

Supplemental Materials

Table 1: Methods used to collect data for each research question

Research Question	Behavioral Obs.: Giraffe feed height	Behavioral Obs.: Camel feed height	Point-centered quarter vegetation transects	GIS
1: Is there overlap between camel and giraffe feeding heights and preferred plant food species?	✓	✓	✓	✓
2: Are there differences between adult female and adult male giraffe foraging ecologies across habitat types?	✓	X	✓	✓

Table 2: Statistical tests used to analyze data for each research question

Research Question	Mann-Whitney U	Multiway ANOVA	Tukey's HSD	Linear Regression	Kruskal-Wallis
1: Is there overlap between camel and giraffe feeding heights and preferred plant food species?	✓	X	X	✓	X
2: Are there differences between adult female and adult male giraffe foraging ecologies across habitat types?	✓	✓	✓	X	✓

Table 3: Giraffe feeding height categories and measurements

Giraffe Feeding Height Category	Mature Male +/-SE (n)	Mature Female +/-SE (n)	Pooled +/-SE (n)
Feeding High	4.8m +/-0.11 (15)	4.1m +/-0.03 (15)	4.4m +/-0.09 (30)
Feeding Medium	3.6m +/-0.08 (15)	3.0m +/-0.09 (16)	3.3m +/-0.08 (31)
Feeding Level	2.7m +/-0.10 (16)	2.1m +/-0.05 (18)	2.4m +/-0.07 (34)
Feeding Below	1.7m +/-0.09 (17)	1.1m +/-0.06 (12)	1.4m +/-0.08 (29)

Table 4: Camel feeding height categories and measurements

Camel Feeding Height Category	Mature Female +/-SE (n=15)
Feeding High	3.0m +/-0.07
Feeding Level	1.5m +/-0.05
Feeding Below	0.7m +/-0.03
Feeding Ground	0m

Table 5: Numbers of tracked and composite giraffe. Total numbers of adult giraffe with feeding height observations from 65 encounters, and breakdown of the numbers of tracked and composite giraffe

Sex	Black Cotton (n)	Red Soil (n)	Transition Soil (n)	Total (n)
Female	28	100	55	183
Male	25	101	28	154
Total	53	201	83	337
Averaging Type				
Tracked Giraffe	13 <i>2 female, 11 male</i>	132 <i>62 female, 70 male</i>	28 <i>17 female, 11 male</i>	173 <i>81 female, 92 male</i>
Composite Giraffe	40 <i>26 female, 14 male</i>	69 <i>38 female, 31 male</i>	55 <i>38 female, 17 male</i>	164 <i>102 female, 62 male</i>
Total	53	201	83	337

Table 6a: Pooled adult giraffe feeding heights

3,617 feeding observations for adults only.

Female n = 2,194 (60.66%)

Male n = 1,423 (39.34%)

Feeding Level	Records	Percentage
Feed High (4.4m)	801	22.15%
Feed Medium (3.3m)	871	24.08%
Feed Level (2.4m)	1,139	31.49%
Feed Below (1.4m)	806	22.28%
Total	3,617	

Table 6b: Adult giraffe feeding heights by sex

Feeding Level	Female Records	Male Records
Feed High	16.3% (358)	31.1% (443)
Feed Medium	20.9% (458)	29.0% (413)
Feed Level	35.1% (771)	25.9% (368)
Feed Below	27.7% (607)	14.0% (199)
n	2,194	1,423

Table 7: Camel feeding heights

Including the "feeding ground" (Adult Females Only)

Number of Observations: 7,340

Feeding Level	Records	Percentage
Feed High	1,022	13.92%
Feed Level	2,377	32.38%
Feed Below	2,863	39.01%
Feed Ground	1,078	14.69%

Table 8a: Total number of plants measured for height on PQ transects (n=1452)

Plant Food Species	Records	Percent
<i>A. mellifera</i>	367	25.28%
<i>A. drepanolobium</i>	321	22.11%
<i>A. brevispica</i>	255	17.56%
<i>A. etbaica</i>	174	11.98%
<i>Croton dichogamous</i>	146	10.06%
<i>Sido oventor (?) Sida spp.</i>	46	3.17%
<i>Euclea spp.</i>	31	2.13%
<i>Boscia albitrunca</i>	24	1.65%
<i>Carissa edulis</i>	19	1.31%
<i>Lycium shawii (Lycium spp.)</i>	18	1.24%
<i>A. nilotica</i>	17	1.17%
<i>Balanites glabra</i>	17	1.17%
<i>A. tortilis</i>	11	0.76%
<i>Rhus natalensis</i>	4	0.28%
<i>Hibiscus flavifolious</i>	2	0.14%
Total	1452	

