Supplementary Information for "Simple MaxEnt Models for Food Web Degree Distributions" by Richard J Williams

Table S1. Data Sets

Web Name	Source	S	L/S	C
AireStream	1	49	2.898	0.059
CrocodileCreek	1	29	1.655	0.057
DeepCreek	1	26	3.731	0.143
LakeNyasa1	1	31	3.065	0.099
LakeNyasa2	1	33	2.121	0.064
OakGall	1	54	3.222	0.06
Saltmeadow	1	32	1.094	0.034
ShortgrassPrairie	1	106	3.575	0.034
SonoranDesert	1	48	2.875	0.06
TreleaseWoods	1	29	2.103	0.073
MontereyBay	1	35	2.086	0.06
Benguela	2	29	7	0.241
Broom	3	85	2.624	0.031
ElVerde	4	155	9.735	0.063
StMartin	5	42	4.881	0.116
BridgeBrookLake	6	25	4.28	0.171
UKGrassland	7	73	1.507	0.021
LittleRockLake	8	92	10.837	0.118
Coachella	9	29	9.034	0.312
Reef	10	50	11.12	0.222
Shelf	11	79	18.076	0.229
StMarks	12	48	4.604	0.096
ChesapeakeBay	13	31	2.226	0.072
SkipwithPond	14	25	7.88	0.315
Ythan	15	78	4.795	0.061
Ythan96	16	124	4.702	0.038
Blackrock	17	84	4.381	0.052
Broad	17	90	6.167	0.069
Canton	17	102	6.833	0.067
German	17	76	4.513	0.059
Healy	17	94	6.713	0.071
KyeBurn	17	96	6.531	0.068
LittleKyeBurn	17	76	4.908	0.065
Dempters	17	106	9.104	0.086
Stony	17	109	7.606	0.07

Sutton	17	67	4.657	0.07
AkatoreA	17	72	2.917	0.041
AkatoreB	17	44	2.364	0.054
Berwick	17	68	3.191	0.047
CompanyBay	18	58	6.81	0.117
Coweeta1	19	47	2.319	0.049
Coweeta17	19	58	2.241	0.039
DuffinCreek	20	30	3.933	0.131
Lerderderg	21	31	1.968	0.063
Martins	19	92	3.5	0.038
Mimihau	17	63	2.889	0.046
Narrowdale	17	50	2.4	0.048
NorthCol	17	67	2.97	0.044
Powder	17	74	3.554	0.048
Troy	19	63	2.54	0.04
Wisp	17	41	2.39	0.058

Table S2. Data Set Sources

1	Cohen, J. E. 1989. Ecologists' Co-operative Web Bank (ECOWeB), Version 1.0 (machine-readable database). Rockefeller University, New York, New York, USA.
2	Yodzis, P. 1998. Local trophodynamics and the interaction of marine mammals and fisheries in the Benguela ecosystem. J. Anim. Ecol. 67, 635.
3	Hawkins, B. A., N. D. Martinez, and F. Gilbert. 1997. Source food webs as estimators of community web structure. International Journal of Ecology 18:575–586.
4	Waide, R. B., and W. B. Reagan. Editors. 1996. The food web of a tropical rainforest. University of Chicago Press, Chicago, Illinois, USA
5	Goldwasser, L., and J. A. Roughgarden. 1993. Construction of a large Caribbean food web. Ecology 74:1216–1233.
6	Havens, K. 1992. Scale and structure in natural food webs. Science 257:1107–1109
7	Memmott, J., N. D. Martinez, and J. E. Cohen. 2000. Predators, parasites and pathogens: species richness, trophic generality, and body sizes in a natural food web. Journal of Animal Ecology 69:1–15.
8	Martinez, N. D. 1991. Artifacts or attributes? Effects of resolution on the Little Rock Lake food web. Ecological Monographs 61:367–392
9	Polis, G. A. 1991 Complex trophic interactions in deserts: an empirical critique of food-web theory. American Naturalist 138:123–155
10	Opitz, S. 1996. Trophic interactions in Caribbean coral reefs. ICLARM [International Center for Living Aquatic Resources Management] Technical Reports 43, 341.

