

FIGURES AND TABLES



Figure 1. When pasting, a striped hyaena everts its anal pouch and deposits a viscous secretion onto a stalk of grass.

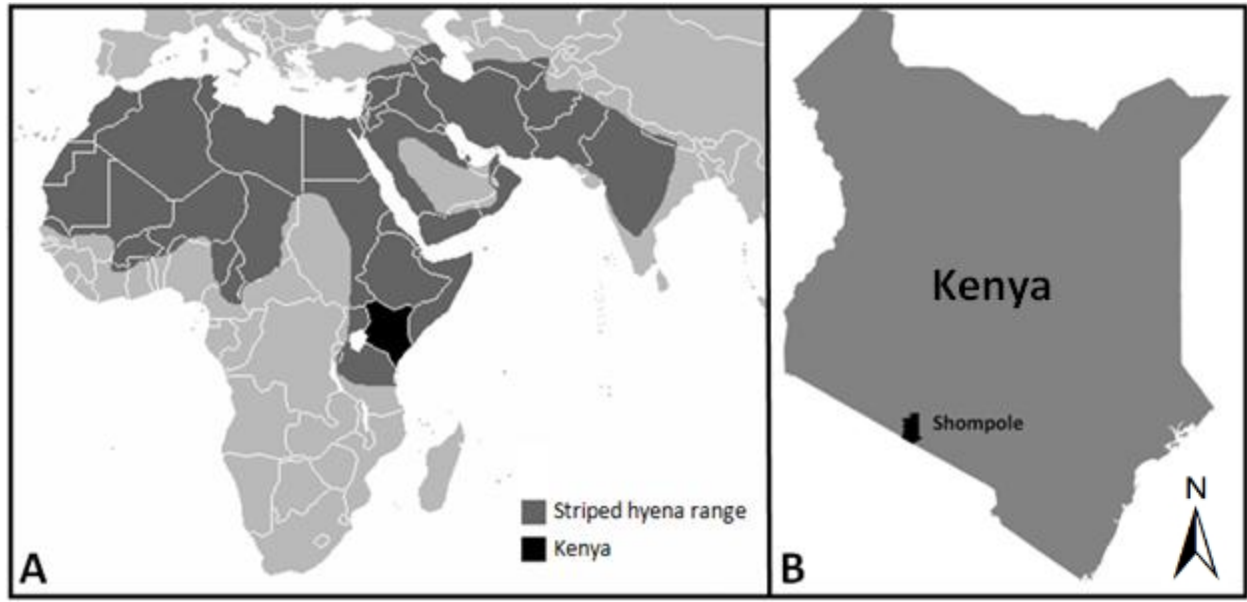


Figure 2. A. Striped hyaenas are found at low densities throughout East and Northeast Africa, the Middle East, the Caucasus region, Central Asia, and the Indian subcontinent (image adapted from <http://defence.pk/threads/wildlife-of-pakistan.282114/page-6>). **B.** This study was conducted on a small population of striped hyaenas in Shompole, Kenya, located in the southern Great Rift Valley of Kenya.

