Ecography

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Supplementary material

Appendix 1: References for data points.

The #number at the end of each reference refers to the reference number in Appendix 2.

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Appendix 2: Data values used in the analysis.

A superscript number after any of the parameters L, k and X_{ss} indicates that the value was derived by applying either equation 1 or 2 (see text for Olson curve). The ref # is a cross-reference to the full reference, given in Appendix 1. For more detail on the derivation of parameters from each study, see (Watson 2012).

Reference	Ref-#	Form-ation	latitude	longitude	L	K	X_{ss}
Adams and Attiwill (1986)	#1	DSF	-36.051	146.884	2.53*	0.21[2]	11.94*
Adams and Attiwill (1986)	#1	GW	-36.051	146.884	2.55*	0.25[2]	10.23*
Adams and Attiwill (1986)	#1	WSF	-37.830	146.250	3.57*	0.26[2]	13.56*
Adams and Attiwill (1986)	#1	DSF	-37.430	145.100	3.74*	0.39[2]	9.50*
Adams and Attiwill (1986)	#1	DSF	-37.430	145.110	4.62*	0.31[2]	14.78*
Adams and Attiwill (1986)	#1	WSF	-37.840	145.390	6.16*	0.22[2]	27.66*
Adams and Attiwill (1986)	#1	WSF	-37.840	145.390	6.87*	0.38[2]	17.91*
Adams and Attiwill (1991)	#2	DSF	-41.430	146.680	3.17*	0.27[2]	11.64*
Adams and Attiwill (1991)	#2	DSF	-41.221	147.545	3.40*	0.32[2]	10.62*
Adams and Attiwill (1991)	#2	DSF	-41.100	147.234	3.93*	0.40[2]	9.86*
Adams and Attiwill (1991)	#2	RF	-41.355	147.734	3.95*	0.39[2]	10.22*
Adams and Attiwill (1991)	#2	WSF	-41.179	147.184	4.86*	0.29[2]	16.65*
Adams and Simmons (1996)	#3	DSF	-37.640	145.300	3.68[2]	0.16[1]	23.00[1]
Applegate (1982)	#4	WSF	-25.460	153.050			12.37*
Ashton (1975)	#5	WSF	-37.395	145.234	7.06*	0.39[2]	18.25*
Attiwill (1968)	#6	WSF	-37.430	145.140		0.22[2]	14.97*
Attiwill et al. (1978)	#7	WSF	-37.440	145.130	3.24*		
Attiwill et al. (1978)	#7	WSF	-37.412	144.668	5.23*		
Birk (1979a)	#8	DSF	-27.545	153.056	2.91*		
Birk and Bridges (1989)	#9	WSF	-31.788	152.589	7.30*	0.44[2]	16.70*
Bowman and Wilson (1988)	#10	RF	-12.165	131.005			6.95*
Bowman and Wilson (1988)	#10	WSF	-12.165	131.011			7.49*
Brasell et al. (1980)	#11	RF	-17.323	145.510	8.60*		
Brasell et al. (1980)	#11	RF	-17.308	145.715	9.37*		
Bresnehan (2003)	#12	DSF	-42.904	147.257	1.66[2]	0.12[1]	13.80[1]
Bresnehan (2003)	#12	DSF	-42.824	147.237	2.18[2]	0.25[1]	8.73[1]
Bridges (2005)	#13	DSF	-37.220	149.640			10.10*
Burrows (1994)	#14	DSF	-32.734	116.409	1.46[2]	0.18[1]	8.10[1]
Burrows (1994)	#14	DSF	-34.695	116.362	2.50[2]	0.16[1]	15.60[1]
Burrows and Burrows (1992)	#15	GW	-23.420	149.860	1.91*		
Campbell et al. (1992)	#16	WSF	-37.414	145.771	7.51*		
Campbell et al. (1992)	#16	WSF	-37.806	145.945	7.60*		
Chaffey and Grant (2000)	#17	DSF	-32.870	151.750			11.80*
Chatto (1996)	#18	GW	-36.120	146.610			7.15[1]
Cohn et al. (2011)	#19	DSF	-30.788	149.187			8.11
Conroy (1993b)	#20	RF	-33.310	151.240			6.50
Conroy (1993b)	#20	DSF	-33.387	151.187	2.30[2]	0.14[1]	16.60[1]
Conroy (1993b)	#20	WSF	-33.286	151.269	5.80[2]	0.47[1]	12.40[1]

