Supplementary Information

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Appendix S1: details of food web sources and selection

We combined published food webs from [1], [2], and [3]. Of the 358 food webs available from [1], 59 were rejected because their original source was unpublished or could not be retrieved. We further eliminated 13 source or sink webs (which describe feeding links flowing from or to a particular resource or top predator rather than the interactions of an entire community), 8 plant-pollinator webs, 33 host-parasitoid webs, and 2 networks describing competitive interactions. Finally, we eliminated 2 webs describing inferred interactions in an extinct community, 10 "generalised schemes" that were not based on direct field data, and 4 webs where it was not clear which of several described study sites were used to construct the food web (and therefore the latitude of the food web could not be included). This left us with 226 webs from [1].

To these, we added 7 webs from [3] that were originally used to assess the roles of

parasites within food webs. As all but 3 of the webs from [1] contained only free-living species, we removed the the parasites (and all interactions involving them) from these webs (and the 3 webs containing parasites from [1]) leaving free-living species only. In addition, we included 30 of the 40 webs from [2]. Nine of the remaining webs in the [2] dataset were also included in the [1] dataset, and the last web was derived from an unpublished source. This gave us a database of 263 webs. As a measure of quality-control, we then eliminated any food web which did not have at least one each of basal resources, intermediate consumers, and top predators. Webs which did not meet this requirement tended to be very small and poorly-resolved. Our final sample size was thereby reduced to 196 food webs.

See Table S1 for a list of rejected webs and reasons for their exclusion.

Table S1: Sources of food webs considered for use in this study. "Collection" indicates the direct source of the food web (i.e., where the interaction matrix was obtained) while "Original source" indicates the original publication of the food web. We also show the ecosystem type, country of origin, and latitude for each food web, as well as whether it was ultimately included in the study. Collection 1 is [2], collection 2 is [3], and collection 3 is [1].

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
Alamitos	1	[4]	stream	37,12,25 N	Yes	
Alford	1	[5]	lake	44,15,41.59 N	Yes	
Beaver	1	[5]	lake	44,18,58.13 N	Yes	
Bere	1	[6]	stream	50,45,7 N	Yes	
Bridge	1	[5]	lake	44,09,42.66 N	Yes	
Broad	1	[7]	stream	45.896938 S	Yes	
Broadstone	1	[8]	stream	51,01,05 N	Yes	
Calero	1	[4]	stream	37,11,09 - 20 N	Yes	
Canton	1	[7]	stream	45.752 S	No	Duplicated in GlobalWeb (web 235)
Carpinteria2006	1	[9]	estuary	34.41 - 34.40 N	Yes	
Chub	1	[5]	lake	43,31,39.36 N	Yes	
Coachella	1	[10]	terrestrial	33,54 N	Yes	
Connery	1	[5]	lake	44,18,42.10 N	Yes	
Corte	1	[4]	stream	37,56,28 - 37,57,39 N	Yes	
Coyote	1	[4]	stream	37,53,11.66 - 37,53,17.06 N	Yes	
German	1	[7]	stream	44.97 S	No	Duplicated in GlobalWeb (web 227)
GrandeCl	1	[11]	terrestrial	46,47,09 N	Yes	
GrandeSc	1	[11]	terrestrial	46,47,09 N	Yes	
Guadalupe	1	[4]	stream	37,27,54 - 37,21,17 N	Yes	
Hainich	1	Unpublished	terrestrial		No	Could not locate original source
LittleKyeBurn	1	[7]	stream	45 S	No	Duplicated in GlobalWeb (web 230)
LittleRock	1	[12]	lake	45,44,07.94 N	Yes	
Mondego	1	[13]	estuary	40,08 N	Yes	
Montane Forest	1	[14]	terrestrial	36,5-37 N	No	Duplicated in GlobalWeb (web60)
Reef	1	[15]	marine	18,29 - 17,53 N	Yes	
Sierra	1	[16]	lake	36,50 - 37,02 N	Yes	
SimberloffE1	1	[17]	terrestrial	24,40,37.29 N	Yes	
SimberloffE2	1	[17]	terrestrial	24,40,33 N	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
SimberloffE3	1	[17]	terrestrial	24,41,23.82 N	Yes	
SimberloffE7	1	[17]	terrestrial	25,15 N	Yes	
SimberloffE9	1	[17]	terrestrial	25,01,59.64 - 25,02,55.44 N	Yes	
SimberloffST2	1	[17]	terrestrial	24,36,16 N	Yes	
Skipwith	1	[18]	lake	53,40 N	Yes	
Stink	1	[5]	lake	43,37,55.88 N	Yes	
StMarks	1	[19]	estuary	30,05 N	No	Duplicated in GlobalWeb (web 288)
Stony	1	[7]	stream	45.58 S	No	Duplicated in GlobalWeb (web 231)
TreleaseWoods	1	[20]	terrestrial	40,09,47 N	No	Duplicated in GlobalWeb (web 59)
Tuesday	1	[21]	lake	46,13 N	Yes	
Weddell Sea	1	[16]	marine	58,20.8 - 60,10.4 S	No	Duplicated in GlobalWeb (web 341)
Ythan	1	[22]	marine		No	Duplicated in Dunne (YthanDunne)
BahiaDunne	2	[23]	estuary	30.43 - 30.46 N	Yes	
CarpinteriaDunne	2	[23]	estuary	34.41 - 34.40 N	Yes	
EsteroDunne	2	[23]	estuary	31.78 - 31.69 N	Yes	
FjordDunne	2	[24]	estuary	54.92 - 54.75 N	Yes	
OtagoDunne	2	[25]	estuary	45.78 - 45.88 S	Yes	
SyltDunne	2	[26]	estuary	54.83 - 55.12 N	Yes	
YthanDunne	2	[22]	estuary	57,18,32 N	Yes	
1	3	[27]	estuary		No	Could not locate original source
2	3	[28]	estuary		No	Could not locate original source
3	3	[29]	estuary	41,03,11 N	Yes	
4	3	[30]	estuary		No	Sink web
5	3	[31]	estuary	31,28,38 N	Yes	
6	3	[32]	estuary	36,48,18 N	Yes	
7	3	[33]	marine	41,45 - 41,30 N	Yes	
8	3	[34]	estuary	41,33,00 N	Yes	
9	3	[35]	stream		No	Could not locate original source
10	3	[36]	marine	41 - 47 N	Yes	
11	3	[36]	marine	41 - 47 N	Yes	
12	3	[36]	marine	45,45 - 49 N	Yes	
13	3	[36]	marine	45,45 - 49 N	Yes	
14	3	[37]	estuary	21,26,09 N	No	Could not locate original source
15	3	[37]	estuary	21,26,09 N	No	Could not locate original source

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
16	3	[38]	estuary		No	Could not locate original source
17	3	[39]	marine	4,30 - 15 N	No	Generalised scheme
18	3	[40]	terrestrial	1,01,29 - 1,06,23 N	Yes	
19	3	[41]	lake		No	Could not locate original source
20	3	[42]	terrestrial		No	Could not locate original source
21	3	[43]	marine	70-85 S	Yes	
22	3	[44]	terrestrial	74,27,54 N	Yes	
23	3	[45]	terrestrial	50,25,17 N	Yes	
24	3	[45]	terrestrial	50,25,17 N	Yes	
25	3	[45]	terrestrial	50,25,17 N	Yes	
26	3	[45]	terrestrial	50,25,17 N	Yes	
27	3	[46]	terrestrial		No	Could not locate original source
28	3	[47]	estuary	45,51,30 S	Yes	
29	3	[48]	marine		No	Generalised scheme
30	3	[49]	marine		No	Generalised scheme
31	3	[50]	marine		No	Could not locate original source
32	3	[50]	marine		No	Could not locate original source
33	3	[51]	lake	11,36,39 S	Yes	
34	3	[52]	stream	51,41 - 51,55 N	Yes	
35	3	[53]	stream	37,18,26 N	Yes	
36	3	[37]	estuary	21,26,09 N	No	Could not locate original source
37	3	[54]	marine	41,02,49 N	Yes	
38	3	[51]	lake	11,36,39 S	Yes	
39	3	[51]	lake	11,36,39 S	Yes	
40	3	[55]	terrestrial		No	Generalised scheme
41	3	[56]	marine		No	Could not locate original source
42	3	[57]	marine		No	Study site unclear
43	3	[58]	marine	32,57 N	Yes	
44	3	[59]	marine	17,26,21 N	Yes	
45	3	[60]	stream	41,22,55 N	Yes	
46	3	[61]	lake	33,54 N	Yes	
47	3	[62]	lake		No	Study site unclear
48	3	[63]	marine		No	Extinct species
49	3	[63]	marine		No	Extinct species
50	3	[64]	marine		No	Generalised scheme
51	3	[65]	marine	42,38,56 N	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
52	3	[66]	marine	58,27 N	Yes	
53	3	[66]	marine	48,19 - 48,37 N	Yes	
54	3	Unpublished	marine		No	Unpublished
55	3	[67]	estuary		No	Could not locate original source
56	3	[67]	estuary		No	Could not locate original source
57	3	[59]	marine	17,26,21 N	Yes	
58	3	[68]	lake	51,46 N	Yes	
59	3	[20]	terrestrial	40,09,47 N	Yes	
60	3	[14]	terrestrial	36,5-37 N	Yes	
61	3	[69]	terrestrial	77,52,30 N	Yes	
62	3	[69]	terrestrial	77,52,30 N	Yes	
63	3	[70]	stream	52,25,08 N	Yes	
64	3	[71]	stream	41,39,33 N	Yes	
65	3	[72]	stream	34,21,20 - 34,23,21 N	Yes	
66	3	[73]	stream	51,30 N	Yes	
67	3	[74]	stream	40,24,16 N	Yes	
68	3	[75]	lake		No	Could not locate original source
69	3	[76]	estuary		No	Could not locate original source
70	3	[77]	estuary	28,54,08 N	Yes	
71	3	[78]	lake	48,00 N	Yes	
72	3	[79]	lake	46,02 N	Yes	
73	3	[80]	lake		No	Could not locate original source
74	3	[81]	marine	34,15,00 S	Yes	
75	3	[82]	lake	47,11 N	Yes	
76	3	[80]	lake	47,42 - 47,54 N	Yes	
77	3	[76]	lake		No	Could not locate original source
78	3	[83]	lake	0	Yes	
79	3	[84]	lake		No	Could not locate original source
80	3	[84]	lake		No	Could not locate original source
81	3	[85]	marine		No	Could not locate original source
82	3	[76]	marine		No	Could not locate original source
83	3	[76]	lake		No	Could not locate original source
84	3	[86]	lake	42,28,42 N	Yes	
85	3	[87]	lake		No	Could not locate original source

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
86	3	[88]	marine	34,36 - 35,38 N	Yes	
87	3	[89]	terrestrial	72,46,34.95 N	Yes	
88	3	[90]	stream		No	Could not locate original source
89	3	[91]	stream	52,13 N	Yes	
91	3	[76]	terrestrial		No	Could not locate original source
92	3	[92]	terrestrial		No	Generalised scheme
93	3	[93]	terrestrial	45 N	Yes	
94	3	[94]	terrestrial		No	Could not locate original source
95	3	[95]	terrestrial	70,11,14.18 N	Yes	
96	3	[76]	terrestrial		No	Could not locate original source
97	3	[76]	terrestrial		No	Could not locate original source
98	3	[96]	terrestrial		No	Could not locate original source
99	3	[97]	terrestrial	32,36 N	Yes	
100	3	[76]	terrestrial		No	Could not locate original source
101	3	[76]	lake		No	Could not locate original source
102	3	[98]	marine	10 S - 15 N	Yes	
103	3	[99]	marine		No	Generalised scheme
104	3	[36]	marine	4,48,04 N	Yes	
105	3	[100]	marine	42,40 N	Yes	
106	3	[101]	marine		No	Could not locate original source
107	3	[102]	marine	39,52,02 N	Yes	
108	3	[103]	marine	36,37 N	Yes	
109	3	[104]	marine		No	Could not locate original source
110	3	[65]	marine	42,38,56 N	Yes	
111	3	[65]	marine	42,38,56 N	Yes	
112	3	[65]	marine	42,38,56 N	Yes	
113	3	[65]	marine	42,38,56 N	Yes	
114	3	[105]	lake	17,54,11.90 S	Yes	
115	3	[106]	marine		No	Could not locate original source
116	3	[107]	lake	35,09,19 S	Yes	
117	3	[108]	lake	9,11,31.50 N	Yes	
118	3	[109]	lake	56,41,18.71 N	Yes	
119	3	[110]	stream	51,27 N	Yes	
120	3	[111]	lake	0,00,58 N	Yes	
121	3	[112]	estuary	53,20 - 53,15 N	Yes	
122	3	[34]	estuary	41,33,04 N	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
123	3	[113]	terrestrial	40,45,28 N	Yes	
124	3	[114]	stream	44,34 N	Yes	
125	3	[115]	marine		No	Generalised scheme
126	3	[116]	lake	61,26,00 N	Yes	
127	3	[117]	lake		No	Could not locate original source
128	3	[117]	lake		No	Could not locate original source
129	3	Unpublished	terrestrial		No	Unpublished
130	3	[118]	estuary	27,12 N	Yes	
131	3	[119]	lake	4,12,37 N	Yes	
132	3	[119]	lake	4,12,37 N	Yes	
133	3	[119]	lake	7,52,22 N	Yes	
134	3	[119]	lake	19 S	Yes	
135	3	[119]	lake	4,40,46 S	Yes	
136	3	[120]	lake		No	Could not locate original source
137	3	[121]	lake	22,14-22,17 N	Yes	
138	3	[122]	lake		No	Could not locate original source
139	3	[122]	lake		No	Could not locate original source
140	3	[123]	terrestrial	10,21 N	Yes	
141	3	[124]	terrestrial		No	Competition network
142	3	[124]	terrestrial		No	Competition network
143	3	[125]	lake	34,41,45 N	Yes	
144	3	[125]	lake		No	Could not locate original source
145	3	[126]	terrestrial		No	Host-parasitoid web
146	3	[126]	terrestrial		No	Host-parasitoid web
147	3	[126]	terrestrial		No	Host-parasitoid web
148	3	[126]	terrestrial		No	Host-parasitoid web
149	3	[127]	terrestrial		No	Host-parasitoid web
150	3	[128]	terrestrial		No	Host-parasitoid web
151	3	[129]	terrestrial	51,20,04 N	Yes	
152	3	[130]	terrestrial		No	Source web
153	3	[131]	terrestrial	40,06,38 N	Yes	
154	3	[131]	terrestrial	39,56,41 N	Yes	
155	3	[132]	terrestrial		No	Host-parasitoid web
156	3	[133]	terrestrial		No	Host-parasitoid web
157	3	[133]	terrestrial		No	Host-parasitoid web
158	3	[133]	terrestrial		No	Host-parasitoid web