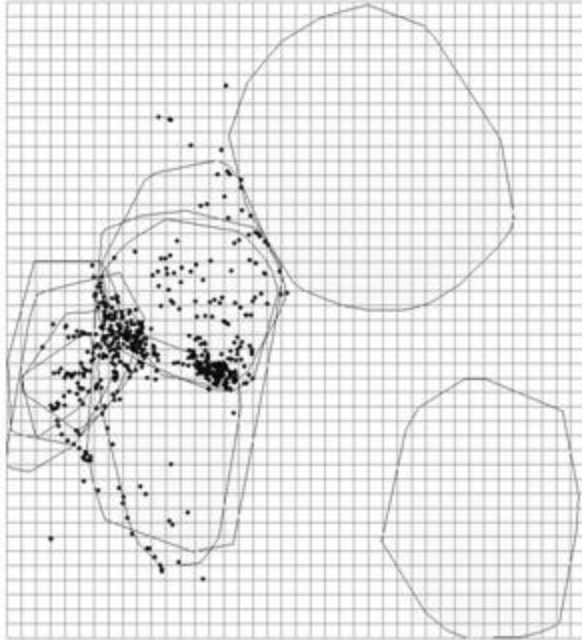


Figure 3. Home ranges of 10 Shompole striped hyaenas ($f=7$, $m=3$), represented by polygons, were merged in ArcMap. Pasting events observed in six female hyaenas are represented by points. We overlaid a fishnet with 500 by 500 meter cells was overlaid, then tabulated the intersections between (a) the fishnet and the merged home ranges and (b) the fishnet and the pasting events. This allowed for extraction of both the number of home ranges overlapping in any particular grid cell as well as the number of pasting events observed within each grid cell.

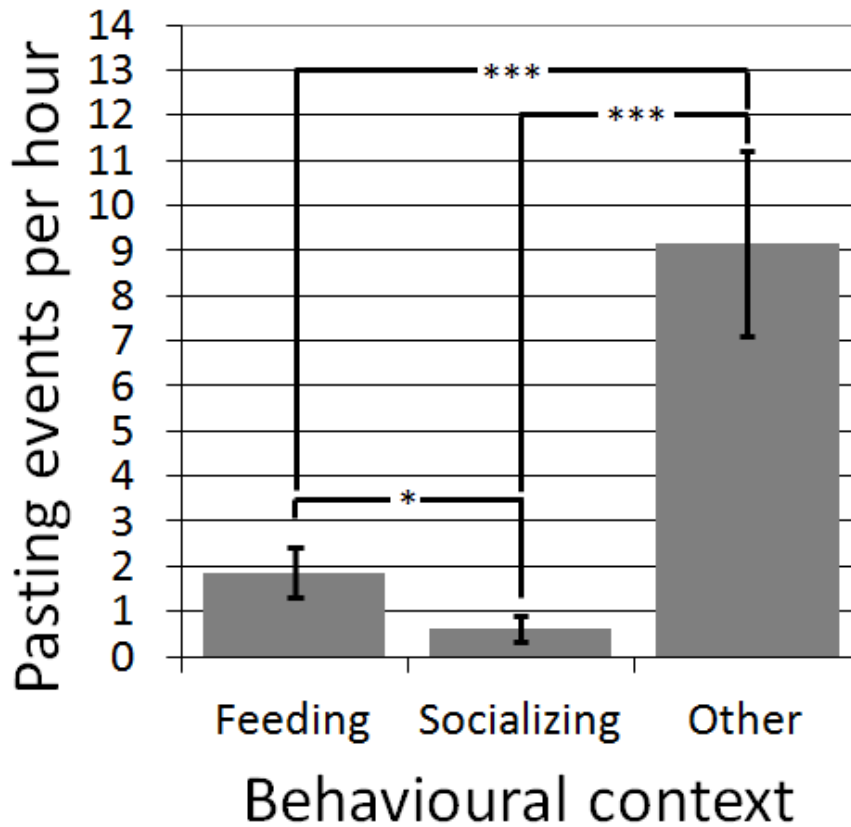


Figure 4. Pasting rates, as estimated by the model, differed significantly among our three contexts. The pasting rate was highest when travelling or resting (“other”), second highest when in the presence of food, and lowest in the presence of a conspecific or at a den site. In this analyses we used a conservative alpha value of 0.0167 using the Bonferroni correction for multiple comparisons. Above, * indicates $p < 0.0167$. *** indicates $p < 0.00001$.

