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Home range of an African wildcat, *Felis silvestris* (Schreber), near Elmenteita, Kenya

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The African wildcat (*Felis silvestris;* Honacki et al. 1982) is a common predator in the grasslands and woodlands of East Africa, but almost no quantitative information on its movements is available (Kingdon 1977; Smithers 1983). Here we describe the home range of a 3.7-kg male wildcat radiocollared near Elmenteita, Kenya (0° 30′ S, 36° 10′ E) during August 1987.

Temperatures in the area during the study period were warm during the day (13–21 °C) and cool at night (4–10 °C); rain was infrequent. Topography is generally flat except for a small, seasonally-dry river bed 5 m deep that bisected the cat's home range. Habitat types in the area included: Grassland (*Themeda triandra, Chloris gayana, Aloe* spp., and *Withania somnifera*), Agriculture (mostly maize fields), Open woodland (< 50 % tree and shrub cover with *Acacia xanthophloea, Euphorbia candelabrum, Opuntia vulgaris, Senecio petitianus, Cordia ovalis, Maerua triphylla,* and *Warbugia salutaris*), and Riverine woodland (> 50 % tree and shrub cover mainly with *Ficus sycomorus*).

The wildcat was captured in a padded steel foot-hold trap (Victor fox-sized "Soft-Catch", Woodstream Corp., Lititz, Pennsylvania, USA), then injected via hand-held syringe with a combination of 11 mg/kg ketamine hydrochloride (100 mg/ml; Ketaset, Birstol-Myers Co., Syracuse, New York, USA) and 5 mg/kg promazine hydrochloride (50 mg/ml; Sparine, Wyeth Laboratories, Inc., Philadelphia, Pennsylvania, USA). A 40-g radiocollar was fitted around the neck, and a numbered metal tag (3 × 12 mm) was affixed to each ear. Radiotelemetry locations were determined using a 3-element hand-held yagi antenna, usually while investigators were standing on the roof of a vehicle. The cat was seen once and was located from < 50 m away three other times. The other 13 radiolocations were determined through triangulation from an average of 2.2 bearings/location made 5 minutes apart, 0.5 km from the animal. Accuracy was estimated from 13 field tests with transmitters located at positions unknown to one investigator. Mean error of bearings was 6° (range = 0–14°), resulting in a calculated error of ±52 m at a distance of 0.5 km. The capture location and 17 telemetry locations were plotted on a topographic map (1:25,000) and recorded as X-Y coordinates on the Universal Transverse Mercator Grid. Home range size was estimated by outlining the minimum perimeter polygon and calculating its area (Odum and Kuenzler 1955). Changes in signal strength caused by flexion of the antenna on the radiocollar indicated when the wildcat was active. Activity observations were recorded only once within any one hourly interval, sometimes even when a location was not recorded. Habitat distribution was drawn on a topographic map with the aid of aerial photos and ground investigations. Habitat occurrence within the home range was determined by placing a dot-grid over the map and calculating frequency of occurrence.

The wildcat was captured on 11 August 1987 and located 17 times during 12–27 August.

Radiolocations were obtained more often between sunrise (0700 h) and sunset (1900 h) than at night (n = 11 and 6, respectively). Activity signals (n = 19) indicated that the cat was mostly nocturnal; all 10 signals obtained during 18000 to 0900 h indicated activity, vs. none of 9 obtained at other times. The wildcat's home range was estimated as 1.6 km^2. Habitat composition of the home range included open woodland (50 %), grassland used for cattle grazing (40 %), riverine woodland (5 %), and agriculture (5 %). The wildcat was located traveling in open grassland during at least 2 different nights, and apparently used different daytime resting sites on 8 of 9 days.

Smithers (1983) stated that African wildcats are almost entirely nocturnal, as we also observed. Wildcats in Europe are also active mostly at night, but sometimes cover long distances during the day (Artois 1985). Home ranges of wildcats in Europe were reported as 0.5 km^2 (Nowak and Paradiso 1983), and 0.6–0.7 km^2 (Leuw 1957 in Kingdon 1977). Radiocollared European wildcats had daily ranges of 0.3–3.3 km^2, and 1.8–12.7 km^2 over longer periods (Artois 1985; Stahl et al. 1988). Our estimate of home range size is likely minimal because our marked wildcat was monitored for only a short time. Wildcats have a wide habitat tolerance, but are conspicuous in open areas (Kingdon 1977) and require cover to rest in during the day (Artois 1985; Smithers 1983). These requirements were reflected in the mix of habitats occurring in the home range of the wildcat we monitored.

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