Opportunity for Thailand's forgotten tigers: assessment of the Indochinese tiger *Panthera tigris corbetti* and its prey with camera-trap surveys

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SUPPLEMENTARY MATERIAL 1 Comprehensive analysis of the photographic capture rate index for tigers and prey for all five parks.

Introduction

The use of photographic capture rates (photographic capture rate index, PCRI; or relative abundance index, RAI) as a correlate with abundance is controversial (Carbone et al., 2001; Jennelle et al., 2002; Harmsen et al., 2010), notably because it fails to account for detection probabilities. Jenks et al. (2011) highlighted that such rates, while not a true metric of abundance and limited in applications, may be useful for opportunistic camera-trap studies, which have been common across Asia. This includes identifying areas for conservation interventions and potential trends to merit further research (Carbone et al., 2001; Jenks et al., 2011). This method was employed previously in Khao Yai National Park to document species declines and identify species hotspots to focus further research or management inquiries (Jenks et al., 2011). If used with additional analysis, such indices can be useful for comparing detection rates between areas of interest (Rayan & Linkie, 2015, 2016). In addition to the methods described in the main text, we conducted additional analysis on PCRI to compare rates across protected areas and survey years. However, as such indices are not a true measure of abundance, results should not be assumed to reflect actual differences in abundance. We feel results may nonetheless be of interest and have therefore included this supplementary information.

Methods

We define PCRI as the number of species detections per 100 camera-trap nights (O'Brien et al. 2003; O'Brien, 2011) and calculated this separately per year for each camera station by dividing the sum of detections for a species by the total number of camera-trap nights divided by 100. PCRI values for prey species were calculated separately for each species as well as for all species combined, calculated as the sum of PCRI values for each individual prey species (Ngoprasert et al., 2007).

We conducted individual comparisons among PCRI for tiger, individual prey species, and combined prey across parks and years using analysis of variance (ANOVA; Sokal and Rohlf 1981). To determine significance of differences in mean PCRI between protected areas and years, we applied a post-hoc Tukey honest significance difference test (Tukey, 1949), examining differences in PCRI between parks, years, and the interaction between parks and years. We considered differences significant when $P < 0.01$, very significant when $P < 0.001$, and highly significant when $P < 0.0001$.

Results

Tiger PCRI was generally higher in Thap Lan National Park than Pang Sida National Park (Fig. 1). Results of ANOVA and Tukey honest significance difference test for tigers in Thap Lan NP and Pang Sida NP indicated highly significant ($P < 0.0001$) differences in mean PCRI (Table 1), with Thap Lan NP characterized by a much higher mean PCRI compared to Pang Sida NP. We also found highly significant differences in PCRI between certain years and for several interactions of park and year. Particularly, mean PCRI for Thap Lan NP in 2014 were higher than almost all years in Pang Sida NP. In general, mean PCRI in the latter years of the study (2013–2016) were significantly higher in comparison to early years (2010, 2012; Table 2), which are mostly attributable to Thap Lan NP.

Differences between combined prey species mean PCRI (Fig. 2) among all variables were highly significant. Thap Lan NP had significantly higher mean PCRI for prey compared to Pang Sida NP, Ta Phraya NP, and Dong Yai WS (Table 3). Mean PCRI for Thap Lan NP in 2015 were higher than most years for Pang Sida NP. Mean PCRI for Khao Yai NP, particularly for 2014 and 2015, were also significantly higher compared to those of Pang Sida NP, Ta Phraya NP, and Dong Yai WS. Similar to tigers, prey PCRI was generally higher in the later years of the study (2013–2016) compared to earlier years (2009, 2010, 2012; Table 2).

A number of notable significant relationships are evident among prey species (Table 3, Fig. 3). For sambar, mean PCRI for Thap Lan NP was higher to a significant or highly significant degree compared to Pang Sida NP, Ta Phraya NP, and Dong Yai WS across a number of years. Furthermore, wild boar mean PCRI in Pang Sida NP was significantly higher than in Thap Lan NP, particularly in 2016. For gaur, differences in mean PCRI were significant for all variables with Khao Yai NP and Pang Sida NP having higher mean PCRI values compared with Thap Lan NP to a highly significant degree.

Discussion

The significant differences in PCRI between the studied parks over time provide insight into this previously understudied tiger population. Large and highly significant differences in mean PCRI occur between Thap Lan NP and Pang Sida NP, particularly with substantial survey effort. These differences occur despite contiguous forest cover between Thap Lan NP, Pang Sida NP, Ta Phraya NP, and Dong Yai WS. This may imply a heterogeneity in suitability of this landscape for tigers, which merits further investigation.

We documented significantly higher PCRI values overall in later years of study compared to earlier years for tigers, particularly for Thap Lan NP. Higher overall PCRI values over time may have resulted from population changes during the study period, however, this cannot be confidently concluded because of limitations in the study design. It is possible that detection probabilities increased over time as a result of increased knowledge of the tigers' use of the landscape and improvements in camera-trap performance. Despite the limitations mentioned, we can conclude that conditions in at least some areas of DPKY support breeding and dispersal of tigers, which could provide a foundation for population recovery and expansion into areas such as Khao Yai NP.

