

## Supplementary information

**Table S1:** Results of Elements of Metacommunity Structure analysis examining the best-fit idealised metacommunity structure for each group in each year. Results are given for the first two axes of reciprocal averaging ordination on the species by site matrices testing for coherence, species range turnover and boundary clumping in 15 sites along the Kinzig River, central Germany, sampled over three years. Abs = number of embedded absences, Re = number of replacements, MI = Morista's Index, SD = standard deviation. Mean and SD values are those calculated from the 1000 generated null matrices.

Group	Year	Axis	df	Coherence					Turnover					Boundary Clumping		
				Abs	z	P	Mean	SD	Re	z	P	Mean	SD	MI	P	Structure
all	2010	Axis 1	126	720	10.73	< 0.0001	1041.00	29.90	53724	-13.10	< 0.0001	11394.30	3230.30	0.39	0.1689	Gleasonian
all	2011	Axis 1	127	817	7.46	< 0.0001	1049.90	31.20	34363	-7.02	< 0.0001	11717.60	3227.30	0.79	0.3837	Gleasonian
all	2012	Axis 1	104	637	7.34	< 0.0001	842.30	28.00	27006	-7.31	< 0.0001	8523.30	2529.70	0.32	0.1157	Gleasonian
riparian	2010	Axis 1	67	337	7.90	< 0.0001	520.30	23.20	19821	-5.94	< 0.0001	7160.40	2130.50	0.42	0.0965	Gleasonian
riparian	2011	Axis 1	72	393	7.16	< 0.0001	568.40	24.50	19597	-6.22	< 0.0001	7053.20	2016.30	0.90	0.4371	Gleasonian
riparian	2012	Axis 1	54	314	4.59	< 0.0001	408.20	20.50	8420	-2.01	0.0446	5267.30	1569.60	1.10	0.3853	Gleasonian
inverts	2010	Axis 1	56	302	6.82	< 0.0001	423.30	17.80	13520	-8.44	< 0.0001	3723.20	1160.90	0.70	0.2498	Gleasonian
inverts	2011	Axis 1	52	300	4.96	< 0.0001	389.80	18.10	9627	-4.96	< 0.0001	3763.10	1181.20	0.65	0.2008	Gleasonian
inverts	2012	Axis 1	47	271	5.11	< 0.0001	350.20	15.50	4917	-2.46	0.014	2821.30	852.40	1.28	0.2325	Gleasonian
beetles	2010	Axis 1	31	129	4.13	< 0.0001	193.60	15.60	6335	-2.15	0.0317	4164.30	1010.20	1.77	0.0156	Clementsian
beetles	2011	Axis 1	35	172	4.04	< 0.0001	235.90	15.80	7368	-3.03	0.0024	4060.20	1090.00	1.43	0.1199	Gleasonian
beetles	2012	Axis 1	18	112	-2.68	0.0074	85.40	9.90	1916	0.19	0.8482	1985.30	361.80	2.55	< 0.0001	Checkerboard
spiders	2010	Axis 1	33	135	7.13	< 0.0001	230.80	13.40	5900	-5.11	< 0.0001	2374.30	689.70	1.26	0.2058	Gleasonian
spiders	2011	Axis 1	34	161	5.82	< 0.0001	243.90	14.30	5932	-4.98	< 0.0001	2367.50	715.80	1.29	0.1816	Gleasonian
spiders	2012	Axis 1	33	139	6.66	< 0.0001	227.20	13.30	5222	-4.40	< 0.0001	2210.00	684.60	1.25	0.2206	Gleasonian
ephemeroptera	2010	Axis 1	7	18	2.22	0.0267	29.70	5.30	313	-0.38	0.7024	287.90	65.80	0.97	0.5061	Quasi-Gleasonian
