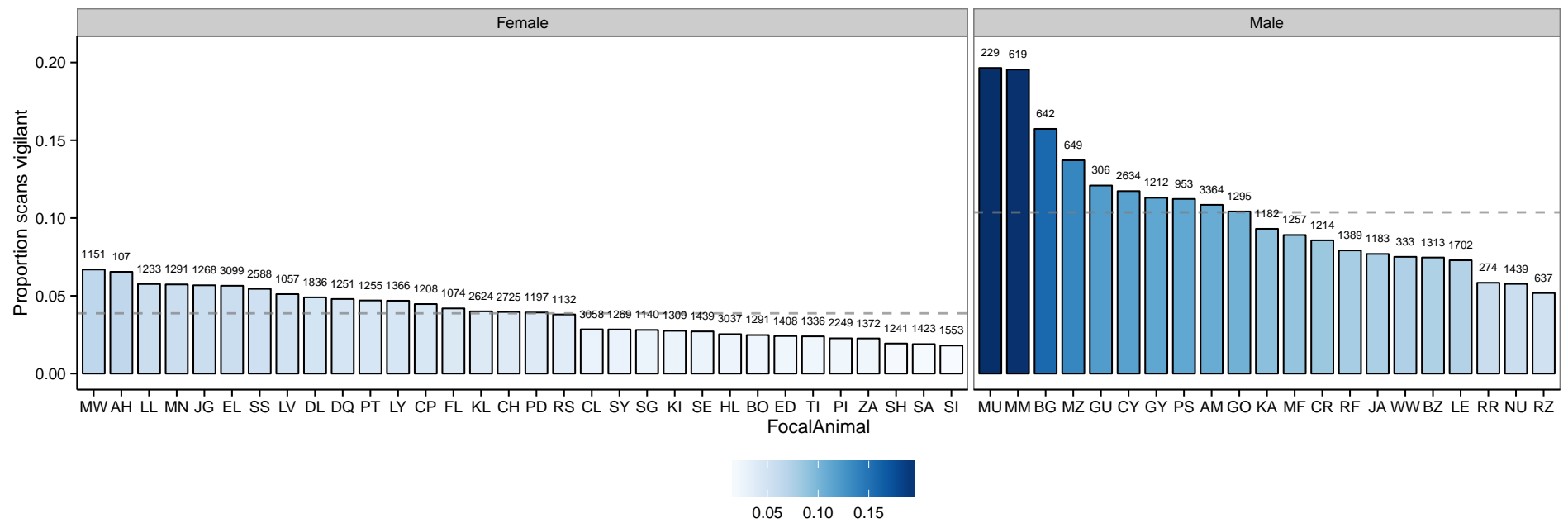
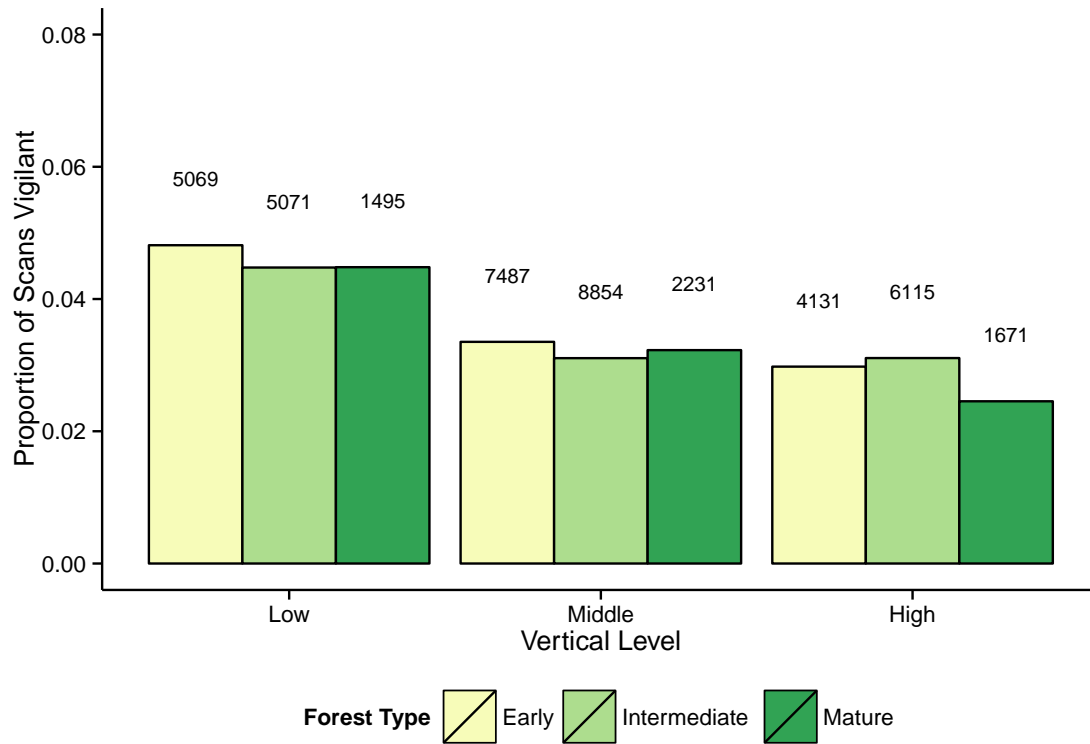


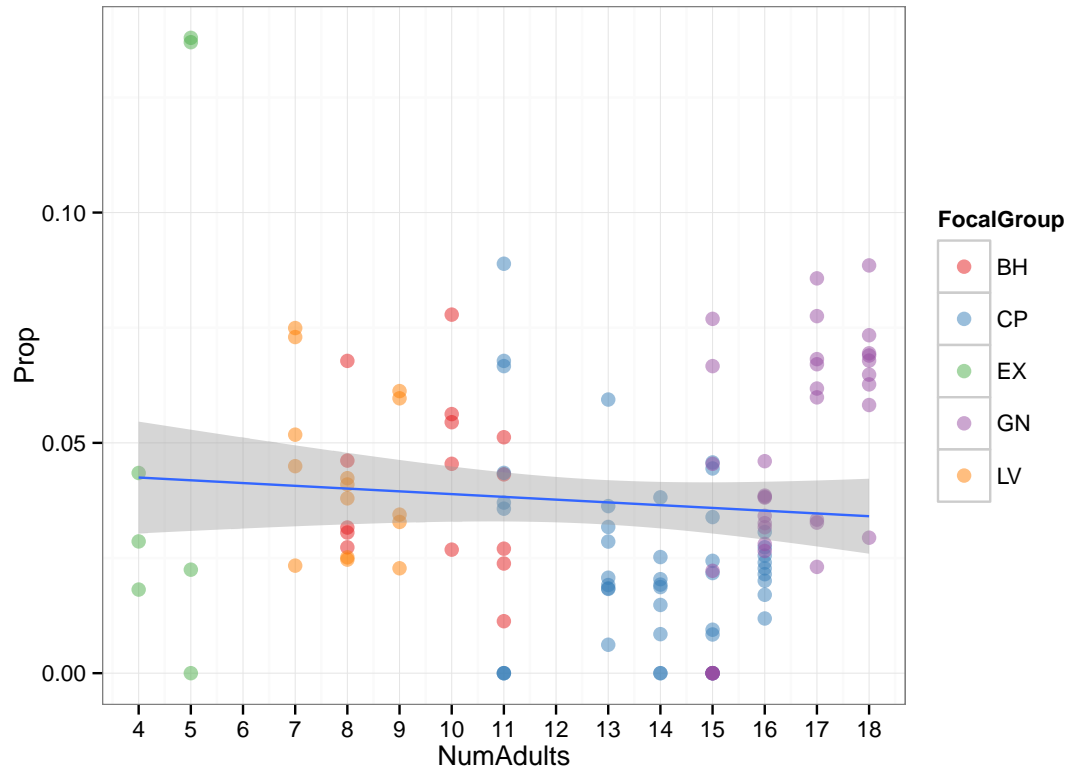
Supplementary Figure S1: Predator encounter densities and habitat use density used to construct the perceived risk maps. Encounter densities for the different predator guilds are based on all-occurrence sampling of the locations of guild-specific alarm calling bouts. Space use density is based on systematic scans collected at 30-min intervals.



