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**Citation** (please note it is advisable to refer to the publisher's version if you intend to cite from this work)

**Cunningham, PL and Wronski, T (2009) Blanford's fox confirmed in the At-Tubaiq Protected Area (northern Saudi Arabia) and the Ibex Reserve (central Saudi Arabia). *Canid News*, 12 (4). ISSN 1478-2677**

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## Canid News

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The following is the established format for referencing this article:

Cunningham, P.L. and Wronski, T. 2009. Blanford's fox confirmed in the At-Tubaiq Protected Area (northern Saudi Arabia) and the Ibex Reserve (central Saudi Arabia). *Canid News* 12.4 [online]  
 URL: [http://www.canids.org/canidnews/12/Blanfords\\_fox\\_in\\_Saudi\\_Arabia.pdf](http://www.canids.org/canidnews/12/Blanfords_fox_in_Saudi_Arabia.pdf).

### Distribution Update

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## Blanford's fox confirmed in the At-Tubaiq Protected Area (northern Saudi Arabia) and the Ibex Reserve (central Saudi Arabia)

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**Keywords:** Saudi Arabia, At-Tubaiq Protected Area, Ibex Reserve, distribution, range extension, Blanford's fox, *Vulpes cana*

### Abstract

Confirmed – new records – of Blanford's fox *Vulpes cana* from the At-Tubaiq Protected Area in northern Saudi Arabia and the Ibex Reserve in central Saudi Arabia extends the recognised range of the species within Saudi Arabia and the Arabian Peninsula.

### Introduction

Blanford's fox *Vulpes cana* Blanford, 1877 is a secretive and rarely observed mountain dwelling nocturnal arid-adapted fox that occurs along the mountainous periphery of the Arabian Peninsula (Geffen et al. 2004). The documented distribution of the Blanford's fox was originally limited to Central Asia, Iran,

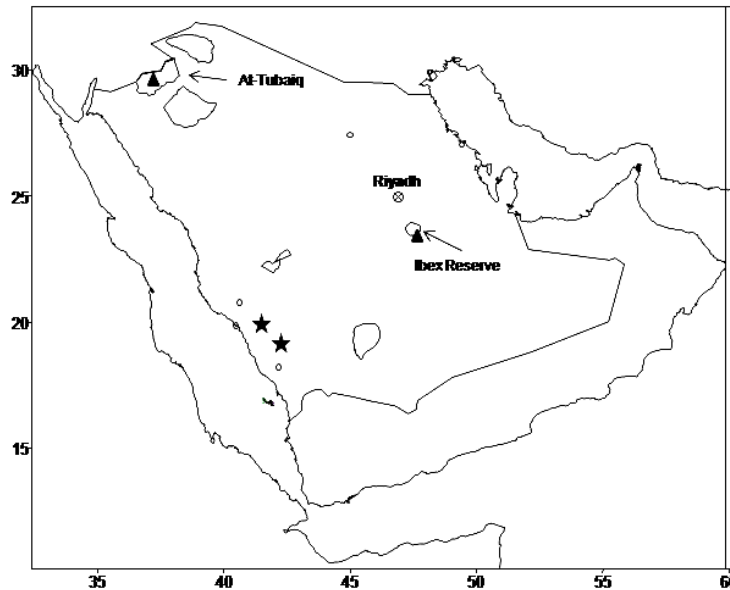
Afghanistan, Pakistan and India and only recently noted to occur on the Arabian Peninsula (Kingdon 1990; Nader 1990; Al-Khalili 1993; Roberts 1997). Arabian specimens have been recorded from Oman, Israel/Palestine, Saudi Arabia, Sinai Peninsula (Egypt) and the United Arab Emirates (Mendelssohn et al. 1987; Nader 1990; Harrison and Bates 1991; Geffen et al. 1992a/b/c; Geffen et al. 1993; Al-Khalili 1993; Stuart and Stuart 1995; Spalton and Willis 1999; Llewellyn-Smith 2000; Cunningham and Howarth 2002; Drew 2003; Stuart and Stuart 2003; Geffen et al. 2004).

Ginsberg and MacDonald (1990) suggested that Blanford's fox probably occurred throughout suitable habitat in Arabia while Geffen et al. (1993) suggested that they have a much larger range than was earlier believed. Although probably more widespread than

currently documented, it is an understudied species – especially in Saudi Arabia – and currently listed as *Least Concern* (LC) by the IUCN (IUCN 2009) and has a CITES protection status of CITES Appendix II (2008).