ephemeroptera	2011	Axis 1	7	31	-1.40	0.1623	22.80	5.90	335	0.38	0.704	360.70	67.60	1.26	0.1096	Random
ephemeroptera	2012	Axis 1	4	11	1.68	0.0922	18.00	4.20	174	1.51	0.1304	244.90	46.90	1.34	0.0209	Random
trichoptera	2010	Axis 1	8	29	0.24	0.8136	30.30	5.60	401	-0.08	0.9351	394.20	83.20	0.95	0.4634	Random
trichoptera	2011	Axis 1	7	13	1.87	0.062	24.30	6.00	338	1.22	0.2221	433.20	78.00	1.22	0.1228	Random
trichoptera	2012	Axis 1	9	46	-1.05	0.2945	39.40	6.30	556	0.33	0.7376	595.20	116.90	1.54	0.013	Random
diptera	2010	Axis 1	6	19	3.42	6e-04	33.90	4.40	199	-0.30	0.7641	181.30	58.90	1.33	0.043	Quasi-Clementsian
diptera	2011	Axis 1	6	30	1.15	0.252	35.40	4.80	107	1.87	0.0615	247.30	75.00	1.27	0.0469	Random
diptera	2012	Axis 1	3	12	0.78	0.435	13.70	2.20	39	0.68	0.4986	52.50	19.90	1.23	0.1116	Random
ept	2010	Axis 1	18	92	-0.10	0.9242	91.00	10.90	924	1.05	0.2919	1201.00	262.80	1.81	0.0095	Random
ept	2011	Axis 1	17	70	1.37	0.1709	85.60	11.40	1593	0.46	0.6446	1754.30	349.60	1.26	0.1416	Random
ept	2012	Axis 1	16	87	0.52	0.6024	92.00	9.50	1758	-0.92	0.356	1466.20	316.10	0.84	0.2507	Random
non_ept	2010	Axis 1	35	176	5.45	< 0.0001	247.10	13.00	5280	-5.88	< 0.0001	1825.10	587.70	1.44	0.109	Gleasonian
non_ept	2011	Axis 1	32	162	4.88	< 0.0001	219.10	11.70	3355	-3.96	< 0.0001	1453.80	479.90	1.73	0.0215	Clementsian
non_ept	2012	Axis 1	28	149	3.64	3e-04	191.40	11.70	1647	-0.89	0.3741	1253.50	442.80	1.79	0.0171	Quasi-Clementsian
adult_naqua	2010	Axis 1	28	140	4.09	< 0.0001	190.60	12.40	2419	-0.69	0.4892	2006.00	597.10	1.84	0.0105	Quasi-Clementsian
adult_naqua	2011	Axis 1	28	152	3.20	0.0014	193.40	12.90	3607	-1.39	0.1641	2663.80	677.80	0.62	0.0904	Quasi-Gleasonian
adult_naqua	2012	Axis 1	24	126	3.45	6e-04	164.10	11.10	2565	-2.24	0.0248	1567.30	444.60	1.08	0.3532	Gleasonian
adult_aqua	2010	Axis 1	25	122	4.29	< 0.0001	170.40	11.30	3656	-4.13	< 0.0001	1687.60	476.70	1.30	0.1523	Gleasonian
adult_aqua	2011	Axis 1	19	115	0.81	0.4178	122.30	9.00	681	0.60	0.5488	851.30	284.10	1.26	0.1663	Random
adult_aqua	2012	Axis 1	19	121	0.27	0.7906	123.40	9.20	1004	0.47	0.6366	1158.70	327.40	1.80	0.0056	Random
ae_ac_disp	2010	Axis 1	19	89	1.28	0.2011	104.60	12.20	1447	0.53	0.5931	1636.80	355.20	3.07	< 0.0001	Random
ae_ac_disp	2011	Axis 1	18	89	0.10	0.9169	90.30	12.50	1810	0.30	0.7657	1921.80	375.00	1.08	0.3419	Random
ae_ac_disp	2012	Axis 1	14	63	1.57	0.1175	77.50	9.20	1262	-0.15	0.8772	1222.80	253.40	1.25	0.1301	Random
aq_disp	2010	Axis 1	34	165	5.72	< 0.0001	239.50	13.00	5292	-6.71	< 0.0001	1611.50	548.40	0.82	0.3168	Gleasonian