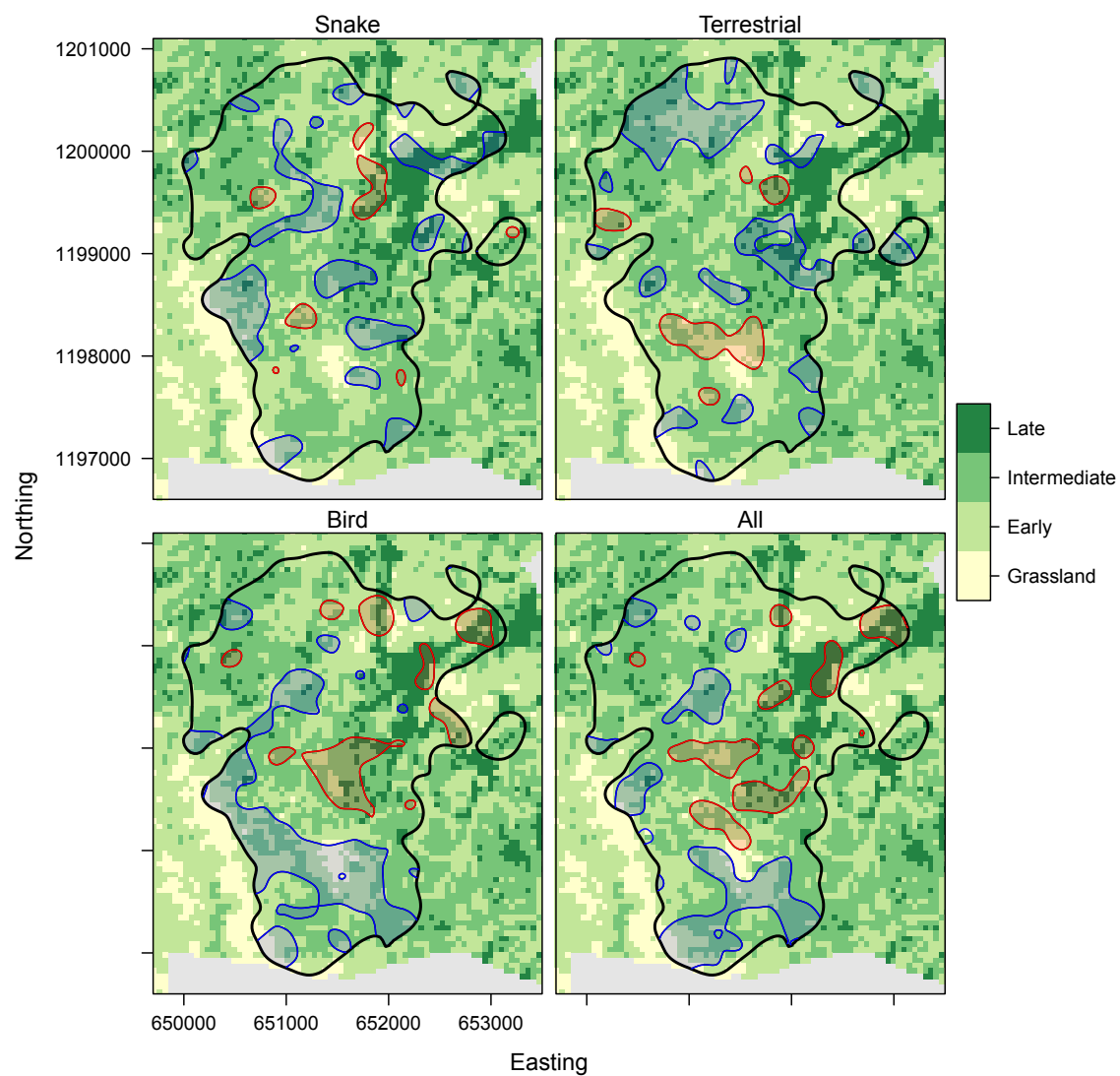
Supplementary Figure S2: Overall proportion of samples coded as vigilant for each focal animal. Horizontal dashed lines indicate the mean value for each sex. Vigilance clearly makes a greater contribution to males activity budgets.