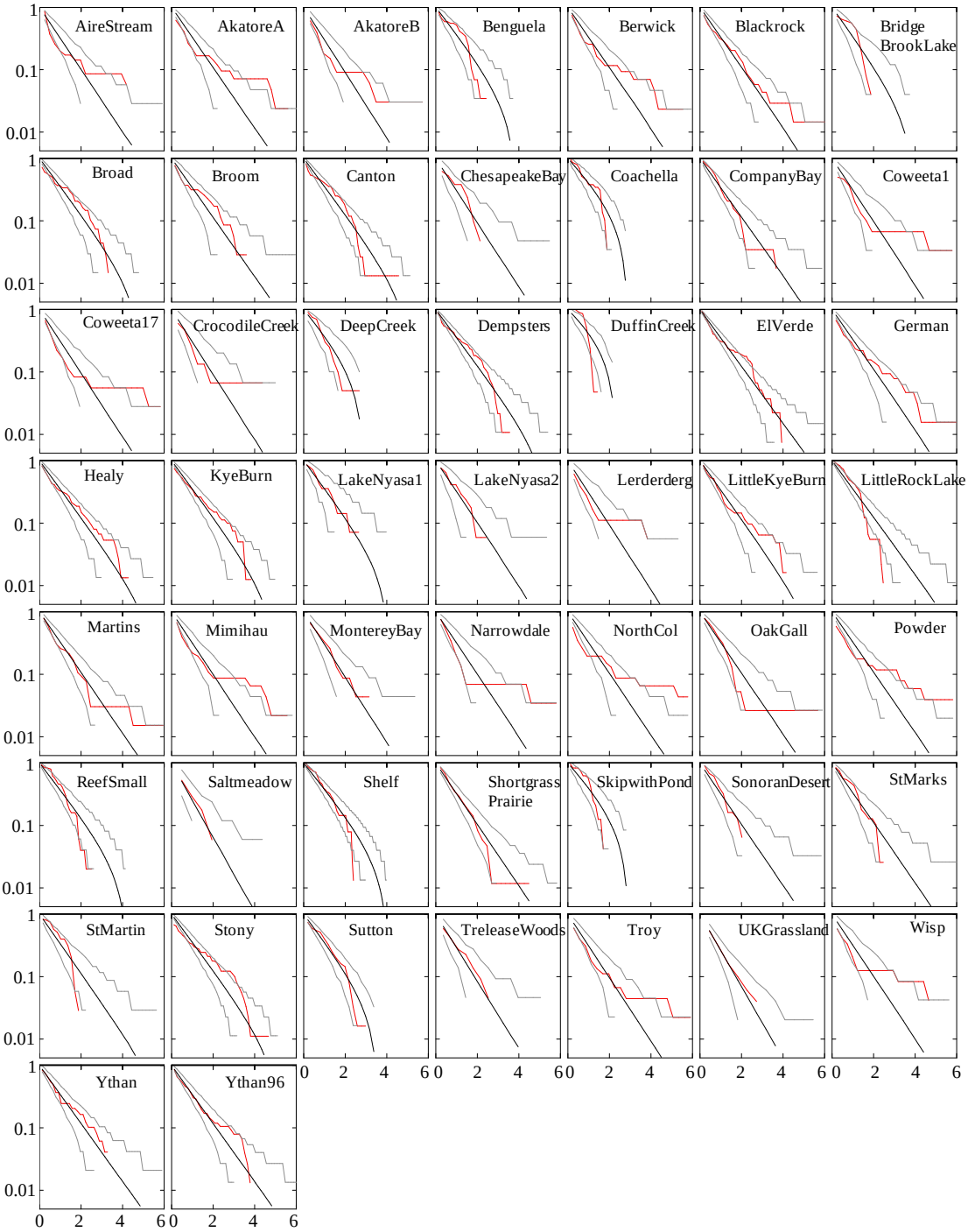
11	Link, J. 2002. Does food web theory work for marine ecosystems? Mar Ecol Prog Ser 230, 1.
12	Christian, R. R., and J. J. Luczkovich. 1999. Organizing and understanding a winter's seagrass foodweb network through effective trophic levels. Ecological Modelling 117:99–124.
13	Baird, D., and R. E. Ulanowicz. 1989. The seasonal dynamics of the Chesapeake Bay ecosystem. Ecological Monographs 59:329–364.
14	Warren, P.H. (1989). Spatial and temporal variation in the structure of a freshwater food web. Oikos, 55, 299–311.
15	Hall, S. J., and D. Raffaelli. 1991. Food-web patterns: lessons from a species-rich web. Journal of Animal Ecology 60:823–842.
16	Huxham, M., S. Beany, and D. Raffaelli. 1996. Do parasites reduce the chances of triangulation in a real food web? Oikos 76, 284.
17	Thompson, R. M., and C. R. Townsend. 2004 Landuse influences on New Zealand stream communities – effects on species composition, functional organization and food-web structure. New Zealand Journal Marine and Freshwater Research 38:595–608.
18	Thompson, R. M., K. Mouristen, and R. Poulin. 2005. Importance of parasites and their life cycle characteristics in determining the structure of a large marine food web. Journal of Animal Ecology 74:77–85.
19	Thompson, R. M., and C. R. Townsend. 2003. Impacts on stream food webs of native and exotic forest: an intercontinental comparison. Ecology 84:145–161.
20	Tavares-Cromar, A. F., and D. D. Williams. 1996 The importance of temporal resolution in food web analysis: Evidence from a detritus-based stream. Ecological Monographs 66:91–113.
21	Closs, G. P., and P. S. Lake. 1994 Spatial and temporal variation in the structure of an intermittent stream food web. Ecological Monographs 64:1–21.

Table S3. Linear regression of goodness of fit f_G and relative width W_{95} versus S and L/S for both consumer and resource networks.

Variable	Independent Var	R^2	p	Slope
Consumer f_G	*S*	0.084	0.039	
	L/S	0.030	0.223	
Resource f_G	*S*	0	0.953	
	L/S	0.015	0.384	
Consumer W_{95}	*S*	0.065	0.071	
	L/S	0.179	0.002	-0.132
Resource W_{95}	*S*	0.025	0.264	
	L/S	0	0.961	

Figure S1. Cumulative predator and prey distributions of the 51 empirical food webs. Linear-log plots of the cumulative distribution (fraction of species (nodes) with more than k predators or prey. On the x-axis, the number of links is scaled by the mean number of links, $z = L/S$. Red curce is the empirical degree distribution, black curve the mean and grey curves the upper and lower limits of the central 95% of 10,000 distributions drawn from the Maxent model. Inset in each panel shows the food web's connectance C, likelihood ratio goodness of fit f_G and fit measured by the relative width of the distribution W_{95}.

Cumulative Consumer Distributions



Cumulative Resource Distributions