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
159	3	[133]	terrestrial		No	Host-parasitoid web
160	3	[133]	terrestrial		No	Host-parasitoid web
161	3	[133]	terrestrial		No	Host-parasitoid web
162	3	[133]	terrestrial		No	Host-parasitoid web
163	3	[133]	terrestrial		No	Host-parasitoid web
164	3	[133]	terrestrial		No	Host-parasitoid web
165	3	[133]	terrestrial		No	Host-parasitoid web
166	3	[133]	terrestrial		No	Host-parasitoid web
167	3	[133]	terrestrial		No	Host-parasitoid web
168	3	[134]	terrestrial		No	Host-parasitoid web
169	3	[134]	terrestrial		No	Host-parasitoid web
170	3	[134]	terrestrial		No	Host-parasitoid web
171	3	[134]	terrestrial		No	Host-parasitoid web
172	3	[134]	terrestrial		No	Host-parasitoid web
173	3	[134]	terrestrial		No	Host-parasitoid web
174	3	[134]	terrestrial		No	Host-parasitoid web
175	3	[134]	terrestrial		No	Host-parasitoid web
176	3	[134]	terrestrial		No	Host-parasitoid web
177	3	[134]	terrestrial		No	Host-parasitoid web
178	3	[134]	terrestrial		No	Host-parasitoid web
179	3	[135]	terrestrial		No	Source web
180	3	[136]	terrestrial	36,01,02 N	Yes	
181	3	[136]	terrestrial	36,01,02 N	Yes	
182	3	[136]	terrestrial	36,01,02 N	Yes	
183	3	[136]	terrestrial	36,01,02 N	Yes	
184	3	[137]	terrestrial		No	Could not locate original source
185	3	[138]	terrestrial		No	Source web
186	3	[139]	terrestrial		No	Source web
187	3	[139]	terrestrial		No	Source web
188	3	[140]	terrestrial		No	Source web
189	3	[141]	terrestrial		No	Could not locate original source
190	3	[141]	terrestrial		No	Could not locate original source
191	3	[141]	terrestrial		No	Could not locate original source
192	3	[141]	terrestrial		No	Could not locate original source
193	3	[141]	terrestrial		No	Could not locate original source
194	3	[141]	terrestrial		No	Could not locate original source

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
195	3	[142]	terrestrial		No	Could not locate original source
196	3	[142]	terrestrial		No	Could not locate original source
197	3	[143]	terrestrial		No	Source web
198	3	[144]	terrestrial		No	Source web
199	3	[145]	terrestrial		No	Source web
200	3	[146]	terrestrial		No	Source web
201	3	[146]	terrestrial		No	Source web
202	3	[147]	stream	38,50,21 N	Yes	
203	3	[114]	stream	44,24 N	Yes	
204	3	[51]	lake	11,36,39 S	Yes	
205	3	[148]	stream	51,01,05 N	Yes	
206	3	[52]	stream	51,41 - 51,55 N	Yes	
207	3	[149]	stream	41,57 - 42,14 N	Yes	
208	3	[150]	stream	37,56 N	Yes	
209	3	[53]	stream	37,18,26 N	Yes	
210	3	[151]	stream		No	Generalised scheme
211	3	[152]	stream		No	Could not locate original source
212	3	[152]	stream		No	Could not locate original source
213	3	[153]	stream	53 N	Yes	
214	3	[154]	stream	44,40,44 N	Yes	
215	3	[154]	stream	40,40,52 N	Yes	
216	3	[154]	stream	35,02,50 N	Yes	
217	3	[154]	stream	35,03,50 N	Yes	
218	3	[155]	stream	45.79 S	Yes	
219	3	[155]	stream	44.64 S	Yes	
220	3	[155]	stream	46.29 S	Yes	
221	3	[155]	stream	46.41 S	Yes	
222	3	[155]	stream	45,57,0 S	Yes	
223	3	[155]	stream	46.08 S	Yes	
224	3	[155]	stream	46.08 S	Yes	
225	3	[155]	stream	46.115 S	Yes	
226	3	[155]	stream	45.61 S	Yes	
227	3	[155]	stream	44.97 S	Yes	
228	3	[155]	stream	44.95 S	Yes	
229	3	[155]	stream	44.96 S	Yes	
230	3	[155]	stream	45 S	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
231	3	[155]	stream	45.58 S	Yes	
232	3	[155]	stream	45.61 S	Yes	
233	3	[155]	stream	45.782 S	Yes	
234	3	[155]	stream	45.803 S	Yes	
235	3	[155]	stream	45.752 S	Yes	
236	3	[155]	stream	46.29 S	Yes	
237	3	[155]	stream	46.41 S	Yes	
238	3	[155]	stream	45,57,0 S	Yes	
239	3	[155]	stream	46.08 S	Yes	
240	3	[155]	stream	46.08 S	Yes	
241	3	[155]	stream	46.115 S	Yes	
242	3	[155]	stream	46.29 S	Yes	
243	3	[155]	stream	46.41 S	Yes	
244	3	[155]	stream	45,57,0 S	Yes	
245	3	[155]	stream	46.08 S	Yes	
246	3	[155]	stream	46.08 S	Yes	
247	3	[155]	stream	46.115 S	Yes	
248	3	[156]	estuary	45,51,28 S	Yes	
249	3	[157]	stream	24,30 S	Yes	
250	3	[158]	lake	22,57,38 S	Yes	
251	3	[158]	lake	22,57,38 S	Yes	
252	3	[159]	stream	18,40 S	Yes	
253	3	[160]	marine	5 - 17,15 S	Yes	
254	3	[161]	stream	21 S	Yes	
255	3	[161]	stream	21 S	Yes	
256	3	[161]	stream		No	Could not locate original source
257	3	[162]	estuary	40,08 N	Yes	
258	3	[162]	estuary	40,08 N	Yes	
259	3	[162]	estuary	40,08 N	Yes	
260	3	[162]	estuary	40,08 N	Yes	
261	3	[162]	estuary	40,08 N	Yes	
262	3	[162]	estuary	40,08 N	Yes	
263	3	[163]	lake	45,58,50 N	Yes	
264	3	[164]	terrestrial	39,06,27 N	Yes	
265	3	[165]	marine	22,27 N	Yes	
266	3	[166]	marine	60 - 69 S	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
267	3	[167]	marine	23.15 - 22.9N	Yes	
268	3	[168]	marine	18,45 - 18,50 N	Yes	
269	3	[169]	lake	29,32,35 N	Yes	
270	3	[170]	marine	42,17,37 - 42,19,29 N	Yes	
271	3	[171]	lake	69,07 N	Yes	
272	3	[172]	lake	48,03,29 N	Yes	
273	3	[173]	stream	69,1 N	Yes	
274	3	[173]	stream	69,1 N	Yes	
275	3	[173]	stream	69,1 N	Yes	
276	3	[173]	stream	69,1 N	Yes	
277	3	[174]	lake	42,08,6 - 42,07 N	Yes	
278	3	[175]	lake	43.7 N	Yes	
279	3	[175]	lake	43.7 N	Yes	
280	3	[176]	stream	43,58 N	Yes	
281	3	[176]	stream	44,58 N	Yes	
282	3	[176]	stream	45,58 N	Yes	
283	3	[176]	stream	46,58 N	Yes	
284	3	[176]	stream	47,58 N	Yes	
285	3	[176]	stream	48,58 N	Yes	
286	3	[176]	stream	49,58 N	Yes	
287	3	[176]	stream	50,58 N	Yes	
288	3	[19]	estuary	30,05,39 N	Yes	
289	3	[177]	lake	11,15 N	Yes	
290	3	[178]	marine	43 - 48 N	Yes	
291	3	[178]	marine	44 - 48 N	Yes	
292	3	[178]	marine	45 - 48 N	Yes	
293	3	[178]	marine	46 - 48 N	Yes	
294	3	[179]	lake	47,37,30 N	Yes	
295	3	[180]	lake	37.66 N	Yes	
296	3	[181]	lake	24,55 S	Yes	
297	3	[182]	stream	37,40 S	Yes	
298	3	[182]	stream	37,40 S	Yes	
299	3	[182]	stream	37,40 S	Yes	
300	3	[182]	stream	37,40 S	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
301	3	[182]	stream	37,40 S	Yes	
302	3	[182]	stream	37,40 S	Yes	
303	3	[182]	stream	37,40 S	Yes	
304	3	[182]	stream	37,40 S	Yes	
305	3	[182]	stream	37,40 S	Yes	
306	3	[182]	stream	37,40 S	Yes	
307	3	[182]	stream	37,40 S	Yes	
308	3	[182]	stream	37,40 S	Yes	
309	3	[183]	marine	61,13,88 N	Yes	
310	3	[184]	lake	12,45,25 N	Yes	
311	3	[185]	terrestrial		No	Source web
312	3	[186]	terrestrial		No	Plant-pollinator web
313	3	[186]	terrestrial		No	Plant-pollinator web
314	3	[187]	terrestrial		No	Plant-pollinator web
315	3	[187]	terrestrial		No	Plant-pollinator web
316	3	[187]	terrestrial		No	Plant-pollinator web
317	3	[187]	terrestrial		No	Plant-pollinator web
318	3	[187]	terrestrial		No	Plant-pollinator web
319	3	[187]	terrestrial		No	Plant-pollinator web
320	3	[188]	marine	42 - 49 N	Yes	
321	3	[188]	marine	43 - 49 N	Yes	
322	3	[188]	marine	44 - 49 N	Yes	
323	3	[188]	marine	45 - 49 N	Yes	
324	3	[188]	marine	46 - 49 N	Yes	
325	3	[189]	terrestrial		No	Host-parasitoid web
326	3	[189]	terrestrial		No	Host-parasitoid web
327	3	[190]	stream	29,13 S	Yes	
328	3	[190]	stream	29,20,0 S	Yes	
329	3	[190]	stream	29,35 S	Yes	
330	3	[190]	stream	29,13 S	Yes	
331	3	[190]	stream	29,20,0 S	Yes	
332	3	[191]	stream	31.70 N	Yes	
333	3	[192]	marine	33,51 - 44,49 N	Yes	
334	3	[193]	lake	41,26,36 N	Yes	
335	3	[193]	lake	41,26,05 N	Yes	
336	3	[193]	lake	41,26,36 N	Yes	

Web ID	Collection	Original Source	Ecosystem	Latitude(degrees)	Used	Reason for rejection
337	3	[193]	lake	41,26,05 N	Yes	
338	3	[194]	marine		No	Could not locate original source
339	3	[195]	marine	37-39 S	Yes	
340	3	[196]	marine	74-78 S	Yes	
341	3	[197]	marine	58,20.8 - 60,10.4 S	Yes	
342	3	[198]	marine	57,00 - 60,45 S	Yes	
343	3	[199]	lake	28,12 S	Yes	
344	3	[200]	terrestrial		No	Host-parasitoid web
345	3	[201]	lake	47,38,10 N	Yes	
346	3	[202]	stream	17,7 S	Yes	
347	3	[203]	stream	23,03 S	Yes	
348	3	[204]	marine	37,13 N	Yes	
349	3	[204]	marine	37,13 N	Yes	
350	3	[204]	marine	37,13 N	Yes	
351	3	[18]	lake		No	Could not locate original source
352	3	[205]	stream	54,06 N	No	describes compartments, not species
353	3	[205]	stream	54,06 N	No	describes compartments, not species
354	3	[206]	terrestrial	18,03 N	Yes	
355	3	[207]	lake	46,13 N	Yes	
356	3	[207]	lake	46,13 N	Yes	
357	3	[208]	marine	34,21 - 16 S	No	Study site unclear
358	3	[209]	terrestrial		No	Generalised scheme
359	3	[210]	lake		No	Study site unclear

Appendix S2: forms of scaling relationships with species richness

Methods

The scaling relationships between link density (Z) and species richness (S) has been shown to be a power law [211] of the form

$$Z_i \sim \alpha S_i^{\beta}, \tag{1}$$

which is often re-expressed in logarithmic form

$$\log Z_i \sim \log \alpha + \beta \log S_i. \tag{2}$$

Although these relationships are very similar, they imply different error distributions [212]. Specifically, equation (1) implies a normally-distributed, additive error and equation (2) a lognormal, multiplicative error. As we have no *a priori* reason to believe that our dataset has one error distribution over another, we follow the recommendations in [212] and compared the two model formulations explicitly. The model with the error distribution that best approximates the one observed in the empirical data was then used to test for potential effects of latitude.

