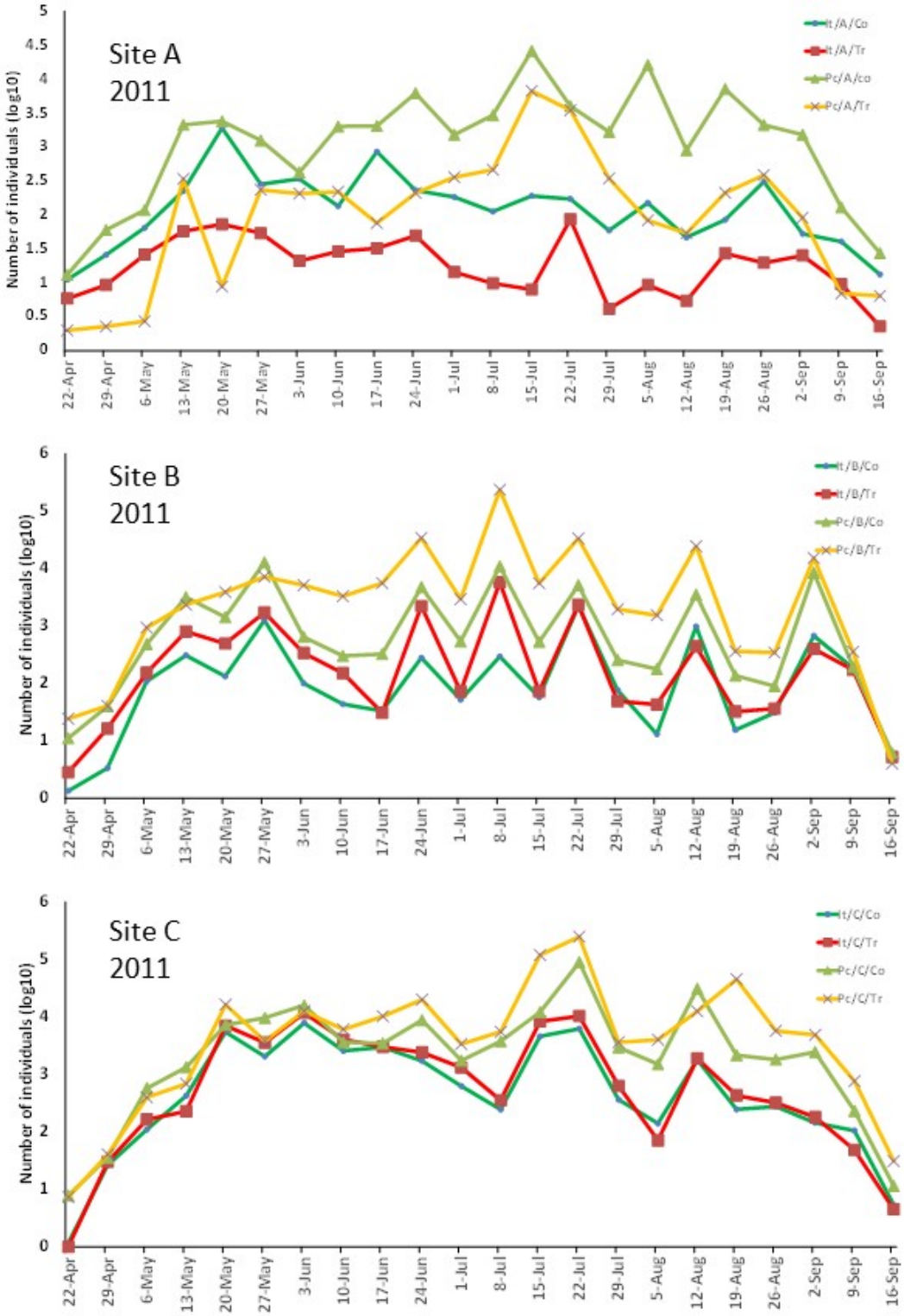
Supplementary online materials

Table S1. Research sites and details.