Crockford and Richardson (1998)	#21	DSF	-35.174	149.381	3.26*	0.15[2]	21.50*
Fogarty (1993)	#22	DSF	-37.690	148.800		0.19[2]	10.10
Fox et al. (1979)	#23	DSF	-32.430	152.500	4.90[1]*	0.33[2]	14.60[1]*
Gould (2011)	#24	DSF	-33.900	115.499	2.11[1]	0.17[2]	12.40[1]
Gould (2011)	#24	DSF	-33.100	116.400	2.60[1]	0.20[2]	13.20[1]
Guinto et al. (2001)	#25	DSF	-25.420	152.620			15.61*
Guinto et al. (2001)	#25	WSF	-26.830	152.880			16.96*
Hart (1995)	#26	DSF	-30.700	149.650	2.03*	0.17[2]	12.16*
Hatch (1955)	#27	DSF	-32.773	116.029	2.44*	0.17[2]	14.40*
Hawkins (1966)	#28	DSF	-26.709	149.558	1.51*		
Hegarty (1991)	#29	RF	-27.332	152.756	9.73*		
Herbohn and Congdon (1993)	#30	RF	-18.997	146.179	5.22*		
Herbohn and Congdon (1993)	#30	RF	-18.997	146.158	5.70*		
Howard (1973)	#31	WSF	-37.720	145.680	5.90*	0.46[2]	12.70*
Hurditch (1981)	#32	DSF	-25.590	153.054	4.29*	0.44[2]	9.67*
Hurditch (1981)	#32	WSF	-31.541	152.754	6.54*	0.37[2]	17.77*
Hurditch (1981)	#32	RF	-25.480	153.105	6.61*	1.04[2]	6.35*
Hurditch (1981)	#32	DSF	-25.586	153.077	6.98*	0.74[2]	9.41*
Hurditch (1981)	#32	WSF	-25.469	153.077	7.41*	0.59[2]	12.55*
Hurditch (1981)	#32	WSF	-30.104	153.044	7.89*	0.46[2]	17.06*
Hurditch (1981)	#32	WSF	-25.564	153.068	8.00*	0.82[2]	9.73*
Hurditch (1981)	#32	WSF	-31.587	152.613	8.06*	0.39[2]	20.63*
Hutson (1985)	#33	DSF	-34.688	138.843	1.04*	0.14[2]	7.26*
Hutson (1985)	#33	DSF	-34.692	138.911	1.86*	0.20[2]	9.45*
Hutson (1985)	#33	DSF	-35.018	138.766	2.12*	0.30[2]	7.04*
Hynes and White (1983)	#34	WSF	-26.386	152.994	4.85*		
Hynes and White (1983)	#34	WSF	-26.386	152.994	6.83*		
Keith et al. (1997)	#35	GW	-35.366	148.798	4.80*		
Lamb (1985)	#36	DSF	-34.036	151.206	5.07	0.28[2]	18.15
Lamb (1985)	#36	DSF	-34.036	151.206	6.50	0.42[2]	15.58
Lowman (1988)	#37	RF	-30.340	152.820	4.90*		
Lowman (1988)	#37	RF	-30.922	152.225	5.60*		
Lowman (1988)	#37	RF	-34.114	151.067	6.60*		
Lowman (1988)	#37	RF	-30.327	152.824	9.10*		
March and Watson (2007)	#38	DSF	-35.710	147.400	2.19*		
McCaw et al. (2002)	#39	WSF	-34.385	115.997		0.15*	44.00
McColl (1966)	#40	WSF	-35.680	150.159	5.06*	0.30	16.87[2]
McElhinny (2005)	#41	DSF	-34.960	149.300			11.70*
O'Connell (1981)	#42	WSF	-34.400	115.990	6.51*		
O'Connell (1989)	#43	WSF	-34.385	115.997	4.78*	0.14[2]	33.62*
O'Connell and Menage (1982)	#44	WSF	-34.286	115.849	8.60*		
Park (1975)	#45	WSF	-35.423	148.813	3.42*		
Park (1975)	#45	WSF	-35.423	148.813	5.69*		
Peet (1971)	#46	DSF	-34.695	116.362	2.03[2]	0.13[1]	15.60[1]*
Peet (1971)	#46	WSF	-34.408	115.882	5.30[2]	0.19[1]	27.90[1]*
Penman and York (2010)	#47	WSF	-31.549	152.614	5.26*	0.31[2]	17.04*

