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## Appendix 1

### Details on data sampling

The sampling was done at hierarchical scales, in decreasing order represented by Forest Divisions and Forest Ranges. Forest cover distribution in the study area was identified using False Colour Composite of satellite imageries (see section 'Land cover variables') and the existing spatial data on Forest Divisions wherein the Forest Ranges were marked. The Forest Ranges were taken as the basic sampling unit in each Forest Division and Protected Area. The Forest Range shape and size determined the number of routes that were surveyed.

The Terai Arc Landscape (TAL) consist of 2 different habitat types: the low elevation plains (terai) which are covered by rich alluvial grasslands and the mountainous areas (bhabar and Shivaliks) which are densely covered by deciduous and riparian forests. To make our sampling as efficient as possible, we searched the likely tiger routes such as riverbeds and dirt forest roads for pugmarks adopting the methodology of previous studies in the TAL (Smith et al. 1998, Johnsingh et al. 2004). Given the nature of 2 different habitat types, and alluvial plains terai, the best approach was to look for pugmarks in the riverbeds of the mountainous areas and unpaved dirt forest roads in the plain areas.

Surveys were carried out on foot by 2/3 well trained research fellows and field assistants, except in Dudhwa National Park (NP), where we collected the data on indirect evidence by traveling in a vehicle at the speed of 15–20 km h<sup>-1</sup> along the forest roads and survey routes at a time. All survey routes were intensively searched for evidence of tiger presence in the early morning before they were damaged by human activities (Johnsingh et al. 2004). Reflecting the rugged terrain sign surveys ranged from 0.5 to 3.25 km in length depending on accessibility.

Tiger pugmarks were distinguished from those of leopards, if they had pad widths  $\geq 7.5$  cm. (Smith et al. 1999). Tiger scats were distinguished from those of leopards based on their size (scats of tigers are larger), appearance (tigers scats have a lower degree of coiling), and other supplementary evidence in the form of associated pugmarks and scraps (scrapes wider than 21 cm were considered as tigers (Smith et al. 1999). Scats not clearly identifiable in the field were disregarded.

Pellets of all these ungulate species are very distinct and have been identified based on reference samples collected from field for each species. Barking deer pellets have a very specific depression in each pellet and are small in size compare to chital, sambar, and hog deer. Such distinguishing features have not been observed in any other species. Chital pellets are more cylindrical in comparison to sambar pellets which are bigger in size and more rectangular or square. Hog deer pellets were smaller than chital and sambar and usually were identified by their size. Chital pellets contained coarse browse materials, easily recognized when broken by hand, whereas hog deer pellets were smooth and did not contain browsed material. The droppings of wild pig were mostly masses of pellets or in strings of sausage-like/conical shape segments. Whenever problems in identification were encountered in the field, pellets were brought to the base camp for comparison with reference samples.

### References

- Johnsingh, A. J. T. et al. 2004. Conservation status of tiger and associated species in the Terai Arc Landscape, India. – RR-04/001, Wildlife Inst. of India, Dehradun.
- Smith, J. L. D. et al. 1998. Landscape analysis of tiger distribution and habitat quality in Nepal. – *Conserv. Biol.* 12: 1338–1346.
- Smith, J. L. D. et al. 1999. Metapopulation structure of tigers in Nepal. – In: Seidensticker, J. et al. (eds), *Riding the tiger: tiger conservation in human-dominated landscapes*. Cambridge Univ. Press, pp. 176–192.

## Appendix 2

### Stratifying species data

To reduce potential autocorrelation among nearby tiger presence locations (i.e. pseudoreplicates), we superimposed the data with a grid with a cell size of 4.5 × 4.5 km. This cell size was selected to match the mean home range size of female resident tigers in Royal Chitwan National Park in the Nepal part of TAL (Smith 1993). If >1 observation was located within 1 grid cell we randomly selected 1 observation. This procedure eliminated 257 data points, resulting in 98 valid occurrences (Fig. 1 in main text). To avoid autocorrelation in the observation data of the prey species, we stratified these locations within a grid with a cell size of 2 × 2 km, corresponding roughly to the prey species' home range size (Moe and Wegge 1994, Sankar 1994, Sankar and Goyal 2004). This data reduction resulted in 64, 50, and 29 occurrences for chital, sambar, and barking deer, respectively across the landscape in the Indian side.

### References

- Moe, S. R. and Wegge, P. 1994. Spacing behaviour and habitat use of axis deer (*Axis axis*) in lowland Nepal. – *Can. J. Zool.* 72: 1735–1744.
- Sankar, K. 1994. The ecology of three large sympatric herbivores (chital, sambar and nilgai) with special reference for reserve management in Sariska Tiger Reserve, Rajasthan. – PhD thesis, Univ. of Rajasthan, Jaipur, India.
- Sankar, K. and Goyal, S. P. (eds) 2004. Ungulates of India. – ENVIS Bulletin: Wildlife and Protected Areas 07 (1), Wildlife Inst. of India, Dehradun.
- Smith, J. L. D. 1993. The role of dispersal in structuring the Chitwan tiger population. – *Behaviour*: 124: 165–195.