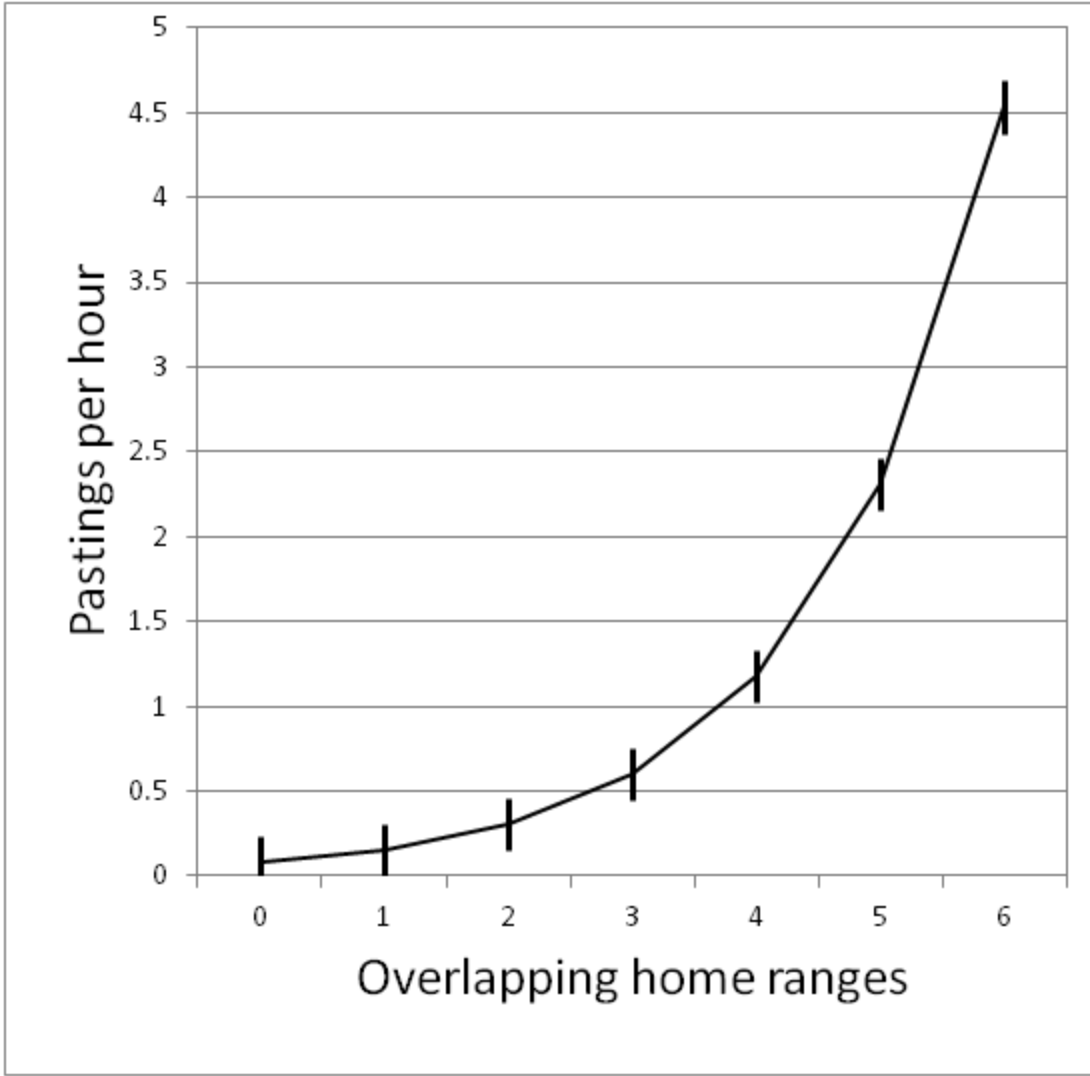


Figure 5. Pasting rate by females per unit area increased exponentially with the number of conspecific home ranges overlapping at any given location ($p < 2e-16$). The rate of increase is 1.9632 ± 0.1547 .