Although scaling relationships between species richness and generality or species richness and vulnerability have not been explicitly examined (but see scaling relationships for the standard deviations of each property in [211]), we expect that they will follow power laws similar to that of the relationship between species richness and links per species. This is because the links taken into account in calculating generality and vulnerability are subsets of the total links included when calculating links per species. As with links per species, we explicitly compared the error distributions of models for generality and vulnerability using both the power-law and logarithmic formulations. In each case, we

used the best-fitting equation as a template when assessing the effect of latitude on scaling with species richness.

Results

When considering the relationships between species richness and all response variables (link density, generality, vulnerability), equation (2) had a lower AIC than did equation (1). This indicates that the data support an assumption of multiplicative lognormal error better than an assumption of additive normal error. That is, models where ϵ is modelled as an additive term on the logarithmic scale provide a better description of the data than models where ϵ is modelled as an additive term on the arithmetic scale. We therefore used logarithmic-form models when assessing the effect of latitude on scaling relationships with species richness.

Appendix S3: testing for effects of sampling effort

Methods

As our dataset consists of food webs published over several decades, from many countries, and by many research groups, there are differences in the procedures used to assemble the food webs and likely also differences in the amount of sampling effort allocated to each web. In order to ensure that our results were not driven by particularly unusual food webs, or by unusually well- or poorly-sampled webs derived from any particular research group, we performed two jackknife tests of our results. In the first test, we removed one web from our dataset and re-fit our models, then repeated this process for all webs in the dataset. We then compared the estimates for each coefficient in each of our models in order to determine whether the omission of any web dramatically changed the resulting model and conclusions. In the second test, we removed groups of webs assembled by a given author (or authors, where two or more authors assembled identical sets of food webs) and again plotted the resulting collection of estimates for each coefficient. We did not plot the coefficients resulting from the removal of authors who compiled a single food web, as these were included in the first test. This allowed us to determine whether the inclusion or exclusion of the webs assembled by a particular researcher or group of researchers affected our results.

Results

None of our models were greatly affected by the removal of any single food web or by the removal of a set of webs compiled by a common author (or group of authors). Estimates of coefficients from all jackknifed datasets were extremely similar (Figs. S1,S2,S3,S4,S5,S6). We are therefore very confident that, while there are undoubtedly differences in the methods used to compile food webs, these differences do not explain the trends we report.

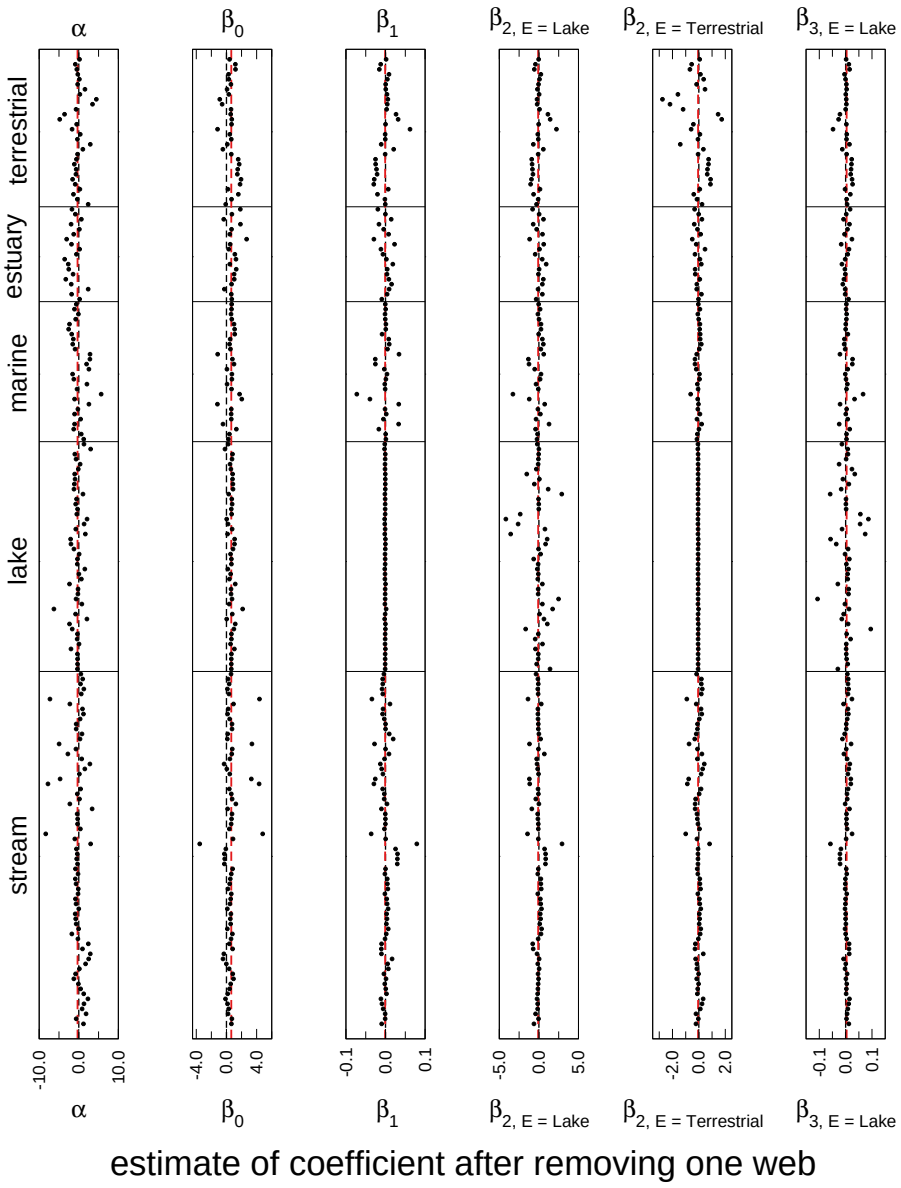

Figure S1: Estimates of the coefficients for scaling of link density with species richness in equation 5 (main text) do not vary significantly when jackknifing across food webs. We show the pseudovalues for each coefficient in the equation after the removal of each web in the dataset. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line.

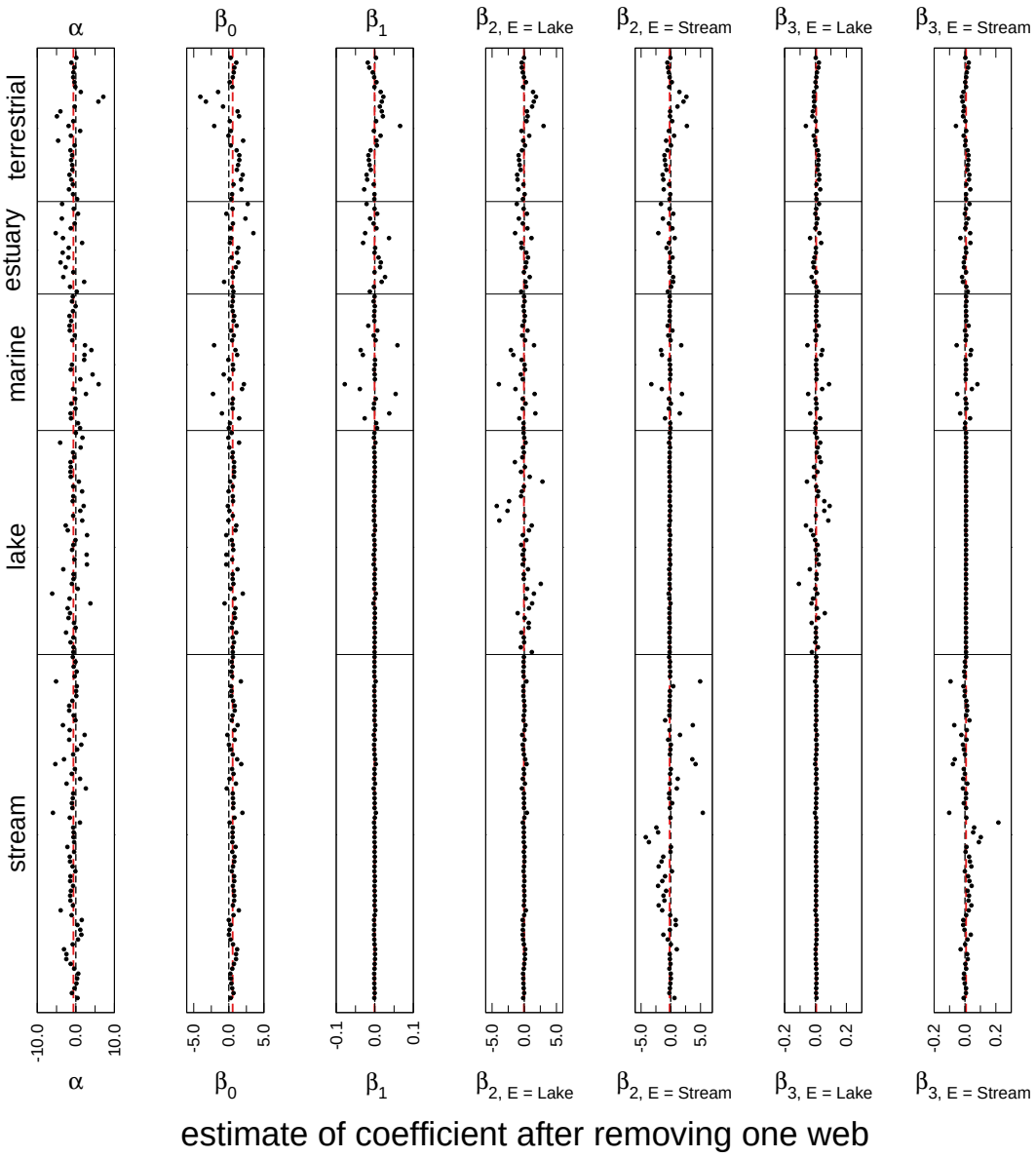

Figure S2: Estimates of the coefficients for scaling of generality with species richness (see equation 5, main text) do not vary significantly when jackknifing across food webs. We show the pseudovalues for each coefficient in the equation after the removal of each web in the dataset. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line.