## Appendix 3

### Environmental variables

Vegetation plots were used to identify tree and shrub species compositions. The plots were also used to record the overall vegetation type and disturbance signs of cutting and lopping of trees and presence of livestock. Assignment of spectral classes was done by interpreting this information recorded in the vegetation plots and the existing spatial layers of villages and roads in the TAL. The dominance of sal forests (dominated by sal *Shorea robusta*), sal mixed forests (e.g. *Terminalia alata*, *Anogeissus latifolia*, and *Haldina cordifolia*), riverine forests (e.g. *Syzygium cumini* and *Trewia nudiflora*), and other miscellaneous forests, without the signs of human disturbances in the plots were taken into account when assigning the spectral classes into dense forest type. Dense forests were mostly identified in the protected areas and core areas of the forest divisions. Disturbed forests were identified around the dense forests with the signs of human disturbances in the plots. In the TAL, plantations were dominated by teak *Tectona grandis* and *Eucalyptus*. Degraded forests were identified by higher level of cutting and lopping of trees and presence of livestock and were mostly found at the edge of the forest patches near the human settlements (villages and roads). Tall and short grasses were identified by their dominance in the plots and spectral classes were assigned to it. Human habitations were identified by the spatial vector layers of villages and roads.

### Reference

Jenness, J. S. 2004. Calculating landscape surface area from digital elevation models. – Wildl. Soc. Bull. 32: 829–839.

Table A1. List of predictor variables (excluding neighbourhood variables) used for the spatial models. The resolution of the data is 456 × 456 m.

Abbreviation	Variable	Definition
A) Land cover variables†.		
V1*	dense forest	Frequency of occurrence of the focal feature within the neighborhood scale
V2*	open and disturbed forest	
V3*	degraded forest and plantation	
V4*	tall grass	
V5*	short grass or open area with sparse vegetation	
V6*	scrub land	
V7*	barren land	
V8*	water body	
V9*	agriculture and human habitation	
B) Topographic variables‡		
ME*	mean elevation	Mean elevation
SD*	slope degree [°]	Slope in degrees calculated from ME
SA*	surface area [m]	Surface area calculated from ME§
SR*	surface ratio	Surface ratio§
C) Human disturbance variables		
DI*	Shannon landscape heterogeneity index	Measure of relative land use diversity; equals 0 when there is only 1 land use and increases as the number of land use types increases
PAREA	Presence of Protected Area	Binary variable (1–presence, 0–absence)
D) Prey species variables		
PC*	Chital habitat model	Probability of occurrence based on ENFA
PS*	Sambar habitat model	Probability of occurrence based on ENFA
PB*	Barking deer habitat model	Probability of occurrence based on ENFA

† Classification of 456 × 456 m Landsat satellite data.

‡ Mean elevation (ME) on a 456 × 456 m resolution was calculated from the original data with 85 × 85 m resolution.

\* We calculated 6 neighbourhood variables (scales 1, 2, 3, 5, 7 and 9) for each variable. Each neighborhood variable was marked with the suffix F and the number refers to the size of the scale, e.g., neighbourhood variables for dense forest V1 were V1F1, V1F2, V1F3, V1F5, V1F7 and V1F9.

§ We used the method of Jenness (2004).

## Appendix 4

### Detailed description of variable reduction in GLM and cross validation

For variable reduction within a given block we tested for statistical differences in the value of the variables between presence and absence locations using Kruskal–Wallis tests (Sokal and Rohlf 1995). Variables which did not show significant differences were removed. We then calculated a correlation matrix among all remaining predictor variables using Spearman rank coefficients (Sokal and Rohlf 1995) and from highly correlated predictors ( $r > 0.7$ ); predictor variables with weaker univariate support were not included in the model. Note that we stratified the species data (Appendix 2) to remove spatial autocorrelation in the observation data.

### Cross validation

The most parsimonious model was defined as that having the lowest Akaike's information criterion (AIC). To evaluate the performance of the final models for each hypothesis we used a cross-validation procedure (Fernández et al. 2003). The original data set was randomly divided into 10 subsamples, called folds. Nine of the folds were combined and used for fitting the model and the remaining fold was used for testing the model. This was then repeated for a total of 10 times, with each of the 10 folds used exactly once as the validation data. The 10 results from the folds then averaged to produce a single estimation. To measure prediction accuracy we used the percentage of presences and pseudo-absences that were correctly predicted by the binomial GLM. Statistics were performed with program R.2.8.1. (R Development Core Team 2008; function 'cv.binary', package 'DAAG')

### References

- Fernandez, N. et al. 2003. Identifying breeding habitat for the Iberian lynx: inferences from a fine-scale spatial analysis. – *Ecol. Appl.* 13: 1310–1324.
- R Development Core Team 2008. R: a language and environment for statistical computing. – R Foundation for Statistical Computing, Vienna, Austria.
- Sokal, R. S. and Rohlf, F. J. 1995. Biometry. The principles and practice of statistics in biological research. – Freeman.

