Supplement 2.
Calculations of autoregressive functions for 25 models of insect population dynamics in five habitats in the Krasnoturansk pine forest

Table S1K2. Values of Equation (2) coefficients and significance of these values for *B. piniarius* in different habitats.

Top				
variables	coefficient	Std.Err.	t(29)	p-value
a0	-0.420	0.131	-3.196	0.003
y(i-2)	-0.800	0.102	-7.830	0.000
y(i-1)	1.597	0.104	15.426	0.000
adjR2	0.930			
F	211.000			
η	0.09			
Placor				
a0	-0.378	0.144	-2.618	0.014
y(i-2)	-0.749	0.112	-6.680	0.000
y(i-1)	1.527	0.116	13.198	0.000
adjR2	0.900			
F	143.800			
η	0.12			
Lake				
a0	-0.607	0.221	-2.751	0.010
y(i-2)	-0.657	0.136	-4.842	0.000
y(i-1)	1.432	0.135	10.570	0.000
adjR2	0.850			
F	93.400			
η	0.16			
Terrace				
a0	-0.565	0.235	-2.406	0.022
y(i-2)	-0.530	0.155	-3.427	0.002
y(i-1)	1.339	0.159	8.410	0.000
adjR2	0.820			
F	74.400			

η	0.19			
Dune				
a0	-0.186	0.084	-2.209	0.035
y(i-2)	-0.799	0.100	-7.986	0.000
y(i-1)	1.640	0.104	15.821	0.000
adjR2	0.940			
F	262.800			
η	0.08			

Table S2K2. Values of Equation (2) coefficients and significance of these values for *S.liturata* in different habitats.

variables	coefficient	Std.Err.	t(29)	p-value
Top				
a0	-1.069	0.246	-4.348	0.000
y(i-2)	-0.766	0.118	-6.513	0.000
y(i-1)	1.439	0.117	12.331	0.000
adjR2	0.850			
F	94.700			
η	0.13			
Plakor				
a0	-1.302	0.310	-4.204	0.000
y(i-2)	-0.707	0.128	-5.524	0.000
y(i-1)	1.340	0.127	10.540	0.000
adjR2	0.800			
F	65.700			
η	0.18			
Lake				
a0	-0.810	0.191	-4.250	0.000
y(i-2)	-0.832	0.103	-8.073	0.000
y(i-1)	1.536	0.103	14.877	0.000
adjR2	0.900			
F	41.200			
η	0.09			
Terrace				

a0	-0.875	0.195	-4.493	0.000
y(i-2)	-0.806	0.109	-7.423	0.000
y(i-1)	1.487	0.107	13.958	0.000
adjR2	0.880			
F	125.400			
η	0.11			
Dune				
a0	-0.816	0.184	-4.434	0.000
y(i-2)	-0.801	0.104	-7.674	0.000
y(i-1)	1.511	0.106	14.290	0.000
adjR2	0.890			
F	134.300			
η	0.11			

Table S3K2. Values of Equation (2) coefficients and significance of these values for *G. virens* in different habitats.

Variables	Coefficient	Std.Err.	t(29)	p-value
Top				
a0	-1.463	0.491	-2.982	0.006
y(i-4)	-0.403	0.158	-2.552	0.017
y(i-3)	0.798	0.239	3.336	0.002
y(i-2)	-1.126	0.247	-4.549	0.000
y(i-1)	1.243	0.173	7.183	0.000
adjR2	0.620			
F	13.500			
η	0.92			
Lake				
a0	-1.368	0.268	-5.095	0.000
y(i-2)	-0.657	0.116	-5.658	0.000
y(i-1)	1.117	0.126	8.857	0.000
adjR2	0.700			
F	39.300			
η	0.25			
Plakor				

a0	-1.011	0.357	-2.832	0.008
y(i-2)	-0.426	0.166	-2.570	0.015
y(i-1)	1.086	0.165	6.571	0.000
adj R2	0.620			
F	28.100			
η	0.32			
Terrace				
a0	-1.795	0.300	-5.977	0.000
y(i-2)	-0.684	0.113	-6.039	0.000
y(i-1)	1.117	0.121	9.210	0.000
adjR2	0.715			
F	42.500			
η	0.24			
Dune				
a0	-1.071	0.289	-3.702	0.001
y(i-2)	-0.565	0.147	-3.844	0.001
y(i-1)	1.133	0.158	7.171	0.000
adjR2	0.615			
F	27.400			
η	0.29			

Table S4K2. Values of Equation (2) coefficients and significance of these values for *M.pallipes* in different habitats.

variables	Coefficient	Std.Err.	t(29)	p-value
Top				
a0	-1.099	0.313	-3.508	0.002
y(i-4)	-0.559	0.151	-3.696	0.001
y(i-3)	1.119	0.259	4.318	0.000
y(i-2)	-1.480	0.258	-5.733	0.000
y(i-1)	1.556	0.156	9.980	0.000
adjR2	0.810			
F	33.200			
ηeta	0.64			
Plakor				

a0	-0.630	0.349	-1.803	0.082
y(i-3)	0.454	0.172	2.633	0.013
y(i-2)	-1.195	0.265	-4.501	0.000
y(i-1)	1.561	0.172	9.100	0.000
adjR2	0.800			
F	43.500			
η	0.30			
Lake				
a0	-0.857	0.318	-2.694	0.012
y(i-4)	-0.507	0.172	-2.942	0.007
y(i-3)	1.169	0.306	3.824	0.001
y(i-2)	-1.582	0.299	-5.295	0.000
y(i-1)	1.653	0.169	9.754	0.000
adjR2	0.820			
F	35.500			
η	0.38			
Terrace				
a0	-1.036	0.416	-2.489	0.019
y(i-3)	0.469	0.158	2.962	0.006
y(i-2)	-1.332	0.223	-5.973	0.000
y(i-1)	1.574	0.159	9.908	0.000
adjR2	0.820			
F	48.200			
η	0.75			
Dune				
a0	-0.994	0.329	-3.021	0.005
y(i-2)	-0.527	0.154	-3.411	0.002
y(i-1)	1.245	0.157	7.908	0.000
adjR2	0.750			
F	47.500			
η	0.24			

Table S5K2. Values of Equation (2) coefficients and significance of these values for *D.pini* in different habitats.

variables	coefficient	Std.Err.	t(29)	p-value
Top				
a0	-0.861	0.199	-4.332	0.000
y(i-2)	-0.794	0.110	-7.188	0.000
y(i-1)	1.503	0.110	13.626	0.000
adjR2	0.880			
F	125.100			
η	0.11			
Plakor				
a0	-0.847	0.215	-3.945	0.000
y(i-2)	-0.764	0.116	-6.581	0.000
y(i-1)	1.483	0.115	12.875	0.000
adjR2	0.870			
F	114.8			
η	0.12			
Lake				
a0	-1.012	0.247	-4.104	0.000
y(i-2)	-0.771	0.119	-6.465	0.000
y(i-1)	1.457	0.118	12.304	0.000
adjR2	0.850			
F	94.800			
η	0.13			
Terrace				
a0	-0.845	0.214	-3.950	0.000
y(i-2)	-0.762	0.116	-6.543	0.000
y(i-1)	1.443	0.116	12.394	0.000
adjR2	0.850			
F	96.800			
η	0.13			
Dune				
a0	-0.630	0.165	-3.806	0.001
y(i-2)	-0.809	0.107	-7.592	0.000

y(i-1)	1.560	0.107	14.640	0.000
adrR2	0.900			
F	156.8			
η	0.10			