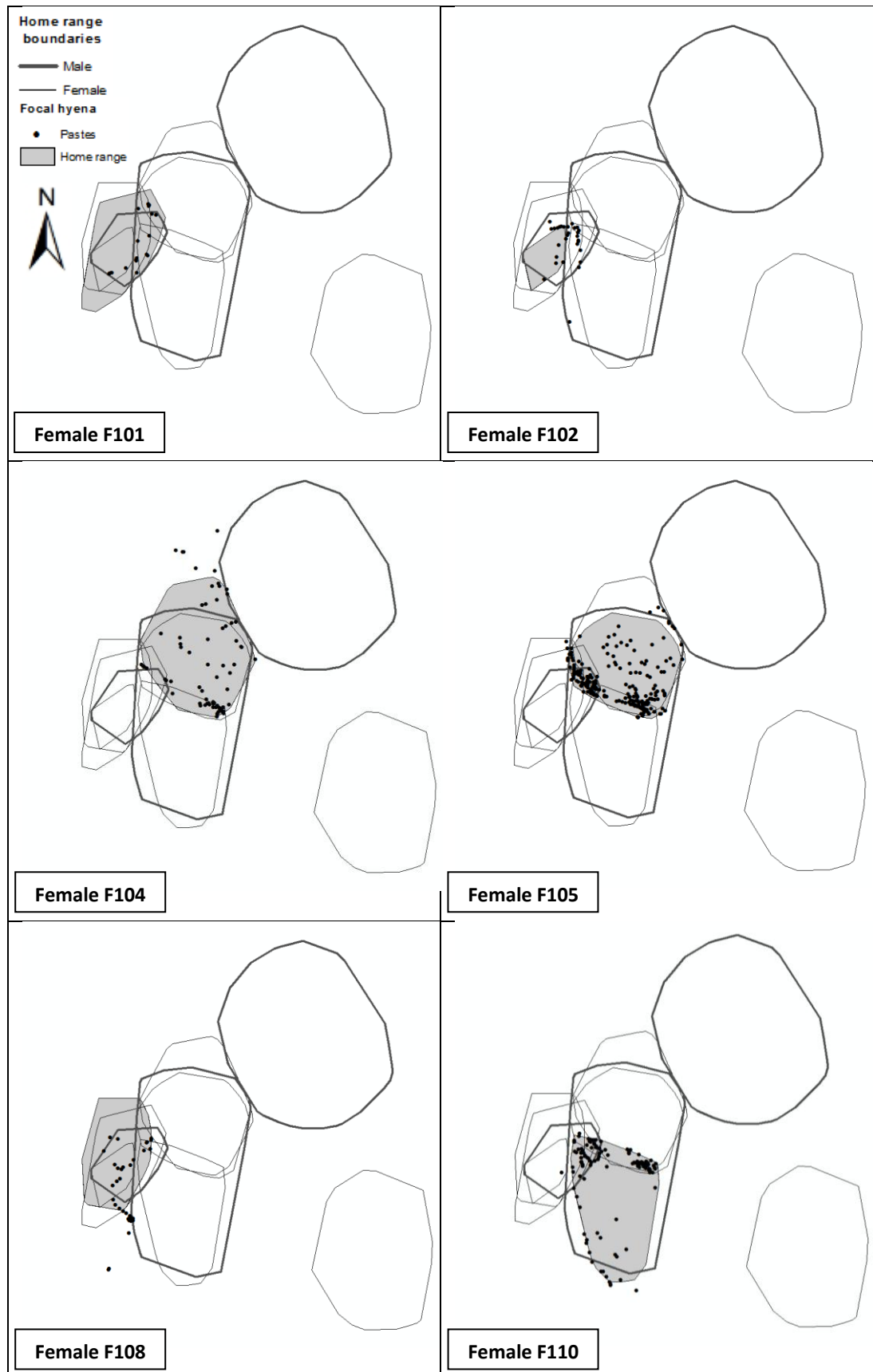


Figure 6. We have shown each female's observed pasting events in relation to known home range boundaries, with her own home range indicated by shading. Home ranges were estimated using telemetry data. Females did not paste primarily within either border areas or hinterlands, but rather pasted primarily in areas of high home range overlap with conspecifics. Two points of particularly high pasting density are easily visible here: one at the junction of five female home ranges and two male home ranges (west), and the other at the intersection of three female home ranges and one male home range (east).

