Table S1. Comparison of ecosystem network analysis whole system indicators for the Cone Springs model (Tilly 1968) as calculated by four different ENA softare tools. Missing values indicates that the software did not calculate the network statistic.

Description	Symbol	enaR	NETWRK	NEA.m*	Econet	*Max % Difference*
No. of nodes	n	5.00	5.00	5.00		0.00
No. of links	L	8.00		8.00		0.00
Connectance, L/n^2	C	0.32		0.32	0.32	0.00
Link density	LD	1.60		1.60	1.60	0.00
Path proliferation	ppr	1.84		1.84		0.00
Dominant eigen value of the adjacency matrix A	lam1A	1.84				
Multiplicity of the dominant eigenvalue in A	mlam1A	1.00				
Damping ratio	rho	1.84				
Distance of lam1A from the bulk of the eigenspectrum	R	0.67				
Difference between dominant eigenvalue and link density	d	0.24				
Number of strongly connected components	no.scc	2.00				
Number of SCC with more than one node	no.scc.big	1.00				
Fraction of network nodes included in a big SCC	pscc	0.80				
Sum of boundary inputs	Boundary	11819.00		11819.00		0.00
Total System Throughflow	TST	30626.00		30626.00	30801.60	0.01
Total System Throughput	TSTp	42445.00	42445.00			0.00
Average Path Length; Also called network aggradation	APL	2.59		2.59	2.61	0.01
Finn Cycling Index	FCI	0.09	0.10	0.09	0.10	0.07
Boundary Flow Intensity, Boundary/TST	BFI	0.39				
Direct Flow Intensity, Direct/TST	DFI	0.30				
Indirect Flow Intensity, Indirect/TST	IFI	0.31				
Ratio of Indirect to Direct Flow	ID.F	1.02				
Input oriented ratio of indirect to direct flow intensity	ID.F.I	1.41		1.42		0.10
Output oriented ratio of indirect to direct flow intensity	ID.F.O	0.91		0.91		0.00
Input oriented network homogenization to direct flow intensity	HMG.F.I	2.47		2.47		0.00
Output oriented network homogenization to direct flow intensity	HMG.F.O	1.87		1.88		0.00
Input oriented network amplification	AMP.F.I	4.00		4.00		0.00
Output oriented network amplification	AMP.F.O	0.00		0.00		0.00
Boundary input	mode0.F	11819.00		11819.00		0.00
Internal First Passage Flow	mode1.F	15991.28		15991.00		0.00
Cycled Flow	mode2.F	2815.72		2815.70		0.00
Dissipative Equivalent to mode1.F	mode3.F	15991.28		15991.00		0.00
Dissipative Equivalent to mode0.F; boundary loss	mode4.F	11819.00		11819.00		0.00
Average mutual information (bits)	AMI	1.34				
Ascendency, AMI * TSTp	ASC	56725.49	56725.00		56196.90	0.04
Overhead	OH	79139.25				
Capacity	CAP	135864.73	135860.00		131063.00	0.04
Ascendency-to-capacity ratio (dimensionless)	ASC.CAP	0.42	0.42			0.12
Overhead-to-capacity ratio (dimensionless)	OH.CAP	0.58				
Total System Storage	TSS	4058.40				
Storage Cycling Index	CIS	0.85				
Boundary Storage Intensity	BSI	0.06				
Direct Storage Intensity	DSI	0.05				
Indirect Storage Intensity	ISI	0.88				
Ratio of Indirect-to-Direct storage (realized)	ID.S	16.44				
Storage-based input-oriented indirect-to-direct ratio	ID.S.I	17.08		17.07		0.04
Storage-based input-oriented indirect-to-direct ratio	ID.S.O	14.38		14.38		0.01
Input-oriented storage network homogenization	HMG.S.O	0.94		0.94		0.00
Output-oriented storage network homogenization	HMG.S.I	1.00		1.00		0.00
Input oriented network amplification	AMP.S.I	4.00		4.00		0.00
Output oriented network amplification	AMP.S.O	8.00		8.00		0.00
Storage from boundary input	mode0.S	262.64				
Storage from internal first passage flows	mode1.S	355.36				
Storage from cycled flow	mode2.S	3440.39				
Dissipative equivalent to mode1.S	mode3.S	355.36				
Dissipative equivalent to mode0.S	mode4.S	262.64				
Dominant eigenvalue of the flow based direct utility matrix (D)	lam1D	1.02				
Benefit-cost ratio or network synergism (flow)	synergism.F	3.98		-9999		
Positive to negative interaction ratio or network mutualism (flow)	mutualism.F	2.13		-9999		
Dominant eigenvalue of the storage based direct utility matrix (DS)	lam1DS	13.67				
Benefit-cost ratio or network synergism (storage)	synergism.S	4.64		-9999		
Positive to negative interaction ratio or network mutualism (storage)	mutualism.S	3.17		-9999		

* The NEA.m package returns -9999 for these statistics because the dominant eigenvalues of matrices exceeded one in the calculations.