Given that prey is an important factor for tiger distribution, density and persistence (Karanth & Stith, 1999; Karanth et al., 2004; Chapron et al., 2008), significant differences in PCRI of prey between Thap Lan NP and Pang Sida NP could be linked to differences in tiger PCRI between these parks. We found that mean PCRI for sambar in Thap Lan NP was significantly higher than in Pang Sida NP, whereas Pang Sida NP had significantly higher mean PCRI for gaur and wild boar than Thap Lan NP. Elsewhere in Thailand, studies indicate that sambar, gaur, banteng (Petdee, 2000; Prommakul, 2003) and wild boar (Ngoprasert et al., 2012) are important prey species for tigers, which is corroborated by studies elsewhere in the tiger's range (Andheria et al., 2007; Sunquist, 2010; Hayward et al., 2012).

Mean PCRI for combined prey were generally higher in the latter part of the study period. Although this could reflect increases in prey populations, it could also be a result of increased detection probabilities.

Given limitations imposed by the study design, we feel analysis of PCRI, although not ideal, was useful for examining differences in detections in our study overall and to illuminate potential trends for more targeted investigation. Our assessments are conservative, given that our study design precludes calibration of PCRI with independent estimates of density or detection probability (Nichols et al., 2010). Further, we do not make comparisons across species or studies nor do we recommend this approach over occupancy or mark–recapture based methods. Methodologically rigorous study designs should be employed wherever possible in monitoring tiger populations.

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SUPPLEMENTARY TABLE 1 Cumulative species detections and detection rates (detections per 100 camera-trap nights) for protected areas in DPKY.

Scientific Name	Common Name	IUCN Red List Status[1]	DYWS[2]	KYNP[2]	PSNP[2]	TLNP[2]	TPNP[2]
Panthera tigris	Indochinese tiger	EN	7 (0.14)		516 (1.8)	1203 (3.65)	
Manis javanica	Sunda pangolin	CR	2 (0.04)	2 (0.03)	7 (0.02)	9 (0.03)	
Bos javanicus	Banteng	EN			7 (0.02)		11 (0.19)
Cuon alpinus	Dhole	EN	11 (0.23)	109 (1.43)	147 (0.51)	366 (1.11)	3 (0.05)
Elephas maximus	Asian elephant	EN	309 (6.34)	128 (1.68)	1047 (3.65)	1500 (4.55)	5 (0.09)
Viverra megaspila	Large-spotted civet	EN	3 (0.06)	8 (0.1)	7 (0.02)	53 (0.16)	10 (0.17)
Arctictis binturong	Binturong	VU	1 (0.02)	2 (0.03)	11 (0.04)	9 (0.03)	
Arctonyx collaris	Hog badger	VU	5 (0.1)	16 (0.21)	186 (0.65)	84 (0.25)	
Bos gaurus	Gaur	VU	119 (2.44)	292 (3.83)	815 (2.84)	422 (1.28)	173 (3)
Helarctos malayanus	Malayan sun bear	VU	33 (0.68)	21 (0.28)	467 (1.63)	144 (0.44)	17 (0.29)
Lutrogale perspicillata	Smooth-coated otter	VU		5 (0.07)	1 (0.003)		
Macaca leonina	Pig-tailed macaque	VU	60 (1.23)	275 (3.61)	292 (1.02)	641 (1.95)	86 (1.49)
Neofelis nebulosa	Clouded leopard	VU	3 (0.06)	19 (0.25)	83 (0.29)	46 (0.14)	7 (0.12)
Nycticebus bengalensis	Bengal slow loris	VU			1 (0.003)		
Rusa unicolor	Sambar	VU	81 (1.66)	661 (8.67)	56 (0.2)	4844 (14.7)	1 (0.02)
Ursus thibetanus	Asiatic black bear	VU	21 (0.43)	35 (0.46)	152 (0.53)	104 (0.32)	10 (0.17)
Capricornis milneedwardsii	Chinese serow	NT	2 (0.04)	9 (0.12)	93 (0.32)	47 (0.14)	12 (0.21)
Catopuma temminckii	Asiatic golden cat	NT		2 (0.03)	11 (0.04)	22 (0.07)	
Pardofelis marmorata	Marbled cat	NT		2 (0.03)	10 (0.03)	17 (0.05)	1 (0.02)
Arctogalidia trivirgata	Three-striped palm civet	LC				1 (0.003)	
Atherurus macrourus	Asiatic brush-tailed porcupine	LC	6 (0.12)	3 (0.04)	144 (0.5)	12 (0.04)	28 (0.49)
Canis aureus	Golden jackal	LC		10 (0.13)	16 (0.06)	34 (0.1)	10 (0.17)
Herpestes javanicus	Small Asian mongoose	LC	1 (0.02)	16 (0.21)	9 (0.03)	12 (0.04)	6 (0.1)
Herpestes urva	Crab-eating mongoose	LC	7 (0.14)	15 (0.2)	152 (0.53)	144 (0.44)	1 (0.02)
Hystrix brachyura	Malayan porcupine	LC	97 (1.99)	181 (2.38)	770 (2.68)	804 (2.44)	22 (0.38)
Lepus peguensis	Siamese hare	LC		5 (0.07)	1 (0.003)	25 (0.08)	1 (0.02)
Macaca fascicularis	Long-tailed macaque	LC	1 (0.02)				
Martes flavigula	Yellow-throated marten	LC	7 (0.14)	4 (0.05)	62 (0.22)	182 (0.55)	3 (0.05)
Muntiacus vaginalis	Northern red muntjac	LC	177 (3.63)	461 (6.05)	691 (2.41)	724 (2.2)	160 (2.78)

Supplementary Table 1, continued.

