Supporting Information

Understanding the spatial distribution and hot spots of collared Bornean elephants in a multi-use landscape

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Table SI 1. Summary of the categories of z-scores and corresponding *p*-values and Confidence Intervals for Moran's I and hot spot analyses. The z-score measures degree of clustering with scores near 0 indicating no significant clustering. Z-scores have corresponding *p*-values. A *p*-values of 0.05 (or less) with high positive z-scores indicate a clustering of significantly high values (hot spot), and p-value of 0.05 (or less) with high negative z-values indicate a clustering of significantly low values (cold spot).

Critical Value (z-score)	Significance level (p-value)	Confidence Interval
<-2.58	0.01	99% Confidence
-2.58 - 1.96	0.05	95% Confidence
-1.96 - 1.65	0.10	90% Confidence
-1.65 - 1.65	Not significant	Not significant
1.65 - 1.96	0.10	90% Confidence
1.96 - 2.58	0.05	95% Confidence
>2.58	0.01	99% Confidence

Table SI 2. Confusion matrix table of Land Use and Land Cover (LULC) for 2010. The overall accuracy of the LULC was 97.3%, based on 226 points. Oil palm estates and oil smallholdings/villages were perfectly classified. Forest had an accuracy of 94%.

LULC 2010	Forest	Oil palm estate	Smallholdings/villages	Total
Forest	96	0	0	96
Oil palm estate	3	97	0	100
Oil Palm smallholdings/villages	3	0	27	30
Total	102	97	27	226
Correctly Classified %	94%	100%	100%	

Table SI 3. Confusion matrix table of Land Use and Land Cover (LULC) for 2015. The overall accuracy of the LULC was 97.7%, based on 221 points. Oil palm estates and oil smallholdings/villages were perfectly classified. Forest had an accuracy of 93%.

LULC 2015	Forest	Oil palm estate	Smallholdings/villages	Total
Forest	68	0	0	68
Oil palm estate	0	119	0	119
Oil Palm smallholdings/villages	5	0	29	34
Total	73	119	29	221
Correctly Classified %	93%	100%	100%	

Table SI 4. Extents (km^2) and proportions (%) of the entire range and hot spot extents in protected areas, unprotected forest, oil palm estates, and oil palm smallholdings/villages.

		Extents (km^2) and proportions (%) of entire range in:				**Extents (km^2) and proportions (%) of hot spots in:**			
Elephant	**Sex**	**Protected areas**	**Unprotected forest**	**Oil palm estates**	**Oil palm small-holdings/ villages**	**Protected areas**	**Unprotected forest**	**Oil palm estates**	**Oil palm small-holdings/ villages**
Pooled data	F/M	231.35 (37%)	49.09 (8%)	331.08 (53%)	9.64 (2%)	91.17 (34%)	29.12 (11%)	136.88 (51%)	5.24 (2%)
Aqeela	F	156.24 (73%)	32.23 (15%)	16.52 (8%)	3.88 (2%)	37.75 (60%)	15.08 (24%)	6.45 (10%)	0.71 (1%)
Liun	F	142.54 (52%)	28.94 (10%)	99.82 (36%)	1.90 (1%)	18.13 (36%)	7.50 (15%)	23.89 (47%)	0.36 (1%)
Gading	M	94.20 (52%)	21.40 (12%)	58.69 (32%)	3.88 (2%)	0 (0%)	0 (0%)	15.13 (100%)	0 (0%)
Putut	F	130.79 (64%)	33.66 (16%)	30.01 (15%)	5.77 (3%)	0.60 (8%)	3.61 (49%)	1.72 (23%)	1.18 (16%)
Jasmine	F	119.15 (71%)	29.50 (18%)	10.75 (6%)	4.69 (3%)	2.80 (25%)	5.95 (53%)	0 (0%)	1.55 (14%)
Puteri	F	196.60 (47%)	34.45 (8%)	180.10 (43%)	3.24 (1%)	21.54 (43%)	8.26 (16%)	19.36 (38%)	0.51 (1%)
Ita	F	113.57 (46%)	24.75 (10%)	106.48 (43%)	2.31 (1%)	1.64 (8%)	4.75 (24%)	13.50 (68%)	0.03 (0%)
Sejati	M	55.37 (44%)	13.35 (11%)	55.68 (44%)	1.04 (1%)	4.04 (29%)	2.11 (15%)	8.01 (57%)	0 (0%)
Sandi	F	159.10 (58%)	27.77 (10%)	83.04 (30%)	2.58 (1%)	19.64 (60%)	10.09 (31%)	1.01 (3%)	0.80 (2%)
Kasih	F	196.28 (72%)	32.21 (12%)	37.68 (14%)	2.88 (1%)	26.85 (71%)	7.25 (19%)	1.94 (5%)	0.45 (1%)
Ratu	F	178.30 (47%)	32.52 (9%)	158.35 (42%)	2.42 (1%)	5.26 (7%)	1.35 (2%)	65.83 (91%)	0 (0%)
Koyah	F	187.23 (54%)	29.15 (8%)	123.56 (36%)	2.24 (1%)	35.37 (65%)	9.32 (17%)	6.95 (13%)	1.46 (3%)
Girang	F	168.33 (46%)	31.51 (9%)	155.46 (43%)	2.92 (1%)	5.97 (24%)	3.12 (13%)	15.27 (63%)	0 (0%)
Sandy	M	76.54 (35%)	24.14 (11%)	113.91 (51%)	3.90 (2%)	6.23 (22%)	2.17 (8%)	19.55 (68%)	0.80 (3%)
Average		147.04 (54%)	29.64 (11%)	104.08 (32%)	3.565 (1%)	18.47 (33%)	7.31 (20%)	22.37 (42%)	0.87 (3%)