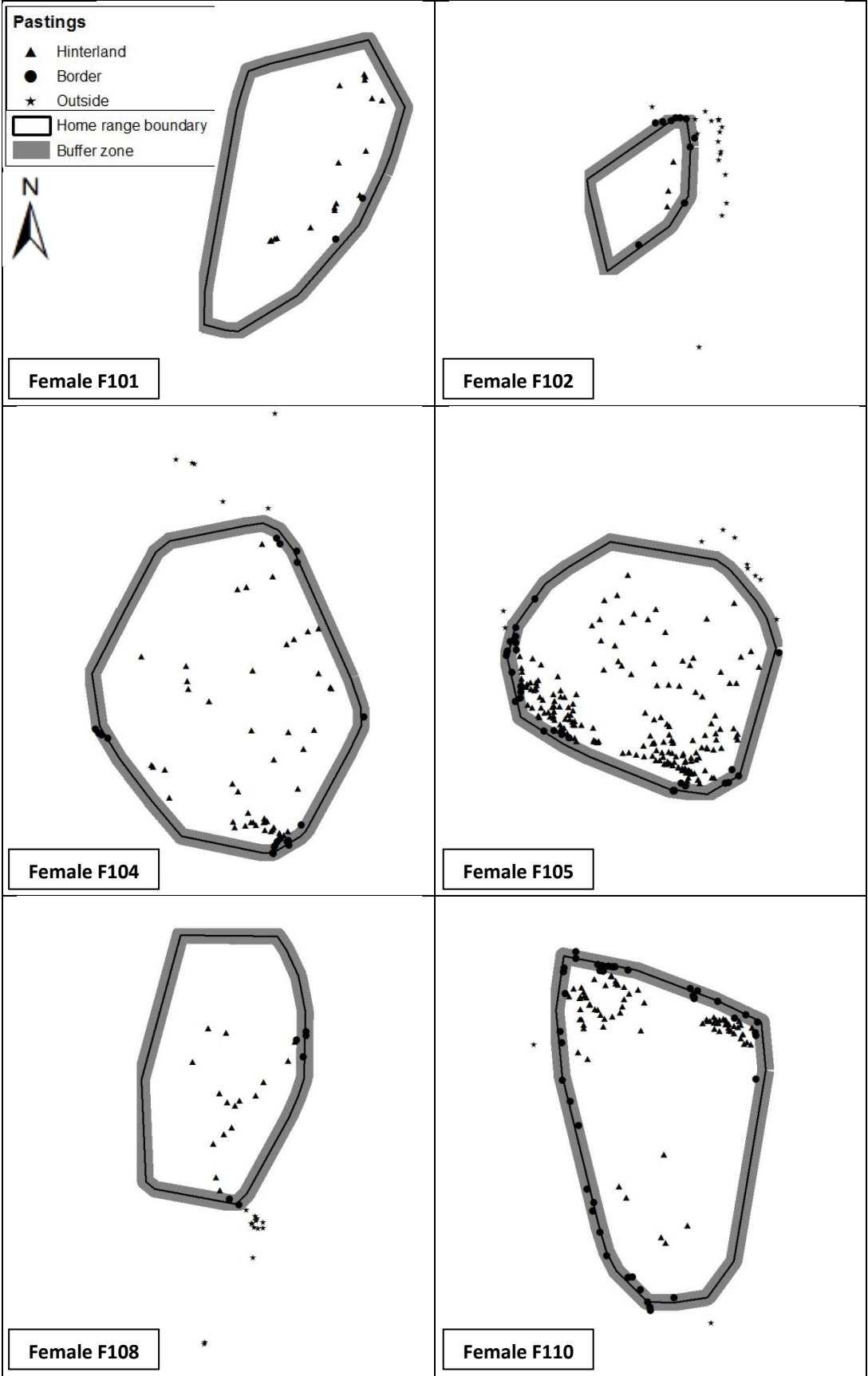


Figure 7. Pasting event densities for six females were compared between home range borders and hinterlands using a 200-meter buffer (as shown above) and a 500-meter buffer (not shown). Spatial distributions of pasting varied greatly among females, but no significant difference was found between borders and hinterlands.