Scientific Name	Common Name	IUCN Red List Status[1]	DYWS[2]	KYNP[2]	PSNP[2]	TLNP[2]	TPNP[2]
Paradoxurus hermaphroditus	Common palm civet	LC	11 (0.23)	74 (0.97)	261 (0.91)	224 (0.68)	25 (0.43)
Prionailurus bengalensis	Leopard cat	LC	20 (0.41)	51 (0.67)	271 (0.94)	369 (1.22)	13 (0.23)
Prionodon pardicolor	Spotted linsang	LC			4 (0.01)	9 (0.03)	
Rhizomys pruinosus	Hoary bamboo rat	LC			7 (0.02)	7 (0.02)	
Sus scrofa	Wild boar	LC	325 (6.67)	398 (5.22)	1911 (6.66)	1522 (4.62)	199 (3.45)
Tragulus kanchil	Lesser mouse-deer	LC	49 (1.01)	28 (0.37)	287 (0.1)	40 (0.12)	10 (0.17)
Viverra zibetha	Large Indian civet	LC	16 (0.33)	114 (1.5)	424 (1.48)	584 (1.77)	9 (0.16)
Viverricula indica	Small Indian civet	LC	4 (0.08)	14 (0.18)	43 (0.15)	198 (0.6)	2 (0.03)
Camera-trap nights			4,871	7,621	28,698	32,955	5,764
Number of Species			27	30	35	33	26

[1]CR, Critically Endangered; EN, Endangered; VUm Vulnerable; NT, Near Threatened; LC, Least Concern.
[2]DYWS, Dong Yai Wildlife Sanctuary; KYNP, Khao Yai National Park; PSNP, Pang Sida National Park; TLNP, Thap Lan National Park; TPNP, Ta Phraya National Park.

SUPPLEMENTARY TABLE 2 Summary of Tukey honest significance difference test results comparing differences in mean tiger PCRI values for and their significance among the interaction between protected areas and years. Only Thap Lan NP and Pang Sida NP were included because of low or no detections of tigers in other protected areas.

	TL10	TL11	TL12	TL13	TL14	TL15	TL16	TL17	PS10	PS11	PS12	PS13	PS14	PS15	PS16	PS17
TL10		-2.5	-1.9	-4.5	-6.3	-3.9	-4.0	-3.2	-0.2	-2.7	0.4	-0.4	-1.2	-1.6	-1.1	-0.3
TL11	2.5		0.6	-1.9	-3.8	-1.4	-1.5	-0.6	2.4	-0.1	2.9	2.1	1.3	0.9	1.5	2.2
TL12	1.9	-0.6		-2.5	-4.4	-2.0	-2.1	-1.2	1.8	-0.7	2.3	1.5	0.7	0.3	0.9	1.6
TL13	4.5	1.9	2.5		-1.8	0.5	0.4	1.3	4.3	1.8	4.9	4.1	3.3	2.8	3.4	4.2
TL14	6.3	3.8	4.4	1.8		2.3	2.2	3.1	6.1	3.6	6.7	5.9	5.1	4.7	5.2	6.0
TL15	3.9	1.4	2.0	-0.5	-2.3		-0.1	0.8	3.8	1.3	4.3	3.5	2.7	4.7	2.9	3.7
TL16	4.0	1.5	2.1	-0.4	-2.2	0.1		0.9	3.9	1.4	4.5	3.7	2.9	2.4	3.0	3.8
TL17	3.2	0.6	1.2	-1.3	-3.1	-0.8	-0.9		3.0	0.5	3.6	2.8	2.0	1.5	2.1	2.9
PS10	0.2	-2.4	-1.8	-4.3	-6.1	-3.8	-3.9	-3.0		-2.5	0.6	-0.2	-1.0	-1.5	-0.9	-0.1
PS11	2.7	0.1	0.7	-1.8	-3.6	-1.3	-1.4	-0.5	2.5		3.1	2.3	1.5	1.0	1.6	2.4
PS12	-0.4	-2.9	-2.3	-4.9	-6.7	-4.3	-4.5	-3.6	-0.6	-3.1		-0.8	-1.6	-2.0	-1.5	-0.7
PS13	0.4	-2.1	-1.5	-4.1	-5.9	-3.5	-3.7	-2.8	0.2	-2.3	0.8		-0.8	-1.2	-0.7	0.1
PS14	1.2	-1.3	-0.7	-3.3	-5.1	-2.7	-2.9	-2.0	1.0	-1.5	1.6	0.8		-0.4	0.1	0.9
PS15	1.6	-0.9	-0.3	-2.8	-4.7	-4.7	-2.4	-1.5	1.5	-1.0	2.0	1.2	0.4		0.6	1.3
PS16	1.1	-1.5	-0.9	-3.4	-5.2	-2.9	-3.0	-2.1	0.9	-1.6	1.5	0.7	-0.1	-0.6		0.8
PS17	0.3	-2.2	-1.6	-4.2	-6.0	-3.7	-3.8	-2.9	0.1	-2.4	0.7	-0.1	-0.9	-1.3	-0.8	

$P < 0.0001$ | $0.0001 \leq P < 0.001$ | $0.001 \leq P < 0.01$ | $0.01 \leq P \leq 0.05$

SUPPLEMENTARY TABLE 3 Summary of Tukey honest significance difference test results comparing differences in mean PCRI values and their significance across years for tigers and combined prey species. For tigers, only Thap Lan NP and Pang Sida NP were included because of low or no detections of tigers in other protected areas.