Trap indicator	Forest plots	Latitude	Longitude	Stand composition	Mean age (years)	Forest density	Altitude (m)	Exhibition	Slope
I. typographus non-action areas									
AIT1	Gheţarul de la Scărişoara 1	46.497039	22.812198	10MO	40	0.8	1156	SE	10
AIT2	Gheţarul de la Scărişoara 2	46.489895	22.80975	9FA 1MO	80	0.7	1184	SV	36
AIT3	Şesul Gârzii 1	46.571015	22.755413	6FA 4MO	160	0.7	1309	NE	17
AIT4	Şesul Gârzii 2	46.570079	22.754416	10MO	110	0.6	1351	NE	25
AIT5	Cheile Gârdişoarei 1	46.558619	22.762535	9FA 1MO	160	0.7	1152	V	28
AIT6	Cheile Gârdişoarei 2	46.551354	22.766206	8MO 2FA	140	0.6	1122	SV	25
AIT7	Cheile Ordâncuşii 1	46.482974	22.847602	6MO 4FA	70	0.8	868	SE	36
BIT2	Pârâul Ursului 1	46.564708	22.721844	10MO	105	0.4	1103	NV	16
BIT3	Pârâul Ursului 2	46.569446	22.73393	10MO	110	0.7	1157	V	31
BIT4	Poiana Ponor	46.576301	22.708151	10MO	100	0.7	1160	SV	21
CIT1	Valea Someşului Cald	46.636761	22.743022	10MO	120	0.7	1175	S	20
CIT2	Tomnatec 1	46.631815	22.739432	10MO	105	0.8	1188	N	20
CIT3	Tomnatec 2	46.629381	22.739507	9MO 1FA	105	0.8	1266	N	20
CIT5	Tomnatec 4	46.627933	22.746917	9MO 1FA	100	0.8	1236	NE	20
CIT6	Pârâul Podurilor	46.710982	22.796327	10MO	170	0.6	1430	SE	20
CIT7	Valea Stanciului	46.716249	22.810221	10MO	80	0.7	1139	N	23
I. typographus action areas									
AIT8	Cheile Ordâncuşii 2	46.495427	22.838332	8MO 2FA	60	0.7	980	SV	29
BIT1	Groapa de la Barsa	46.585441	22.67492	9MO 1BR	100	0.5	1190	NV	21
BIT5	Şesul Padiş	46.603646	22.713508	10MO	90	0.2	1252	SV	16
BIT6	Vărăşoaia	46.610435	22.713304	10MO	75	0.5	1278	SV	5
BIT7	Măgura Vânătă	46.608395	22.725469	10MO	80	0.7	1322	V	21
BIT8	Cabana Padiş	46.597823	22.740032	10MO	95	0.8	1354	V	26
CIT4	Tomnatec 3	46.625387	22.749022	9MO 1FA	100	0.8	1287	N	20
CIT8	Călineasa	46.573472	22.824442	10MO	83	0.5	1499	V	28
P. chalcographus non-action areas									
APC1	Gheţarul de la Scărişoara	46.498467	22.814845	10MO	45	0.8	1165	V	20
APC2	Gheţarul de la Scărişoara	46.488231	22.825911	10MO	100	0.7	1088	PLAN	10
APC3	Şesul Gârzii	46.57191	22.75758	9FA 1MO	160	0.7	1292	E	17
APC4	Şesul Gârzii	46.569969	22.752887	10MO	110	0.6	1373	SE	25
APC5	Cheile Gârdişoarei	46.554277	22.764609	8MO 2FA	140	0.6	1133	S	25
APC6	Cheile Gârdişoarei	46.548523	22.765894	7MO 2BR 1FA	135	0.7	1109	E	22
APC8	Cheile Ordâncuşii	46.485495	22.845844	6MO 4FA	70	0.8	889	SV	36
BPC2	Pârâul Ursului - Căput	46.567336	22.724864	10MO	105	0.8	1095	SV	26
BPC3	Pârâul Ursului - amonte	46.5676	22.735274	10MO	130	0.6	1207	NV	21
BPC4	Poiana Ponor	46.57458	22.710536	10MO	100	0.7	1140	S	21
BPC5	Şesul Padiş	46.604347	22.710773	10MO	80	0.1	1243	SV	0
BPC6	Vărăşoaia	46.609048	22.708796	10MO	90	0.2	1278	NV	SV
CPC1	Valea Someşului Cald	46.636733	22.744624	10MO	120	0.7	1183	SE	20
CPC2	Tomnatec	46.631262	22.740498	10MO	105	0.7	1198	N	15
CPC5	Tomnatec	46.628372	22.745573	9MO 1FA	100	0.8	1239	NE	20
CPC6	Pârâul Podurilor	46.710982	22.796327	10MO	170	0.6	1430	SE	20
CPC7	Valea Stanciului	46.717251	22.810117	10MO	105	0.7	1135	E	38
P. chalcographus action areas									
APC7	Cheile Ordâncuşii	46.487937	22.843002	9MO 1FA	40	0.7	894	E	36
BPC1	Groapa de la Barsa	46.586284	22.675322	9MO 1BR	100	0.5	1183	NV	21
BPC7	Măgura Vânătă	46.607419	22.724998	10MO	80	0.7	1322	V	21
BPC8	Cabana Padiş	46.597787	22.741782	10MO	95	0.8	1354	V	26
CPC3	Tomnatec	46.627861	22.741826	9MO 1FA	110	0.5	1277	NE	15
CPC4	Tomnatec	46.625666	22.746102	9MO 1FA	100	0.8	1305	NE	20
CPC8	Călineasa	46.568405	22.821373	10MO	78	0.2	1454	V	26