Table 8b: Plant species Mean, Median & SD height (m)

Plant Food Species	n	Mean Height (m)	Median Height (m)	SD Height (m)
<i>A. mellifera</i>	367	2.80	2.68	1.17
<i>A. drepanolobium</i>	321	2.46	2.09	1.19
<i>A. brevispica</i>	255	1.89	1.77	0.61
<i>A. etbaica</i>	174	3.33	3.28	1.33
<i>Croton dichogamous</i>	146	1.73	1.57	0.59
<i>Sido oventor (?) Sida spp.</i>	46	1.50	1.40	0.42
<i>Euclea spp.</i>	31	2.01	1.71	0.97
<i>Boscia albitrunca</i>	24	4.05	4.04	1.14
<i>Carissa edulis</i>	19	1.94	1.84	0.84
<i>Lycium shawii (Lycium spp.)</i>	18	1.46	1.29	0.46
<i>A. nilotica</i>	17	2.30	2.40	0.65
<i>Balanites glabra</i>	17	3.53	3.20	1.43
<i>A. tortilis</i>	11	2.51	2.55	1.12
<i>Rhus natalensis</i>	4	1.72	1.63	0.76
<i>Hibiscus flavifolious</i>	2	1.55	1.55	0.66

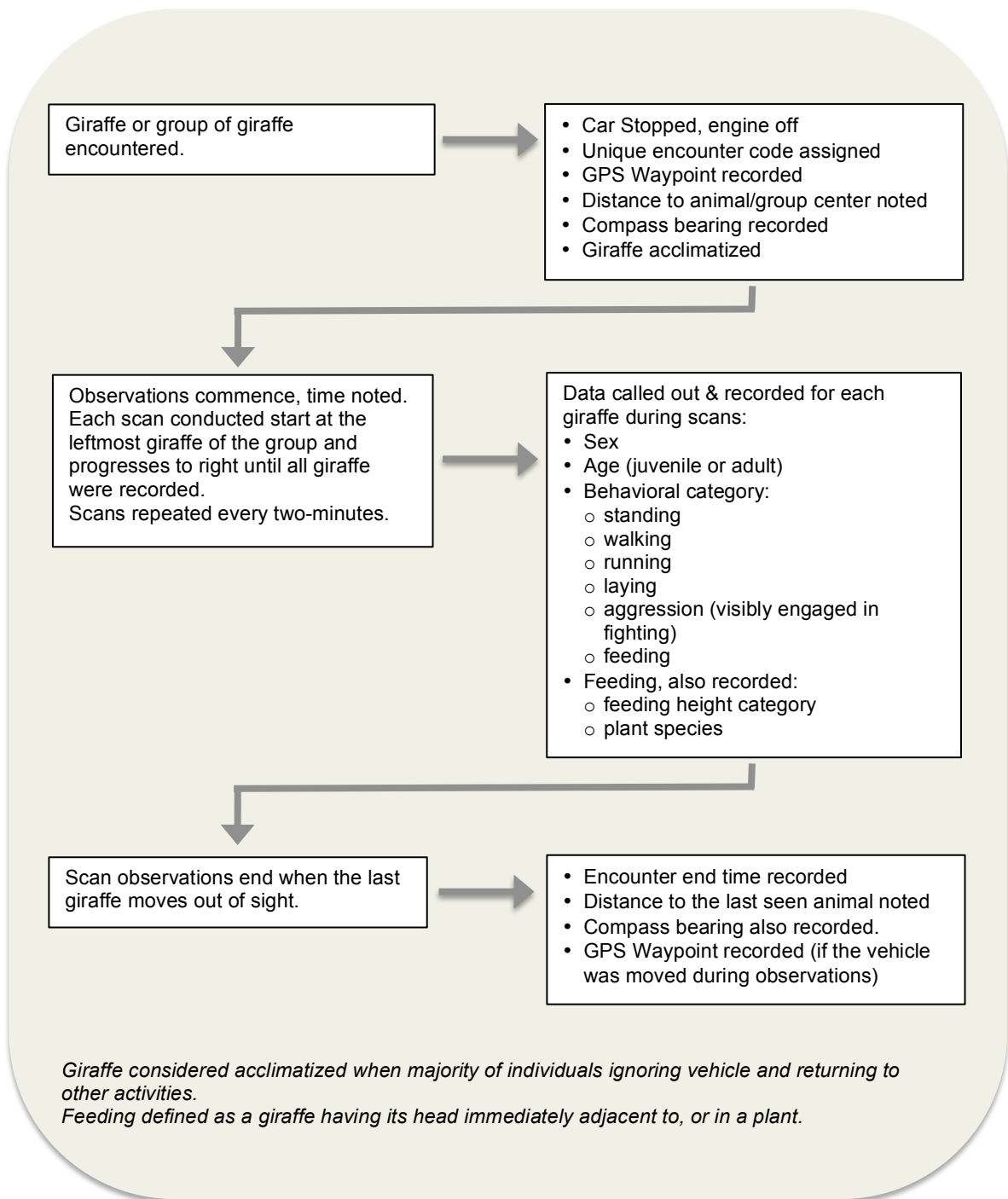
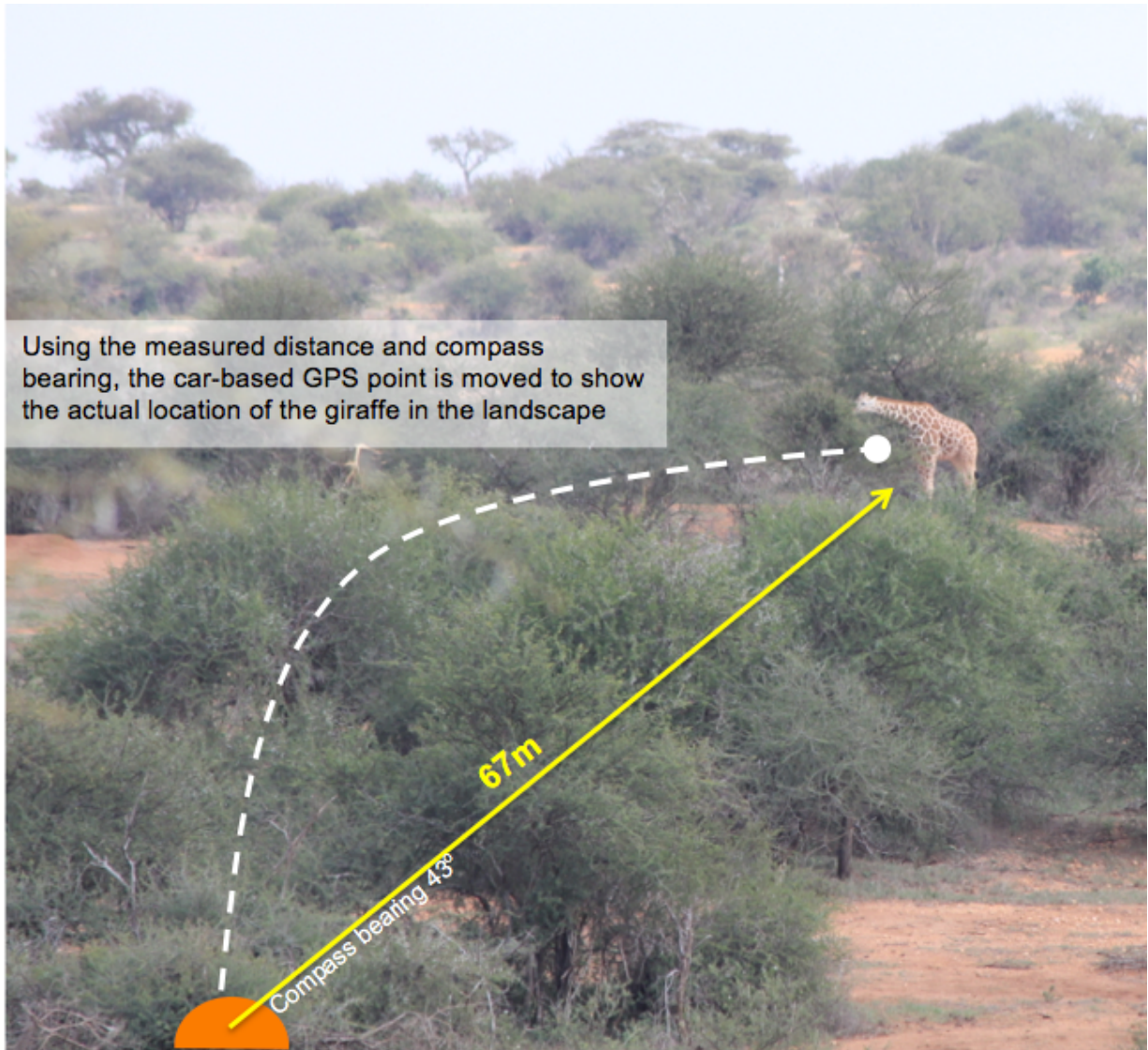


Figure 1: Flow chart detailing the method and data recorded during giraffe behavioral observations.



GPS Waypoint originally taken in car

Figure 2: Photo illustration of how the vehicle-based GPS waypoints of giraffe encounters were moved using field metadata and ArcGIS trigonometry to represent the real location of the giraffe in space (not to scale).