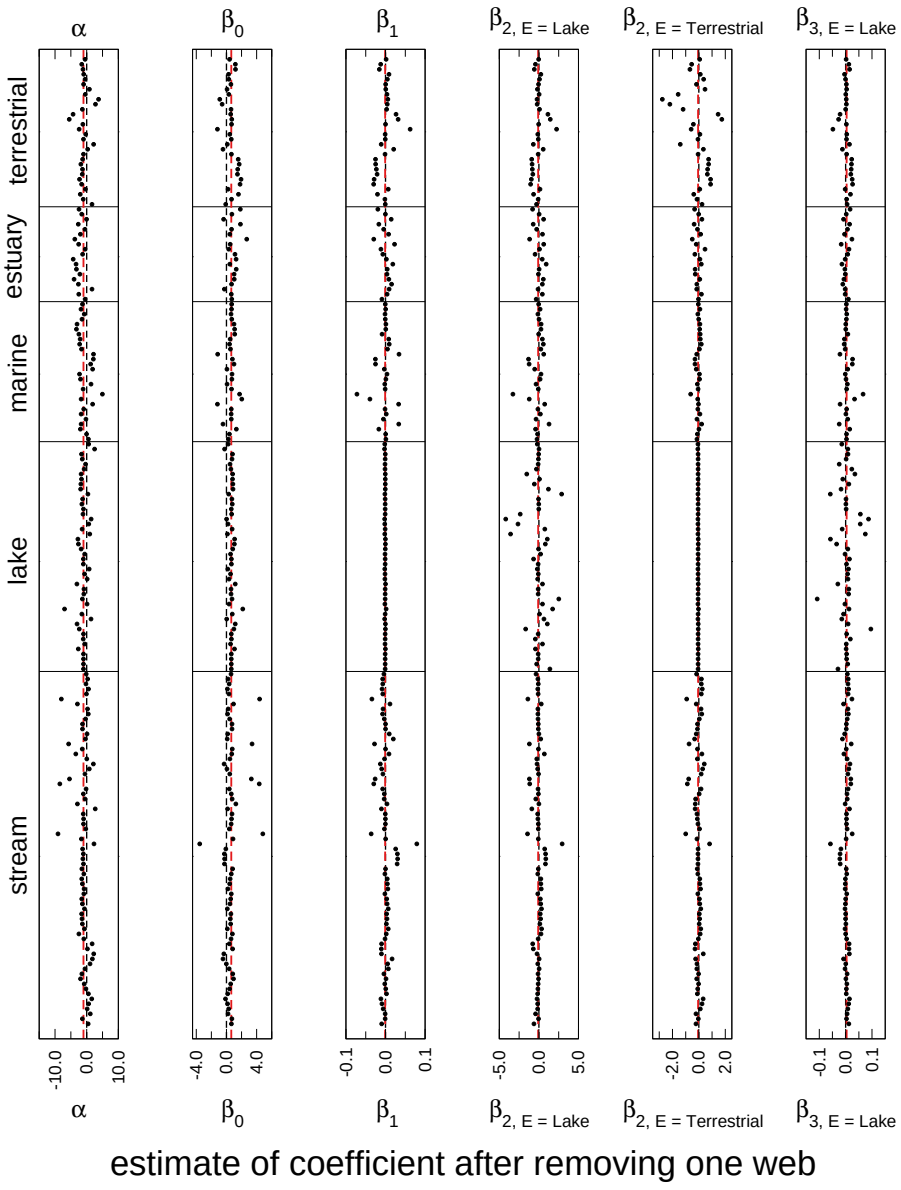

Figure S3: Estimates of the coefficients for scaling of vulnerability with species richness (see equation 5, main text) do not vary significantly when jackknifing across food webs. We show the pseudovalues for each coefficient in the equation after the removal of each web in the dataset. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line.

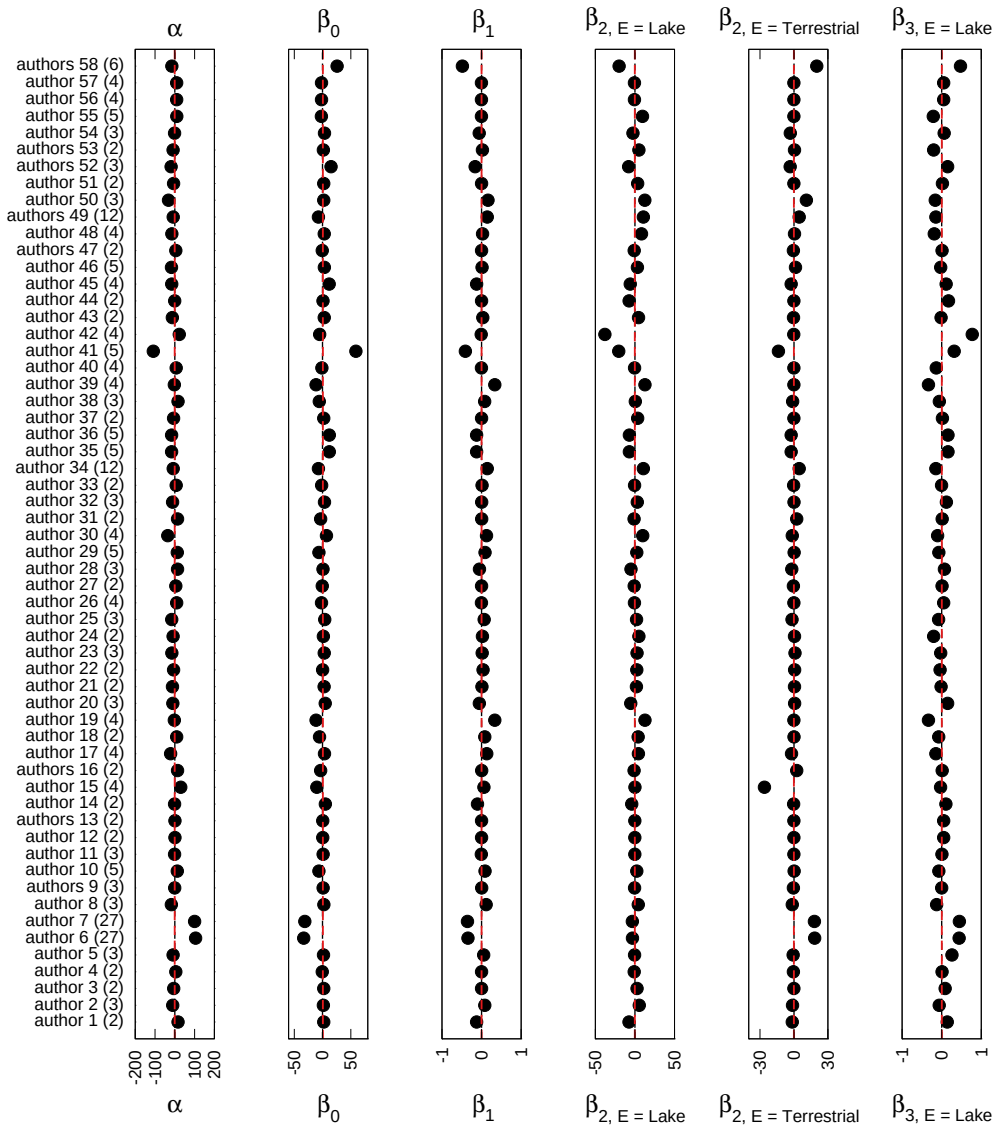

Figure S4: Estimates of the coefficients for scaling of link density with species richness in equation 5 (main text) do not vary significantly when jackknifing across authors of the published food webs used in this study. We show the pseudovalues for each coefficient in the equation after the removal of all webs compiled by each author (or set of authors where multiple authors compiled identical sets of webs) in the dataset. Authors who compiled only a single web were jackknifed as part of the by-web jackknife. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line, and the number of webs removed in each jackknife is given in parentheses.

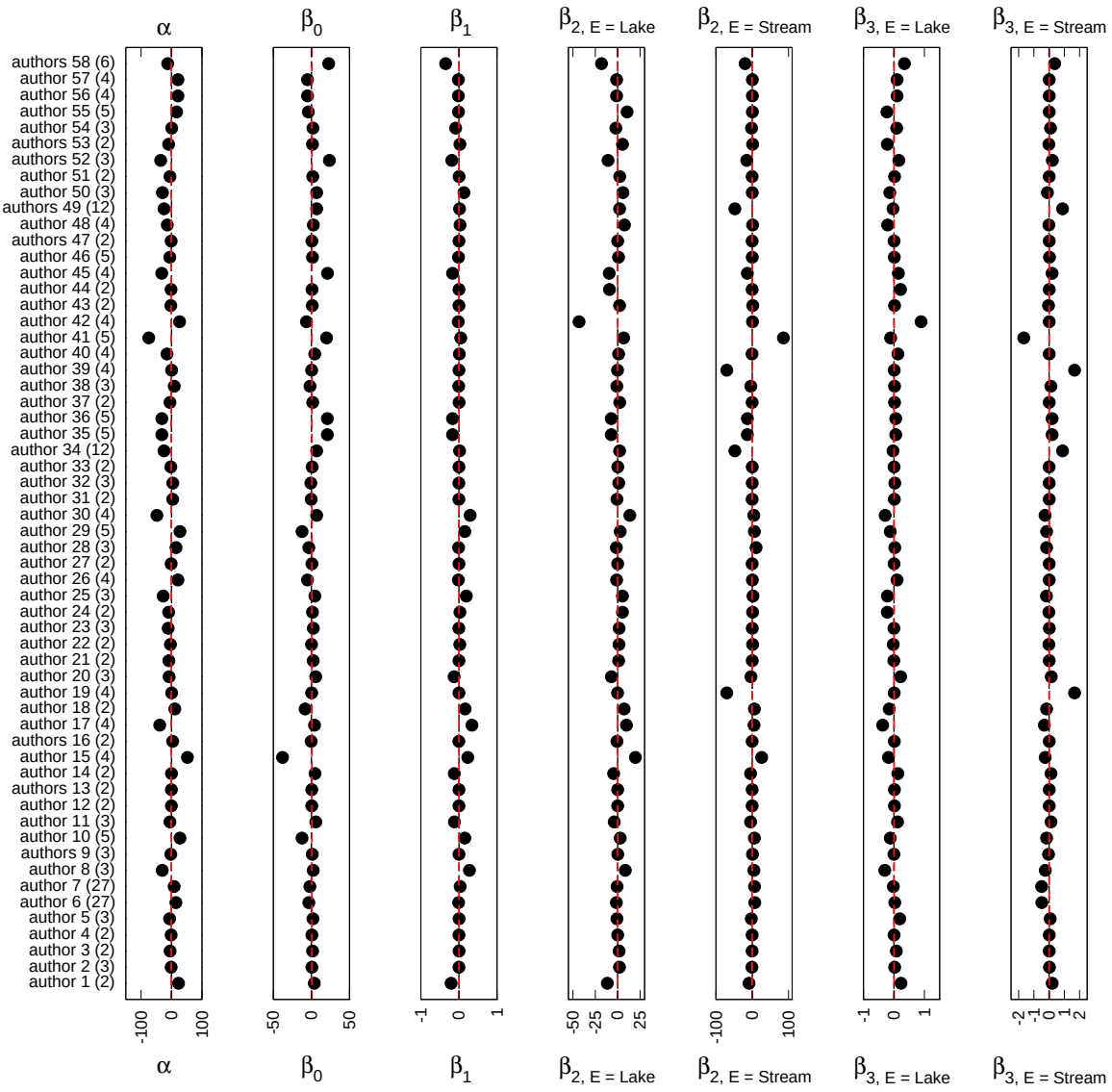

Figure S5: Estimates of the coefficients for scaling of generality with species richness (see equation 5, main text) do not vary significantly when jackknifing across authors of the published food webs used in this study. We show the pseudovalues for each coefficient in the equation after the removal of all webs compiled by each author (or set of authors where multiple authors compiled identical sets of webs) in the dataset. Authors who compiled only a single web were jackknifed as part of the by-web jackknife. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line, and the number of webs removed in each jackknife is given in parentheses.