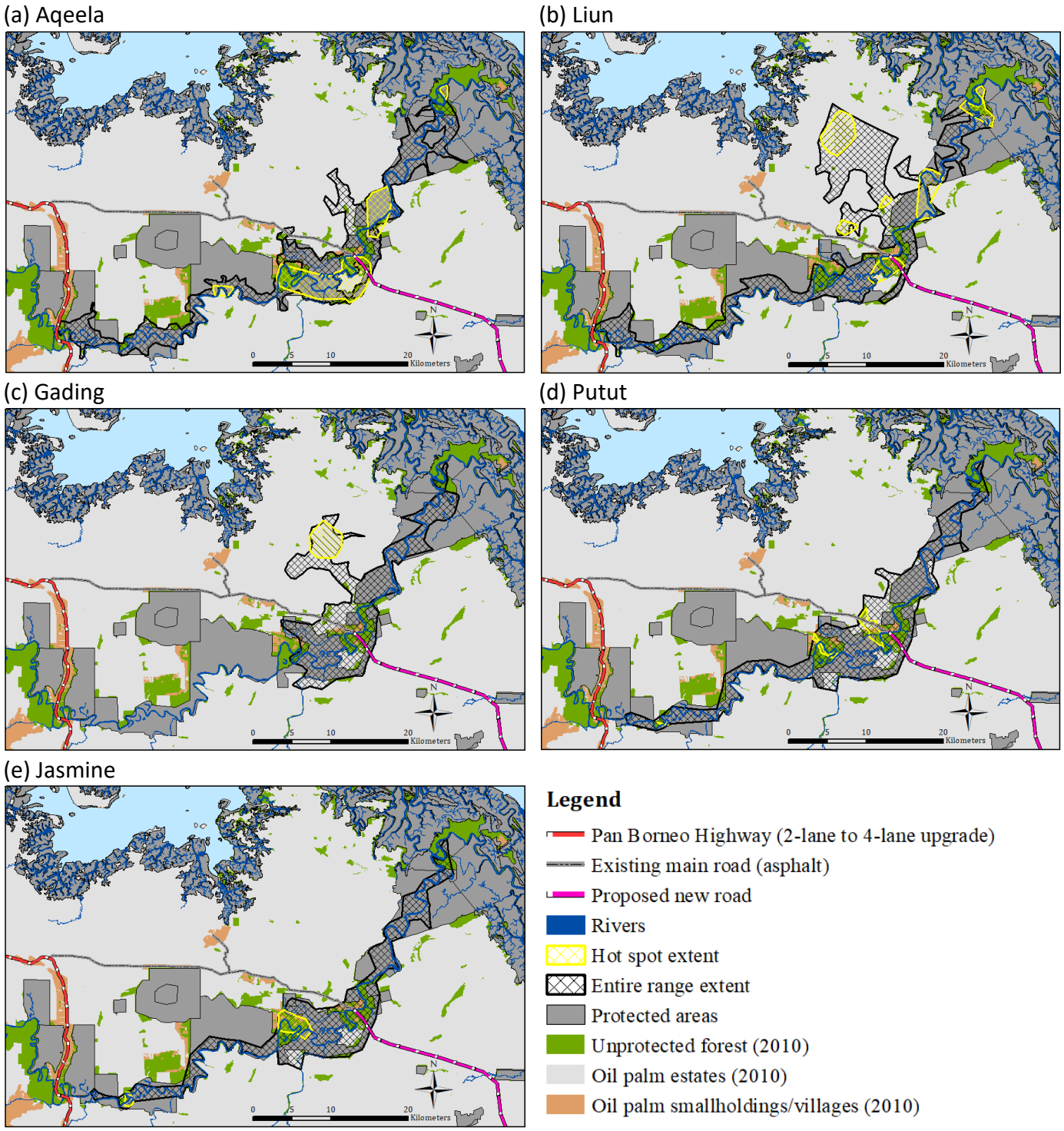
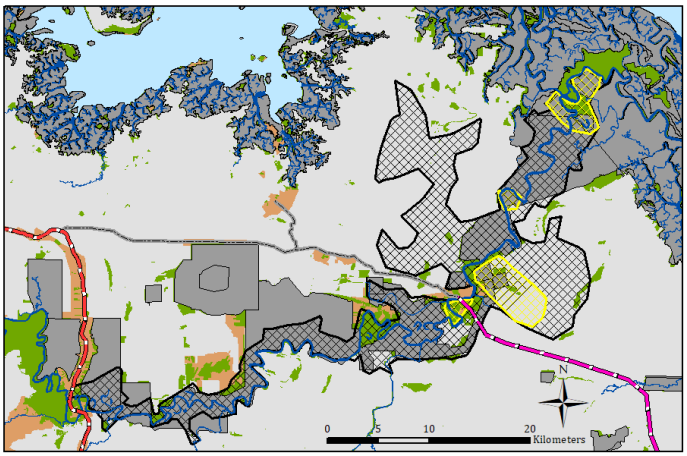
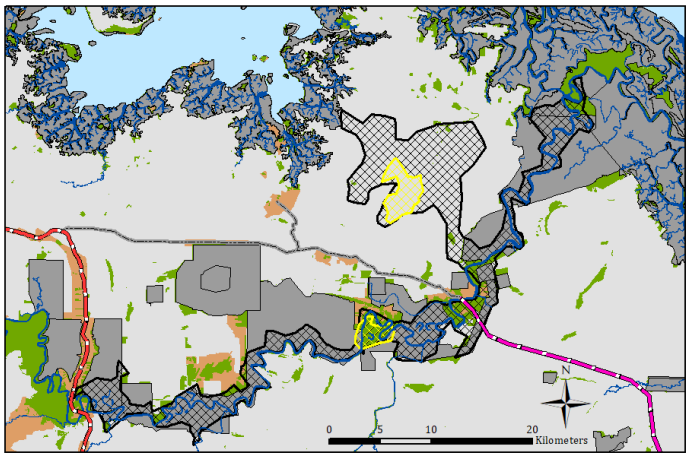