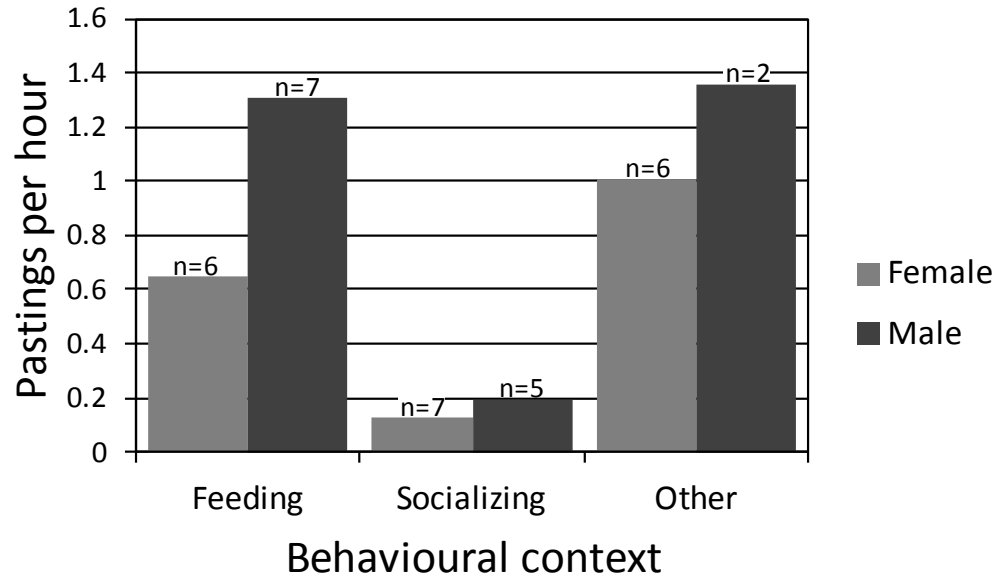


Figure 8. The overall pasting rate of males was higher than that for females in each context, including feeding (f=0.65 pastings/hr, m=1.31 pastings/hr), socializing (f=0.13 pastings/hr, m=0.19 pastings/hr), and other (f=1.01 pastings/hr, m=1.36 pastings/hr). Sample sizes (n) shown above each bar denote numbers of hyaenas observed.