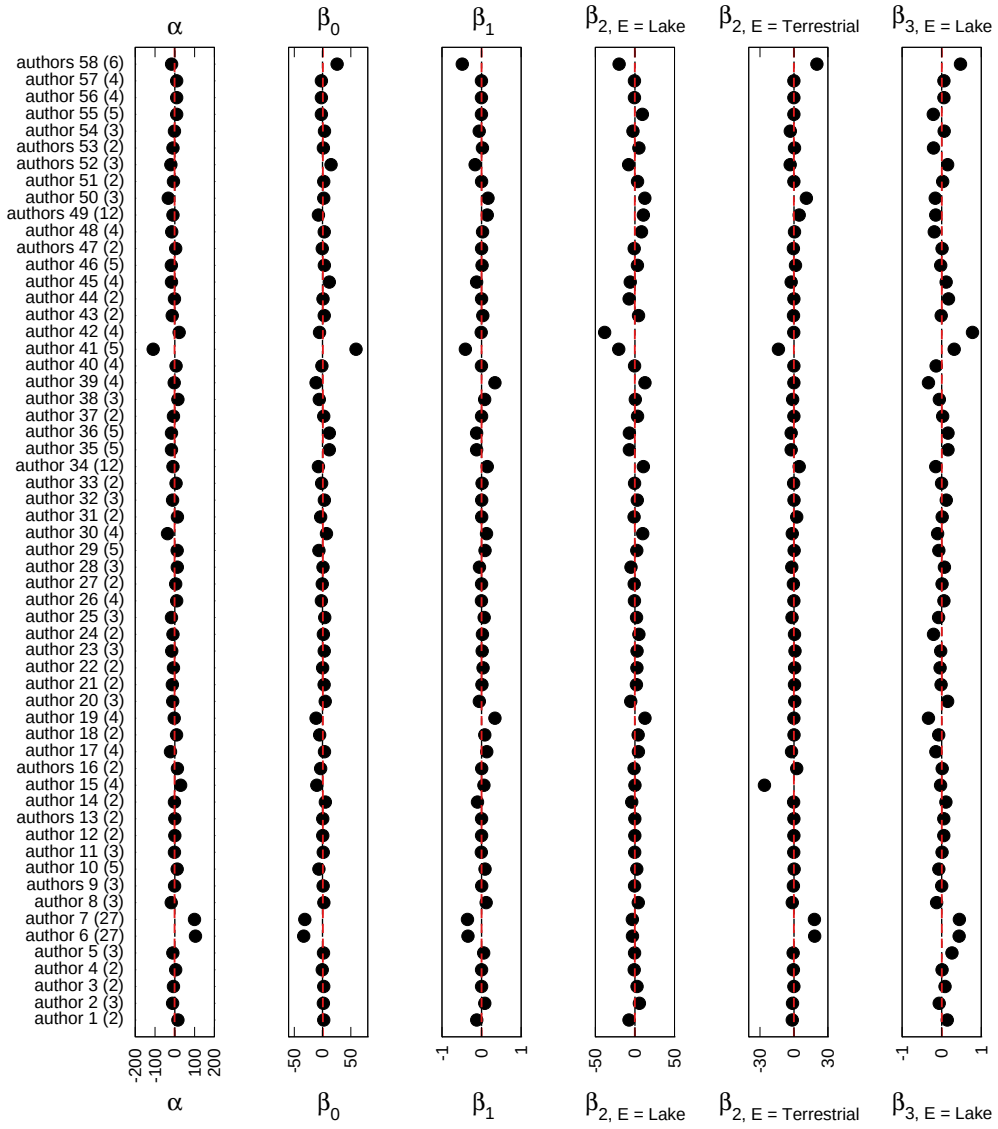

Figure S6: Estimates of the coefficients for the scaling of vulnerability with species richness (see equation 5, main text) do not vary significantly when jackknifing across authors of the published food webs used in this study. We show the pseudovalues for each coefficient in the equation after the removal of all webs compiled by each author (or set of authors where multiple authors compiled identical sets of webs) in the dataset. Authors who compiled only a single web were jackknifed as part of the by-web jackknife. The estimate for the full, non-jackknifed dataset is indicated by the red, dashed line, and the number of webs removed in each jackknife is given in parentheses.

Appendix S5: supplemental figure

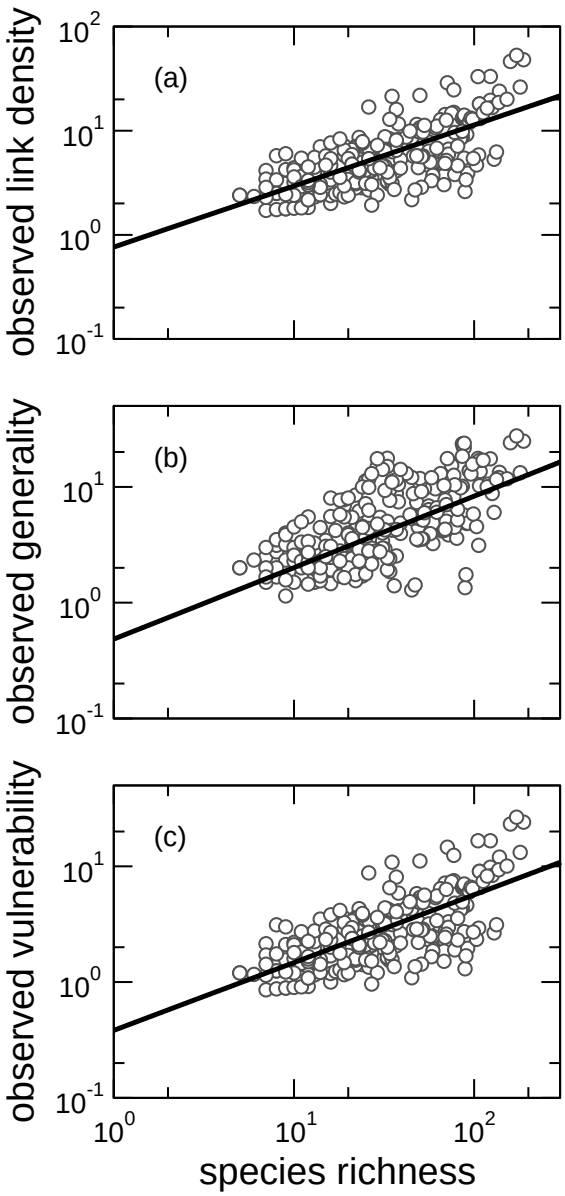

Figure S7: Scaling relationships for link density, generality, and vulnerability relative to species richness of a food web. For each relationship, we show observed values (white circles) and a simplified form of the scaling relationship described in equation 2 (*Main Text*), neglecting any effects of habitat type or latitude (black line, N=196 food webs). See Fig. 1 (*Main Text*) to compare with observed values correcting for the effects of habitat type and latitude.

References

[1] Caffrey L, Thompson R. 2015 *GlobalWeb: An online collection of food webs.* University of Canberra. http://globalwebdb.com

[2] Riede JO, Brose U, Ebenman B, Jacob U, Thompson R, Townsend CR, Jonsson T. 2011 Stepping in Elton's footprints: a general scaling model for body masses and trophic levels across ecosystems. *Ecol. Lett.* **14**, 169–178. (doi:10.1111/j.1461-0248.2010.01568.x)

[3] Dunne JA, *et al.* 2013 Parasites affect food web structure primarily through increased diversity and complexity. *PLoS Biology* **11**, e1001579. (doi:10.1371/journal.pbio.1001579)

[4] Harrison S. 1995 Effects of spatial structure on ecosystem functioning. In VH Heywood, RT Watson, eds., *Global Biodiversity Assessment, United Nations Environmental Programme*, chap. 5.3.2, Ch. 5.2.3. Cambridge: Cambridge University Press

[5] Havens K. 1992 Scale and structure in natural food webs. *Science* **257**, 1107–1109. (doi:10.1126/science.257.5073.1107)

[6] Woodward G, Papantoniou G, Lauridsen RB. 2008 Trophic trickles and cascades in a complex food web: impacts of a keystone predator on stream community structure and ecosystem processes. *Oikos* **117**, 683–692. (doi:10.1111/j.2008.0030-1299.16500.x)

[7] Townsend CR, Thompson RM, Mcintosh AR, Kilroy C, Edwards E, Scarsbrook MR. 1998 Disturbance, resource supply, and food-web architecture in streams. *Ecol. Lett.* **1**, 200–209. (doi:10.1046/j.1461-0248.1998.00039.x)

[8] Woodward G, Ebenman B, Emmerson M, Montoya JM, Olesen JM, Valido A, Warren PH. 2005 Body size in ecological networks. *Trends Ecol. Evol.* **20**, 402–409. (doi:10.1016/j.tree.2005.04.005)

[9] Lafferty KD, Dobson AP, Kuris AM. 2006 Parasites dominate food web links. *PNAS* **103**, 11211–11216. (doi:10.1073/pnas.0604755103)

[10] Polis GA. 1991 Complex Trophic Interactions in Deserts: An Empirical Critique of Food-Web Theory. *Am. Nat.* **138**, 123. (doi:10.1086/285208)

[11] Cattin Blandenier MF, 2004 *Food web ecology: models and application to conservation.* Ph.D. thesis, Universite de Neuchatel

[12] Martinez ND. 1991 Artifacts or attributes? Effects of resolution on the Little Rock Lake food web. *Ecol. Monogr.* **61**, 367–392. (doi:10.2307/2937047)

[13] Patrício J, Marques JaC. 2006 Mass balanced models of the food web in three areas along a gradient of eutrophication symptoms in the south arm of the Mondego estuary (Portugal). *Ecol. Model.* **197**, 21–34. (doi:10.1016/j.ecolmodel.2006.03.008)

[14] Rasmussen DI. 1941 Biotic Communities of Kaibab Plateau, Arizona. *Ecol. Monogr.* **11**, 230–275

[15] Opitz S. 1996 *Trophic Interactions in Caribbean Coral Reefs.* Manila: International Center for Living Aquatic Resources Management

[16] Brose U, *et al.* 2005 Body Sizes of Consumers and Their Resources. *Ecology* **86**, 2545–2545. (doi:10.1890/05-0379)

[17] Simberloff DS, Abele LG. 1976 Island biogeography theory and conservation practice. *Science* **191**, 285–286. (doi:10.1126/science.191.4224.285)

[18] Warren PH, Warren PH. 1989 Spatial and temporal variation in the structure of a freshwater food web. *Oikos* **55**, 299–311

[19] Christian RR, Luczkovich JJ. 1999 Organizing and understanding a winter's seagrass foodweb network through effective trophic levels. *Ecol. Model.* **117**, 99–124. (doi:10.1016/S0304-3800(99)00022-8)

[20] Twomey AC. 1945 The bird population of an elm-maple forest with special reference to aspection, territorialism, and coactions. *Ecol. Monogr.* **15**, 173–205

[21] Jonsson T, Cohen JE, Carpenter SR. 2005 Food webs, body size, and species abundance in ecological community description. In H Caswell, ed., *Advances in Ecological Research*, vol. 36, chap. 1, 1–84. Elsevier Ltd. (doi:10.1016/S0065-2504(05)36001-6)

[22] Huxham M, Beaney S, Raffaelli D. 1996 Do parasites reduce the chances of triangulation in a real food web? *Oikos* **76**, 284–300. (doi:10.2307/3546201)

[23] Hechinger RF, Lafferty KD, Dobson AP, Brown JH, Kuris AM. 2011 A common scaling rule for abundance, energetics, and production of parasitic and free-living species. *Science* **333**, 445–448. (doi:10.1126/science.1204337)

[24] Zander CD, Josten N, Detloff KC, Poulin R, McLaughlin JP, Thieltges DW. 2011 Food web including metazoan parasites for a brackish shallow water ecosystem in Germany and Denmark. *Ecology* **92**, 2007–2007. (doi:10.1890/11-0374.1)

[25] Mouritsen KN, Poulin R, McLaughlin JP, Thieltges DW. 2011 Food web including metazoan parasites for an intertidal ecosystem in New Zealand. *Ecology* **92**, 2006–2006. (doi:10.1890/11-0371.1)

[26] Thieltges DW, Reise K, Mouritsen KN, McLaughlin JP, Poulin R. 2011 Food web including metazoan parasites for a tidal basin in Germany and Denmark. *Ecology* **92**, 2005–2005. (doi:10.1890/11-0351.1)

[27] Qazim SZ. 1970 Some problems related to the food chain in a tropical estuary. In JH Steele, ed., *Marine Food Chains*, 45–51. Edinburgh: Oliver and Boyd

[28] Day JH. 1967 The biology of the Knysna estuary, South Africa. In GH Lauff, ed., *Estuaries*, 397–407. Washington: American Association for the Advancement of Science

[29] Woodwell GM. 1967 Toxic substances and ecological cycles. *Scientific American* **216**, 24–31. (doi:10.1038/scientificamerican0367-24)

[30] Johnston RF. 1956 Predation by short-eared owls on a salicornia salt marsh. *The Wilson Bulletin* **68**, 91–102. (doi:10.2307/4158481)

[31] Teal JM. 1962 Energy flow in the salt marsh ecosystem of Georgia. *Ecology* **43**, 614–624. (doi:10.2307/1933451)

[32] MacGinitie GE. 1935 Ecological aspects of a California marine estuary. *Am. Midland Nat.* **16**, 629–765

[33] Silvert W. 1979 *A Coastal Marine Ecosystem. Simulation and Analysis.*, vol. 36. Berlin: Springer-Verlag. (doi:10.1139/f79-087)

[34] Nixon S, Oviatt C. 1973 Ecology of a New England salt marsh. *Ecol. Monogr.* **43**, 463–498

[35] Kitching JA, Ebling FJ. 1967 Ecological Studies at Lough Ine. In JB Cragg, ed., *Advances in Ecological Research*, vol. 4, 197–291. London: Academic Press. (doi: 10.1016/S0065-2504(08)60322-0)

[36] Plaistow SJ, St Clair JJH, Grant J, Benton TG. 2007 How to put all your eggs in one basket: empirical patterns of offspring provisioning throughout a mother's lifetime. *Am. Nat.* **170**, 520–529. (doi:10.1086/521238)

[37] Walsh GE. 1963 An ecological study of a Hawaiian mangrove swamp. In GH Lauff, ed., *Estuaries*, 219. Washington: American Association for the Advancement of Science, Publication 83

[38] Copeland BJ, Tenore KR, Horton DB. 1974 Oligohaline regime. In HT Odum, BJ Copeland, EA McMahan, eds., *Coastal ecological systems of the United States*, 533. Washington: Conservation Foundation, National Oceanic and Atmospheric Administration

