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IRANIAN CHEETAH SOCIETY
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Project Final Report

Status of Asiatic Cheetah in Iran: A Country-Scale Assessment

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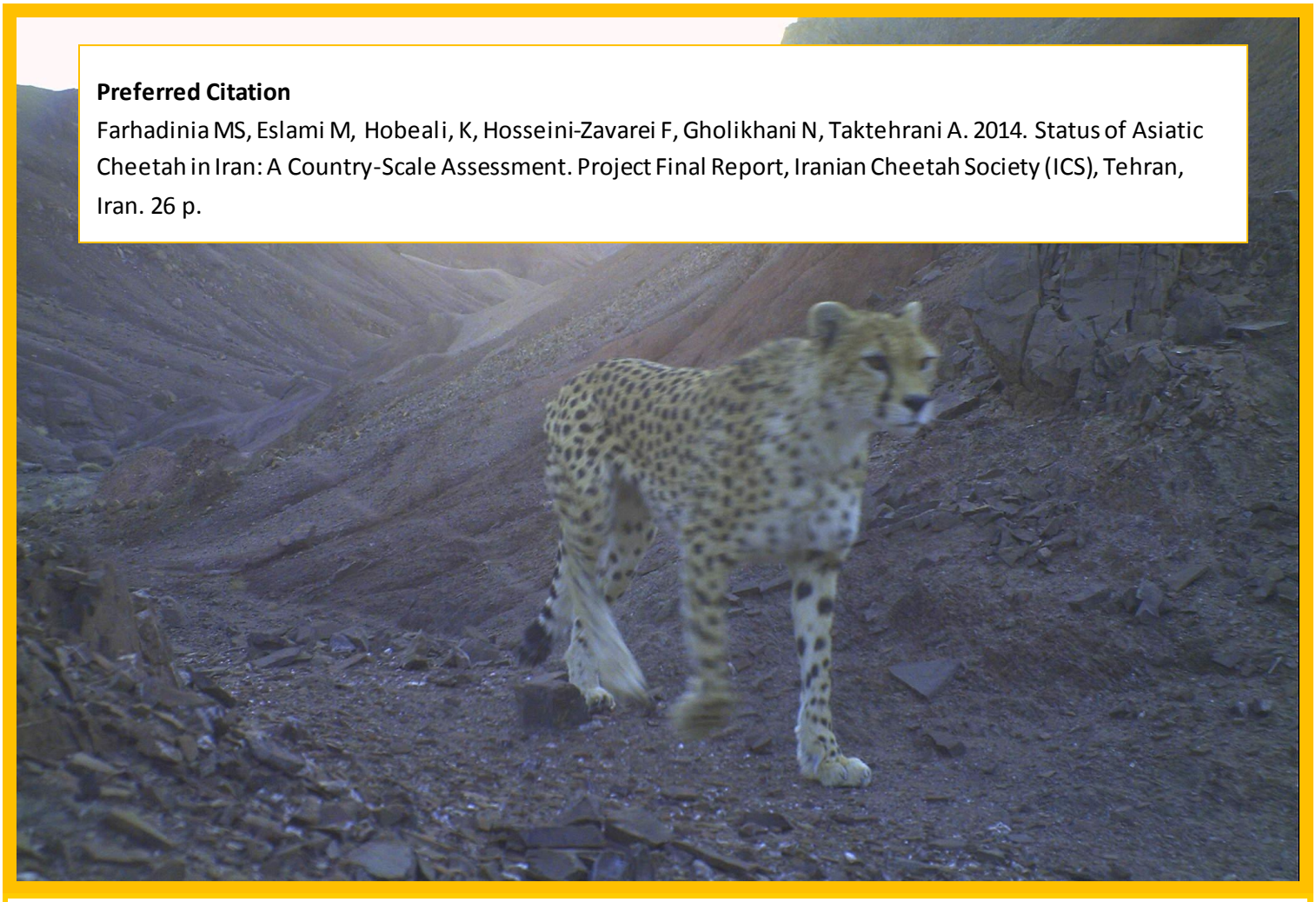

Iranian Cheetah Society (ICS) is a non-governmental, non-profitable organization devoted to save the biodiversity which is so rich, but disappearing in Iran. Carnivores have essential priority within the ICS activities and various research and conservation projects have been implemented on the species, such as Asiatic cheetah, brown bear, striped hyena, grey wolf, Eurasian lynx, caracal, mustelids and Persian leopard whose more than two third of its wild population occurs in Iran. It has been established in 2001 (registration number 13640) and celebrated its first decade of biodiversity conservation recently.