Tiger

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2008		-	-	-	-	-	-	-	-	-
2009			-	-	-	-	-	-	-	-
2010		-		-4.0	-1.5	-3.0	-4.8	-3.6	-3.5	-2.7
2011		-	4.0		2.5	1.0	-0.9	0.4	0.5	1.3
2012		-	1.5	-2.5		-1.5	-3.4	-2.1	-2.0	-1.2
2013		-	3.0	-1.0	1.5		-1.8	-0.6	-0.5	0.4
2014		-	4.8	0.9	3.4	1.8		1.3	1.4	2.2
2015		-	3.6	-0.4	2.1	0.6	-1.3		0.1	0.9
2016		-	3.5	-0.5	2.0	0.5	-1.4	-0.1		0.8
2017		-	2.7	-1.3	1.2	-0.4	-2.2	-0.9	-0.8	

Combined prey

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2008		13.2	16.0	4.1	5.7	-2.3	-0.3	-7.5	-4.0	5.7
2009	-13.2		2.8	-9.1	-7.5	-15.5	-13.5	-20.7	-17.2	-7.4
2010	-16.0	-2.8		-11.9	-10.2	-18.3	-16.2	-23.5	-20.0	-10.2
2011	-4.1	9.1	11.9		1.7	-6.4	-4.3	-11.6	-8.1	1.7
2012	-5.7	7.5	10.2	-1.7		-8.0	-6.0	-13.2	-9.7	0.0
2013	2.3	15.5	18.3	6.4	8.0		2.0	-5.2	-1.7	8.1
2014	0.3	13.5	16.2	4.3	6.0	-2.0		-7.2	-3.7	6.0
2015	7.5	20.7	23.5	11.6	13.2	5.2	7.2		3.5	13.2
2016	4.0	17.2	20.0	8.1	9.7	1.7	3.7	-3.5		9.8
2017	-5.7	7.4	10.2	-1.7	0.0	-8.1	-6.0	-13.2	-9.8	

$P < 0.0001$ | $0.0001 \leq P < 0.001$ | $0.001 \leq P < 0.01$ | $0.01 \leq P \leq 0.05$

Supplementary TABLE 4 Summary of Tukey honest significance difference test results comparing differences in mean PCRI values amongst protected areas for combined prey, gaur *Bos gaurus*, sambar *Rusa unicolor* and wild boar *Sus scrofa*.

Combined prey

	DYWS	KYNP	PSNP	TLNP	TPNP
DYWS		-12.3	0.3	-11.7	3.8
KYNP	12.3		12.5	0.6	16.1
PSNP	-0.3	-12.5		-11.9	3.6
TLNP	11.7	-0.6	11.9		15.5
TPNP	-3.8	-16.1	-3.6	-15.5	

Gaur

	DYWS	KYNP	PSNP	TLNP	TPNP
DYWS		-1.3	-0.6	0.8	-0.5
KYNP	1.3		0.8	2.1	0.8
PSNP	0.6	-0.8		1.3	0.1
TLNP	-0.8	-2.1	-1.3		-1.3
TPNP	0.5	-0.8	-0.1	1.3	

Sambar

	DYWS	KYNP	PSNP	TLNP	TPNP
DYWS		-7.6	1.2	-14.2	1.3
KYNP	7.6		8.8	-6.6	8.9
PSNP	-1.2	-8.8		-15.4	0.2
TLNP	14.2	6.6	15.4		15.5
TPNP	-1.3	-8.9	-0.2	-15.5	

Wild boar

	DYWS	KYNP	PSNP	TLNP	TPNP
DYWS		-0.3	-0.9	0.8	2.4
KYNP	0.3		-0.7	1.1	2.6
PSNP	0.9	0.7		1.8	3.3
TLNP	-0.8	-1.1	-1.8		1.5
TPNP	-2.4	-2.6	-3.3	-1.5	

$P < 0.0001$ $0.0001 \leq P < 0.001$ $0.001 \leq P < 0.01$ $0.01 \leq P \leq 0.05$

SUPPLEMENTARY TABLE 5 Summary of ANOVA test results comparing differences in mean PCRI values and their significance among protected areas (PARK), years (YEAR), and the interaction between protected areas and years (PARK:YEAR). Only Thap Lan NP and Pang Sida NP were included because of low or no detections of tigers in other protected areas.