aq_disp	2011	Axis 1	29	165	2.42	0.0154	190.80	10.60	1927	-2.21	0.0269	1088.00	379.20	1.74	0.0235	Clementsian
aq_disp	2012	Axis 1	29	150	4.10	< 0.0001	197.70	11.60	1827	-1.13	0.2567	1320.80	446.30	1.09	0.3654	Quasi-Gleasonian
dc_high	2010	Axis 1	24	119	3.28	0.001	159.60	12.40	2660	-0.66	0.5066	2273.30	582.10	2.08	0.0014	Quasi-Clementsian
dc_high	2011	Axis 1	20	138	-1.46	0.1454	121.30	11.50	1387	1.70	0.0892	2101.50	420.30	0.76	0.1957	Random

Group	Year	Axis	df	Coherence					Turnover					Boundary Clumping		
				Abs	z	P	Mean	SD	Re	z	P	Mean	SD	MI	P	Structure
dc_high	2012	Axis 1	17	99	1.34	0.1817	111.10	9.10	1301	-0.57	0.566	1123.90	308.50	1.27	0.1237	Random
dc_low	2010	Axis 1	29	142	4.88	< 0.0001	200.00	11.90	4357	-6.14	< 0.0001	1448.70	473.40	1.30	0.1678	Gleasonian
dc_low	2011	Axis 1	27	142	3.62	3e-04	182.90	11.30	2767	-3.66	2e-04	1213.90	423.90	1.83	0.0127	Clementsian
dc_low	2012	Axis 1	26	144	3.16	0.0016	178.70	11.00	2005	-0.94	0.3487	1557.50	477.60	1.80	0.0112	Quasi-Clementsian
mps_l	2010	Axis 1	20	114	2.14	0.0325	134.00	9.40	1428	-0.80	0.4244	1160.40	335.00	1.14	0.2767	Quasi-Clementsian
mps_l	2011	Axis 1	18	92	2.72	0.0065	114.80	8.40	705	0.22	0.8293	758.90	250.10	0.94	0.4343	Quasi-Nested (random)
mps_l	2012	Axis 1	15	53	5.53	< 0.0001	94.40	7.50	398	1.28	0.2001	668.80	211.40	2.67	< 0.0001	Quasi-Nested (clumped)
mps_s	2010	Axis 1	33	169	4.71	< 0.0001	235.20	14.00	5788	-4.32	< 0.0001	2526.90	755.40	0.74	0.2403	Gleasonian
mps_s	2011	Axis 1	29	176	1.81	0.0697	200.40	13.50	3962	-1.60	0.1095	2786.90	734.20	0.65	0.1119	Random
mps_s	2012	Axis 1	28	175	1.57	0.1164	196.30	13.60	1875	0.53	0.5946	2220.50	649.30	0.74	0.2149	Random
lcd_l1	2010	Axis 1	32	158	5.04	< 0.0001	227.90	13.80	5340	-3.92	< 0.0001	2482.00	728.30	0.88	0.3869	Gleasonian
lcd_l1	2011	Axis 1	26	137	3.38	7e-04	178.50	12.30	3719	-2.40	0.0165	2304.00	590.20	0.91	0.4152	Gleasonian
lcd_l1	2012	Axis 1	25	137	3.19	0.0014	172.10	11.00	2409	-2.27	0.0233	1423.60	434.20	1.30	0.1523	Gleasonian
lcd_g1	2010	Axis 1	12	51	3.32	9e-04	73.40	6.80	820	-1.39	0.1636	585.10	168.60	1.52	0.0148	Quasi-Clementsian
lcd_g1	2011	Axis 1	10	46	2.28	0.0226	58.80	5.60	391	-0.38	0.7051	346.80	116.70	1.67	0.0076	Quasi-Clementsian
lcd_g1	2012	Axis 1	9	24	4.78	< 0.0001	52.30	5.90	386	0.38	0.7014	430.40	115.90	1.88	3e-04	Quasi-Nested (clumped)
univoltine	2010	Axis 1	24	122	2.01	0.0447	148.80	13.30	3552	-1.74	0.0818	2585.10	555.60	2.15	6e-04	Quasi-Clementsian
univoltine	2011	Axis 1	22	97	2.28	0.0225	125.00	12.20	2830	-0.02	0.987	2819.90	619.70	1.77	0.0077	Quasi-Clementsian