The aim of this paper is to update the distribution of Blanford's fox in Saudi Arabia by providing new locations representing an expansion of their range in northern and central Saudi Arabia, including away from the accepted peripheral Arabian Peninsula range.

approximately 400km inland. It stretches from the north of Riyadh southwards to Uruq bani M' Arid, approximately 250km north of Najran on the Yemen border where it peters out into the Empty Quarter. The Ibex Reserve harbours a small population of reintroduced mountain gazelle (*Idmi*) *Gazella gazella* and canids confirmed from the area include red fox *Vulpes vulpes arabica*, Arabian wolf *Canis lupus pallipes* and occasionally feral dogs (Child and Grainger 1990; Wronski and Macasero 2008).



**Figure 1.** Map of Saudi Arabia indicating the location of the At-Tubaiq Protected Area (northern Saudi Arabia) and the Ibex Reserve (central Saudi Arabia) (Triangles indicate the approximate positions of the Blanford's fox sightings in the Protected Areas). Stars indicate the approximate positions of the previously reported sightings from south-western Saudi Arabia.

## Methods

### Ibex Reserve

The Ibex Reserve is an isolated massive with steep walled incised canyons and located approximately 200km south of Riyadh in the Tuwaiq escarpment in central Saudi Arabia (23°30'N, 46°00'E) (Figure 1). It is 2,369km<sup>2</sup> in size and was established in 1988 for the protection of the only known relict population of Nubian ibex *Capra nubiana* in the Tuwayq Mountains and the central Najd region (Child and Grainger 1990). The Tuwaiq escarpment runs parallel to the Gulf of Arabia in the east,

### At-Tubaiq Protected Area

The At-Tubaiq Protected Area is an eroded sedimentary plateau, demarcated by a low escarpment from a sandy plain situated adjacent to the northwest international boundary with Jordan in northern Saudi Arabia (29°30'N, 37°30'E) (Figure 1). It is 12,200km<sup>2</sup> in size and was established in 1989 for the protection of the northern plains and the most northern population of Nubian ibex in Saudi Arabia (Child and Grainger 1990). Domestic stock can frequently be found within the Protected Area. Canids confirmed from the area include red fox, Rüppell's fox *Vulpes rueppelli* and Arabian wolf (Kingdon 1990; Harrison

and Bates 1991; Wacher and Strauss 2000; Wacher 2001).

As part of a larger study on the home range and territoriality of *G. gazella* using middens as a possible indicator thereof in the Ibex Reserve, camera traps were used to photograph gazelle activities related to middens. Camera trapping using Trailmaster 35mm cameras has been ongoing for a number of years with various size classes of middens under observation. Cameras were also placed at natural springs in the area to photograph gazelle (including ibex) drinking intervals and population numbers (Wakefield et al. 2006), and during these photographic trapping sessions opportunistic sightings of other species were made. A limited biodiversity survey conducted mainly to survey the presence of mountain gazelle in At-Tubaiq Protected Area also included the use of camera traps to confirm the presence of other, especially nocturnal, wildlife.

## Results

During November 2001 a Blanford's fox individual with black tail tip was photographed at night in Wadi Asharat in the At-Tubaiq Protected Area, approximately 350km inland from the Red Sea (Wacher 2001) (Figure 2a,b).

During 2004 an individual Blanford's fox with black tail tip was photographed at night in Wadi Mutam (Ghaba) in the Ibex Reserve, approximately 400km inland from the Arabian

Gulf (Attum 2004) (Figure 3). Of all the trapping nights over the last few years using up to a maximum of five cameras, this was the only sighting of Blanford's fox.

## Discussion

These Blanford's foxes photographed in the At-Tubaiq Protected Area (Wacher 2001) and the Ibex Reserve (Attum 2004) confirm their existence in northern Saudi Arabia and the Tuwaiq Mountains of central Saudi Arabia.

A number of species accounts include Blanford's fox from Saudi Arabia although very few confirmed sightings have been documented. Confirmed sightings from Saudi Arabia include a road kill 40km southeast of Biljurshi and a photographed individual at Jebal Shada, both sightings in south-western Saudi Arabia in the Asir Mountains (Harrison and Bates 1991).

Maps on the distribution of Blanford's fox include south-western Saudi Arabia (Kingdon 1990; Harrison and Bates 1991; Geffen et al. 2004) with Geffen et al. (2004) including the entire western mountainous region of Saudi Arabia from the Yemen border up to the Jordanian border as suspected range.