Note: MO – spruce; BR – fir; FA – beech.


Site A
2011
Number of individuals (log10)
It/A/Co
It/A/Tr
Pc/A/co
Pc/A/Tr
Site B
2011
Number of individuals (log10)
It/B/Co
It/B/Tr
Pc/B/Co
Pc/B/Tr
Site C
2011
Number of individuals (log10)
It/C/Co
It/C/Tr
Pc/C/Co
Pc/C/Tr
22-Apr
29-Apr
6-May
13-May
20-May
27-May
3-Jun
10-Jun
17-Jun
24-Jun
1-Jul
8-Jul
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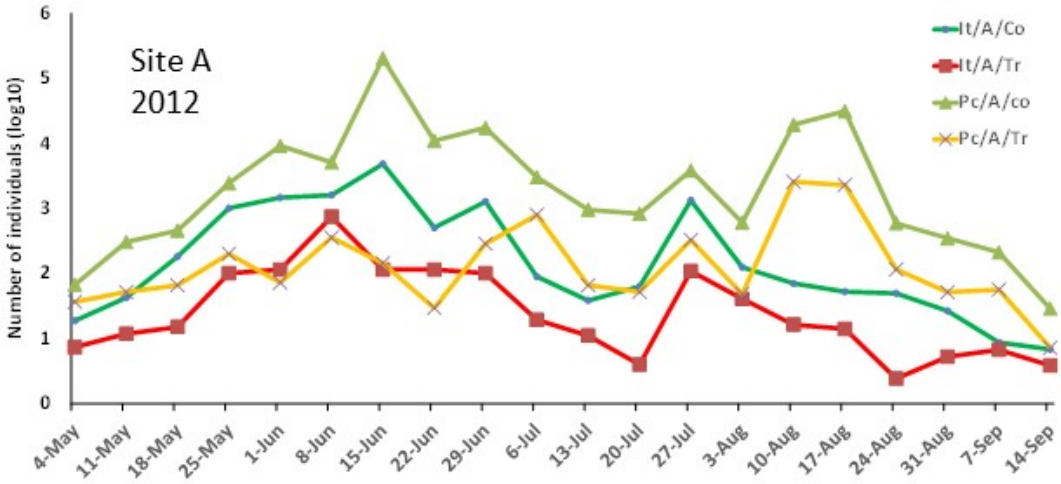
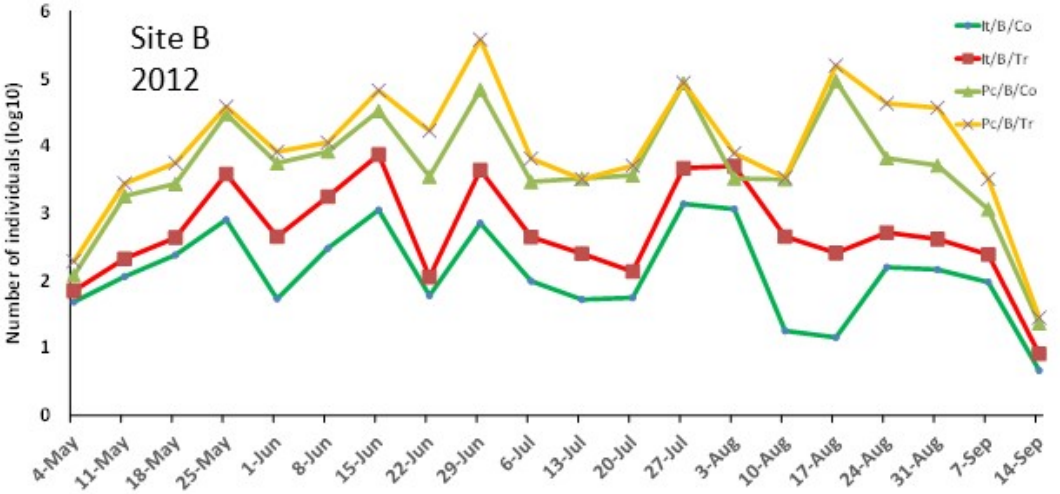
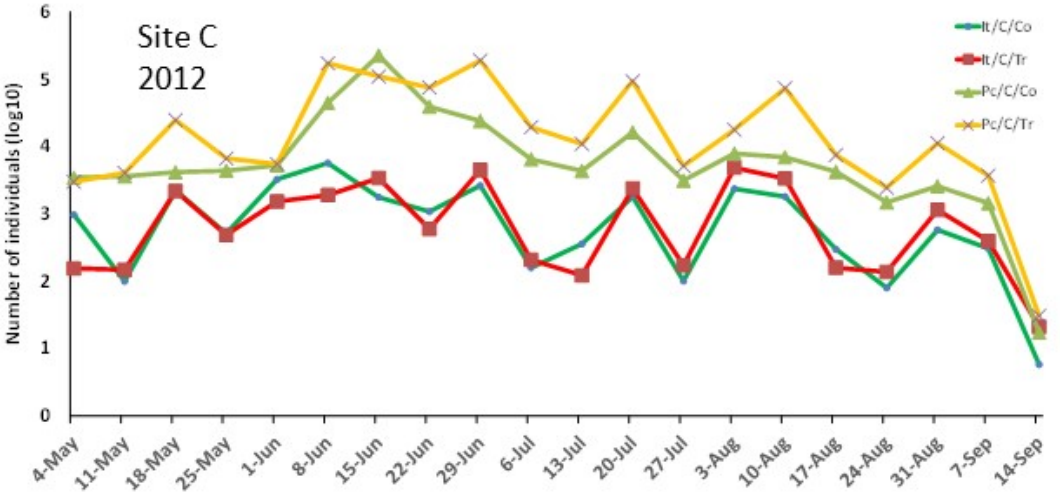
22-Jul
29-Jul
5-Aug
12-Aug
19-Aug
26-Aug
2-Sep
9-Sep
16-Sep


Site A
2012
It/A/Co
It/A/Tr
Pc/A/co
Pc/A/Tr
Number of individuals (log10)
0
1
2
3
4
5
6
4-May
11-May
18-May
25-May
1-Jun
8-Jun
15-Jun
22-Jun
29-Jun
6-Jul
13-Jul
20-Jul
27-Jul
3-Aug
10-Aug
17-Aug
24-Aug
31-Aug
7-Sep
14-Sep


Site B
2012
It/B/Co
It/B/Tr
Pc/B/Co
Pc/B/Tr
Number of individuals (log10)
0
1
2
3
4
5
6
4-May
11-May
18-May
25-May
1-Jun
8-Jun
15-Jun
22-Jun
29-Jun
6-Jul
13-Jul
20-Jul
27-Jul
3-Aug
10-Aug
17-Aug
24-Aug
31-Aug
7-Sep
14-Sep


