

Supplementary material for**Subsistence lifestyles and insular forest loss in the Louisiade Archipelago of Papua New Guinea: an endemic hotspot***William Goulding^{A,B}, Alvaro Salazar Perez^A, Patrick Moss^A and Clive McAlpine^A*^AUniversity of Queensland.^BCorresponding author. Email: w.goulding@uq.edu.au**Table S1.** Islands ranked in increasing size with associated demographic data (1979-2011) and forest loss rates (2000-2014).

Island	Area (ha)	2011 Population	2011 Pop. Density (km ²)	Pop. Growth Rate '79-'99 (%/yr)	Pop. Growth Rate '99-2011 (%/yr)	Total Pop. Growth Rate (%/yr)	Forest Loss 2000-2007 (<i>r</i>)	Forest Loss 2007-2014 (<i>r</i>)	Forest Loss 2000-2014 (<i>r</i>)
Nigahau	10.44	194	1858.2	-0.67	3.64	0.76	-0.015	-0.008	-0.012
Hesesai	23.82	171	717.9	-	-1.10	-	-0.034	-0.002	-0.018
Dadahai	27.00	37	137.1	-1.18	3.53	0.27	-0.018	-0.001	-0.009
Grass	163.64	448	273.8	0.19	8.56	3.45	-0.013	-0.024	-0.018
Nimowa	353.59	481	136.0	5.97	7.14	8.97	-0.004	-0.009	-0.007
Sabara	405.08	640	158.0	2.44	0.86	1.86	n/a**	n/a**	n/a**
Hemenahai*	1014.71	-	-	-	-	-	-0.001	-0.003	-0.002
Panawina	2930.93	578	19.7	1.49	6.00	3.85	-0.001	-0.002	-0.002
Junet	7698.30	368	4.8	10.34	-3.46	2.48	-0.002	-0.005	-0.003
Sudest	80860.23	3780	4.7	2.37	1.41	2.26	-0.001	-0.001	-0.001
Ward 4	8964.80	559	6.2	1.31	2.55	2.03	-0.002	-0.003	-0.002
Ward 5	8238.48	762	9.2	2.59	1.89	2.70	-0.003	-0.003	-0.003
Ward 6	24491.70	811	3.3	5.49	0.69	3.97	-0.001	-0.001	-0.001
Ward 7	17176.10	763	4.4	3.89	1.43	3.39	-0.001	-0.001	-0.001
Ward 8	12684.40	372	2.9	0.30	0.57	0.42	-0.001	-0.001	-0.001
Ward 9	4319.20	331	7.7	0.58	2.36	1.35	-0.001	-0.002	-0.002
Ward 16	5097.22	182	3.6	0.46	0.14	0.34	-0.001	-0.001	-0.001

*This island supports a village (Niyelahoi) and small hamlets (at time of study) on the north and north-western sides but these appear to have been incorporated into surrounding island village census data. Source: Local government census data books.

**Sabara Island is not used for gardening and forest loss rates were not calculated due to zero loss. Forest loss rates (*r*) were calculated following Puyravaud (2003).

Table S2. Full results using the Dredge function of model estimates of predictor variables for forest loss (MuMIn package; Bartoń, 2016).