[39] Hiatt RW, Strasburg DW. 1960 Ecological relationships of the fish fauna on coral reefs of the Marshall Islands. *Ecol. Monogr.* **30**, 65. (doi:10.2307/1942181)

[40] Niering W, A. 1963 Terrestrial ecology of Kapingamarangi Atoll, Caroline Islands. *Ecol. Monogr.* **33**, 131–160

[41] Brooks JL, Deevey ES. 2009 New England. In DG Frey, ed., *Limnology in North America*, 117–162. Madison, WI: University of Wisconsin Press

[42] Knox GA. 1970 Antactic marine ecosystems. In MW Holdgate, ed., *Antar. Ecol.*, 69–96. New York: Academic Press

[43] Patten BC, Finn JT. 1979 Systems approach to continental shelf ecosystems. In E Halfon, ed., *Theoretical systems ecology*, 184–213. New York: Academic Press

[44] Summerhayes VS, Elton CS. 1923 Bear Island. *J. Ecol.* **11**, 216–233. (doi:10.2307/2255864)

[45] Bird RD. 1930 Biotic communities of the aspen parkland of central Canada. *Ecology* **11**, 356. (doi:10.2307/1930270)

[46] Varley GC, Watson A. 1970 The concept of energy flow applied to a woodland and community. In A Watson, ed., *Animal populations in relation to their food resources*, 389–401. Oxford: Blackwell Scientific

[47] Paviour-Smith K. 1956 The biotic community of a salt meadow in New Zealand. *Trans. R. Soc. New Zeal.* **83**, 525–554

[48] Dunbar MJ. 1953 Arctic and subarctic marine ecology: immediate problems. *Arctic* **6**, 75–90

[49] Mackintosh Na. 1964 A survey of Antarctic biology up to 1945. In R Carrick, M Holdgate, J Prevost, eds., *Biologie Antarctique*, 29–38. Paris: Hermann

[50] Petipa, T S and Mironov, G N and Pavlova, E V. 1970 The food web structure, utilization and transport of energy by trophic levels in the planktonic comunities. In JH Steele, ed., *Marine food chains*, 142–167. Edinburgh: Oliver and Boyd

[51] Fryer G. 1957 The trophic interrelationships and ecology of some littoral communities of Lake Nyasa With especial reference to the fishes, and a discussion of the evolution of a group of rock-frequenting Cichlidae. *Proc. Zool. Soc. London* **132**, 153–281

[52] Jones JRE. 1949 A Further Ecological Study of Calcareous Streams in the 'Black Mountain' District of South Wales. *J. Anim. Ecol.* **18**, 142–159. (doi:10.2307/1596)

[53] Minshall GW. 1967 Role of allochthonous detritus in the trophic structure of a woodland springbrook community. *Ecology* **48**, 139–149. (doi:10.2307/1933425)

[54] Clarke TA, Flechsig AO, Grigg RW. 1967 Ecological studies during Project Sealab II. *Science* **157**, 1381–1389. (doi:10.1126/science.157.3795.1381)

[55] Harrison AJL. 2013 The distribution of feeding habits among animals in a tropical rain forest. *J. Anim. Ecol.1* **31**, 53–63

[56] Parin N. 1968 *Ichthyofauna of the epipelagic zone.* Springfield, VA: Israel Program for Scientific Translations (available from the U.S. Department of Commerce Clearinghouse for Federal Scientific and Technical Information)

[57] Vinogradov ME, Shushkina EA. 1978 Some development patterns of plankton communities in the upwelling areas of the Pacific Ocean. *Mar. Biol.* **48**, 357–366. (doi:10.1007/BF00391640)

[58] Rosenthal RJ, Clarke WD, Dayton PK. 1974 Ecology and natural history of a stand of giant kelp, Macrocystis pyrifera, off Del Mar, California. *Fish. Bull.* **72**, 670–684

[59] Yáñez Arancibia A. 1978 *Taxonomía, ecología y estructura de las comunidades de peces en lagunas costeras con bocas efímeras del Pacífico de México.*, vol. 2. Ciudad Universitaria, Mexico, D.F.: Universidad Nacional Autonoma de Mexico, Centro de Ciencias del Mar y Limnologia, 1st edn.

[60] Tilly LJ. 1968 The structure and dynamics of Cone Spring. *Ecol. Monogr.* **38**, 169–197

[61] Patten BC, Egloff DA, Richardson TH, 38 coauthors. 1975 Total ecosystem model for a cove in Lake Texoma. In BC Patten, ed., *Systems Analysis and Simulation in Ecology, Vol. 3*, vol. III, 205–421. New York: Academic Press

[62] Harris LD, Bowman GB, Breymeyer aI, Van Dyne GM. 1980 Vertebrate predator subsystem. In AI Breymeyer, GM Van Dyne, eds., *Grasslands, system analysis and man: International Biological Programme Series, no. 19*, 591–607. Cambridge: Cambridge University Press

[63] Simenstad CA, Estes JA, Kenyon KW. 1978 Aleuts, sea otters, and alternate stable-state communities. *Science* **200**, 403–411. (doi:10.1126/science.200.4340.403)

[64] Nybakken J, Bertness M. 2005 *Marine biology, an ecological approach*. New York: Harper and Row

[65] Dexter RW. 1947 The marine communities of a tidal inlet at Cape Ann, Massachusetts: A study in bio-ecology. *Ecol. Monogr.* **17**, 261–294

[66] Paine RT. 1980 Linkage, interaction strength and community infrastructure. *J. Anim. Ecol.* **49**, 667–685. (doi:10.2307/4220)

[67] Milne H, Dunnet GM. 1972 Standing crop, productivity and trophic relations of the fauna of the Ythan estuary. In RSK Barnes, J Green, eds., *The estuarine environment*, 86–106. Edinburgh: Applied Science Publications

[68] Smirnov NN. 1961 Food cycles in sphagnous bogs. *Hydrobiologia* **17**, 175–182

[69] Summerhayes VS. 1928 North-East Land and Hinlopen Strait. *J. Ecol.* **16**, 201–212. (doi:10.2307/2255796)

[70] McCarthy FMG, Findlay DJ, Little ML. 2004 The micropaleontological character of anomalous calcareous sediments of late Pliocene through early Pleistocene age below the CCD in the northwestern North Pacific Ocean. *Palaeogeogr. Palaeoclim. Palaeoecol.* **215**, 1–15. (doi:10.1016/j.palaeo.2004.07.032)

[71] Cummins, KW, Coffman, WP, Roff P. 1996 Trophic relations in a small woodland stream.pdf. *Proc. Int. Assoc. Theor. App. Limn.* **16**, 627 – 638

[72] Tsuda M. 1972 Interim results of the Yoshino River productivity survey, especially on benthic animals. In Z Kajak, A Hillbricht-Ilkowska, eds., *Productivity problems of freshwaters*, 827–841. Warsaw: Polish Scientific

[73] Mathews C. 1993 Productivity and energy flows at all trophic levels in the River Thames, England: Mark 2. In Z Kajak, A Hillbricht-Ilkowska, eds., *Trophic models of aquatic ecosystems*, 161–171. Warsaw: Polish Scientific

[74] Carlson CA. 1968 Summer bottom fauna of the Mississippi. *Ecology* **49**, 162–169

[75] Morgan NC, McLusky DS. 1972 A summary of the Loch Leven IBP results in relation to lake management and future research. *Proc. R. Soc. Edinburgh B* **74**, 407–416

[76] Cohen JE, Briand F, Newman CM. 1990 *Community food webs: Data and theory.* Berlin: Springer-Verlag

[77] Kemp W, Smith W, McKellar H, Lehman M, Homer M, Young D, Odum H. 1977 Energy cost-benefit analysis applied to power plants near Crystal River, Florida. In CAS Hall, JW Day, Jr, eds., *Ecosystem Modeling in Theory and Practice: An introduction with case histories*, 684. Boulder: University Press of Colorado

[78] Sorokin YI. 1972 Biological productivity of the Rybinsk reservoir. In Z Kajak, A Hillbricht-Ilkowska, eds., *Productivity problems of freshwaters*, 493–503. Warsaw: Polish Scientific

[79] Baril A, 1983 *The effect of the water mite, Piona constricta, on planktonic community structure.* Ph.D. thesis, University of Ottawa

[80] Schiemer F. 1979 The benthic community of the open lake. In H Loffler, ed., *Monograohiae Biologicae*, vol. 1979; 37, 337–384. The Hague: Dr. W. Junk Publishers

[81] Brown AC. 1964 Food relations on the intertidal sandy beaches of Cape Peninsula. *South Afr. J. Sci.* **60**, 35–41

[82] Pechlaner R, Bretschko G, Gollmann P, Pfeifer HTMWHP. 1970 The production processes in two high mountain lakes (Vorderer und Hinterer Finstertaler See, Kühtai, Austria). In Z Kajak, A Hillbricht-Ilkowska, eds., *IBP-UNESCO Symposium on Productivity Problems of Freshwaters*, 239–269. Warsaw: Polish Scientific

[83] Burgis MJ, Dunn IG, Ganf GG, McGowan LM, Viner AB. 1972 Lake George: Uganda: Studies on a tropical freshwater ecosystem. In Z Kajak, A Hillbricht-Ilkowska, eds., *Productivity problems of freshwaters*, 918. Warsaw: Polish Scientific

[84] Sarvala J. 1974 Paarjarven energiatalous. *Luonnon Tutkija* **78**, 181–190

[85] Hatanaka MA. 1977 Sendai Bay. In K Hogetsu, M Horanaka, T Hatanaka, T Kawamura, eds., *Productivity of biocenoses in coastal regions of Japan*, 173–221. Tokyo: Japanese Committee for the International Biological Program Synthesis

[86] Wilbur HM. 1972 Competition, predation, and the structure of the Ambystoma-Rana sylvatica community. *Ecology* **53**, 3–21. (doi:10.2307/1935707)

[87] Mizuno N, Furtado JI. 1982 Ecological notes on fishes. In JI Furtado, S Mori, eds., *The Ecology of a Tropical Freshwater Swamp, the Tasek Bera*, vol. 42, 321–349. The Hague: Dr. W. Junk Publishers

[88] Hogetsu K. 1979 Biological productivity of some coastal regions of Japan. In M Dunbar, ed., *Marine Production Mechanisms*, 71–87. Cambridge: Cambridge University Press

[89] Chang NB, Mount TD, Schuler RE. 1993 Econometric analysis of the construction and operating costs of municipal solid waste incinerators. *Env. Soft.* **8**, 173–186. (doi:10.1016/0266-9838(93)90013-8)

[90] Kuusela K. 1980 Early summer ecology and community structure of the macrozoobenthos on stones in the Javajankoski rapids on the River Lestijoki, Finland. *Acta Universitatis Ouluensis Series Biologica* **87**, 1–130

[91] Hartley P. 1948 Food and feeding relationships in a community of fresh-water fishes. *J. Anim. Ecol.* **17**, 1–14. (doi:10.2307/1604)

[92] Swan LW. 1961 The Ecology of the High Himalayas. *Sci. Am.* **205**, 68–78. (doi:10.1038/scientificamerican1061-68)

[93] Johnson RE. 1966 Alpine birds of the Little Belt Mountains, Montana. *Wilson Bull.* **78**, 225–227

[94] Brown J. 1971 The structure and function of the tundra ecosystem. Final summer activity report. *US Tundra Biome Program Report* **6**, 26

[95] Brown J. 1975 *Biological papers of the ecological investigations of the tundra biome in the Prudhoe Bay Region, Alaska:*. Anchorage: University of Alaska

[96] Holm E, Scholtz CH. 1980 Structure and pattern of the Namib Desert dune ecosystem at Gobabeb. *Madoqua* **1**, 3–39

[97] Howes PG. 1954 *The giant cactus forest and its world: a brief biology of the cactus forest of our American Southwest*. New York: Duell, Sloan, and Pearce

[98] Shushkina EA, Vinogradov ME. 1979 Trophic relationships in communities and the functioning of marine ecosystems: II Some results of investigations on the pelagic ecosystem in tropical regions of the ocean. In MJ Dunbar, ed., *Marine Production Mechanisms*, chap. 12, 251–268. Cambridge: Cambridge University Press

[99] Petipa TS. 1979 Trophic relationships in communities and the functioning of marine ecosystems: I. Studies in trophic relationships in pelagic communities of the southern seas of the USSR and in the tropical Pacific. In M Dunbar, ed., *Marine Production Mechanisms1*, 233–250. Cambridge: Cambridge University Press

[100] Edwards DC, Conover D, Sutter III F. 1982 Mobile predators and the structure of marine intertidal communities. *Ecology* **63**, 1175–1180

[101] Glynn PW. 1965 Community composition, structure, and interrelationships in the marine intertidal Endocladia muricata - Balanus glandula association in Monterey Bay, California. *Beaufortia* **12**, 1–198

