285096.833	5638.192	0.000
plot	RLB	0.014	5	0.003	0.085	0.994
	RSB	0.149	5	0.030	0.234	0.946
	RFRB	0.178	5	0.036	2.426	0.050
	RMRB	0.534	5	0.107	2.591	0.081
	RCRB	3.378	5	0.676	0.314	0.891
	RH	27.698	5	5.540	0.381	0.859
	RAR	800.771	5	160.154	3.167	0.015
level	RLB	4.501	3	1.500	47.279	0.000
	RSB	18.031	3	6.010	47.227	0.000
	RFRB	1.284	3	0.428	29.249	0.000
	RMRB	2.007	3	0.669	2.552	0.076
	RCRB	19.534	3	6.511	3.003	0.058
	RH	8105.007	3	2701.669	185.909	0.000
	RAR	12669.612	3	4223.204	83.520	0.000
plot * level	RLB	0.272	15	0.018	0.572	0.882
	RSB	2.464	15	0.164	1.291	0.245
	RFRB	0.223	15	0.015	1.015	0.457
	RMRB	1.603	15	0.107	1.593	0.112
	RCRB	18.585	15	1.239	1.372	0.200
	RH	157.640	15	10.509	0.723	0.749
	RAR	1311.926	15	87.462	1.730	0.076
Error	RLB	1.523	48	0.032		
	RSB	6.109	48	0.127		
	RFRB	0.702	48	0.015		

	RMRB	12.576	48	0.262
	RCRB	104.064	48	2.168
	RH	697.545	48	14.532
	RAR	2427.134	48	50.565
Total	RLB	62.157	72	
	RSB	137.469	72	
	RFRB	4.982	72	
	RMRB	21.326	72	
	RCRB	428.678	72	
	RH	62159.009	72	
	RAR	302306.277	72	
Corrected	RLB	6.309	71	
Total	RSB	26.752	71	
	RFRB	2.387	71	
	RMRB	7.365	71	
	RCRB	84.835	71	
	RH	8987.890	71	
	RAR	17209.444	71	

RLB represent leaf biomass of *R. aureum*, RSB represent stem biomass of *R. aureum*, RFRB represent fine root biomass of *R. aureum*, RMRB represent medium root biomass of *R. aureum*, RCRB represent coarse root biomass of *R. aureum*, RH represent height of *R. aureum*, RAR represent leaf area of *R. aureum*. (a)R²=0.715, (b)R²=0.680, (c)R²=0.612, (d)R²=0.345, (e)R²=0.270, (f)R²=0.905, (g)R²=0.783.

Table S2 Tests of between-subjects' effects of *D. angustifolia* biomass, height and leaf area

Source	Dependent Variable	Type III		Mean Square	F	Sig.
		Sum of Squares	df			
Corrected Model	DLB	2.436 ^a	23	0.106	17.393	0.000
	DSB	3.201 ^b	23	0.139	15.140	0.000
	DFRB	2.243 ^c	23	0.098	5.615	0.000
	DMRB	12.390 ^d	23	0.539	11.331	0.000
	DAR	3506.409 ^e	23	152.453	5.139	0.000
	DH	4220.899 ^f	23	183.517	5.112	0.000
Intercept	DLB	6.578	1	6.578	1080.245	0.000
	DSB	11.601	1	11.601	1261.827	0.000
	DFRB	2.630	1	2.630	151.446	0.000
	DMRB	10.770	1	10.770	226.543	0.000
	DAR	192871.364	1	192871.364	6501.705	0.000
	DH	234847.893	1	234847.893	6541.916	0.000
plot	DLB	0.025	5	0.005	0.823	0.540
	DSB	0.049	5	0.010	1.069	0.389
	DFRB	0.039	5	0.008	0.444	0.816

	DMRB	0.194	5	0.039	0.815	0.545
	DAR	164.261	5	32.852	1.107	0.369
	DH	65.449	5	13.090	0.365	0.870
Encroachment level	DLB	2.303	3	0.768	126.086	0.000
	DSB	2.955	3	0.985	107.154	0.000
	DFRB	2.027	3	0.676	38.909	0.000
	DMRB	11.723	3	3.908	82.195	0.000
	DAR	3143.850	3	1047.950	35.326	0.001
	DH	3854.010	3	1284.670	35.786	0.000
plot * encroachment level	DLB	0.108	15	0.007	1.178	0.320
	DSB	0.197	15	0.013	1.428	0.173
	DFRB	0.177	15	0.012	0.680	0.791
	DMRB	0.473	15	0.032	0.663	0.806
	DAR	198.298	15	13.220	0.446	0.956
	DH	301.440	15	20.096	0.560	0.890
Error	DLB	0.292	48	0.006		
	DSB	0.441	48	0.009		
	DFRB	0.834	48	0.017		
	DMRB	2.282	48	0.048		
	DAR	1423.907	48	29.665		
	DH	1723.149	48	35.899		
Total	DLB	9.307	72			
	DSB	15.243	72			
	DFRB	5.706	72			
	DMRB	25.442	72			
	DAR	197801.681	72			
	DH	240791.941	72			
Corrected Total	DLB	2.728	71			
	DSB	3.643	71			
	DFRB	3.076	71			
	DMRB	14.672	71			
	DAR	4930.316	71			
	DH	5944.048	71			

DLB represent leaf biomass of *D. angustifolia*, DSB represent stem biomass of *D. angustifolia*, DFRB represent fine root biomass of *D. angustifolia*, DMRB represent medium root biomass of *D. angustifolia*, DCB represent coarse root biomass of *D. angustifolia*, DH represent height of *D. angustifolia*, DAR represent leaf area of *D. angustifolia*. (a)R²=0.893, (b)R²=0.879, (c)R²=0.729, (d)R²=0.844, (e)R²=0.711, (f)R²=0.710.