## Appendix 5

### Validation of selected habitat suitability models using independent data

To assess the performance of final models we used published information on tiger observations from sign transects which were laid across the entire Indian part of TAL (see Johnsingh et al. 2004, their Appendix VIII and their Fig. 3.1 and 7.1). Transects ranged in length from 3 to 9 km with an average of 4 km, and were spread 3–4 km apart. In total, 246 transects adding up to 1001.2 km were surveyed in the entire Indian part of TAL.

The data comprise geographic coordinates of the start and the end point of the transects, the number of tiger signs/km and frequency of occurrence, but not the locations of actual observations. We therefore could not use the data for model construction. Because of a high probability of false absences (i.e. true tiger presence was not recorded at a given transect during the survey) we used only transects with recorded presence for model validation. Transects were often placed in areas of uncertain tiger presence crossing the border from unsuitable to suitable. Thus, it was possible that a 9 km transect was initiated in suitable habitat but terminated in unsuitable areas. We therefore calculated 2 measures of habitat suitability of the transect based on the GLM models to be validated: these were the mean and maximum value of all cells crossed by the transect. The model yielded for a given transect a wrong classification if the mean value (or alternatively the maximum value) was below the suitability cut-off of 0.5.

### Reference

- Johnsingh, A. J. T. et al. 2004. Conservation status of tiger and associated species in the Terai Arc Landscape, India. – RR-04/001, Wildlife Inst. of India, Dehradun.

## Appendix 6

### Results of ENFA models

A high marginality value of 1.864 and low tolerance of 0.178 for tiger indicated that this species used very particular habitats compared to that available in the reference area and showed low tolerance towards deviations from its optimal habitat (Table A2). Tigers preferred areas with high suitability for their main prey species (as captured by the corresponding ENFA habitat suitability maps; Table A2) and dense forests, but avoided areas having agricultural use and human habitations.

The high global marginality values of 1.239, 1.351, and 1.342 for chital, sambar, and barking deer, respectively, indicate that these species used a narrow range of habitat conditions compared to those available. They preferred non-degraded forests and tall grass but avoided agricultural and human habitations (Table A2). The high tolerance index of 0.245 for chital, compared to the values of 0.213 and 0.172 for sambar and barking deer, respectively, indicates that chital is more tolerant towards deviations from its optimal habitat than sambar and barking deer. This is because the later 2 showed preference for high elevated areas in relatively undisturbed habitats (Table A2).

Applying MacArthur's broken-stick rule (Hirzel et al. 2002), 2 factors explaining 92.1% of the information for chital and 4 factors each explaining 97.2 and 97.3% of the information for sambar and barking deer, respectively, were used for calculating the habitat suitability (HS) index (see section 'Statistical analyses' in the main text). The HS maps indicated that sambar and barking deer preferred high elevated hilly areas and avoided the low land *terai* habitats whereas chital preferred low land *terai* habitats and low elevated areas (Figure A2).

### Reference

Hirzel, A. et al. 2002. Ecological-niche factor analysis: how to compute habitat suitability maps without absence data? – Ecology 83: 2027–2036.

Table A2. Results of ENFA habitat models. Correlations between the ENFA factors and the environmental variables for chital, sambar, barking deer, and tiger. Factor 1 explains 100% of the marginality. The percentages indicate the amount of specialization accounted for by the factor. For variable definitions see Table A1.

A) Chital		
	Factor 1 <sup>1</sup> (22%)	Factor 2 <sup>2</sup> (62%)
V1F2	+	0
V2F2	+	0
V3F2	–	0
V4F2	+	0
V5F2	–	0
V6F2	–	0
V7F2	–	0
V9F2	–	0
MEF2	+	0
SDF2	+	0
SAF2	–	*****
SRF2	–	*****
DIF2	–	0

## B) Sambar

	Factor 1 <sup>1</sup> (65%)	Factor 2 <sup>2</sup> (17%)	Factor 3 <sup>2</sup> (7%)	Factor 4 <sup>2</sup> (5%)
V1F2	+	0	0	0
V2F2	+	0	0	0
V3F2	-	0	0	0
V4F2	+	0	0	0
V5F2	-	0	0	0
V6F2	-	0	0	0
V9F2	-	0	*	0
MEF2	+	0	***	*
SDF2	+	0	***	0
SAF2	+	*****	*****	*****
SRF2	+	*****	*****	*****
DIF2	0	0	*	0