Plowman (1979)	#48	WSF	-27.318	152.716	8.07*	0.45[2]	17.86[2]*
Plowman (1979)	#48	RF	-27.312	152.772	8.31*	0.87[2]	9.57[2]*
Polglase and Attiwill (1992)	#49	WSF	-37.413	145.791	5.27*	0.38[2]	13.96*
Polglase and Attiwill (1992)	#49	WSF	-37.413	145.791	7.53*	0.40[2]	18.81*
Polglase and Attiwill (1992)	#49	WSF	-37.490	145.836	7.84*	0.33[2]	23.96*
Polglase and Attiwill (1992)	#49	WSF	-37.413	145.791	8.56*	0.36[2]	24.06*
Pook et al. (1997)	#50	WSF	-35.570	150.310	5.76		
Pressland (1982)	#51	GW	-30.410	151.630	3.35*	0.35[2]	6.90*
Raison et al. (1983)	#52	WSF	-35.366	148.713	4.19[2]	0.16[1]	26.20[1]
Raison et al. (1983)	#52	GW	-35.447	148.774	5.27[2]	0.31[1]	17.00[1]
Raison et al. (1983)	#52	GW	-35.447	148.774	5.33[2]	0.31[1]	17.20[1]
Raison et al. (1986)	#53	GW	-35.447	148.774	5.41[2]	0.32[1]	16.90[1]
Raison et al. (1986)	#53	WSF	-35.366	148.713	7.10[2]	0.31[1]	22.90[1]
Rogers and Westman (1977)	#54	DSF	-27.504	153.493	5.85*	0.26[2]	22.10*
Roxburgh et al. (2006)	#55	WSF	-35.540	150.320			20.10*
Sandercoe (1989)	#56	DSF	-26.027	152.907	1.35[2]	0.19[1]	7.22[1]*
Sandercoe (1989)	#56	DSF	-26.118	152.952	3.77[2]	0.54[1]	6.99[1]*
Simmons and Adams (1986)	#57	DSF	-37.626	145.529	4.06[2]	0.24[1]	16.90[1]
Spain (1984)	#58	RF	-17.180	145.600	7.64*	1.56[2]	4.90*
Spain (1984)	#58	RF	-17.310	145.710	8.09*	1.47[2]	5.51*
Spain (1984)	#58	RF	-17.405	145.870	9.10*	2.37[2]	3.84*
Stocker et al. (1995)	#59	RF	-17.308	145.715	10.03*		
Stocker et al. (1995)	#59	RF	-17.000	145.833	7.28*		
Thomas et al. (1992)	#60	WSF	-35.359	148.827	4.33*		
Tolhurst and Kelly (2003)	#61	DSF	-37.386	144.218	5.00[2]	0.50[1]	12.17[1]
Turnbull and Madden (1983)	#62	RF	-43.408	146.802	4.50*		
Turner (1986)	#63	WSF	-30.040	153.053	6.79*	0.45[2]	15.21*
Turner and Lambert (1983)	#64	WSF	-30.060	153.115	8.74*	0.62[2]	14.20*
Turner et al. (1989)	#65	RF	-28.503	153.000	6.60*	1.05[2]	6.30
Turner et al. (1992)	#66	DSF	-37.320	149.640	1.57		
Van Loon (1977)	#67	DSF	-33.735	150.400	2.00[2]	0.17[1]	11.80[1]
Van Loon and Love (1971)	#68	DSF	-30.530	149.530			5.17*
Watson (1977)	#69	WSF	-30.510	152.340	2.87*		
Watson (1977)	#69	WSF	-30.510	152.390	3.16*		
Watson (1977)	#69	DSF	-30.567	152.206	4.17*		
Watson (1977)	#69	RF	-30.500	152.390	4.54*	0.47[2]	9.73*
Watson (1977)	#69	WSF	-30.508	152.460	8.34*		
Watson (2005)	#70	GW	-33.807	150.725	3.68[2]	0.57[1]	6.46[1]
Webb et al. (1969)	#71	RF	-28.580	153.330	10.30*		
Webb et al. (1969)	#71	RF	-28.580	153.330	6.27*		
Webb et al. (1969)	#71	WSF	-28.569	153.297	9.10*		
Williams and Wardle (2007)	#72	DSF	-33.396	150.195	2.38*		
Woods and Raison (1983)	#73	GW	-35.447	148.774	3.50		
Woods and Raison (1983)	#73	GW	-35.447	148.774	4.10		
Woods and Raison (1983)	#73	WSF	-35.366	148.713	5.10	0.22*	22.70

Reference for Appendix 2

Watson, P. 2012. Fuel Load Dynamics in NSW Vegetation. Part 1: Forests and Grassy Woodlands. — Centre for the Environmental Risk Management of Bushfires, University of Wollongong.

Appendix 3: List of models for L, k and X_{SS}

In each case, all possible combinations of TEMP, RAIN, WARMRAIN and VEG were fitted, including two-way interactions, except that RAIN and WARMRAIN were correlated and not considered in the same model. Models with n/df < 10 were not tested and hence not shown. The tables include the results of the Shapiro-Wilk test for normality (yes or no at p<0.05 level).