The Blanford's fox sighting from the At-Tubaiq Protected Area in northern Saudi Arabia falls within the suspected range as



**Figure 2a,b.** Blanford's fox photographed in the At-Tubaiq Protected Area in northern Saudi Arabia (Wacher 2001).



**Figure 3.** Blanford's fox photographed in the Ibx Reserve in central Saudi Arabia (Attum 2004).

indicated by Geffen et al. (2004) – i.e. the western mountainous region of Saudi Arabia – and Ginsberg and MacDonald (1990) – i.e. suitable habitat. However, the Blanford's fox sighting from the Ibx Reserve is viewed as a range extension from its known range in the Asir Mountains in south-western Saudi Arabia eastwards to central Saudi Arabia, a distance of approximately 800km inland (400km from the Arabian Gulf). The closest other confirmed sightings (except for the At-Tubaiq Protected Area individual – this report) are from the Jebal Samhan (Dofar region) area north of Salalah in southern Oman (Harrison and Bates 1991; Spalton and Willis 1999) and the limestone inselberg – Jebal Hafit – in south-eastern United Arab Emirates (Drew 2003) as well as other mountainous wadis in the UAE (Stuart and Stuart 1995; Cunningham and Howarth 2002), all these areas approximately 1,000km away, respectively. These last mentioned areas are separated from the Tuwaiq Mountains by the Rub al Khali or Empty Quarter, the largest inland sand sea in the world thus denying potential movement of Blanford's fox between the Tuwaiq Mountains eastwards and southwards.

Blanford's fox was not thought to occur in the Ibx Reserve or the At-Tubaiq Protected Area when first established as protective areas in 1988/89 as Child and Grainger (1990) did not

include them in the System Plans for these areas. The At-Tubaiq Protected Area Master Management Plan (Seddon and Khan 1996) and subsequent surveys in 1997 (Robertson et al. 1997) and Wachter and Strauss (2000) in the At-Tubaiq Protected Area also make no mention of Blanford's fox. With the exception of the records from the Asir Mountains in south-western Saudi Arabia no other sightings have been documented from Saudi Arabia although this is an understudied species with very few biodiversity surveys having been conducted throughout the Kingdom, especially true for the rugged, often inaccessible, mountainous regions. With these confirmed sightings from northern Saudi Arabia as well as the Tuwaiq Mountains in central Saudi Arabia, Blanford's fox is expected to occur more widespread throughout the mountainous areas of Saudi Arabia, including the central Tuwaiq escarpment.

The status of Blanford's fox from Saudi Arabia is unknown, but it would be reasonable to assume that they are widespread throughout the mountainous areas although their densities are not high. As any other carnivore they would be indiscriminately persecuted as livestock predators or included as collateral damage during the poisoning of carcasses targeting other predators, a major concern for the species. Although carnivores were not specifi-

cally targeted during the camera trapping sessions in the Ibex Reserve, the fact that so few photographic sightings of them were made over the years in an intensively studied area such as the Ibex Reserve probably indicates low densities of this species. However, the possibility does exist that they occur at higher densities than currently expected in more favourable habitats – i.e. talus slopes, at the base of cliffs and inaccessible smaller rocky wadis. This could however be confirmed with targeted photographic and physical trapping for this species.

The black tail tip of the photographed individuals differs from the Arabian red fox, a congeneric in the Ibex Reserve and the At-Tubaiq Protected Area, which have a white tail tip and Rüppell's fox, which does not occur in the rocky Ibex Reserve, also having a white tail tip (Kingdon 1990; Nader 1990; Harrison and Bates 1991; Duckworth 1996). According to Roberts (1997) the tip of the tail of Blanford's fox is generally black, but may be white in some specimens. In the United Arab Emirates approximately 20% of Blanford's fox trapped, photographed and encountered as road kills have been known to have white tipped tails (Llewellyn-Smith 2000; Cunningham and Howarth 2002).

These opportunistic sightings of Blanford's fox in new regions emphasise the importance of biodiversity surveys in protected areas throughout Saudi Arabia. An increased knowledge of the overall biodiversity can assist wildlife managers in effectively managing protected areas. More information on the distribution and population densities of Blanford's fox would undoubtedly assist wildlife managers and decision makers in determining the conservation status of this little known species from Saudi Arabia.

## Acknowledgements

We hereby acknowledge H.H. Prince Bandar bin Saud bin Mohammed Al Saud, Secretary General, NCWCD for his continued support towards conservation efforts in Saudi Arabia. Our appreciation also goes to Ernest Robinson (Director KKWRC, Thumamah) for commenting on a draft of this note.

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**Torsten Wronski** is currently an ecologist at King Khalid Wildlife Research Centre in Saudi Arabia, studying the ecology of re-introduced mountain gazelles *Gazella gazella* in the Ibex Reserve in central Saudi Arabia. Previously he worked in Uganda and published extensively on the behavioural ecology and social organisation of the bushbuck *Tragelaphus scriptus*. Most recently he carried out a post-doctoral study at the University of Hamburg, Germany, working on the biogeography of East and Central African land snails.