Intercept	Autocov	E	FC	DV	E:FC	E:DV	FC:DV	E:FC:DV	df	logLik	AIC	ΔAIC	weight
-1.399	1.127	0.197	-0.317	0.004	-0.431	-0.081	0.102	0.229	10	-8655.942	17331.884	0	1
-1.479	1.169	0.145	-0.177	0.059	-0.279	-0.118	-	-	8	-8710.219	17436.438	104.554	1.98E-23
-1.477	1.169	0.144	-0.181	0.060	-0.277	-0.118	-0.007	-	9	-8710.184	17438.368	106.484	7.54E-24
-1.481	1.141	0.097	-0.127	0.047	-0.234	-	-	-	7	-8728.113	17470.227	138.343	9.10E-31
-1.482	1.117	0.106	-0.130	-	-0.239	-	-	-	6	-8729.556	17471.112	139.228	5.85E-31
-1.479	1.140	0.096	-0.132	0.047	-0.232	-	-0.009	-	8	-8728.061	17472.122	140.238	3.53E-31
-1.594	1.210	0.109	-0.056	0.099	-	-0.060	-0.073	-	8	-8757.232	17530.465	198.581	7.56E-44
-1.627	1.217	0.112	-	0.094	-	-0.059	-	-	6	-8761.586	17535.172	203.288	7.19E-45
-1.630	1.216	0.113	-0.006	0.095	-	-0.060	-	-	7	-8761.530	17537.061	205.177	2.80E-45
-1.624	1.196	0.083	-0.045	0.091	-	-	-0.073	-	7	-8762.720	17539.440	207.556	8.51E-46
-1.663	1.202	0.088	-	0.088	-	-	-	-	5	-8766.934	17543.867	211.983	9.30E-47
-1.661	1.203	0.088	0.004	0.087	-	-	-	-	6	-8766.905	17545.809	213.926	3.52E-47
-1.540	1.141	0.107	-	-	-	-	-	-	4	-8771.777	17551.554	219.670	1.99E-48
-1.631	1.187	-	-0.041	0.116	-	-	-0.079	-	6	-8770.074	17552.147	220.263	1.48E-48
-1.540	1.144	0.106	0.010	-	-	-	-	-	5	-8771.627	17553.254	221.371	8.51E-49
-1.678	1.189	-	-	0.114	-	-	-	-	4	-8775.315	17558.629	226.746	5.79E-50
-1.671	1.193	-	0.013	0.113	-	-	-	-	5	-8775.070	17560.140	228.256	2.72E-50
-1.683	1.120	-	-	-	-	-	-	-	3	-8784.027	17574.053	242.169	2.59E-53
-1.673	1.126	-	0.017	-	-	-	-	-	4	-8783.589	17575.178	243.295	1.48E-53
-1.121	-	0.174	-0.719	-0.748	-0.726	-0.003	0.151	0.390	9	-9642.001	19302.003	1970.119	0
-1.248	-	0.067	-0.524	-0.700	-0.525	-0.085	-0.042	-	8	-9775.382	19566.763	2234.879	0
-1.264	-	0.071	-0.502	-0.703	-0.538	-0.088	-	-	7	-9776.626	19567.252	2235.368	0
-1.309	-	0.050	-0.491	-0.693	-0.484	-	-0.050	-	7	-9782.392	19578.784	2246.900	0
-1.330	-	0.053	-0.464	-0.696	-0.497	-	-	-	6	-9784.081	19580.162	2248.278	0
-1.476	-	-0.003	-0.266	-0.685	-	0.057	-0.154	-	7	-9929.329	19872.657	2540.774	0
-1.442	-	-	-0.271	-0.685	-	-	-0.151	-	5	-9933.376	19876.752	2544.868	0
-1.442	-	0.004	-0.272	-0.686	-	-	-0.151	-	6	-9933.355	19878.710	2546.827	0
-1.556	-	-0.003	-0.160	-0.689	-	0.052	-	-	6	-9949.590	19911.179	2579.295	0
-1.525	-	-	-0.167	-0.689	-	-	-	-	4	-9952.604	19913.207	2581.323	0
-1.525	-	0.001	-0.167	-0.690	-	-	-	-	5	-9952.601	19915.203	2583.319	0
-1.456	-	-0.036	-	-0.727	-	0.087	-	-	5	-9992.377	19994.753	2662.870	0
-1.396	-	-0.034	-	-0.732	-	-	-	-	4	-10000.652	20009.304	2677.420	0
-1.386	-	-	-	-0.745	-	-	-	-	3	-10001.922	20009.844	2677.960	0
-0.958	-	-0.159	-0.573	-	-0.506	-	-	-	5	-10263.161	20536.321	3204.438	0
-1.147	-	-0.189	-0.268	-	-	-	-	-	4	-10433.048	20874.096	3542.212	0
-1.068	-	-	-0.303	-	-	-	-	-	3	-10479.632	20965.264	3633.380	0
-0.879	-	-0.261	-	-	-	-	-	-	3	-10561.193	21128.386	3796.503	0
-0.710	-	-	-	-	-	-	-	-	2	-10650.629	21305.259	3973.375	0