univoltine	2012	Axis 1	14	87	-0.43	0.6684	83.30	8.60	957	0.72	0.4699	1159.20	279.80	1.80	0.0027	Random
multivoltine	2010	Axis 1	10	30	4.60	< 0.0001	53.70	5.20	293	-1.15	0.2509	202.60	78.80	2.24	< 0.0001	Quasi-Clementsian
multivoltine	2011	Axis 1	10	27	4.04	< 0.0001	44.60	4.40	234	-1.18	0.2376	158.80	63.70	1.83	0.0012	Quasi-Clementsian
multivoltine	2012	Axis 1	12	46	3.70	2e-04	67.30	5.80	379	-1.13	0.2578	265.20	100.60	1.17	0.1876	Quasi-Gleasonian
shredder	2010	Axis 1	17	72	4.54	< 0.0001	109.50	8.30	639	-0.13	0.8958	611.30	211.80	2.27	< 0.0001	Quasi-Clementsian
shredder	2011	Axis 1	18	74	4.74	< 0.0001	119.10	9.50	1509	-2.04	0.041	918.30	289.00	0.82	0.2365	Gleasonian
shredder	2012	Axis 1	14	52	4.89	< 0.0001	86.10	7.00	714	-1.83	0.0678	428.60	156.30	1.15	0.2256	Quasi-Gleasonian
scraper	2010	Axis 1	14	61	2.60	0.0094	82.80	8.40	1356	-0.83	0.4048	1124.40	278.00	2.22	< 0.0001	Quasi-Clementsian
scraper	2011	Axis 1	14	59	2.30	0.0215	78.70	8.60	1619	-0.60	0.55	1448.90	284.70	1.38	0.051	Quasi-Gleasonian
scraper	2012	Axis 1	11	60	0.77	0.4394	65.50	7.10	667	0.18	0.857	695.90	160.60	1.07	0.3087	Random
filter_feeder	2010	Axis 1	16	71	3.63	3e-04	102.90	8.80	1653	-2.67	0.0077	922.00	274.10	0.96	0.4841	Gleasonian
filter_feeder	2011	Axis 1	11	52	1.79	0.0737	64.70	7.10	705	-0.84	0.4016	584.70	143.40	1.39	0.0453	Random
filter_feeder	2012	Axis 1	12	62	1.33	0.1832	72.20	7.70	1119	-1.08	0.2807	889.80	212.50	1.52	0.0148	Random
predator	2010	Axis 1	7	36	-1.31	0.1898	28.10	6.00	451	0.90	0.3692	534.40	92.80	1.87	2e-04	Random
predator	2011	Axis 1	5	13	1.99	0.0463	22.50	4.70	277	1.19	0.2348	353.20	64.10	1.48	0.0144	Quasi-Nested (clumped)
predator	2012	Axis 1	6	22	0.39	0.6996	24.10	5.50	403	0.38	0.7073	433.40	81.00	1.96	7e-04	Random
all	2010	Axis 2	126	951	2.93	0.0034	1042.80	31.30	12595	-0.50	0.6158	11045.00	3089.10	1.56	0.1848	Quasi-Gleasonian
all	2011	Axis 2	127	959	2.94	0.0032	1050.30	31.00	16152	-1.33	0.182	11712.90	3325.90	0.39	0.1712	Quasi-Gleasonian
all	2012	Axis 2	104	774	2.59	0.0095	842.90	26.60	9078	-0.25	0.8036	8459.60	2486.30	1.29	0.2942	Quasi-Gleasonian
riparian	2010	Axis 2	67	506	0.52	0.6062	518.90	25.00	6246	0.49	0.6221	7344.50	2228.80	1.05	0.4378	Random
riparian	2011	Axis 2	72	551	0.67	0.5034	567.10	24.00	6172	0.47	0.6373	7156.40	2087.70	0.45	0.1203	Random
riparian	2012	Axis 2	54	403	0.27	0.7847	408.40	19.90	4355	0.61	0.5397	5277.60	1504.50	1.69	0.0573	Random
inverts	2010	Axis 2	56	399	1.33	0.1841	422.70	17.90	5195	-1.27	0.2024	3752.40	1131.70	1.14	0.3542	Random