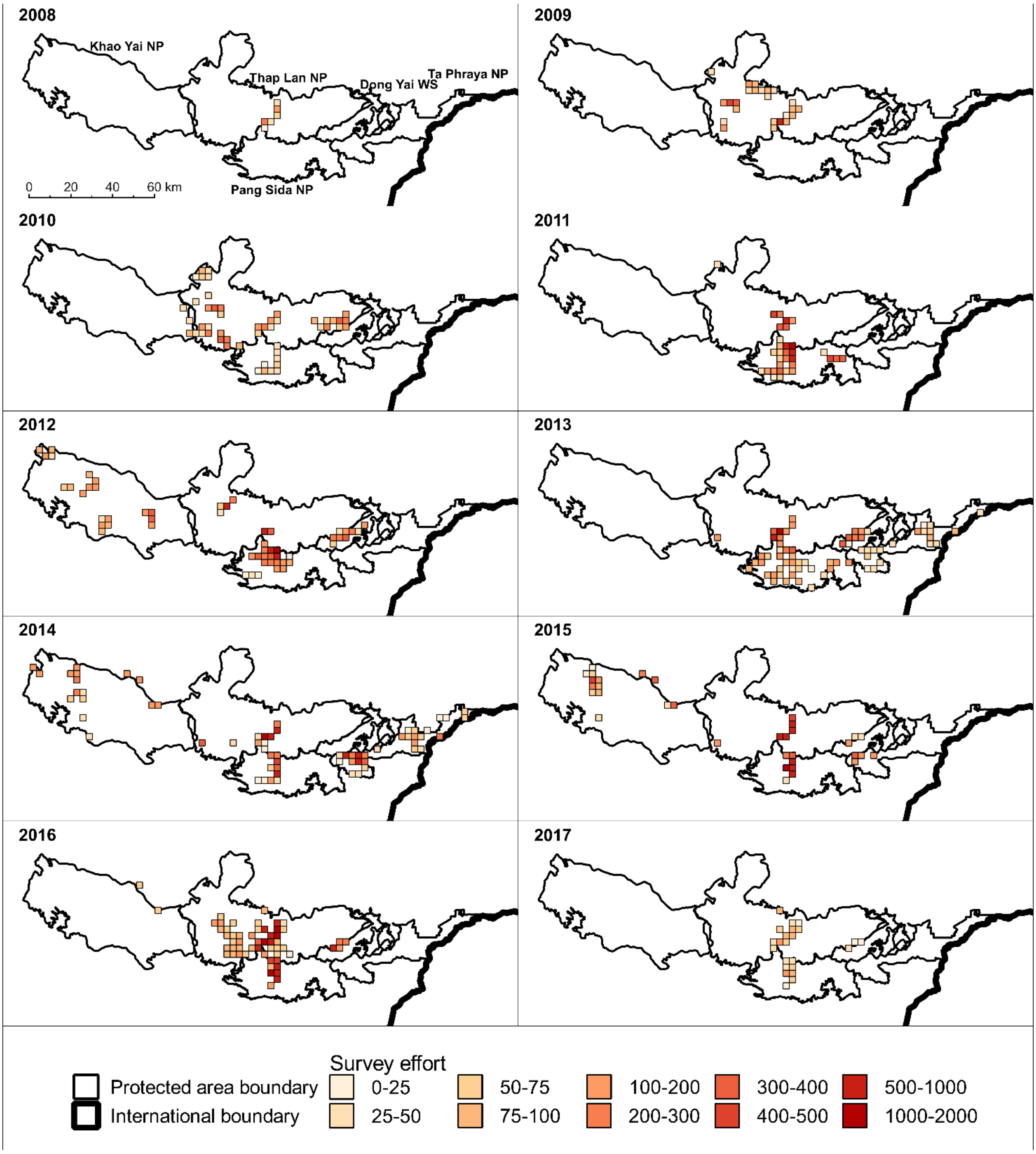
		Sum of squares	Mean square	F-value	p	Significance
Tiger	PARK	637.83	637.83	28.12	1.45E-07	***
	YEAR	1973.38	219.26	9.67	3.69E-14	***
	PARK:YEAR	408.28	58.33	2.57	1.26E-02	
	Residuals	19598.57	22.68			
Combined prey	PARK	95200.16	23800.04	21.38	2.45E-17	***
	YEAR	114570.51	12730.06	11.44	1.06E-17	***
	PARK:YEAR	55125.62	3242.68	2.91	5.69E-05	***
	Residuals	2554308.87	1112.99			
Sambar	PARK	122714.90	30678.73	33.43	3.85E-27	***
	YEAR	57491.87	6387.99	6.96	5.76E-10	***
	PARK:YEAR	28359.21	1668.19	1.82	2.11E-02	
	Residuals	2106122.78	917.70			
Gaur	PARK	1267.02	316.75	11.75	1.90E-09	***
	YEAR	652.39	72.49	2.69	4.14E-03	*
	PARK:YEAR	2333.33	137.25	5.09	4.46E-11	***
	Residuals	61876.47	26.96			
Wild boar	PARK	2471.56	617.89	5.58	1.80E-04	**
	YEAR	5347.12	594.12	5.37	2.69E-07	***
	PARK:YEAR	4470.12	262.95	2.38	1.23E-03	*
	Residuals	254016.40	110.68			
Muntjac	PARK	2992.86	748.21	21.47	2.10E-17	***
	YEAR	4174.74	463.86	13.31	5.68E-21	***
	PARK:YEAR	2182.20	128.36	3.68	4.96E-07	***
	Residuals	79994.68	34.86			
Banteng	PARK	4.56	1.14	4.26	1.94E-03	*
	YEAR	3.91	0.43	1.62	1.03E-01	
	PARK:YEAR	6.38	0.38	1.40	1.25E-01	
	Residuals	613.90	0.27			
Serow	PARK	18.74	4.69	3.05	1.601E-02	
	YEAR	20.73	2.30	1.50	1.415E-01	
	PARK:YEAR	17.41	1.02	0.67	8.375E-01	
	Residuals	3521.12	1.53			