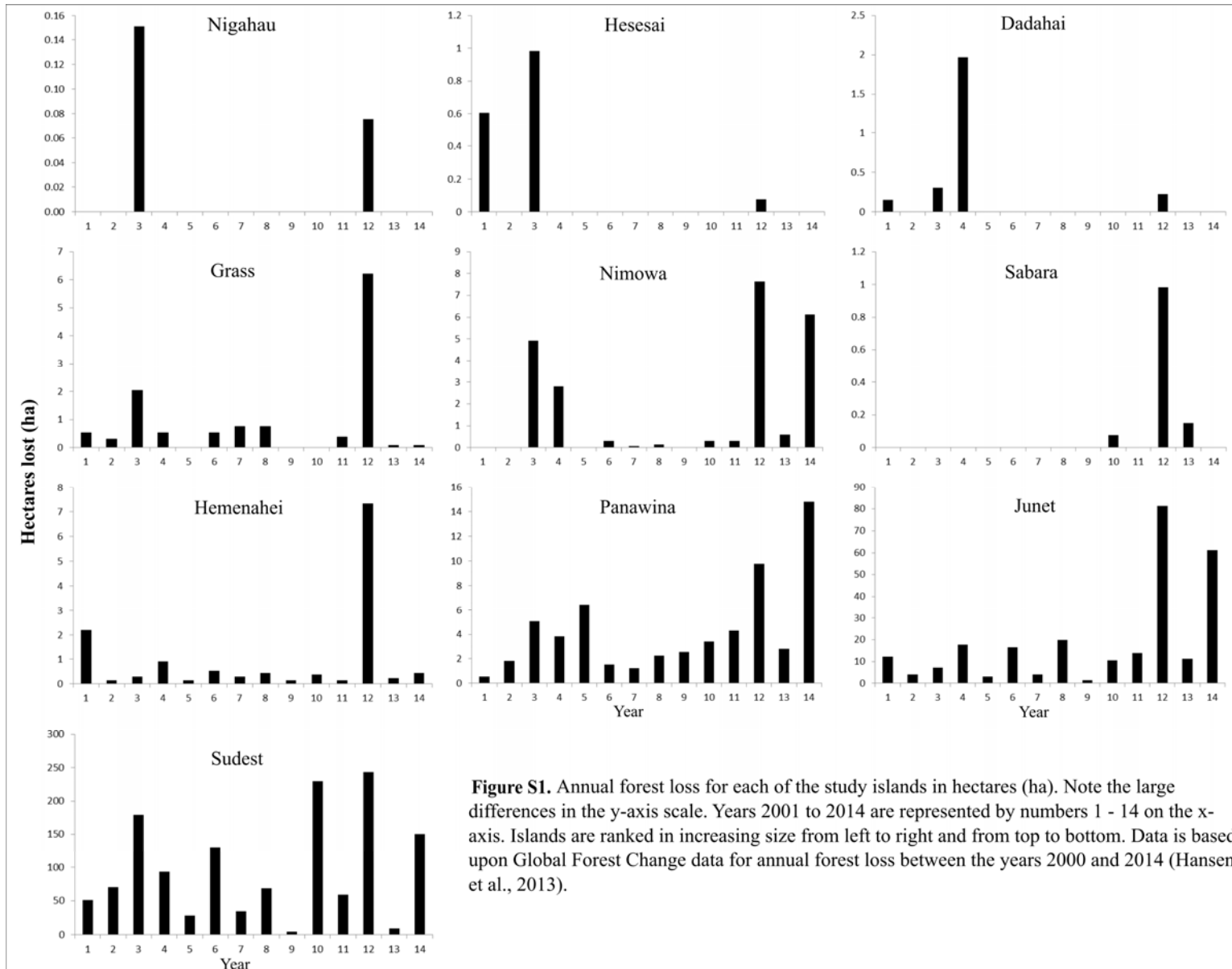


Figure S1. Annual forest loss for each of the study islands in hectares (ha). Note the large differences in the y-axis scale. Years 2001 to 2014 are represented by numbers 1 - 14 on the x-axis. Islands are ranked in increasing size from left to right and from top to bottom. Data is based upon Global Forest Change data for annual forest loss between the years 2000 and 2014 (Hansen et al., 2013).