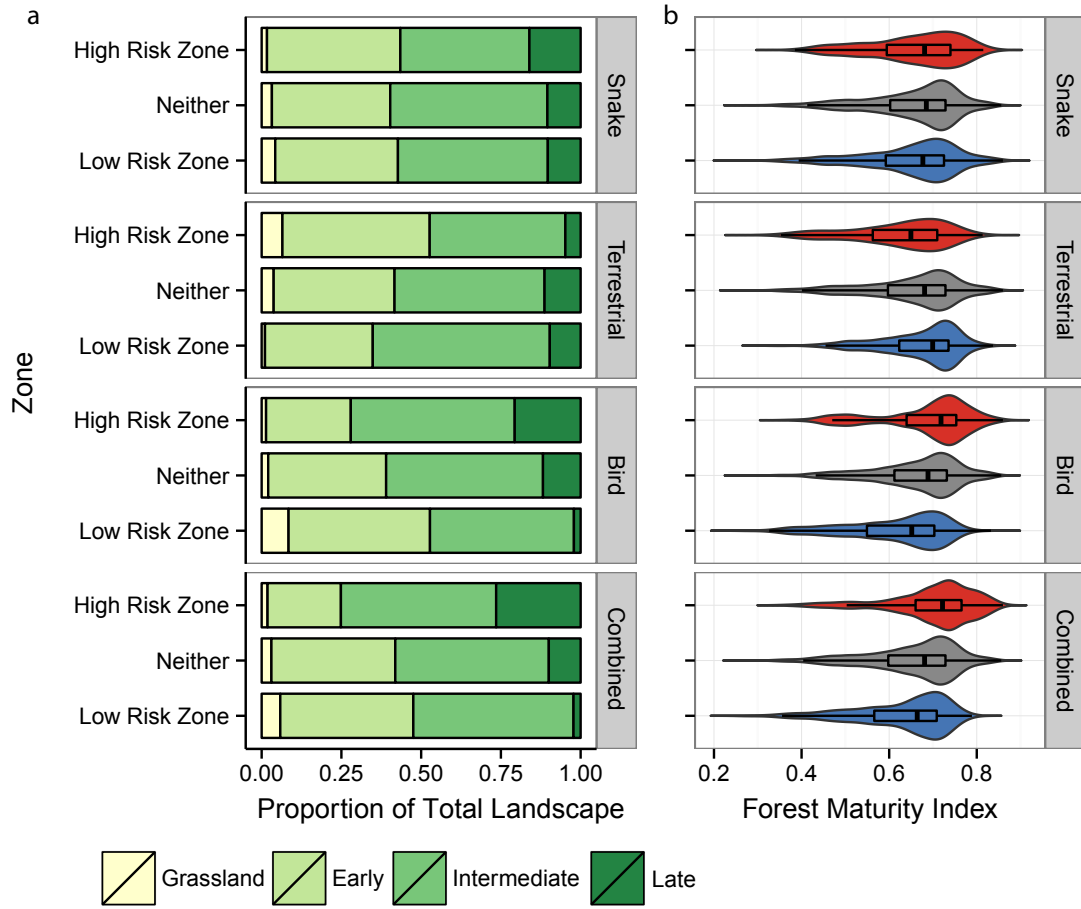
Supplementary Figure S3: Proportion of samples scored vigilant in the reduced focal data set (see methods) across vertical levels and forest types. Animals were more likely to be vigilant in the low vertical level compared to the middle and high levels, which did not differ from each other. There were no consistent, obvious differences in vigilance behavior according to forest type. Total number of scans for each condition indicated above the bar. Grassland and Early Forest habitat types combined due to low number of samples in grassland habitat.