Site C
2012
It/C/Co
It/C/Tr
Pc/C/Co
Pc/C/Tr
Number of individuals (log10)
0
1
2
3
4
5
6
4-May
11-May
18-May
25-May
1-Jun
8-Jun
15-Jun
22-Jun
29-Jun
6-Jul
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24-Aug
31-Aug
7-Sep
14-Sep

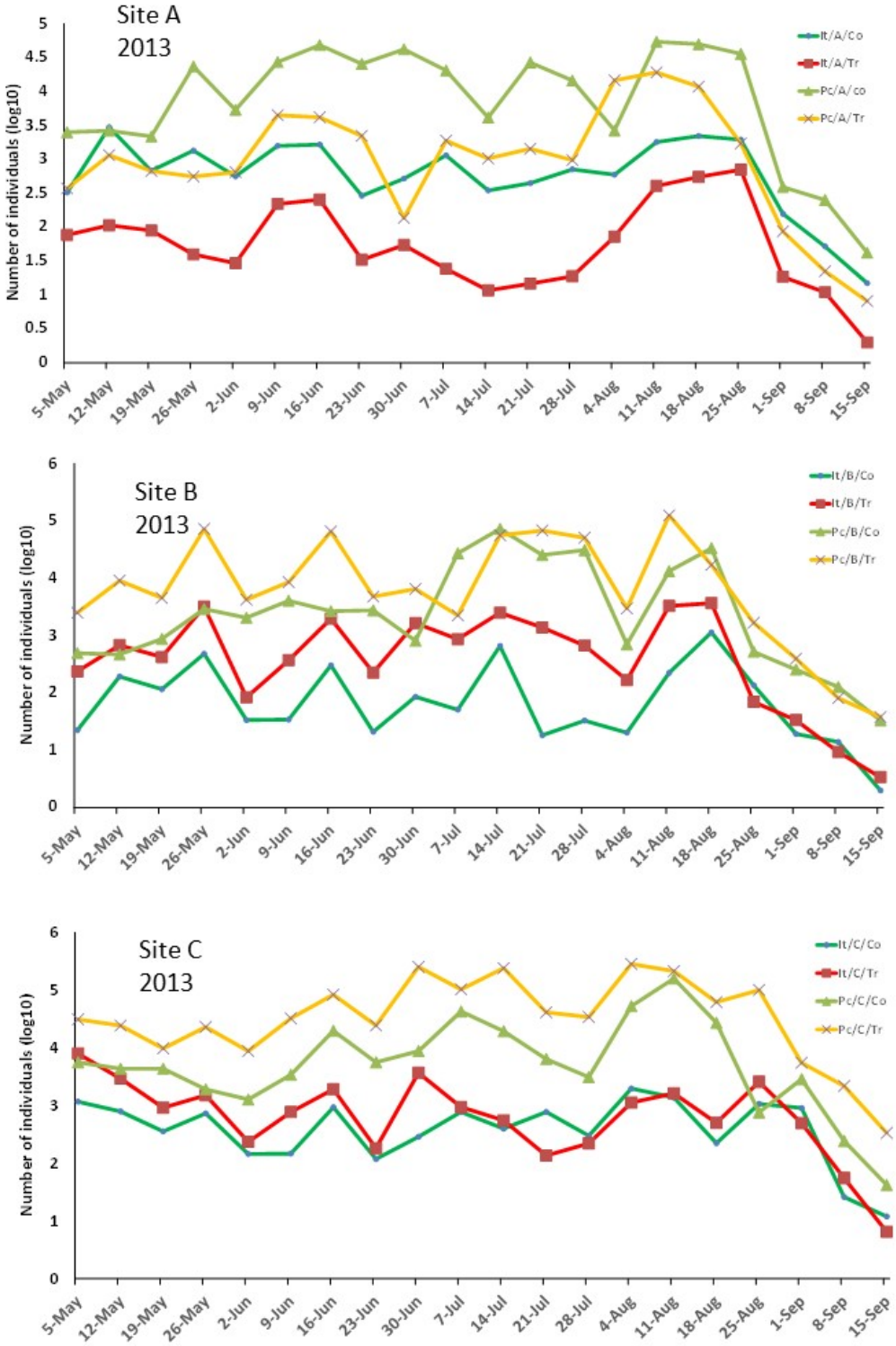

Figure S1. Flight dynamics in 2011, 2012 and 2013 Ips + Pityogenes.