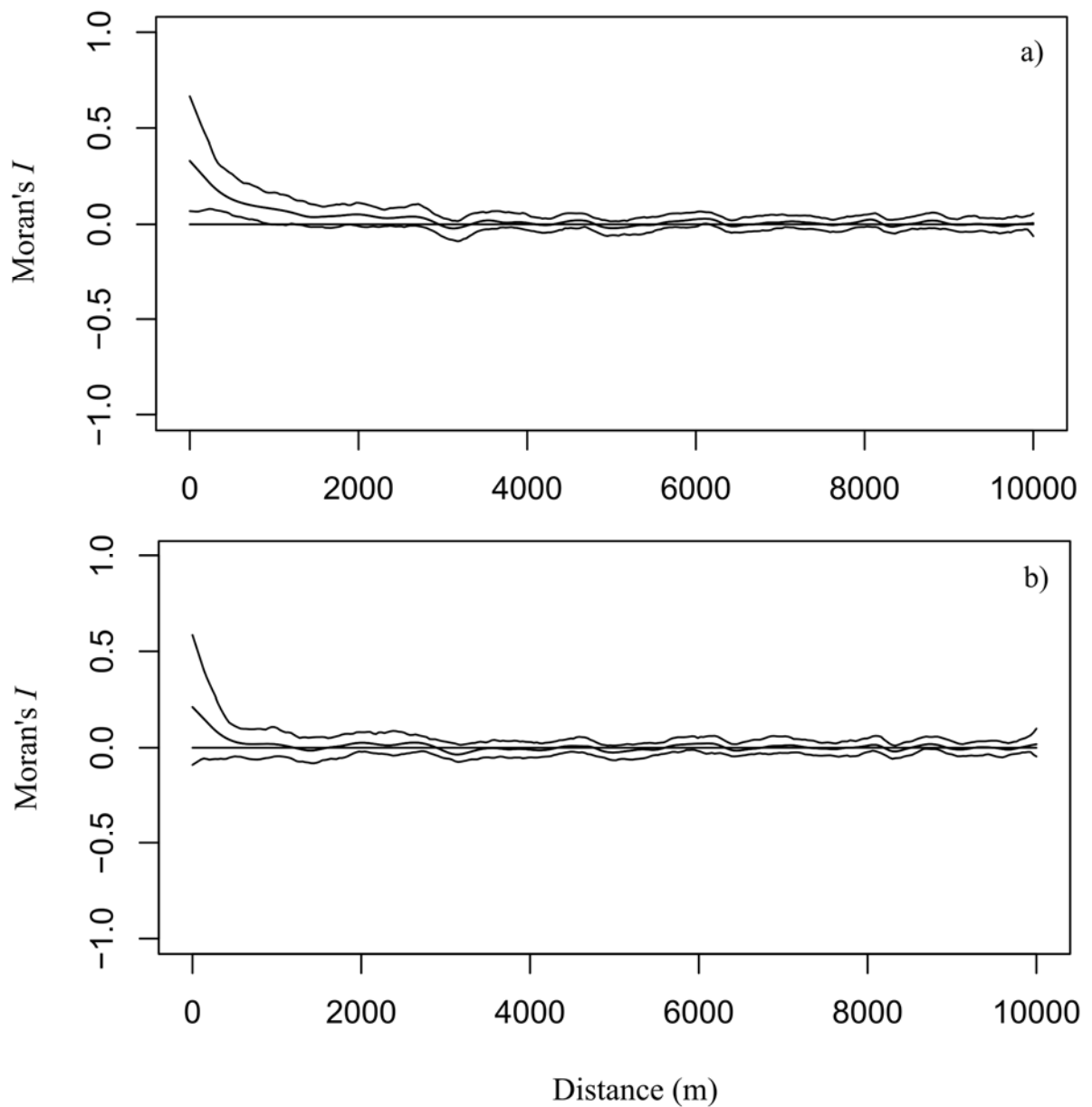


Figure S2. Correlograms of forest loss model residuals a) before the introduction of an autocovariate and b) the final model with an autocovariate introduced. Both show the Moran's I (observed) bounded by the upper and lower 95% confidence intervals. The slight model improvement is most apparent at very near distances where spatial autocorrelation occurred in a).