* P < 0.01
** P < 0.001
*** P < 0.0001

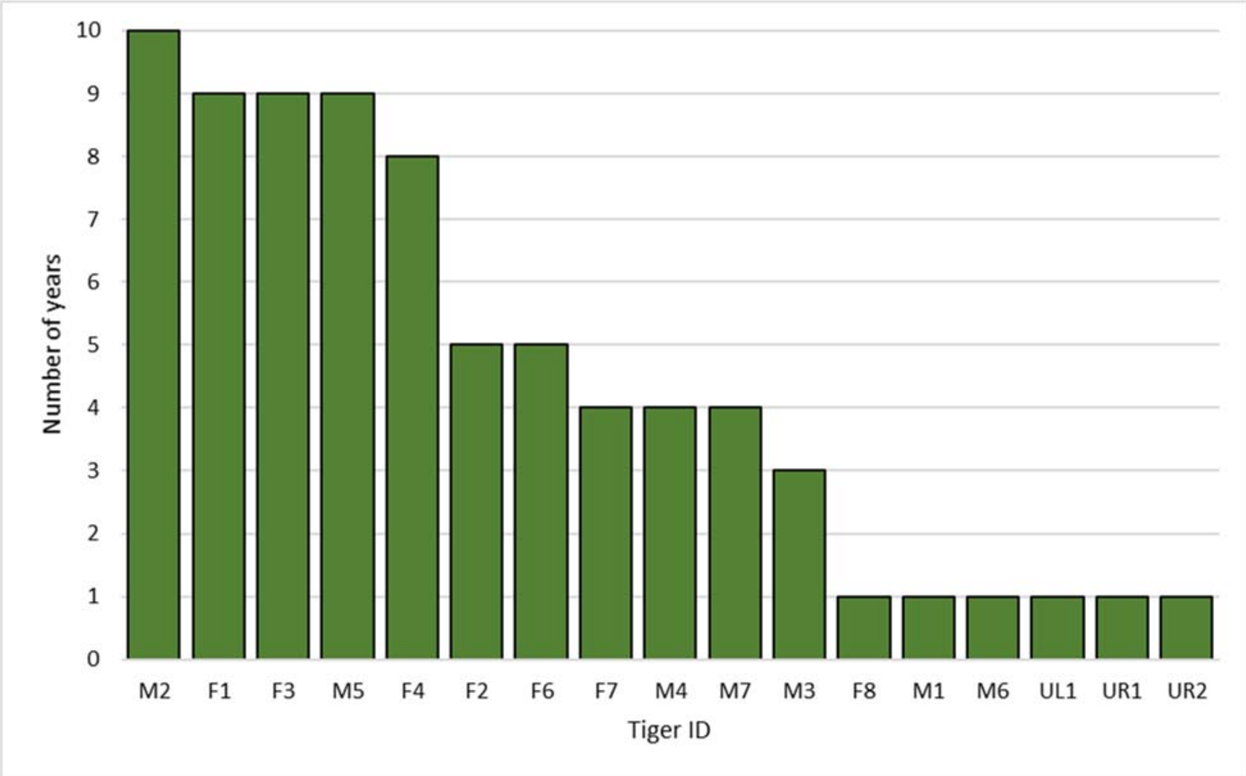
SUPPLEMENTARY TABLE 6 Summary of Tukey honest significance difference test results comparing differences in observed mean PCRI for combined prey (diff), 95% confidence intervals (CI), adjusted p-values (p), and their significance among the interaction between specific protected areas and years (PARK:YEAR).

Variables	Difference in means	Lower CI	Upper CI	p	Significance
TL:2015-PS:2012	41.08	22.55	59.60	3.06E-11	***
TL:2015-TP:2014	41.51	22.85	60.17	3.06E-11	***
TL:2015-PS:2011	41.54	23.60	59.49	3.07E-11	***
TL:2015-TL:2010	41.75	23.40	60.11	3.07E-11	***
TL:2015-PS:2015	40.03	20.10	59.97	3.27E-11	***
TL:2015-TL:2009	38.55	18.62	58.48	4.98E-11	***
TL:2015-KY:2012	41.22	18.78	63.67	3.81E-10	***
TL:2015-PS:2013	37.62	17.04	58.20	4.79E-10	***
TL:2015-DY:2012	41.18	17.69	64.67	3.89E-09	***
PS:2016-TL:2015	-32.35	-51.02	-13.67	6.98E-09	***
TL:2016-PS:2011	20.01	7.71	32.30	1.15E-07	***
TL:2015-TP:2013	46.52	17.76	75.28	1.48E-07	***
TL:2016-TL:2010	20.22	7.34	33.10	5.05E-07	***
TL:2015-PS:2014	34.88	11.95	57.81	1.67E-06	***
TL:2016-TP:2014	19.97	6.67	33.28	2.74E-06	***
TL:2015-DY:2013	37.85	12.58	63.12	2.93E-06	***
TL:2016-PS:2012	19.54	6.42	32.66	3.65E-06	***
TL:2013-PS:2011	29.09	9.36	48.83	5.21E-06	***
TL:2015-PS:2010	48.44	15.55	81.32	5.33E-06	***
TL:2013-TL:2010	29.30	9.20	49.41	7.71E-06	***
TL:2015-TL:2014	29.69	8.91	50.47	1.50E-05	***
TP:2014-TL:2013	-29.06	-49.45	-8.68	1.61E-05	***
TL:2013-PS:2012	28.63	8.36	48.89	2.16E-05	***
PS:2015-TL:2013	-27.58	-49.14	-6.02	3.79E-04	**
DY:2016-TL:2015	-34.76	-62.00	-7.51	4.10E-04	**
TL:2015-TL:2011	28.87	5.95	51.80	5.69E-04	**
KY:2014-PS:2011	23.12	4.62	41.62	6.85E-04	**
TL:2016-TL:2015	-21.54	-38.78	-4.30	6.94E-04	**
KY:2015-PS:2011	23.37	4.46	42.28	9.03E-04	**
KY:2014-TL:2010	23.33	4.44	42.23	9.19E-04	**
TL:2016-PS:2015	18.49	3.45	33.54	1.03E-03	*
KY:2015-TL:2010	23.58	4.29	42.88	1.18E-03	*
TL:2013-TL:2009	26.10	4.54	47.66	1.47E-03	*
TL:2013-KY:2012	28.77	4.88	52.67	1.67E-03	*
TP:2014-KY:2014	-23.09	-42.28	-3.90	1.69E-03	*
TP:2015-TL:2015	-41.67	-76.64	-6.71	2.10E-03	*
KY:2015-TP:2014	23.34	3.75	42.93	2.10E-03	*
KY:2014-PS:2012	22.66	3.60	41.72	2.22E-03	*
KY:2015-PS:2012	22.91	3.45	42.37	2.76E-03	*
TL:2013-DY:2012	28.73	3.84	53.61	4.15E-03	*
TL:2017-TL:2015	-33.63	-63.12	-4.15	5.30E-03	*
TP:2013-TL:2013	-34.07	-63.98	-4.16	5.45E-03	*
TL:2013-PS:2013	25.17	3.02	47.33	5.74E-03	*
TL:2016-TL:2009	17.01	1.97	32.05	6.31E-03	*

