

## Short Note

Alaaeldin Soultan\*, Omar Attum, Ayman Hamada, El-Bialy Hatab, Saied E. Ahmed, Ali Eisa, Ismail Al Sharif, Abdullah Nagy and Wael Shohdi

## Recent observation for leopard *Panthera pardus* in Egypt

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**Abstract:** An adult male leopard *Panthera pardus* was killed in Elba Protected Area in south-east Egypt. This record represents the first confirmed observation in Egypt during the past 65 years, and the first confirmed record in this region. We visited the surrounding areas where the leopard was killed and in areas where tracks were observed by local people to follow the animal's movement and describe the habitat. The external measurements and the morphology are also described and a tissue sample was preserved for genetic analysis.

**Keywords:** Egypt; Elba Protected Area; leopard; *Panthera pardus*.

The leopard, *Panthera pardus* (Linnaeus, 1758) is one of the most widely distributed large cats with a geographical range from North Africa and sub-Saharan Africa to southern Asia and the Amur Valley in the Russian Far East (Nowell and Jackson 1996, Mondol et al. 2009). The

leopard is a highly adaptable species, occurring in high altitude and montane habitats and also within arid and tropical regions (Uphyrkina et al. 2001). Over the last century, leopard populations have decreased as a result of habitat fragmentation, poaching, and expanding human development (Uphyrkina et al. 2001, Mondol et al. 2009).

Two subspecies of leopard have been recorded in Egypt, the Arabian leopard *Panthera pardus nimr* in Sinai and the African leopard, *Panthera pardus pardus* in the northern part of the Western Desert and Elba mountains in far south east of Egypt (Flower 1932, Osborn and Helmy 1980, Saleh and Basuony 1998, Uphyrkina et al. 2001, Spalton and Al Hikmani 2006, Basuony et al. 2010). Leopards records are very rare in Egypt up until early last century (Flower 1932), and the leopard is currently listed as extinct (Hunter et al., 2013). The last confirmed published leopard record was in the early 1950s in Sinai (Osborn and Helmy 1980), with most of the historical records also occurring in Sinai (Figure 1). This paper reports new evidence of leopards in Egypt.

On December 16, 2014 an adult male leopard was killed by group of shepherds after it attacked their camel in Wadi Shalal, Elba Protected Area, which is located in the (Hala'ib) region of the extreme south east of Egypt (Figure 1). The leopard carcass was then stored in a refrigerator and body measurements were recorded on December 22, 2014. This specimen was ochraceous buff on its dorsum, and fading to white on its venter. Black spots were scattered on the face and the limbs. The animal weighed approximately 45 kg, while the head-body length was 1240 mm, hind foot length was 230 mm, ear length was 87 mm and the height at the shoulder was 630 mm.

Between December 18 and 23, 2014, we visited the surrounding areas where the leopard was killed and in areas that tracks were observed by local people to follow the animal's movement and describe the habitat. The attacked camel was part of a group of free-ranging camels who return at night to their owner's camp located in Wadi Shalal near the base of the Hadal Angir mountain (36.54883 E°, 22.13214 N°). After the leopard was detected

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\*Corresponding author: **Alaaeldin Soultan**, Department for Migration and Immuno-ecology, Max Plank Institute for Ornithology, Am Obstberg 1, 78315 Radolfzell, Germany; Department of Biology, University of Konstanz, 78464 Konstanz, Germany; and St. Katherine Protectorate, South Sinai, Nature Conservation Sector, EEAA, Egypt, e-mail: asoultan@orn.mpg.de