inverts	2011	Axis 2	52	343	2.63	0.0085	389.40	17.60	6198	-2.21	0.0271	3739.10	1112.50	0.71	0.2553	Gleasonian
inverts	2012	Axis 2	47	327	1.38	0.1683	348.60	15.70	4545	-1.93	0.0533	2867.20	868.00	0.89	0.4088	Random
beetles	2010	Axis 2	31	198	-0.27	0.79	193.80	15.70	3639	0.52	0.6052	4169.00	1025.40	0.89	0.3868	Random

Group	Year	Axis	df	Coherence					Turnover					Boundary Clumping		
				Abs	z	P	Mean	SD	Re	z	P	Mean	SD	MI	P	Structure
beetles	2011	Axis 2	35	283	-2.88	0.004	235.30	16.60	1214	2.60	0.0093	4127.60	1119.90	1.22	0.2418	Checkerboard
beetles	2012	Axis 2	18	109	-2.27	0.0233	85.70	10.30	2370	-1.03	0.3027	1963.40	394.50	2.14	0.0011	Checkerboard
spiders	2010	Axis 2	33	255	-1.76	0.0782	230.50	13.90	510	2.62	0.0088	2402.80	722.00	2.51	1e-04	Random
spiders	2011	Axis 2	34	231	0.95	0.3399	244.30	14.00	1606	1.08	0.2823	2361.30	702.40	0.86	0.3619	Random
spiders	2012	Axis 2	33	197	2.23	0.0257	227.30	13.60	3060	-1.15	0.2482	2239.10	710.80	2.09	0.0026	Quasi-Clementsian
ephemeroptera	2010	Axis 2	7	32	-0.52	0.6039	29.30	5.10	233	0.88	0.381	288.60	63.50	1.66	0.0039	Random
ephemeroptera	2011	Axis 2	7	31	-1.51	0.1304	22.80	5.40	390	-0.38	0.7039	363.60	69.50	1.03	0.3762	Random
ephemeroptera	2012	Axis 2	4	23	-1.20	0.2305	18.00	4.20	167	1.75	0.0803	247.40	46.00	1.17	0.1193	Random
trichoptera	2010	Axis 2	8	28	0.46	0.6423	30.60	5.60	361	0.37	0.7095	391.40	81.50	1.21	0.1608	Random
trichoptera	2011	Axis 2	7	31	-1.17	0.2417	24.20	5.80	309	1.56	0.1185	433.30	79.60	1.17	0.1504	Random
trichoptera	2012	Axis 2	9	58	-2.98	0.0029	39.30	6.30	506	0.80	0.4248	595.20	111.70	1.42	0.0487	Checkerboard
diptera	2010	Axis 2	6	21	3.17	0.0015	34.10	4.10	123	0.99	0.3238	178.60	56.40	1.31	0.0314	Quasi-Nested (clumped)
diptera	2011	Axis 2	6	34	0.36	0.719	35.70	4.70	295	-0.66	0.5109	246.30	74.10	1.12	0.2008	Random
diptera	2012	Axis 2	3	21	-3.25	0.0011	13.80	2.20	0	2.69	0.0072	52.00	19.30	1.13	0.1718	Checkerboard
ept	2010	Axis 2	18	79	1.16	0.2467	91.00	10.30	994	0.83	0.4041	1210.50	259.50	1.79	0.0067	Random
ept	2011	Axis 2	17	96	-0.92	0.359	85.90	11.00	2169	-1.14	0.2553	1768.30	352.30	1.14	0.2562	Random
ept	2012	Axis 2	16	112	-1.98	0.0476	92.30	9.90	822	2.12	0.0343	1472.60	307.40	1.13	0.2584	Checkerboard
non_ept	2010	Axis 2	35	238	0.74	0.4589	247.50	12.80	2193	-0.70	0.4859	1780.50	591.90	0.71	0.233	Random
non_ept	2011	Axis 2	32	198	1.74	0.0818	218.80	12.00	1989	-1.06	0.2891	1449.20	509.20	0.88	0.3869	Random
non_ept	2012	Axis 2	28	164	2.49	0.0128	191.60	11.10	1605	-0.82	0.411	1262.00	417.30	2.42	3e-04	Quasi-Clementsian
adult_naqua	2010	Axis 2	28	185	0.49	0.6242	191.10	12.40	1978	0.01	0.99	1985.30	579.00	0.92	0.4365	Random