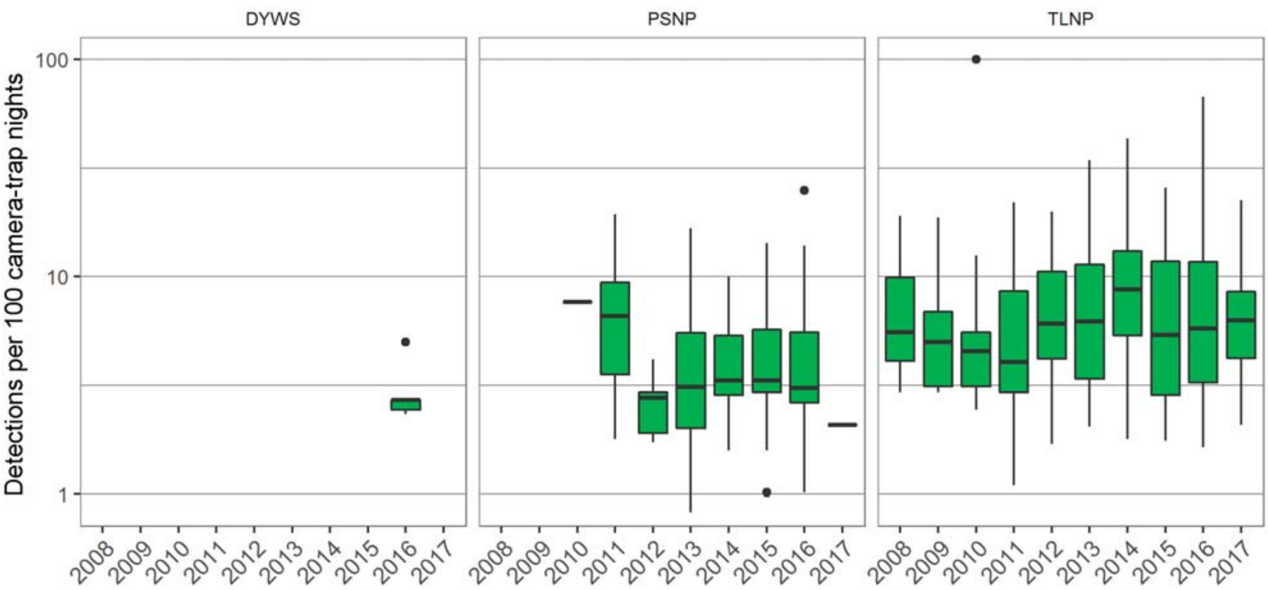
* Significant ($P < 0.01$).
**Very Significant ($P < 0.001$).
*** Highly Significant ($P < 0.0001$).



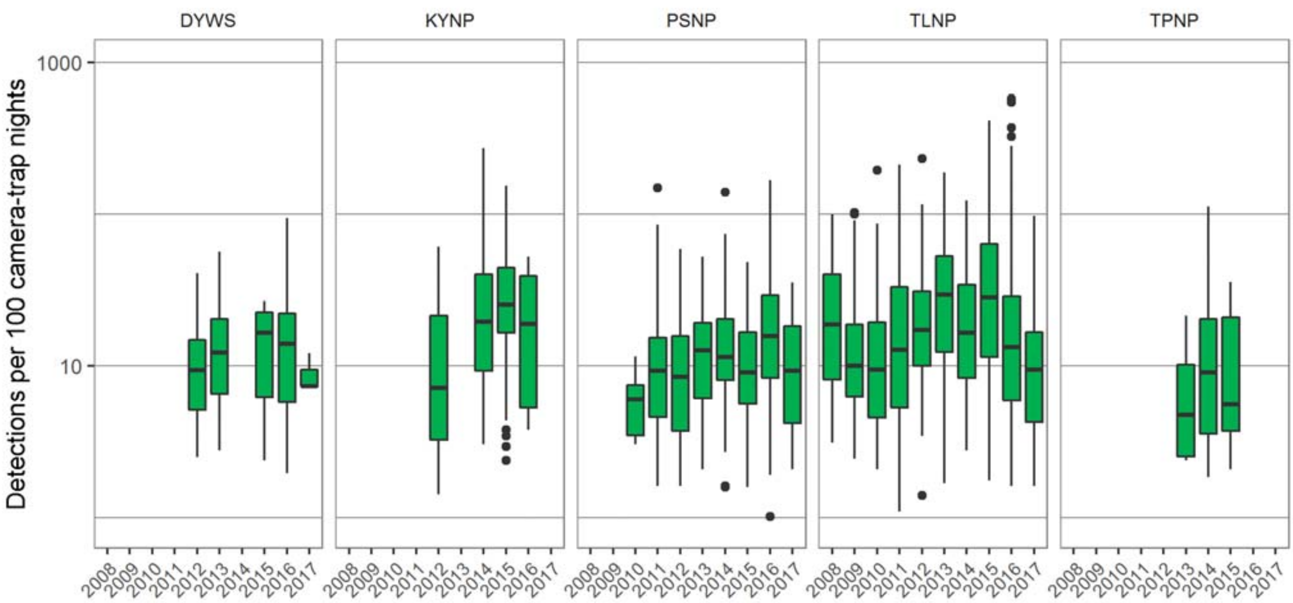
SUPPLEMENTARY FIG. 1 Spatial extent of surveys in 2008–2017, shaded according to total survey effort (number of camera-trap nights).