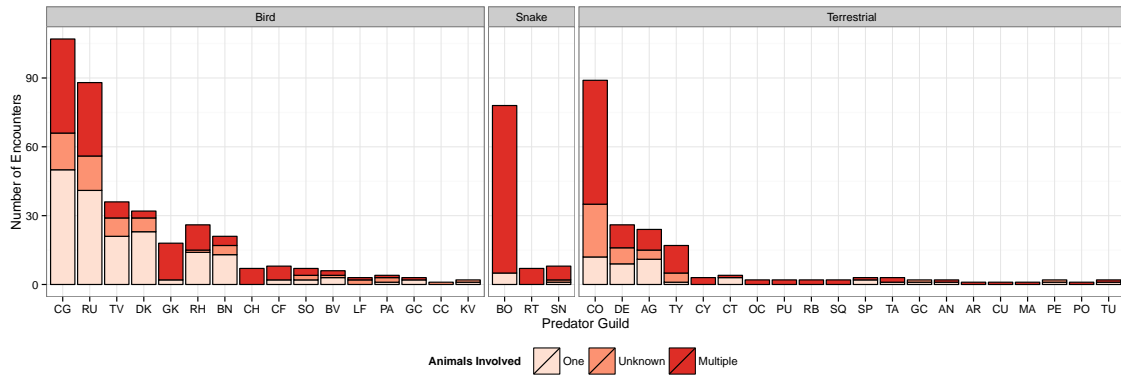
Supplementary Figure S4: Vigilance behavior shows no clear linear relationship with group size. The plot shows the total proportion of samples coded as vigilant for each group, with all individuals pooled together, at different group sizes. Gray shaded area shows 95% confidence interval around the regression line. Regression coefficient \pm standard error: 0 ± 0.0079 , $F \approx 0$, $p \approx 1$, adjusted $R^2 = -0.00427$.



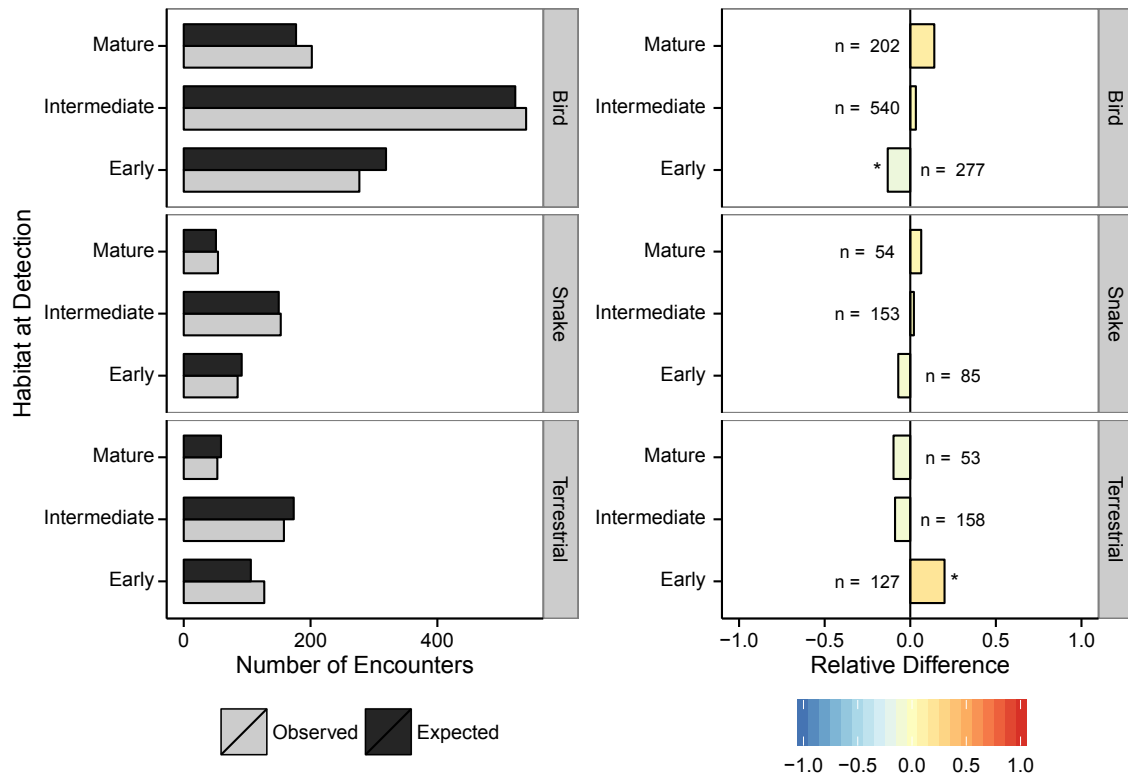
Supplementary Figure S5: High-risk zones (red) and low risk zones (blue) for each predator guild plotted over a categorical habitat map. The thick black line ecloses the study area.



