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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