## C) Barking deer

	Factor 1 <sup>1</sup> (68%)	Factor 2 <sup>2</sup> (12%)	Factor 3 <sup>2</sup> (10%)	Factor 4 <sup>2</sup> (5%)
V1F2	+	0	0	0
V2F2	+	0	0	0
V3F2	0	0	0	0
V4F2	+	0	0	0
V5F2	-	0	0	0
V6F2	-	0	0	0
V9F2	-	0	0	0
MEF2	+	0	*	*
SDF2	+	0	0	**
SAF2	+	*****	*****	*****
SRF2	+	*****	*****	*****
DIF2	+	0	0	*

D) Tiger

	Factor 1 <sup>1</sup> (72%)	Factor 2 <sup>2</sup> (17%)	Factor 3 <sup>2</sup> (4%)
PCF5	++++	0	**
PSF5	+++	0	0
PBF5	+++	0	***
V1F5	+++	0	0
V2F5	++	0	0
V3F5	--	0	0
V4F5	++	0	*
V5F5	--	0	0
V6F5	-	0	0
V7F5	--	0	0
V9F5	----	0	*
MEF5	+	0	***
SDF5	++	0	*****
SAF5	0	*****	*****
SRF5	0	*****	*****
DIF5	--	0	*

<sup>1</sup>Marginality factor. The symbols + and – mean that the species was found in locations with higher and lower values than the average cell, respectively. The greater the number of symbols, the higher the correlation; 0 indicates a very weak correlation.

<sup>2</sup>Specialization factor. Any number > 0 means the species was found occupying a narrower range of values than available. The greater the number of symbols, the narrower the range; 0 indicates a very low specialization.