Figure SI 1. Maps showing the hot spot areas (yellow cross hatch) inside of the mapped out entire range (black cross hatch) for each collared elephant in the Lower Kinabatangan; along with information on locations of protected areas, unprotected forest, oil palm estates, and oil palm smallholdings/villages in 2010.

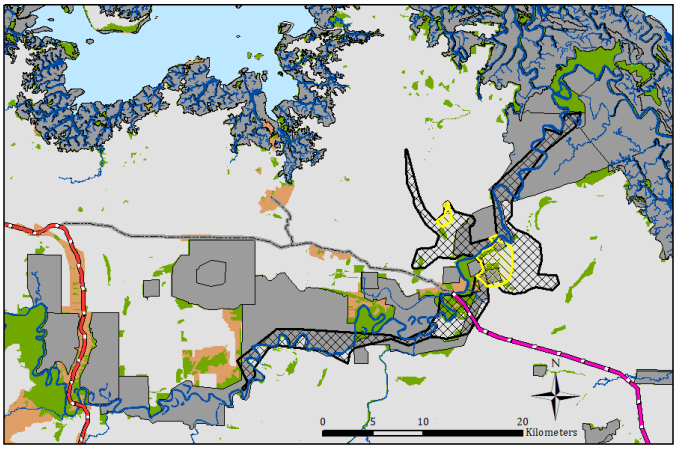
(a) Puteri



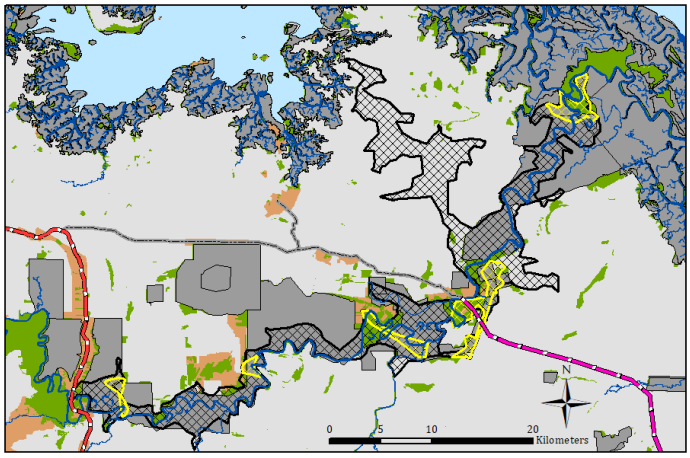
(b) Ita



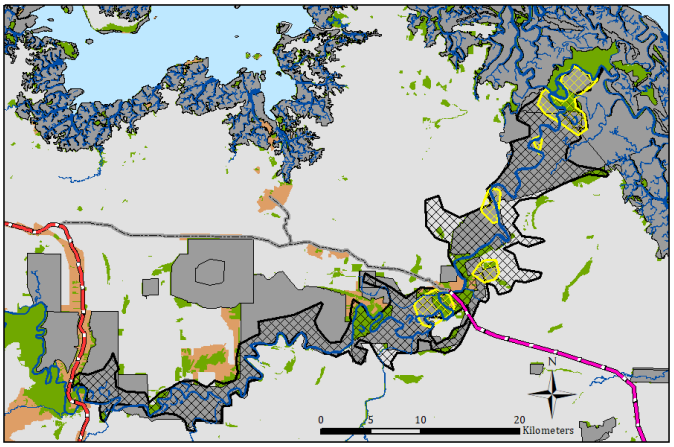
(c) Sejati



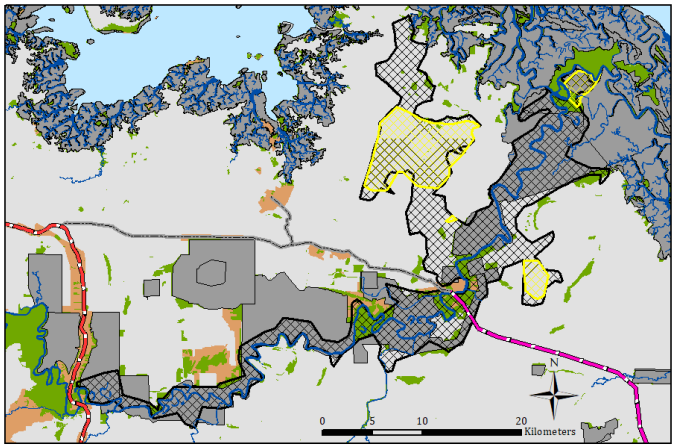
(d) Sandi (F)