**Omar Attum:** Department of Biology, Indiana University Southeast, New Albany, IN 47150, USA

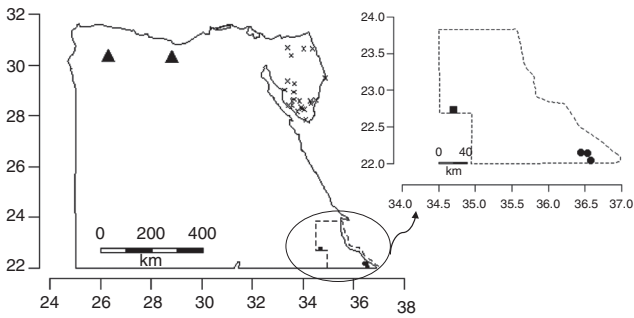
**Ayman Hamada and El-Bialy Hatab:** Nature Conservation Sector, Egyptian Environmental Affairs Agency EEAA, 30 Misr Helwan St., Maadi, 11431, Cairo, Egypt

**Saied E. Ahmed:** Red Sea Protected Areas, Nature Conservation Sector, EEAA, 84517, Hurghada, Egypt

**Ali Eisa and Ismail Al Sharif:** Elba Protected Area, Nature Conservation Sector, EEAA, 84517, Hurghada, Egypt

**Abdullah Nagy:** Faculty of Science, Zoology Department, Al Azhar University, 11682, Cairo, Egypt

**Wael Shohdi:** Nature Conservation Egypt, Mohandeseen, 12411, Giza, Egypt



**Figure 1:** Distribution of leopards in Egypt. The dashed polygon represents the border of Elba protected area. The x represents historical records of Arabian leopard *Panthera pardus nimr*, and the triangles represents the historical records of the African leopard *Panthera pardus pardus*. The circles represent recent observations of the leopard or signs, while the square represents an unidentified large cat observation.

by local people, it was chased into a rock overhang a few hundred metres away (36.53486 E°, 22.14175 N°). In addition, leopard footprints were observed on Baladok mountain (36.578944 E°, 22.041169 N°) and Wadi *Embersel* (36.59472 E°, 22.07653 N°), roughly a straight line distance of 15 km away.

The vegetation of this area consists of different perennial species; *Acacia mellifera*, *Ziziphus spina*, *Boerhavia elegans*, *Citrullus colocynthis*, and *Lindenbergia indica*. In the spring, there is a high density of grasses and annual plants after winter rains. Free-ranging camels are common and there is also population of feral donkeys. We observed tracks or faeces for the following native large mammals; Dorcas gazelles *Gazella dorcas* (Linnaeus, 1758), desert hare *Lepus capensis* (Linnaeus, 1758), hyrax *Procapra capensis* (Pallas, 1766), wild ass *Equus africanus* (Heuglin & Fitzinger, 1866) and Nubian ibex *Capra nubiana* (F. Cuvier, 1825). In addition, we observed the following large birds of prey; lammergeier, *Gypaetus barbatus*, and lappet-faced vulture, *Torgos tracheliotus*.

This record shows that leopards still occur in the southern part of Egypt. Local inhabitants believe that the leopard population comprises of residents and visitors from neighbouring Sudan. A small resident population is believed to inhabit Elba Mountain (1435 m) and its surrounding hills. In addition, vagrant leopards are believed to cross the Sudanese border into Egypt in the winter when there is high annual plant cover after the annual rainfall and the presence of high numbers of grazing native and non-native herbivores. We also have two unconfirmed observations by local people of large cats, which they suggested were probably leopards, in Wadi Sermatai in October, 2010 and Meshbah Mountain

in December, 2010 (Figure 1). In 1986 the remains of about 29 leopards were collected from Wadi Adayd in the Eastern Desert, whose remains were dated between 9570 and 2276 B.P. (Hobbs and Goodman 1995). Apart from these fossil remains collected from the Eastern Desert, we know of no other records for leopards in this region except from the recent records presented in this paper.

The persecution of leopards in Egypt has been continuing since 5000 B.P., as the local inhabitants view leopards as a negative presence because of the perceived threat to livestock and other game species (Hobbs and Goodman 1995). We believe that human persecution and the decreasing populations of native large mammals are the main threats to the leopard population in Egypt. We recommend a follow-up systematic survey to determine the current population status and the area of occupancy of the leopard in the Elba Protected Area.

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