[102] Peterson CH. 1979 The importance of predation and competition in organizing the intertidal epifauna communities of Barnegat Inlet, New Jersey. *Oecologia* **39**, 1–24

[103] Hewatt WG. 1937 Ecological studies on selected marine intertidal communities of Monterey Bay, California. *Amer. Midl. Nat.* **18**, 161–206

[104] Castilla J. 1981 Perspectivas de investigacion en estructura y dinamica de comunidades intermareales rocosas de Chile central. II. Depredadores de alto nivel trofico. *Medio Ambiente* **5**, 190–215

[105] Marshall BE. 1982 The fish of Lake McIlwaine. In JA Thornton, ed., *Lake McIlwaine: the eutrophication and recovery of a tropical man-made lake. Monographia Biologicae, Vol. 49*, 156–188. The Hague: D. W. Junk Publishers

[106] Koepcke HW, Koepcke M. 1952 Sobre el proceso de transformación de la materia orgánica en las playas arenosas marinas del Perú. *Publicaciones del Museo de Historia Natural 'Javier Prado', Serie A* **8**, 1–25

[107] Hurlbert SH, Mulla MS, Willson HR. 1972 Effects of an organophosphorus insecticide on the growth and cellulolytic activity of fungi. *Ecol. Monogr.* **42**, 269–299. (doi:10.1016/0964-8305(93)90025-W)

[108] Zaret TM, Paine RT. 1973 Species introduction in a tropical lake: a newly introduced piscivore can produce population changes in a wide range of trophic levels. *Science* **182**, 449–455. (doi:10.1126/science.182.4111.449)

[109] Bindloss ME, Holden AV, Bailey-Watts AE, Smith IR. 1972 Phytoplankton production, chemical and physical conditions in Loch Leven. In Z Kajak, A Hillbricht-Ilkowska, eds., *Productivity problems of freshwaters*, 918. Warsaw: Polish Scientific

[110] Mann KH. 1972 Case history: The River Thames. In RT Oglesby, CA Carlson, JA McCann, eds., *River Ecology and Man*, 215–232. New York: Academic Press

[111] Moriarty DJW, Darlington JPEC, Dunn IG, Moriarty CM, Tevlin MP. 1973 Feeding

359 and grazing in Lake George, Uganda. *Proc. R. Soc. B* **184**, 299–319. (doi:10.1098/
360 rspb.1973.0050)

361 [112] van Es FB. 1977 A preliminary carbon budget for a part of the Ems estuary:
362 The Dollard. *Helgolander Wissenschaftliche Meeresuntersuchungen* **30**, 283–294.
363 (doi:10.1007/BF02207842)

364 [113] Harris LD, Paur L, 1972 A quantitative food web analysis of a shortgrass community.
365 Tech. rep., Colorado State University, Fort Collins, Colorado

366 [114] Collins NC, Mitchell R, Wiegert RG. 1976 Functional analysis of a theral spring
367 ecosystem, with an evaluation of the role of consumers. *Ecology* **57**, 1221–1232

368 [115] Landry MR. 1977 A review of important concepts in the trophic organization of
369 pelagic ecosystems. *Helgolander Wissenschaftliche Meeresuntersuchungen* **30**, 8–17.
370 (doi:10.1007/BF02207821)

371 [116] Larsson P, Brittain JE, Lien L, Lillehammer A. 1978 The lake ecosystem of Ovre
372 Heimdalsvatn. *Holarctic Ecol.* **1**, 304–320

373 [117] Beaver RA. 1979 Fauna and foodwebs of pitcher plants in west Malaysia. *Malayan*
374 *Nat. J.* **33**, 1–10

375 [118] Odum WE, Heald EJ. 1975 The detritus-based food web of an estuarine mangrove
376 community. In LE Cronin, ed., *Estuarine Research*, 265–286. New York: Academic
377 Press

378 [119] Beaver RA. 1985 Geographical variation in food web structure in Nepenthes pitcher
379 plants. *Ecol. Entom.* **10**, 241–248. (doi:10.1111/j.1365-2311.1985.tb00720.x)

[120] Bradshaw WE. 1983 Interaction between the mosquito Wyeomyia smithii, the midge metriocnemus knabi, and their carnivorous host Sarracenia purpurea. In JH Frank, LP Lounibos, eds., *Phytotelmata: Terrestrial plants as hosts for aquatic insect communities*, 161–189. Medford, NJ: Plexus Publishsing

[121] Corker B, 1984 *The ecology of the pitcher plant Nepethes mirabilis and its associated fauna in Hong Kong.* Ph.D. thesis, University of Hong Kong

[122] Kitching RL. 1983 Community structure in waterfilled treeholes in Europe and Australia: comparisons and speculations. In JH Frank, LP Lounibos, eds., *Phytotelmata: terrestrial plants as hosts for aquatic insect communities.*, 205–222. Medford, NJ: Plexus Publishsing

[123] Seifert RP, Seifert FH. 2008 A Heliconia insect community in a Venezuelan cloud forest. *Ecology* **60**, 462–467

[124] Seifert RP, Florence Hammett Seifert. 2000 A community matrix analysis of Heliconia insect communities. *Am. Nat.* **110**, 36

[125] Snow WE. 1958 Stratification of arthropods in a wet stump cavity. *Ecology* **39**, 83–88

[126] Rejmánek M, Starý P. 1979 Connectance in real biotic communities and critical values for stability of model ecosystems. *Nature* **280**, 311–313. (doi:10.1038/280311a0)

[127] Force DC. 1974 Ecology of insect host-parasitoid communities. *Science* **184**, 624–632. (doi:10.1126/science.184.4137.624)

[128] Hopkins MJG. 1984 The parasite complex associated with stem-boring Apion (Col.,

401 Curculionidae) feeding on Rumex species (Polygonaceae). *Entom. Mon. Mag.* **120**,
402 187–192

403 [129] Richards OW. 1926 Studies on the ecology of English heaths: III. Animal commu-
404 nities of the felling and burn successions at Oxshott Heath, Surrey. *J. Ecol.* **14**,
405 244–281. (doi:10.2307/2256021)

406 [130] Whittaker PL. 2010 Southwestern Association of Naturalists. *The Southwestern*
407 *Naturalist* **55**, 310–310. (doi:10.1894/0038-4909-55.2.310)

408 [131] Mayse MA, Price PW. 1978 Seasonal development of soybean arthropod communi-
409 ties in east central Illinois. *Agro-Ecosystems* **4**, 387–405. (doi:10.1016/0304-3746(78)
410 90004-5)

411 [132] Askew RR. 1975 The organisation of chalcid-dominated parasitoid communities cen-
412 tred upon endophytic hosts. In PW Price, ed., *Evolutionary Strategies of Parasitic*
413 *Insects and Mites*, 130–153. New York: Springer US

414 [133] Askew RR. 1961 On the biology of the inhabitants of oak galls of Cynipidae (Hy-
415 menoptera) in Britain. *Trans. Soc. Brit. Entom.* **14**, 237–268

416 [134] Hawkins Ba, Goeden RD. 1984 Organization of a parasitoid community associated
417 with a complex of galls on Atriplex spp. in southern California. *Ecol. Entom.* **9**,
418 271–292. (doi:10.1111/j.1365-2311.1984.tb00851.x)

419 [135] Robinson I. 1953 On the fauna of a brown flux of an elm tree, Ulmus procera Salisb.
420 *J. Anim. Ecol.* **22**, 149–153

421 [136] Savely, Jr HE. 1939 Ecological relations of certain animals in dead pine and oak
422 logs. *Ecol. Monogr.* **9**, 321–385. (doi:10.2307/1943233)

[137] Beaver RA. 1972 Ecological studies on Diptera breeding in dead snails. 1. Biology of the species found in Cepaea nemoralis (L.). *Entomologist* **105**, 41–52

[138] Chapman RF, Sankey JHP. 1955 The larger invertebrate fauna of three rabbit carcasses. *J. Anim. Ecol.* **24**, 395–402

[139] Cornabyl BW. 1974 No carrion reduction by animals in contrasting tropical habitats. *Biotropica* **6**, 51–63

[140] Jirón LF, Cartín VM. 1981 Insect succession in the decomposition of a mammal in Costa Rica. *J. New York Entom. Soc.* **89**, 158–165

[141] McKinnerney M. 1978 Carrion communities in the northern Chihuahuan desert. *Southwestern Nat.* **23**, 563–576

[142] Schoenly W K, Reid, Schoenly K, Reid. 1983 Community structure of carrion arthropods in the Chichuahuan desert. *J. Arid Env.* **6**, 253–263

[143] Society E, Monographs E. 1943 Cattle droppings as ecological units. *Ecol. Monogr.* **13**, 275–298

[144] Schoenly K. 1983 Arthropods associated with bovine and equine dung in an ungrazed Chihuahuan desert (USA) ecosystem. *Ann. Entomol. Soc. Am.* **76**, 790–796

[145] Valiela I. 1969 An experimental study of the mortality factors of larval Musca autumnalis DeGeer. *Ecol. Monogr.* **39**, 199–225

[146] Valiela I. 1974 Composition, food webs and population limitation in dung arthropod communities during invasion and succession. *Am. Mid. Nat.* **92**, 370–385

[147] Allan JD. 2009 The effects of reduction in trout density on the invertebrate community of a mountain stream. *Ecology* **63**, 1444–1455

[148] Hildrew AG, Townsend CR, Hasham A. 1985 The predatory Chironomidae of an iron-rich stream: feeding ecology and food web structure. *Ecol. Entom.* **10**, 403–413. (doi:10.1111/j.1365-2311.1985.tb00738.x)

[149] Koslucher DG, Minshall GW. 1973 Food habits of some benthic invertebrates in a northern cool-desert stream (Deep Creek, Curlew Valley, Idaho-Utah). *Trans. Am. Microsc. Soc.* **92**, 441–452. (doi:10.2307/3225248)

[150] Minckley W. 1963 *The ecology of a spring stream: Doe Run, Meade County, Kentucky.* 11. Washington: Wildlife Monographs, The Wildlife Society

[151] Percival AE, Whitehead H. 1929 A quantitative study of the fauna of some types of stream-bed. *J. Ecol.* **17**, 282–314. (doi:10.2307/2256044)

[152] Ricker WE. 1934 An ecological classification of certain Ontario streams. *Pub. Ontario Fish. Res. Lab.* **49**, 1–114

[153] Badcock RM. 1949 Studies in stream life in tributaries of the Welsh Dee. *J. Anim. Ecol.* **18**, 193–208

[154] Thompson ARM, Townsend CR. 2010 Impacts on stream food webs of native and exotic forest: an intercontinental comparison. *Ecology* **84**, 145–161

[155] Thompson RM, Townsend CR. 2004 Landuse influences on new zealand stream communities: effects on species composition, functional organisation, and foodweb structure. *New Zeal. J. Mar. Fresh. Res.* **38**, 595–608. (doi:10.1080/00288330.2004.9517265)

[156] Thompson RM, Mouritsen KN, Poulin R. 2005 Importance of parasites and their life cycle characteristics in determining the structure of a large marine food web. *J. Anim. Ecol.* **74**, 77–85. (doi:10.1111/j.1365-2656.2004.00899.x)

[157] Angelini R, Agostinho AA. 2005 Food web model of the Upper Paraná River Floodplain: Description and aggregation effects. *Ecol. Model.* **181**, 109–121. (doi:10.1016/j.ecolmodel.2004.06.025)

[158] Angelini R, Agostinho AA, Gomes LC. 2006 Modeling energy flow in a large Neotropical reservoir: a tool do evaluate fishing and stability. *Neotrop. Ichthy.* **4**, 253–260. (doi:10.1590/S1679-62252006000200011)

[159] Angelini R, Aloísio GR, Carvalho AR. 2011 Mixed food web control and stability in a Cerrado river (Brazil). *Pan-Am. J. Aquat. Sci.* **5**, 421–431

[160] Angelini R, Vaz-Velho F. 2010 Ecosystem structure and trophic analysis of Angolan fishery landings. *Scientia Marina* **75**, 309–319. (doi:10.3989/scimar.2011.75n2309)

[161] Angelini R, de Morais RJ, Catella AC, Resende EK, Libralato S. 2013 Aquatic food webs of the oxbow lakes in the Pantanal: a new site for fisheries guaranteed by alternated control? *Ecol. Model.* **253**, 82–96. (doi:10.1016/j.ecolmodel.2013.01.001)

[162] Baeta A, Niquil N, Marques JaC, Patrício J. 2011 Modelling the effects of eutrophication, mitigation measures and an extreme flood event on estuarine benthic food webs. *Ecol. Model.* **222**, 1209–1221. (doi:10.1016/j.ecolmodel.2010.12.010)

[163] Schneider DW. 2013 Predation and food web structure along a habitat duration gradient. *Oecologia* **110**, 567–575