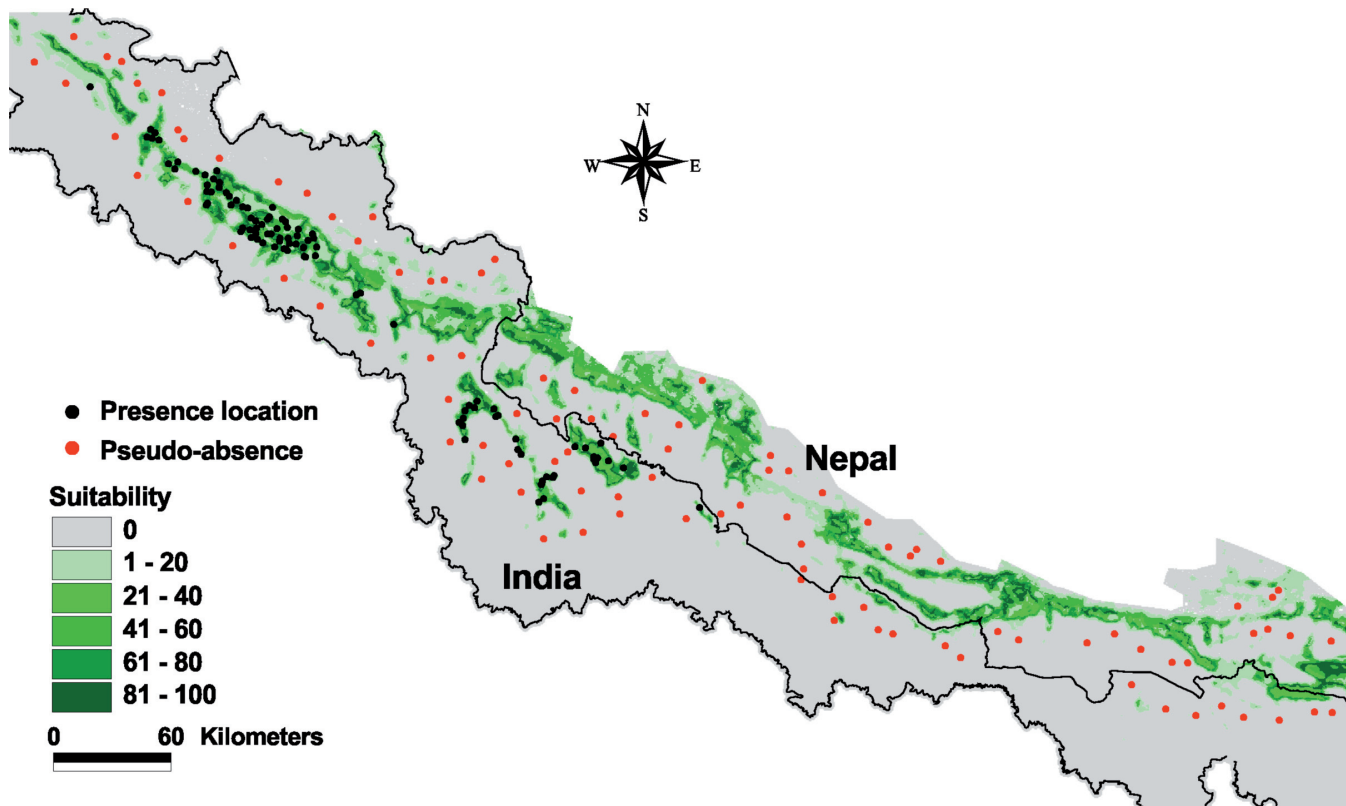
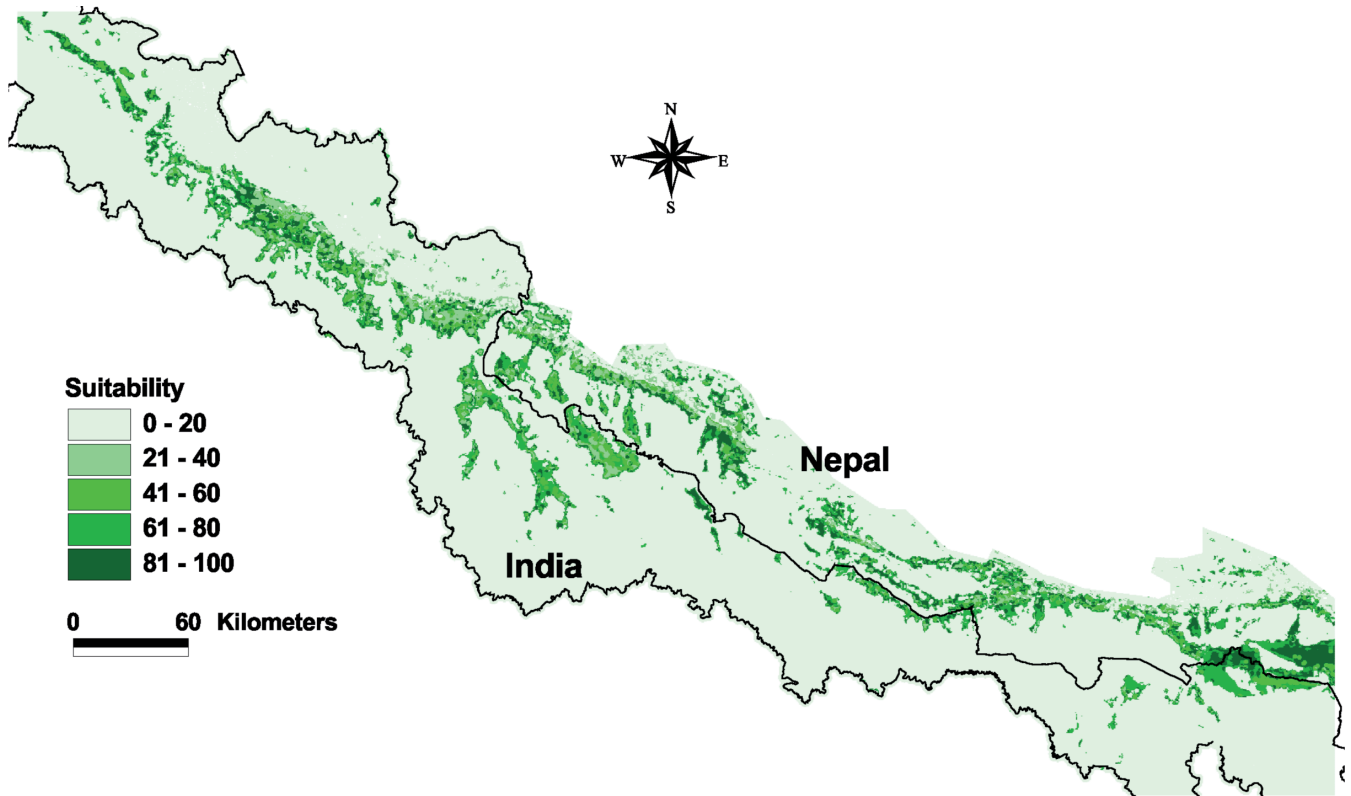


Figure A1. Habitat suitability map, as computed from ENFA, for tiger showing the locations of tiger presence and ENFA-weighted random pseudo-absences. Pseudo-absence locations were randomly selected with minimum distance of 4.5 km between points using the areas classified <1 suitable by ENFA.





**Chital**



**Sambar**



## Barking deer

Figure A2. Habitat suitability maps, as computed from ENFA, for chital, sambar, and barking deer showing the spatial distribution of predicted suitable habitats in TAL.