L (n=113)

Model	R^2	P	ΔAIC	Residuals normal?
RAIN*VEG + TEMP	0.66	< 0.001	0.00	yes
TEMP*VEG + RAIN	0.66	< 0.001	0.02	yes
TEMP*VEG + RAIN*VEG	0.67	< 0.001	1.42	yes
TEMP + RAIN + VEG	0.64	< 0.001	1.62	yes
TEMP*RAIN + VEG	0.64	< 0.001	3.29	yes
RAIN + VEG	0.62	< 0.001	6.16	yes
RAIN*VEG	0.63	< 0.001	7.90	yes
TEMP*VEG + WARMRAIN	0.63	< 0.001	11.41	yes
WARMRAIN + VEG	0.59	< 0.001	13.08	yes
TEMP*VEG + WARMRAIN*VEG	0.64	< 0.001	13.85	yes
TEMP*VEG	0.61	< 0.001	14.30	yes
TEMP + WARMRAIN + VEG	0.59	< 0.001	14.40	yes
TEMP*WARMRAIN + VEG	0.59	< 0.001	16.14	yes
WARMRAIN*VEG	0.60	< 0.001	17.39	yes
WARMRAIN*VEG + TEMP	0.60	< 0.001	18.14	yes
TEMP + VEG	0.56	< 0.001	22.31	yes
TEMP*RAIN	0.46	< 0.001	41.85	yes
RAIN	0.43	< 0.001	44.14	yes
TEMP + RAIN	0.44	< 0.001	44.38	yes
WARMRAIN	0.33	< 0.001	63.50	yes
TEMP + WARMRAIN	0.33	< 0.001	64.45	yes
TEMP*WARMRAIN	0.33	< 0.001	66.37	yes
TEMP	0.09	0.0013	97.49	yes

k (n=76)

Model	R^2	P	ΔAIC	Residuals normal?
TEMP*WARMRAIN + VEG	0.91	< 0.0001	0	yes
TEMP*RAIN + VEG	0.87	< 0.0001	22.34	yes
WARMRAIN*VEG	0.87	< 0.0001	24.71	yes
TEMP*WARMRAIN	0.82	< 0.0001	43.18	no
TEMP + RAIN + VEG	0.83	< 0.0001	43.60	yes
RAIN*VEG	0.82	< 0.0001	50.23	no
WARMRAIN + VEG	0.79	< 0.0001	55.10	no
TEMP + WARMRAIN + VEG	0.80	< 0.0001	55.92	no
TEMP*VEG	0.80	< 0.0001	58.14	no
TEMP*RAIN	0.75	< 0.0001	66.72	no
RAIN + VEG	0.76	< 0.0001	67.29	yes
WARMRAIN	0.70	< 0.0001	78.77	yes
TEMP + WARMRAIN	0.70	< 0.0001	80.72	yes
TEMP + VEG	0.68	< 0.0001	87.35	no
TEMP + RAIN	0.67	< 0.0001	87.7	yes
RAIN	0.57	< 0.0001	104.47	no
TEMP	0.26	< 0.0001	145.86	no

X_{ss} (n=89)

Model	**R^2**	**P**	**ΔAIC**	**Residuals normal?**
RAIN*VEG + TEMP	0.65	< 0.0001	0	yes
RAIN*VEG	0.58	< 0.0001	14.28	yes
TEMP*VEG + WARMRAIN	0.58	< 0.0001	16.41	yes
TEMP*VEG	0.57	< 0.0001	17.57	yes
WARMRAIN*VEG + TEMP	0.57	< 0.0001	18.13	yes
TEMP*VEG + RAIN	0.57	< 0.0001	18.27	yes
TEMP + VEG	0.53	< 0.0001	18.33	yes
TEMP*WARMRAIN + VEG	0.55	< 0.0001	18.82	yes
TEMP + WARMRAIN + VEG	0.54	< 0.0001	18.93	yes
TEMP + RAIN + VEG	0.53	< 0.0001	20.17	yes
TEMP*RAIN + VEG	0.54	< 0.0001	21.70	yes
WARMRAIN + VEG	0.50	< 0.0001	24.35	yes
WARMRAIN*VEG	0.53	< 0.0001	24.71	yes
RAIN + VEG	0.45	< 0.0001	32.98	yes
TEMP*RAIN	0.23	< 0.0001	60.66	yes
TEMP* WARMRAIN	0.22	< 0.0001	61.15	yes
TEMP + WARMRAIN	0.19	0.0001	63.51	yes
TEMP	0.16	0.0001	64.53	yes
TEMP + RAIN	0.16	0.0006	66.53	yes
WARMRAIN	0.14	0.0004	66.78	yes
RAIN	0.01	0.0022	78.54	yes