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First camera trap pictures of Eurasian lynx from Turkey

Studying cryptic animals require dedicated field work and careful planning depending on the habitat and behavior of the target animal. However, use of camera traps now provides a non-invasive technique to detect and monitor wildlife, especially nocturnal carnivores; it can also be used to estimate population sizes of animals with special markings or patterns (Carbone et al. 2001, Balme et al. 2009). We have used systematic and opportunistic camera trapping in central and northeastern Turkey, respectively, to inventory local carnivore fauna. Our surveys yielded six Eurasian Lynx *Lynx lynx* photos in Artvin, and eight in Ankara, constituting the first time this species was documented by camera traps in Turkey.

The lynx was listed among the two most widespread felid species in Turkey (Turan 1984). However, because of its relatively low densities and secretive nature, it is rarely seen or otherwise documented alive. We aimed to use camera traps to overcome the problems of detection, and possibly also to estimate population density in the future. A systematic effort at one study site west of Ankara (Fig. 1) started in December 2008 and lasted one year. This site is mostly covered with mature pine forest (*Pinus brutia* and *P. nigra*). Recorded fauna include red deer *Cervus elaphus*, wild boar *Sus scrofa*, wolf *Canis lupus*, red fox *Vulpes vulpes* and brown hare *Lepus europaeus* (Mengüllüoğlu & Bilgin 2008). Up to fifteen 35 mm trail cameras (Deercam brand) were set at locations of 500-1600 m altitude and roughly 2 km apart. They were checked at regular intervals, and films and batteries were replaced as necessary.

The Artvin site (Fig. 2) is on the southern slopes of Kaçkar Mountains. Typical land cover is deciduous shrubland on the drier lower elevations, and coniferous (*Pinus silvestris*, *Picea orientalis*, *Abies nordmanniana*) or mixed forest in the more humid parts. Wild goat *Capra aegagrus*, brown bear *Ursus arctos*, wild boar, and brown hare are common (Ambarlı & Bilgin, unpubl. data). In 2009, six digital camera traps (Stealthcam brand) were set 1-10 km distant, and left for two

weeks to one month at altitudes of 1000-2200 m.

The first photo of a lynx (Fig. 2) was captured in Artvin on 16 February 2009 (40.8°N/41.6°E). Each of the other three camera traps nearby and three additional camera traps at the Altıparmak valley eventually took lynx pictures, too. Based on spotting patterns on their hind legs and tail, we identified at least five, probably six different individuals.

On 28 February 2009, a single photograph of a lynx was captured 850 km west in Ankara (40.2°N/31.7°E) after 1109 trap-days of effort (Fig. 3). A minimum of three different individuals were identified based on a total of eight photos taken in 2009. The lynx in Ankara is largely nocturnal probably due to high human and livestock presence (all but one photo were taken at night between 23:58 and 04:47).

In northern Turkey, various recent initiatives tried to document carnivores, sometimes specifically lynx, using camera traps. Despite several thousand trap-days of effort in suitable habitat (A. Ertürk, pers. comm.), no lynx was captured until our study. This could indicate absence at the site or extremely low densities, wariness of lynx toward the camera setups, or poorly chosen locations of traps. Our work has shown that, at least in certain areas, the lynx can be successfully photographed when signs of presence are carefully interpreted and camera-trap sites are properly selected. Further research with an appropriate sampling design may provide enough data to assess accurate densities.

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Fig. 2. The first Eurasian lynx photograph taken in Artvin, NE Turkey.



Fig. 3. The Eurasian lynx captured near Ankara.

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Fig. 1. Locations of study sites near Ankara and Artvin.