Table A3. Model evaluation indices for the habitat suitability maps of chital, sambar, barking deer, and tiger, computed with 10-fold cross-validation. High mean values indicate a high consistency with the evaluation data sets. The lower the standard deviation, the more robust the prediction of habitat quality.

	Absolute validation index <sup>1</sup>	Contrast validation index <sup>2</sup>	Boyce index <sup>3</sup>
Chital			
Mean	0.521 ± 0.197	0.401 ± 0.180	0.933 ± 0.107
Sambar			
Mean	0.618 ± 0.358	0.507 ± 0.348	0.911 ± 0.115
Barking deer			
Mean	0.567 ± 0.353	0.485 ± 0.346	0.91 ± 0.115
Tiger			
Mean	0.595 ± 0.186	0.507 ± 0.183	0.956 ± 0.094

<sup>1</sup>AVI varies from 0 to 1. <sup>2</sup>CVI varies from 0 to AVI. <sup>3</sup>Boyce's index varies from -1 to 1.

## Appendix 7

### Detailed results of GLM models

Table A4. Summary of logistic predictive models for tiger distribution, and model selection estimators;  $-2\log(L) = -2 \log\text{-likelihood estimates}$ ; AIC = Akaike's information criterion. For variable definitions see Table A1. Square in the variable refers to the quadratic term.

Model	$-2\log(L)$	AIC	Ranking
<b>Protective habitat</b>			
0. Intercept only (Null model)	296.7	298.7	6
1. V1F1, V3F1, V4F1, V6F1, V7F1, MEF1, MEF1 <sup>2</sup> , PAREA	29.7	47.7	5
2. V1F3, V3F3, V4F3, V6F3, V7F3, MEF3, MEF3 <sup>2</sup> , PAREA	9.8	27.8	2
3. V1F5, V3F5, V4F5, V6F5, V7F5, MEF5, MEF5 <sup>2</sup> , PAREA	16.1	34.1	4
4. V1F7, V3F7, V4F7, V6F7, V7F7, MEF7, MEF7 <sup>2</sup> , PAREA	12.8	30.8	3
5. V1F9, V3F9, V4F9, V6F9, V7F9, MEF9, MEF9 <sup>2</sup> , PAREA	8.7	26.7	1
<b>Prey species – Model type I</b>			
0. Intercept only (Null model)	296.7	298.7	6
1. PSF1	183.4	187.4	5
2. PSF3	172.8	176.8	4
3. PSF5	170.0	174.0	3
4. PSF7	166.0	170.0	1
5. PSF9	167.1	171.1	2
<b>Prey species – Model type II</b>			
0. Intercept only (Null model)	296.7	298.7	6
1. PCF1	30.8	34.8	5
2. PCF3	22.0	26.0	4
3. PCF5	9.5	13.5	2
4. PCF7	9.1	13.1	1
5. PCF9	11.6	15.6	3
<b>Prey species – Model type III</b>			
0. Intercept only (Null model)	296.7	298.7	6
1. PBF1	163.4	167.4	5
2. PBF3	144.8	148.8	4
3. PBF5	136.0	140.0	2
4. PBF7	134.7	138.7	1
5. PBF9	138.1	142.1	3
<b>Prey species – Model type IV</b>			
0. Intercept only (Null model)	296.7	298.7	6
1. PCF1, PSF1	21.1	27.1	5
2. PCF3, PSF3	14.8	20.8	4
3. PCF5, PSF5	6.2	12.2	2
4. PCF7, PSF7	4.5	10.5	1
5. PCF9, PSF9	7.4	13.4	3

**Prey species – Model type V**

0. Intercept only (Null model)	296.7	298.7	6
1. PCF1, PBF1	20.7	26.7	3
2. PCF3, PBF3	13.6	19.6	2
3. PCF5, PBF5	5.3	11.3	1
4*. PCF7, PBF7	–	–	–
5*. PCF9, PBF9	–	–	–

**Prey and Protective habitat – Model type I**

0. Intercept only (Null model)	296.7	298.7	6
1. PSF1, V1F1, V3F1, V4F1, V6F1, V7F1, MEF1, MEF1 <sup>2</sup> , PAREA	15.8	35.8	4
2. PSF3, V1F3, V3F3, V4F3, V6F3, V7F3, MEF3, MEF3 <sup>2</sup> , PAREA	22.2	42.2	5
3. PSF5, V1F5, V3F5, V4F5, V6F5, V7F5, MEF5, MEF5 <sup>2</sup> , PAREA	13.7	33.7	3
4. PSF7, V1F7, V3F7, V4F7, V6F7, V7F7, MEF7, MEF7 <sup>2</sup> , PAREA	10.0	30.0	1
5. PSF9, V1F9, V3F9, V4F9, V6F9, V7F9, MEF9, MEF9 <sup>2</sup> , PAREA	13.0	33.0	2