[164] Stagliano DM, Whiles MR. 2014 Macroinvertebrate production and trophic structure in a tallgrass prairie headwater stream. *J. North Am. Benth. Soc.* **21**, 97–113

[165] Lin HJ, Dai XX, Shao KT, Su HM, Lo WT, Hsieh HL, Fang LS, Hung JJ. 2006 Trophic structure and functioning in a eutrophic and poorly flushed lagoon in southwestern Taiwan. *Mar. Env. Res.* **62**, 61–82. (doi:10.1016/j.marenvres.2006.03.003)

[166] Cornejo-Donoso J, Antezana T. 2008 Preliminary trophic model of the Antarctic peninsula ecosystem (sub-area CCAMLR 48.1). *Ecol. Model.* **218**, 1–17. (doi:10.1016/j.ecolmodel.2008.06.011)

[167] Zetina-Rejón MJ, Arreguín-Sánchez F, Chávez EA. 2003 Trophic structure and flows of energy in the Huizache-Caimanero lagoon complex on the Pacific coast of Mexico. *Estuar. Coast. Shelf Sci.* **57**, 803–815. (doi:10.1016/S0272-7714(02)00410-9)

[168] Cruz-Escalona VH, Arreguín-Sánchez F, Zetina-Rejón M. 2007 Analysis of the ecosystem structure of Laguna Alvarado, western Gulf of Mexico, by means of a mass balance model. *Estuar. Coast. Shelf Sci.* **72**, 155–167. (doi:10.1016/j.ecss.2006.10.013)

[169] Liu QG, Chen Y, Li JL, Chen LQ. 2007 The food web structure and ecosystem properties of a filter-feeding carps dominated deep reservoir ecosystem. *Ecol. Model.* **203**, 279–289. (doi:10.1016/j.ecolmodel.2006.11.028)

[170] Filgueira R, Castro BG. 2011 Study of the trophic web of San Simón Bay (Ría de Vigo) by using stable isotopes. *Continental Shelf Research* **31**, 476–487. (doi:10.1016/j.csr.2010.10.010)

[171] Amundsen PA, Lafferty KD, Knudsen R, Primicerio R, Kristoffersen R, Klemetsen

A, Kuris AM. 2013 New parasites and predators follow the introduction of two fish species to a subarctic lake: implications for food-web structure and functioning. *Oecologia* **171**, 993–1002. (doi:10.1007/s00442-012-2461-2)

[172] Hampton SE, Fradkin SC, Leavitt PR, Rosenberger EE. 2011 Disproportionate importance of nearshore habitat for the food web of a deep oligotrophic lake. *Mar. Fresh. Res.* **62**, 350–358. (doi:10.1071/MF10229)

[173] Parker SM, Huryn AD. 2006 Food web structure and function in two arctic streams with contrasting disturbance regimes. *Fresh. Biol.* **51**, 1249–1263. (doi:10.1111/j.1365-2427.2006.01567.x)

[174] Massana R, García-Cantizano J, Pedrós-Alió C. 1996 Components, structure and fluxes of the microbial food web in a small, stratified lake. *Aquat. Micro. Ecol.* **11**, 279–288. (doi:10.3354/ame011279)

[175] Stewart TJ, Sprules WG. 2011 Carbon-based balanced trophic structure and flows in the offshore Lake Ontario food web before (1987-1991) and after (2001-2005) invasion-induced ecosystem change. *Ecol. Model.* **222**, 692–708. (doi:10.1016/j.ecolmodel.2010.10.024)

[176] Monographs SE, Feb N, Tavares-cromar AF, Williams DD. 2012 The importance of temporal resolution in food web analysis: evidence from a detritus-based stream. *Ecol. Monogr.* **66**, 91–113

[177] Fetahi T, Schagerl M, Mengistou S, Libralato S. 2011 Food web structure and trophic interactions of the tropical highland lake Hayq, Ethiopia. *Ecol. Model.* **222**, 804–813. (doi:10.1016/j.ecolmodel.2010.09.038)

[178] Brodeur RD, Pearcy WG. 1992 Effects of environmental variability on trophic interactions and food web structure in a pelagic upwelling ecosystem. *Mar. Ecol. Prog. Ser.* **84**, 101–119. (doi:10.3354/meps084101)

[179] Gaedke U, Straile D. 1994 Seasonal changes of trophic transfer efficiencies in a plankton food web derived from biomass size distributions and network analysis. *Ecol. Model.* **75-76**, 435–445. (doi:10.1016/0304-3800(94)90038-8)

[180] Preston DL, Orlofske SA, McLaughlin JP, Johnson PTJ. 2012 Food web including infectious agents for a California freshwater pond. *Ecology* **93**, 1760–1760. (doi: 10.1890/11-2194.1)

[181] Ratsirarson J, John A Silander J. 1996 Structure and dynamics in Nepenthes madagascariensis pitcher plant micro-communities. *Biotropica* **28**, 218–227. (doi: 10.2307/2389076)

[182] Warren PH, Warren PH. 1989 Spatial and temporal variation in the structure of a freshwater food web. *Oikos* **55**, 299–311

[183] Gontikaki E, van Oevelen D, Soetaert K, Witte U. 2011 Food web flows through a sub-arctic deep-sea benthic community. *Prog. Oceanogr.* **91**, 245–259. (doi:10. 1016/j.pocean.2010.12.014)

[184] Feroz Khan M, Panikkar P. 2009 Assessment of impacts of invasive fishes on the food web structure and ecosystem properties of a tropical reservoir in India. *Ecol. Model.* **220**, 2281–2290. (doi:10.1016/j.ecolmodel.2009.05.020)

[185] Memmott J, Martinez ND, Cohen JE. 2000 Predators, parasitoids and pathogens:

551 species richness, trophic generality and body sizes in a natural food web. *J. Anim.*
552 *Ecol.* **69**, 1–15

553 [186] Kaiser-Bunbury CN, Memmott J, Müller CB. 2009 Community structure of pol-
554 lination webs of Mauritian heathland habitats. *Persp. Plant Ecol. Evol. Sys.* **11**,
555 241–254. (doi:10.1016/j.ppees.2009.04.001)

556 [187] Kaiser-Bunbury CN, Valentin T, Mougal J, Matatiken D, Ghazoul J. 2011 The
557 tolerance of island plant-pollinator networks to alien plants. *J. Ecol.* **99**, 202–213.
558 (doi:10.1111/j.1365-2745.2010.01732.x)

559 [188] Ruzicka JJ, Brodeur RD, Emmett RL, Steele JH, Zamon JE, Morgan CA, Thomas
560 AC, Wainwright TC. 2012 Interannual variability in the Northern California Current
561 food web structure: changes in energy flow pathways and the role of forage fish,
562 euphausiids, and jellyfish. *Prog. Oceanogr.* **102**, 19–41. (doi:10.1016/j.pocean.2012.
563 02.002)

564 [189] Lewis OT, Memmott J, Lasalle J, Lyal CHC, Whitefoord C, Godfray HCJ. 2002
565 Structure of a diverse tropical forest insect-parasitoid community. *J. Anim. Ecol.*
566 **71**, 855–873. (doi:10.1046/j.1365-2656.2002.00651.x)

567 [190] Kelleway J, Mazumder D, Wilson GG, Saintilan N, Knowles L, Iles J, Kobayashi T.
568 2010 Trophic structure of benthic resources and consumers varies across a regulated
569 floodplain wetland. *Austr. J. Mar. Fresh. Res.* **61**, 430–440

570 [191] Huang Y, Yan Y, Li X. 2008 Food web structure of benthic macroinvertebrates in
571 a second order stream of the Hanjiang River Basin in Middle China. *J. Fresh. Ecol.*
572 **23**, 421–427. (doi:10.1080/02705060.2008.9664219)

[192] Link J. 2002 Does food web theory work for marine ecosystems? *Mar. Ecol. Prog. Ser.* **230**, 1–9. (doi:10.3354/meps230001)

[193] Alcorlo P, Baltanás A, Montes C. 2001 Food-web structure in two shallow salt lakes in Los Monegros (NE Spain): Energetic vs dynamic constraints. *Hydrobiologia* **466**, 307–316. (doi:10.1023/A:1014594408119)

[194] Torres MA, Coll M, Heymans JJ, Christensen V, Sobrino I. 2013 Food-web structure of and fishing impacts on the Gulf of Cadiz ecosystem (South-western Spain). *Ecol. Model.* **265**, 26–44. (doi:10.1016/j.ecolmodel.2013.05.019)

[195] Bulman C, Althaus F, He X, Bax NJ, Williams A. 2001 Diets and trophic guilds of demersal fishes of the south-eastern Australian shelf. *Mar. Fresh. Res.* **52**, 537–548. (doi:10.1071/MF99152)

[196] Smith WO, Ainley DG, Cattaneo-Vietti R. 2007 Trophic interactions within the Ross Sea continental shelf ecosystem. *Phil. Trans. R. Soc. B* **362**, 95–111. (doi: 10.1098/rstb.2006.1956)

[197] Lancraft TM, Hopkins TL, Torres JJ, Donnelly J. 1991 Oceanic micronektonic/macrozooplanktonic community structure and feeding in ice covered Antarctic waters during the winter (AMERIEZ 1988). *Polar Biol.* **11**, 157–167. (doi: 10.1007/BF00240204)

[198] Hopkins TL, Ainley DG, Torres JJ, Lancraft TM. 1993 Trophic structure in open waters of the marginal ice zone in the Scotia-Weddell confluence region during spring (1983). *Polar Biol.* **13**, 389–397. (doi:10.1007/BF01681980)

[199] Kitching RL. 1987 Spatial and temporal variation in food webs in water-filled treeholes. *Oikos* **48**, 280–288

[200] Hodkinson ID, Coulson SJ. 2004 Are high Arctic terrestrial food chains really that simple? The Bear Island food web revisited. *Oikos* **106**, 427–431

[201] Boit A, Martinez ND, Williams RJ, Gaedke U. 2012 Mechanistic theory and modelling of complex food-web dynamics in Lake Constance. *Ecol. Lett.* **15**, 594–602. (doi:10.1111/j.1461-0248.2012.01777.x)

[202] Rayner TS, Pusey BJ, Pearson RG, Godfrey PC. 2010 Food web dynamics in an Australian Wet Tropics river. *Mar. Fresh. Res.* **61**, 909–917. (doi:10.1071/MF09202)

[203] Motta RL, Uieda VS. 2005 Food web structure in a tropical stream ecosystem. *Austral Ecol.* **30**, 58–73. (doi:10.1111/j.1442-9993.2005.01424.x)

[204] Douglass JG, Emmett Duffy J, Canuel EA. 2011 Food web structure in a Chesapeake Bay eelgrass bed as determined through gut contents and 13C and 15N isotope analysis. *Estuar. Coasts* **34**, 701–711. (doi:10.1007/s12237-010-9356-4)

[205] Poepperl R. 2003 A quantitative food web model for the macroinvertebrate community of a Northern German lowland stream. *Int. Rev. Hydrobiol.* **88**, 433–452. (doi:10.1002/iroh.200310666)

[206] Goldwasser L, Roughgarden J. 1993 Construction and analysis of a large Caribbean food web. *Ecology* **74**, 1216–1233

[207] Cohen JE, Jonsson T, Carpenter SR. 2003 Ecological community description using the food web, species abundance, and body size. *PNAS* **100**, 1781–1786. (doi: 10.1073/pnas.232715699)

[208] Yodzis P. 1998 Local trophodynamics and the interaction of marine mammals and fisheries in the Benguela ecosystem. *J. Anim. Ecol.* **67**, 635–658. (doi:10.1046/j.1365-2656.1998.00224.x)

[209] Schröter D, Wolters V, De Ruiter PC. 2003 C and N mineralisation in the decomposer food webs of a European forest transect. *Oikos* **102**, 294–308. (doi:10.1034/j.1600-0579.2003.12064.x)

[210] Baiser B, Gotelli NJ, Buckley HL, Miller TE, Ellison AM. 2012 Geographic variation in network structure of a nearctic aquatic food web. *Global Ecol. Biogeogr.* **21**, 579–591. (doi:10.1111/j.1466-8238.2011.00705.x)

[211] Riede JO, Rall BC, Banasek-Richter C, Navarrete SA, Wieters EA, Emmerson MC, Jacob U, Brose U. 2010 Scaling of food-web properties with diversity and complexity across ecosystems. In G Woodward, ed., *Advances in Ecological Research*, vol. 42, 139–170. Burlington: Elsevier Ltd. (doi:10.1016/S0065-2504(10)42003-6)

[212] Xiao X, White EP, Hooten MB, Durham SL. 2011 On the use of log-transformation vs. nonlinear regression for analyzing biological power laws. *Ecology* **92**, 1887–1894. (doi:10.1890/11-0538.1)