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Supplementary Table S5. Chi-square test results examining how the proportions of plots within the pairs of intervals mirrored along the theoretical trend (e.g. a *vs* d, defined by the distance from the trend line measured in SES units – shown in parentheses) differ from each other, considering the equal distribution as a null expectation. *Total number* (*N*) of plots used for a particular habitat group or a trait-habitat combination; *Mean* and *Median* of the degree of decoupling; *number* (*n*) and *percentage* (%) of plots belonging to individual intervals; *test criterion* (χ^2) for the comparison of mirroring pairs of intervals and its significance (n.s. $p \geq 0.05$; ** $p \geq 0.001$ & < 0.01; *** $p < 0.001$). The *n* for the interval with a higher proportion is in bold. We interpret the cases with plots occurring significantly more frequently within all the three intervals on just one side of the theoretical trend as those exhibiting a strong tendency towards decoupling (marked with a coloured asterisk: red for an overall tendency towards decoupled PD and blue the same for decoupled FD). (A) Results for the combined diversity measure; (B) Results for individual trait-habitat combinations. See Materials and methods and Figure 2 for further details.

(A)

	a (> 0 & < 1)		**d** (< 0 & > -1)		**a** *vs.* **d**	**b** (≥ 1 & < 2)		**e** (≤ -1 & > -2)		**b** *vs.* **e**	**c** (≥ 2)		**f** (≤ -2)		**c** *vs.* **f**	**Mean**	**Median**	**N**
	n	%	n	%	χ^2	n	%	n	%	χ^2	n	%	n	%	χ^2			
Dry*	**3121**	26.6	797	6.8	1379 ***	**5157**	44.0	114	1.0	4825 ***	**2502**	21.4	27	0.2	2422 ***	1.3	1.3	11718
Mesic*	**9025**	30.1	3329	11.1	2626 ***	**11319**	37.8	1141	3.8	8314 ***	**4366**	14.6	785	2.6	2490 ***	0.9	1.1	29965
Wet*	**4794**	32.5	1492	10.1	1735 ***	**6238**	42.2	440	3.0	5034 ***	**1585**	10.7	217	1.5	1039 ***	0.9	1.1	14766
Alpine*	**338**	44.4	111	14.6	115 ***	**245**	32.2	22	2.9	186 ***	**39**	5.1	6	0.8	24 ***	0.7	0.8	761

(B)

		a (> 0 & < 1)		**d** (< 0 & > -1)		**a** *vs.* **d**	**b** (≥ 1 & < 2)		**e** (≤ -1 & > -2)		**b** *vs.* **e**	**c** (≥ 2)		**f** (≤ -2)		**c** *vs.* **f**	**Mean**	**Median**	**N**
		n	%	n	%	χ^2	n	%	n	%	χ^2	n	%	n	%	χ^2			
Plant height	Dry*	**9840**	43.5	3901	17.2	2567 ***	**6753**	29.8	708	3.1	4898 ***	**1330**	5.9	92	0.4	1078 ***	0.7	0.7	22624
	Mesic*	**13956**	43.6	5658	17.7	3511 ***	**8723**	27.3	1526	4.8	5054 ***	**1183**	3.7	949	3.0	26 ***	0.5	0.6	31995
	Wet*	**9073**	40.6	3679	16.4	2282 ***	**7407**	33.1	1077	4.8	4723 ***	**750**	3.4	383	1.7	119 ***	0.6	0.7	22369
	Alpine*	**1949**	43.4	836	18.6	445 ***	**1268**	28.3	142	3.2	899 ***	**271**	6.0	21	0.5	214 ***	0.6	0.7	4487
Leaf area	Dry*	**6784**	40.1	4070	24.1	679 ***	**4085**	24.1	1059	6.3	1780 ***	**742**	4.4	178	1.1	346 ***	0.4	0.5	16918
	Mesic	**11912**	38.2	7166	23.0	1181 ***	**7179**	23.0	2356	7.6	2440 ***	1214	3.9	**1361**	4.4	8 *	0.3	0.4	31188
	Wet*	**8816**	41.3	4121	19.3	1704 ***	**5924**	27.8	1298	6.1	2963 ***	**727**	3.4	459	2.2	61 ***	0.5	0.6	21345
	Alpine*	**764**	43.3	339	19.2	164 ***	**509**	28.8	85	4.8	303 ***	**57**	3.2	12	0.7	29 ***	0.5	0.6	1766
Specific leaf area	Dry*	**7240**	40.5	2156	12.1	2751 ***	**6489**	36.3	290	1.6	5669 ***	**1607**	9.0	73	0.4	1401 ***	0.9	0.9	17855
	Mesic	**13182**	41.8	4761	15.1	3952 ***	**9704**	30.8	1556	4.9	5896 ***	1138	3.6	1191	3.8	1 n.s.	0.5	0.7	31532
	Wet*	**8527**	39.9	3718	17.4	1889 ***	**6719**	31.4	1139	5.3	3962 ***	**736**	3.4	546	2.6	28 ***	0.5	0.7	21385
	Alpine	**985**	40.3	544	22.2	127 ***	**640**	26.2	173	7.1	268 ***	51	2.1	52	2.1	0 n.s.	0.4	0.5	2445
Leaf nitrogen content	Dry	**4877**	52.0	2602	27.7	692 ***	**1339**	14.3	426	4.5	472 ***	56	0.6	79	0.8	4 n.s.	0.3	0.3	9379
	Mesic*	5515	19.2	**11828**	41.3	2298 ***	580	2.0	**6749**	23.6	5193 ***	15	0.1	**3969**	13.9	3924 ***	-0.9	-0.7	28656
	Wet*	4189	34.6	**5164**	42.6	102 ***	654	5.4	**1544**	12.7	360 ***	33	0.3	**535**	4.4	444 ***	-0.3	-0.2	12119
	Alpine	539	44.7	487	40.4	3 n.s.	73	6.1	96	8.0	3 n.s.	0	0.0	**10**	0.8	10 **	0.0	0.0	1205
Seed mass	Dry*	**8347**	44.1	3313	17.5	2173 ***	**5650**	29.8	554	2.9	4186 ***	**1006**	5.3	76	0.4	799 ***	0.7	0.7	18946
	Mesic	**13338**	42.4	7630	24.2	1554 ***	**6494**	20.6	2083	6.6	2268 ***	798	2.5	**1132**	3.6	58 ***	0.2	0.4	31475
	Wet*	**8593**	40.0	4737	22.0	1115 ***	**5412**	25.2	1385	6.4	2386 ***	**791**	3.7	587	2.7	30 ***	0.4	0.5	21505
	Alpine*	**401**	46.9	140	16.4	126 ***	**242**	28.3	30	3.5	165 ***	**36**	4.2	6	0.7	21 ***	0.6	0.7	855
Lateral spread	Mesic*	70	4.3	**207**	12.7	68 ***	7	0.4	**259**	15.8	239 ***	0	0.0	**1093**	66.8	1093 ***	-3.2	-3.0	1636
	Wet*	466	9.5	**1341**	27.4	424 ***	44	0.9	**1417**	29.0	1290 ***	3	0.1	**1616**	33.1	1607 ***	-1.6	-1.4	4887