**Prey and Protective habitat – Model type II**

0. Intercept only (Null model)	296.7	298.7	6
1. PSF1, V1F1	81.5	87.5	5
2. PSF3, V1F3	59.6	65.6	4
3. PSF5, V1F5	47.5	53.5	3
4. PSF7, V1F7	41.8	47.8	1
5. PSF9, V1F9	44.0	50.0	2

**Prey and Protective habitat – Model type III**

0. Intercept only (Null model)	296.7	298.7	6
1. PBF1, V1F1	76.1	82.1	5
2. PBF3, V1F3	59.6	65.9	4
3. PBF5, V1F5	46.7	52.7	3
4. PBF7, V1F7	42.3	48.3	1
5. PBF9, V1F9	45.1	51.1	2

**Human disturbance**

0. Intercept only (Null model)	296.7	298.7	5
1. V9F1, DIF1, PAREA	50.5	58.5	4
2. V9F3, DIF3, PAREA	45.2	53.2	3
3. V9F5, DIF5, PAREA	32.1	40.1	2
4. V9F7, DIF7, PAREA	27.6	35.6	1
5. V9F9, DIF9, PAREA	27.6	35.6	1

**Global model**

0. Intercept only (Null model)	296.7	298.7	6
1. PSF1, V1F1, V3F1, V4F1, V6F1, V7F1, MEF1, MEF1 <sup>2</sup> , PAREA, DIF1	17.1	39.1	5
2. PSF3, V1F3, V3F3, V4F3, V6F3, V7F3, MEF3, MEF3 <sup>2</sup> , PAREA, DIF3	16.7	38.7	4
3. PSF5, V1F5, V3F5, V4F5, V6F5, V7F5, MEF5, MEF5 <sup>2</sup> , PAREA, DIF5	10.3	32.3	1
4. PSF7, V1F7, V3F7, V4F7, V6F7, V7F7, MEF7, MEF7 <sup>2</sup> , PAREA, DIF7	11.1	33.1	2
5. PSF9, V1F9, V3F9, V4F9, V6F9, V7F9, MEF9, MEF9 <sup>2</sup> , PAREA, DIF9	11.6	33.6	3

\* Model was not run because of high correlation ( $\geq 0.7$ ) between variables, chital and barking deer.

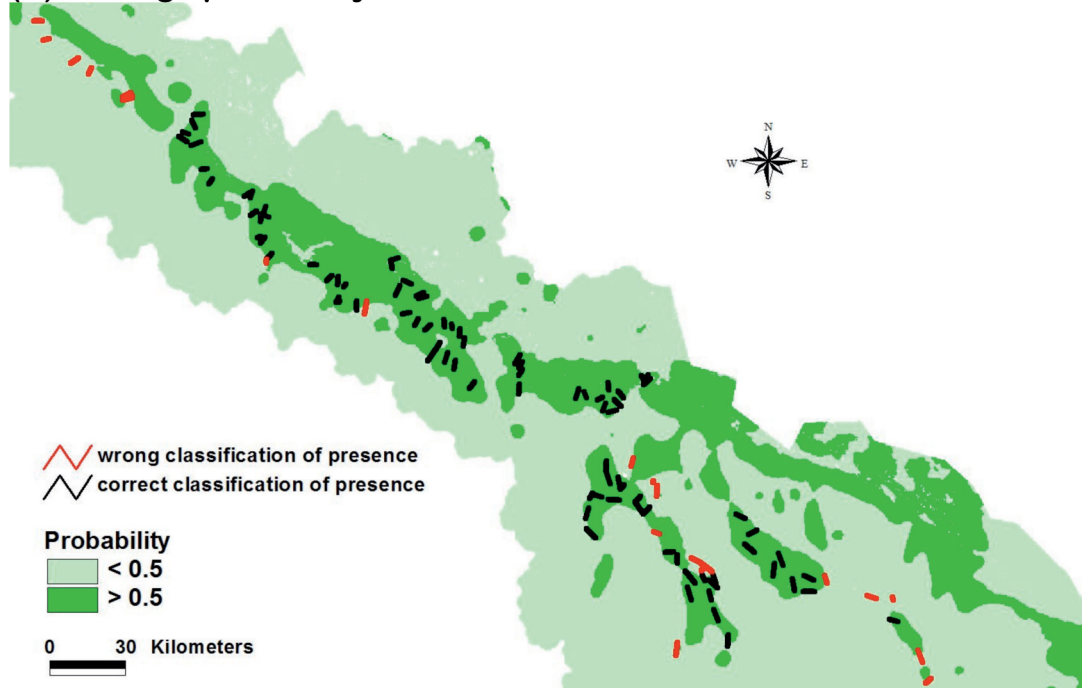
Table A5. Summary of the final logistic regression models for tiger constructed with presence and pseudo absence data.