adult_naqua	2011	Axis 2	28	186	0.50	0.6188	192.70	13.40	2751	-0.11	0.9141	2673.70	716.40	1.25	0.1934	Random
adult_naqua	2012	Axis 2	24	159	0.46	0.6467	164.20	11.40	1267	0.59	0.5555	1539.10	461.60	1.00	0.4616	Random
adult_aqua	2010	Axis 2	25	158	1.10	0.2728	170.50	11.40	1784	-0.27	0.7855	1650.50	490.60	1.20	0.2243	Random
adult_aqua	2011	Axis 2	19	110	1.45	0.1475	122.80	8.80	609	0.80	0.4234	824.40	269.10	1.05	0.3854	Random
adult_aqua	2012	Axis 2	19	128	-0.40	0.6908	124.20	9.60	532	1.81	0.0697	1147.20	339.20	1.42	0.0602	Random
ae_ac_disp	2010	Axis 2	19	98	0.59	0.5566	104.80	11.60	1612	0.07	0.9456	1636.40	356.90	2.40	< 0.0001	Random
ae_ac_disp	2011	Axis 2	18	100	-0.88	0.38	89.70	11.80	2810	-2.23	0.0255	1931.30	393.30	0.89	0.3573	Random
ae_ac_disp	2012	Axis 2	14	78	-0.07	0.9471	77.40	9.20	1303	-0.35	0.7241	1215.30	248.40	1.15	0.2256	Random
aq_disp	2010	Axis 2	34	224	1.21	0.2263	239.20	12.50	1694	-0.14	0.8916	1620.90	536.10	1.28	0.1963	Random
aq_disp	2011	Axis 2	29	159	2.89	0.0038	190.70	11.00	1836	-1.84	0.0653	1105.70	396.20	0.80	0.281	Quasi-Gleasonian
aq_disp	2012	Axis 2	29	192	0.60	0.5516	198.80	11.40	904	0.85	0.3957	1282.30	445.30	1.94	0.0048	Random
dc_high	2010	Axis 2	24	147	1.07	0.2863	159.80	12.00	2561	-0.54	0.5914	2242.10	594.00	0.85	0.312	Random
dc_high	2011	Axis 2	20	133	-1.02	0.3061	121.00	11.70	2107	-0.02	0.9805	2096.50	431.10	1.10	0.316	Random
dc_high	2012	Axis 2	17	100	1.30	0.1952	111.90	9.20	1020	0.29	0.7747	1108.30	308.30	1.26	0.1416	Random
dc_low	2010	Axis 2	29	178	1.78	0.075	199.50	12.10	1866	-0.87	0.3859	1454.40	474.70	1.38	0.1093	Random
dc_low	2011	Axis 2	27	175	0.72	0.47	182.70	10.70	1125	0.20	0.8423	1205.40	404.00	1.72	0.0224	Random
dc_low	2012	Axis 2	26	158	1.80	0.0715	178.40	11.30	1727	-0.32	0.7467	1576.40	466.40	1.00	0.5327	Random
mps_l	2010	Axis 2	20	94	4.23	< 0.0001	134.10	9.50	955	0.58	0.563	1148.20	334.10	1.49	0.0417	Quasi-Nested (clumped)
mps_l	2011	Axis 2	18	93	2.55	0.0107	115.00	8.60	864	-0.45	0.6527	750.20	253.00	1.11	0.2912	Quasi-Gleasonian
mps_l	2012	Axis 2	15	82	1.72	0.0846	94.90	7.50	528	0.62	0.5357	655.80	206.30	1.77	0.0031	Random
mps_s	2010	Axis 2	33	219	1.10	0.2699	234.30	13.80	2407	0.17	0.8659	2533.90	751.10	1.15	0.2985	Random
mps_s	2011	Axis 2	29	192	0.62	0.5381	200.20	13.30	2742	0.09	0.932	2804.30	730.60	1.29	0.1648	Random
mps_s	2012	Axis 2	28	190	0.54	0.5923	197.10	13.20	1905	0.45	0.6541	2187.20	629.70	0.75	0.2579	Random

Group	Year	Axis	df	Coherence					Turnover					Boundary Clumping		
				Abs	z	P	Mean	SD	Re	z	P	Mean	SD	MI	P	Structure