Table S2. Statistical analyses comparing insect densities between sites, treatments and years (ANOVA). Above diagonal are probability (*p*) values; significant values are in bold, below diagonal are *F* values.

Ips typographus

	A/Co/11	A/Tr/11	B/Co/11	B/Tr/11	C/Co/11	C/Tr/11	A/Co/12	A/Tr/12	B/Co/12	B/Tr/12	C/Co/12	C/Tr/12	A/Co/13	A/Tr/13	B/Co/13	B/Tr/13	C/Co/13	C/Tr/13
A/Co/11		1	1	1	0.4844	0.1944	1	1	1	0.5994	0.4363	0.388	0.4251	0.9641	0.9928	0.9491	0.9398	0.3412
A/Tr/11	0.2212		1	1	0.3692	0.1299	1	1	1	0.4782	0.3261	0.2843	0.3163	0.9224	0.9981	0.8973	0.8824	0.245
B/Co/11	1.26	1.039		0.9987	**0.05649**	**0.01161**	1	0.9999	1	0.08883	**0.04604**	**0.03698**	**0.04382**	0.4485	1	0.3992	0.3747	**0.02937**
B/Tr/11	0.5348	0.756	1.795		0.7666	0.4285	1	1	1	0.8535	0.7234	0.6756	0.7127	0.9975	0.9312	0.9956	0.9942	0.6246
C/Co/11	3.619	3.84	4.88	3.084		1	0.5164	0.6096	0.3455	1	1	1	1	1	**0.00719**	1	1	1
C/Tr/11	4.259	4.48	5.519	3.724	0.6395		0.2147	0.2815	0.1181	1	1	1	1	0.9983	**0.001058**	0.9991	0.9994	1
A/Co/12	0.05851	0.2797	1.319	0.4763	3.561	4.2		1	1	0.6313	0.4675	0.418	0.456	0.9715	0.9902	0.9588	0.9508	0.3695
A/Tr/12	0.2283	0.4495	1.489	0.3065	3.391	4.031	0.1698		1	0.7199	0.5603	0.5089	0.5485	0.9866	0.9783	0.9793	0.9745	0.4571
B/Co/12	0.27	0.0488	0.9905	0.8048	3.889	4.529	0.3285	0.4983		0.452	0.3039	0.2638	0.2945	0.91	0.9986	0.8824	0.8663	0.2264
B/Tr/12	3.41	3.631	4.67	2.875	0.2096	0.8492	3.351	3.181	3.68		1	1	1	1	**0.01276**	1	1	1
C/Co/12	3.709	3.93	4.97	3.174	0.08991	0.5496	3.651	3.481	3.979	0.2995		1	1	1	**0.005576**	1	1	1
C/Tr/12	3.803	4.024	5.063	3.268	0.1835	0.4561	3.744	3.574	4.073	0.3931	0.09355		1	1	**0.004242**	1	1	1
A/Co/13	3.731	3.952	4.991	3.196	0.1113	0.5282	3.672	3.502	4.001	0.3209	0.02139	0.07216		1	**0.005246**	1	1	1
A/Tr/13	2.426	2.647	3.686	1.891	1.194	1.833	2.367	2.197	2.696	0.9839	1.283	1.377	1.305		0.125	1	1	0.9999
B/Co/13	2.074	1.853	0.8138	2.609	5.694	6.333	2.133	2.303	1.804	5.484	5.783	5.877	5.805	4.5		0.1037	0.09391	**0.003199**
B/Tr/13	2.52	2.741	3.781	1.985	1.099	1.739	2.462	2.292	2.79	0.8896	1.189	1.283	1.21	0.09438	4.594		1	1
C/Co/13	2.569	2.79	3.829	2.034	1.05	1.69	2.51	2.341	2.839	0.8408	1.14	1.234	1.162	0.1432	4.643	0.04878		1
C/Tr/13	3.898	4.12	5.159	3.364	0.2791	0.3605	3.84	3.67	4.168	0.4887	0.1891	0.0956	0.1678	1.473	5.973	1.378	1.329	