Variable	Symbol	$\beta$	SE	p	AIC	Predicted	CV
Model – Final					10.5	99.0%	98.5%
chital habitat suitability based on ENFA	PCF7	0.235	0.058	<0.001			
sambar habitat suitability based on ENFA	PSF7	0.101	0.053	0.061			
intercept	C	-7.968	2.502	0.001			
Model – Human disturbance					35.6	96.9%	95.4%
agricultural and human habitation (%)	V9F7	-0.212	0.058	<0.001			
Shannon landscape diversity index	DIF7	-4.246	1.572	0.006			
presence of protected area	PAREA	3.268	1.602	0.041			
intercept	C	7.875	2.044	<0.001			
Model – Protective habitat					26.7	99.0%	96.4%
dense forest (%)	V1F9	0.279	0.100	0.005			
plantation and degraded forest (%)	V3F9	0.056	0.105	0.592			
tall grass (%)	V4F9	0.035	0.094	0.708			
scrub land (%)	V6F9	-0.963	0.454	0.033			
barren land (%)	V7F9	-1.636	0.714	0.022			
elevation (mean)	MEF9	0.003	0.006	0.607			
elevation (mean)-quadratic term	MEF9 <sup>2</sup>	-8.9e-07	2.9e-06	0.763			
presence of protected area	PAREA	10.680	4.118	0.009			
intercept	C	-3.312	2.285	0.172			

## Appendix S8

### Validation of GLM

(A) Average probability value at transect



(B) Maximum probability value at transect

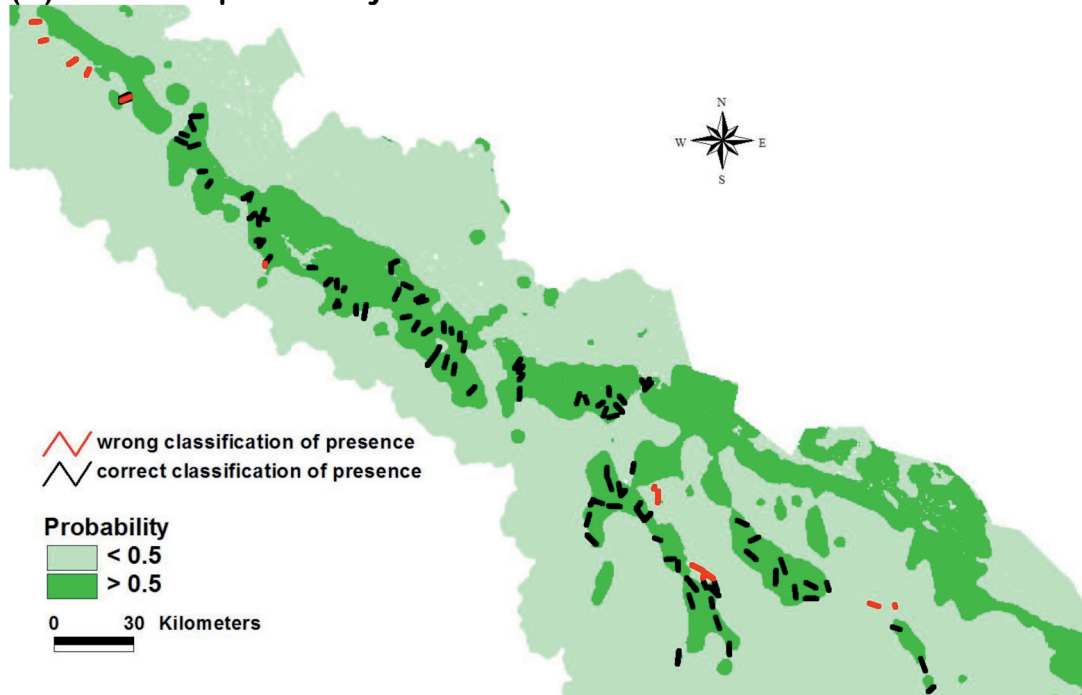


Figure A3. GLM validation. Habitat suitability maps showing the wrong and correct classifications of independent data set of tiger presence transects (Johnsingh et al. 2004). Mean (A) and maximum (B) probability values were calculated for each transects and wrong classification of presence transects were identified using a cut-off  $p < 0.5$ .

Table A6. GLM validation. Number and percentage of correctly classified presence transects when using the mean and maximum value of the respective model along the transect.

Model	Correctly classified transects, mean value	Correctly classified transects, maximal value
Final	100 (81%)	109 (89%)
Human disturbance	91 (74%)	107 (87%)
Protective habitat	94 (76%)	99 (80%)

## Reference

Johnsingh, A. J. T. et al. 2004. Conservation status of tiger and associated species in the Terai Arc Landscape, India. – RR-04/001, Wildlife Inst. of India, Dehradun.