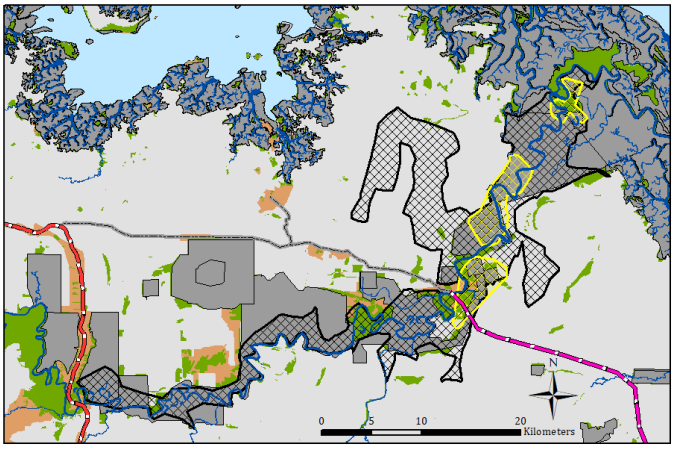
(e) Kasih



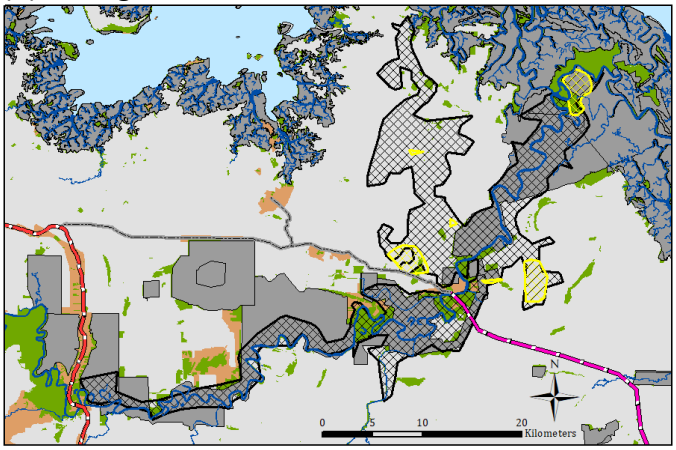
(f) Ratu



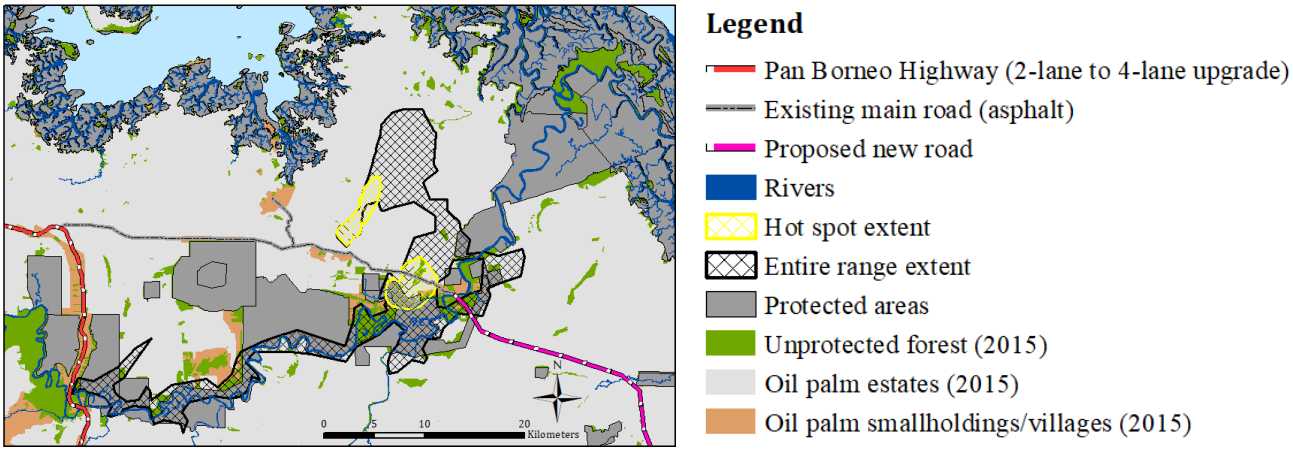
(g) Koyah



(h) Girang



(i) Sandy (M)



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