Pityogenes chalcographus

	A/Co/11	A/Tr/11	B/Co/11	B/Tr/11	C/Co/11	C/Tr/11	A/Co/12	A/Tr/12	B/Co/12	B/Tr/12	C/Co/12	C/Tr/12	A/Co/13	A/Tr/13	B/Co/13	B/Tr/13	C/Co/13	C/Tr/13
A/Co/11		0.9999	0.9997	0.9997	1	0.9588	1	1	0.9486	0.2622	0.8555	0.07696	0.5655	0.6991	1	0.7632	0.911	**0.00025**
A/Tr/11	1.439		1	0.7946	0.8975	0.3397	0.9962	1	0.3117	**0.01172**	0.1781	**0.001717**	**0.05269**	0.09037	0.9714	0.1177	0.2404	**1.00E-04**
B/Co/11	1.582	0.1425		0.7283	0.8505	0.2758	0.9915	1	0.251	**0.007934**	0.1372	**0.001102**	**0.03787**	0.06674	0.9508	0.08823	0.1893	**3.62E-05**
B/Tr/11	1.583	3.022	3.165		1	1	1	0.8861	1	0.9537	1	0.7327	0.9976	0.9996	1	0.9999	1	**0.02596**
C/Co/11	1.301	2.741	2.883	0.2814		1	1	0.9531	1	0.8871	0.9998	0.5845	0.9882	0.997	1	0.9987	1	**0.01255**
C/Tr/11	2.462	3.901	4.044	0.8794	1.161		0.9967	0.4636	1	0.9997	1	0.9807	1	1	0.9998	1	1	0.1716
A/Co/12	0.5238	1.963	2.106	1.059	0.7776	1.938		0.9992	0.9953	0.5208	0.9739	0.2096	0.8258	0.9092	1	0.94	0.9883	**0.001297**
A/Tr/12	1.196	0.2436	0.3861	2.778	2.497	3.658	1.719		0.4315	**0.02214**	0.2669	**0.003588**	0.08939	0.146	0.9906	0.185	0.3462	**3.77E-05**
B/Co/12	2.523	3.962	4.104	0.9399	1.221	0.06051	1.999	3.718		0.9998	1	0.9854	1	1	0.9997	1	1	0.191
B/Tr/12	4.077	5.516	5.658	2.494	2.775	1.614	3.553	5.272	1.554		1	1	1	1	0.7366	1	1	0.9047
C/Co/12	2.87	4.309	4.451	1.287	1.568	0.4074	2.346	4.065	0.3469	1.207		0.9979	1	1	0.9966	1	1	0.33
C/Tr/12	4.738	6.178	6.32	3.156	3.437	2.276	4.215	5.934	2.216	0.6618	1.869		1	0.9999	0.3847	0.9996	0.9938	0.9936
A/Co/13	3.471	4.911	5.053	1.889	2.17	1.009	2.948	4.667	0.9487	0.6051	0.6018	1.267		1	0.945	1	1	0.6479
A/Tr/13	3.223	4.662	4.804	1.64	1.921	0.7604	2.699	4.418	0.6999	0.8539	0.353	1.516	0.2488		0.9791	1	1	0.5118
B/Co/13	0.929	2.368	2.511	0.6538	0.3724	1.533	0.4052	2.125	1.594	3.148	1.941	3.809	2.542	2.294		0.9887	0.999	**0.004423**
B/Tr/13	3.092	4.531	4.673	1.509	1.79	0.6295	2.568	4.287	0.569	0.9849	0.2221	1.647	0.3798	0.1309	2.163		1	0.4411
C/Co/13	2.692	4.131	4.274	1.109	1.391	0.23	2.168	3.888	0.1695	1.384	0.1774	2.046	0.7793	0.5304	1.763	0.3995		0.2529
C/Tr/13	6.792	8.231	8.373	5.209	5.49	4.33	6.268	7.987	4.269	2.715	3.922	2.053	3.32	3.569	5.863	3.7	4.1	