lcd_l1	2010	Axis 2	32	194	2.57	0.0102	228.20	13.30	2976	-0.73	0.4644	2452.10	716.00	1.22	0.2328	Quasi-Gleasonian
lcd_l1	2011	Axis 2	26	160	1.43	0.1538	177.60	12.40	2039	0.45	0.6546	2321.80	632.00	1.50	0.0558	Random
lcd_l1	2012	Axis 2	25	169	0.29	0.7743	172.30	11.60	912	1.09	0.2755	1400.70	448.10	1.65	0.0258	Random
lcd_g1	2010	Axis 2	12	68	0.78	0.4377	73.40	6.90	360	1.27	0.2024	583.40	175.20	1.73	0.0032	Random
lcd_g1	2011	Axis 2	10	46	2.22	0.0266	58.90	5.80	248	0.86	0.3882	349.00	117.10	1.73	0.0017	Quasi-Nested (clumped)
lcd_g1	2012	Axis 2	9	37	2.66	0.0077	52.30	5.70	44	3.14	0.0017	422.60	120.60	0.92	0.4205	Nested (random)
univoltine	2010	Axis 2	24	156	-0.56	0.573	148.70	13.00	2812	-0.36	0.719	2602.50	582.40	1.00	0.4616	Random
univoltine	2011	Axis 2	22	135	-0.81	0.4151	125.10	12.20	3440	-1.08	0.2811	2779.20	613.10	1.49	0.0474	Random
univoltine	2012	Axis 2	14	82	0.11	0.9142	82.90	8.80	1498	-1.29	0.197	1148.40	271.00	0.97	0.4916	Random
multivoltine	2010	Axis 2	10	27	5.02	< 0.0001	53.60	5.30	187	0.22	0.825	205.30	82.70	1.93	2e-04	Quasi-Nested (clumped)
multivoltine	2011	Axis 2	10	39	1.29	0.1986	44.60	4.40	168	-0.15	0.8791	158.20	64.50	1.13	0.2773	Random
multivoltine	2012	Axis 2	12	47	3.56	4e-04	67.20	5.70	220	0.48	0.634	268.30	101.60	1.80	0.0014	Quasi-Nested (clumped)
shredder	2010	Axis 2	17	70	4.92	< 0.0001	109.40	8.00	684	-0.36	0.7191	607.00	214.10	1.05	0.3697	Quasi-Gleasonian
shredder	2011	Axis 2	18	92	3.06	0.0022	119.20	8.90	957	-0.11	0.9143	927.30	275.70	1.40	0.0609	Quasi-Gleasonian
shredder	2012	Axis 2	14	81	0.80	0.4238	86.70	7.10	444	-0.20	0.8413	413.30	153.30	1.42	0.0555	Random
scraper	2010	Axis 2	14	92	-1.06	0.2903	82.80	8.70	492	2.34	0.0191	1121.70	268.80	2.31	< 0.0001	Random
scraper	2011	Axis 2	14	91	-1.37	0.1711	78.70	9.00	1482	-0.17	0.8635	1432.50	288.00	1.45	0.0366	Random
scraper	2012	Axis 2	11	78	-1.58	0.1138	66.30	7.40	620	0.41	0.6846	685.40	160.90	2.27	6e-04	Random
filter_feeder	2010	Axis 2	16	119	-1.82	0.0688	103.10	8.80	644	0.94	0.3465	900.20	272.20	1.05	0.3825	Random
filter_feeder	2011	Axis 2	11	69	-0.55	0.581	65.20	6.90	361	1.41	0.1579	574.70	151.30	1.26	0.1512	Random
filter_feeder	2012	Axis 2	12	72	0.09	0.9298	72.70	7.70	708	0.78	0.433	875.90	214.10	0.94	0.4423	Random
predator	2010	Axis 2	7	33	-0.78	0.4328	28.10	6.20	355	1.94	0.0522	535.60	93.00	1.60	0.0032	Random
predator	2011	Axis 2	5	19	0.61	0.5447	22.00	5.00	298	0.84	0.4007	354.40	67.10	1.14	0.1375	Random
predator	2012	Axis 2	6	32	-1.46	0.1445	24.20	5.30	291	1.85	0.0644	430.30	75.30	1.33	0.0305	Random