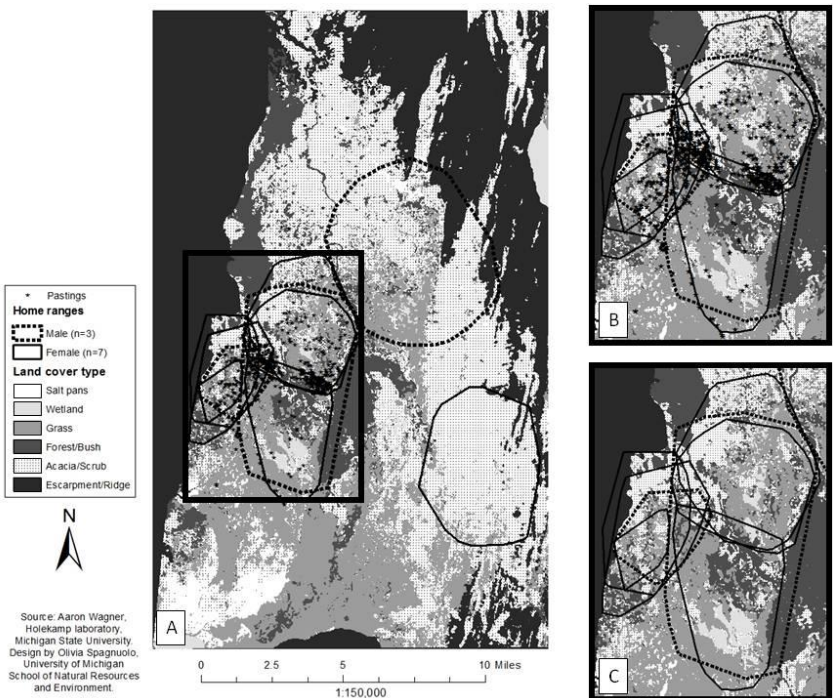


Figure 9. The above map depicts the land cover of the entire study area, the boundaries of male and female home ranges, and all pasting events observed during focal follows. The rectangular portion of the study area outlined in black contains all observed pasting events as well as the home ranges of all subjects followed during behavioural observations (A). We enlarged the rectangular portion to allow for closer comparison of pasting locations (B) with the land cover (C).



Figure 10. The proportion of pasting events observed at the easternmost of the two points of high pasting density cannot be explained by home range overlap alone. To better visualize the land cover at this location, we examined a satellite image. This area is open but appears to be bounded by forest and waterways.

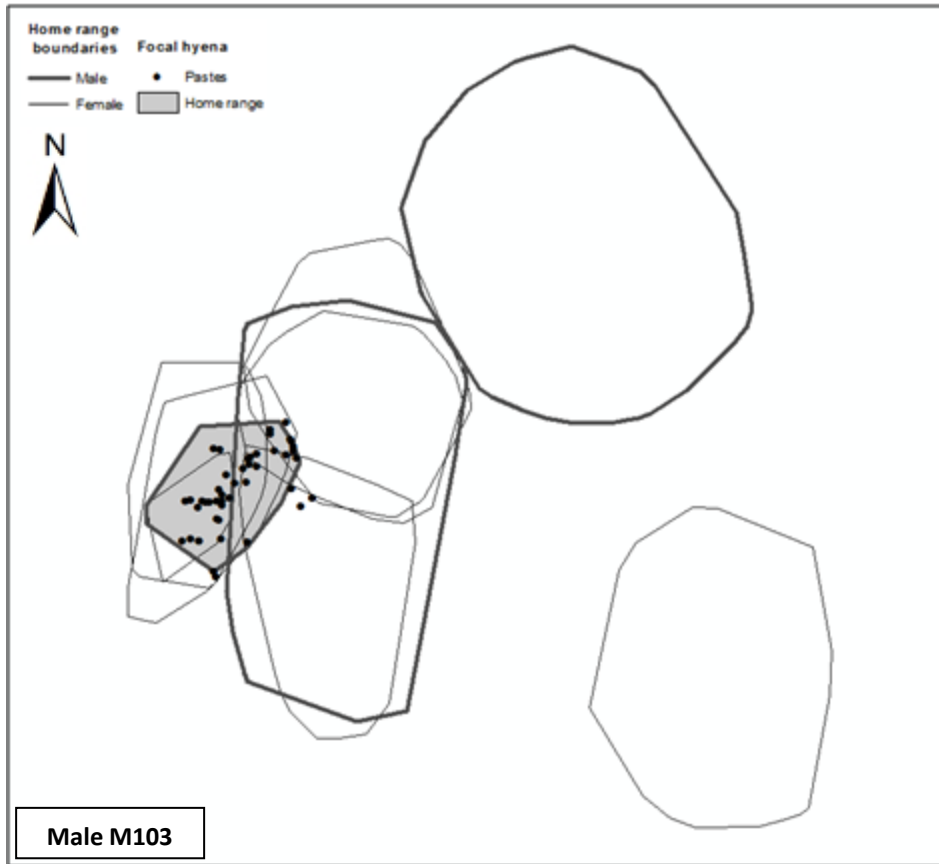


Figure 11. Here we show the home range and pasting events of one adult male subject, M103. His pasting events appear to be distributed throughout his home range with no obvious grouping apparent.