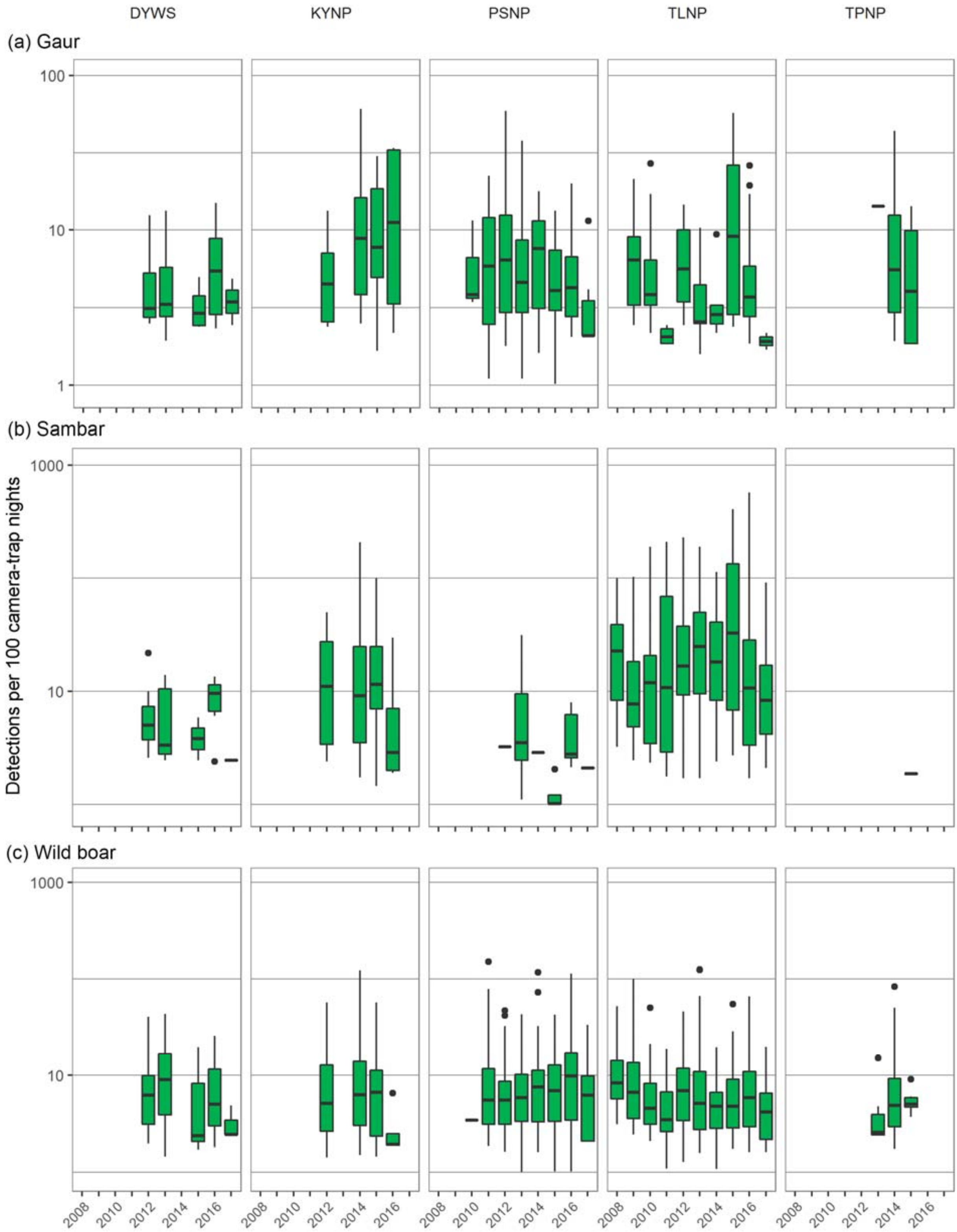
SUPPLEMENTARY FIG. 2 Number of years between first and last confirmed detections of individual adult tigers, indicating the minimum length of persistence within the study site since first detection. Five individuals were detected over a period of 8–10 years, six individuals were detected over 3–5 years, and another six were documented in 1 year during the study.



SUPPLEMENTARY FIG. 3 Boxplot of photographic capture rate indices (PCRI) of tigers for Dong Yai WS, Pang Sida NP, and Thap Lan NP over the study period (2008–2017). Boxes indicate the range between 25th and 75th percentiles, with an internal line designating the median. Whiskers indicate the range between minimum and maximum values, with dots representing outliers.



SUPPLEMENTARY FIG. 4 Boxplot of photographic capture rate indices (PCRI) of combined prey (sambar *Rusa unicolor*, wild boar *Sus scrofa*, gaur *Bos gaurus*, northern red muntjac *Muntiacus vaginalis*, banteng *Bos javanicus* and Chinese serow *Capricornis milneedwardsii*) for each park in DPKY over the study period (2008–2017).



SUPPLEMENTARY FIG. 5 Boxplot of photographic capture rate indices (PCRI; detections per 100 camera-trap nights) of prey species (a) gaur, (b) sambar and (c) wild boar, for each park in DPKY over the study period (2008–2017).