Supplementary Figure S6: Ecological characterization of high-risk, low-risk, and neither zones (neither heightened nor reduced risk) for snake, terrestrial, bird, and combined predator guilds, including **(a)** proportional coverage of four different habitat categories; and **(b)** violin plots showing the probability densities of forest maturity indices within each zone. Black boxplots show medians (thick vertical bars) and interquartile ranges (box hinges), and 1.5 times the interquartile range (whiskers).



Supplementary Figure S7: Number of alarm-calling bouts provoked by different species. All encounters for which the target species could not be identified are excluded. Note that these counts are biased against secretive species such as felids. **Birds:** CG: crested guan (*Penelope purpurascens*), RU: unidentified diurnal raptor, TV: turkey vulture (*Cathartes aura*), DK: double-toothed kite (*Harpagus bidentatus*), RH: roadside hawk (*Rupornis magnirostris*), BN: non-dangerous bird (e.g. dove, woodpecker, etc.), GK: gray-headed kite (*Leptodon cayanensis*), CF: collared forest falcon (*Micrastur semitorquatus*), SO: spectacled owl (*Pulsatrix perspicillata*), CH: crane hawk (*Geranospiza caerulescens*), BV: black vulture (*Coragyps atratus*), PA: parrot (subfamily Arinae), LF: laughing falcon (*Herpetotheres cachinnans*), GC: great curassow in tree (*Crax rubra*), KV: king vulture (*Sarcorampophus papa*), CC: crested caracara (*Caracara cheriway*). **Snakes:** BO: boa (*Boa constrictor*), SN: non-dangerous snake (Colubrids), RT: rattlesnake (*Crotalus simus*). **Terrestrial:** CO: coati (*Nasua narica*), DE: white-tailed deer (*Odocoileus virginianus*), AG: agouti (*Dasyprocta punctata*), TY: tayra (*Eira barbara*), CT: ctenosaur (*Ctenosaura similis*), TA: Bairds tapir (*Tapirus bairdii*), SP: spider monkey (*Ateles geoffroyi*), CY: coyote (*Canis latrans*), GC: great curassow walking on ground (*Crax rubra*), TU: turtle / tortoise, SQ: squirrel (usually *Sciurus variegatoides*), RB: rabbit, PU: puma (*Puma concolor*), PE: collared peccary (*Pecari tajacu*), OC: ocelot (*Leopardus pardalis*), AN: anteater (*Tamandua mexicana*), PO: porcupine (*Sphiggurus mexicanus*), MA: margay (*Leopardus wiedii*), CU: cat of unknown species, AR: armadillo (*Dasybus novemcinctus*).



Supplementary Figure S8: Observed and expected frequencies of alarm-calling bouts for snake, terrestrial, and bird predator guilds, stratified by habitat type. Expected frequencies are based on the proportional use of each habitat type during systematic sampling. Relative difference calculated as $(\text{observed} - \text{expected}) / \text{expected}$. Sample sizes in the relative difference plot indicate the observed number of alarm-calling bouts for that condition. Significance stars indicate Holm-Bonferroni adjusted p-values for pairwise comparisons among categories (* $p_{\text{adj}} < 0.05$).

Supplementary Table S1: Pearsons chi-squared goodness-of-fit tests to determine whether observed predator encounter frequencies among microhabitat categories differ from expected frequencies, which are based on systematically-sampled usage. Due to small sample sizes for some categories, the p-values for these tests were computed via Monte Carlo simulations with 10,000 replicates. Where this global test is significant, we show the results of pairwise comparisons among categories using asterisks in Figure 2 and Supplementary Figure S8.

Microhabitat Variable	Predator Type	χ^2	P-value
Vertical level	Bird	46.077	< 0.001
	Snake	45.864	< 0.001
	Terrestrial	28.217	< 0.001
Absolute Height	Bird	46.422	< 0.001
	Snake	49.595	< 0.001
	Terrestrial	36.755	< 0.001
Habitat Type	Bird	9.589	0.009
	Snake	0.725	0.693
	Terrestrial	6.177	0.046