To learn more about Iranian Cheetah Society (ICS) visit: www.wildlife.ir

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Donors and Partners

Iranian Department of Environment
Deputy of Natural Environment and Biodiversity

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Introduction

Historically, the cheetah *Acinonyx jubatus* occurred widely through much of non-forested Africa, the Middle East and southern Asia (Nowell & Jackson 1996), suggesting that the species might have a wide habitat tolerance (Bissett & Bernard 2007). In Africa, cheetahs have lost 76% of their historic range (Ray et al. 2005). In Asia, it formerly ranged across southwest and central Asia to India (Nowell and Jackson 1996), but in the past four decades, the occurrence of Asiatic cheetahs *A.j.venaticus* has only been confirmed from Iran (Farhadinia 2004) with some occasional reports from some neighboring countries (i.e., Pakistan: Roberts 1997, Husain 2001; Afghanistan: Manati & Nogge 2008; Turkmenistan: Flint 1988).

The Asiatic cheetah was known to exist in more than forty areas in eastern Iran as well as Iran-Iraq borders in west during the 1950s (Harrignton 1977, Ziaie 2008, Jourabchian & Farhadinia 2008) with an overall population of 200-300 (Firouz 1974). However, the latter population figure was considered to be an over-estimation by some experts, considering the country's population to be around 100 (Joslin 1984). It was declared as protected by law in 1959 by the former Iranian Game Council (Firouz 1974). However, due to weakened protection measures in early 1980s, the cheetah disappeared from most of its range (Fig 1; Ziaie 2008).

In late 1990s, Jourabchian (1999) reported that Iran hosts fewer than 40 cheetahs, in contrast to Asadi (1997) who reported some 50 to 100 individuals, before establishment of a comprehensive initiative, namely as Conservation of Asiatic Cheetah Project (CACP) in 2001. During first half of the 2000s, the country's cheetah population was still supposed to be fewer than 60 individuals, mainly living in five reserves (Schaller & O'Brien 2001, Farhadinia 2004).

Parallel to intensive attempts to halt drastic decline in the cheetah and prey number; however, more investigations by trained experts resulted in higher number of areas approved for existence of the cheetahs, so presently 17 areas are known with confirmed cheetah presence in the country. Thus, a higher cheetah population was considered in second half of the 2000s, mostly around 60 to 100 individuals (Hunter et al. 2007, Jourabchian & Farhadinia 2008, Jowkar et al. 2008) and it was officially published in Iran' A Field Guide to Mammals (i.e. 70-100 cheetahs; Ziaie 2008). However, all these figures were based on scientifically accepted methods.

Figure 1 Historical and present range of the Asiatic cheetah in Iran (Source: Farhadinia et al. In prep.)

As the most challenging question against managers, the cheetah population was one of the key protection indicators recommended to be targeted (Schaller & O'Brien 2001, Breitenmoser et al. 2009). Meanwhile, initial efforts based on camera trapping methodology (O'Brien 2003) were disappointing, yielding extremely low number of cheetah images (71 independent captures during 19080 trap nights efforts distributed in 16 surveys) and normally no more than three different individuals were recognized during each estimation season (Jourabchian & Farhadinia 2008). Furthermore, besides expertise drawback for data management and analysis, lack of necessary equipment, particularly camera traps which was increased due to financial sanctions against Iran did not permit implementation of a comprehensive assessment. Therefore, despite law enforcement and promotion of protection measures, success evaluation to guide future efforts was not easy. Thus, according to final evaluation done by the IUCN/SSC Cat Specialist Group "It is assumed that

the cheetah population has even increased in recent years, but the neither the initial baseline information nor the newest population estimates are reliable enough to assess this assumption" (Breitenmsoer et al. 2009).

Asiatic cheetahs are difficult to study in these areas as they use large ranges (up-to at least 5,000 km^2; Farhadinia et al. 2013), are extremely shy and elusive, and occur at low densities (Schaller & O'Brien 2001, Hunter et al 2007). Camera traps have been recommended as reliable tools to study the cryptic 'marked' species (Karanth & Nichols 2002) and since the spot patterns of the cheetahs are unique and remain constant through their life (Caro & Durant 1991), individuals can be recognized from photographs and followed through time (Fig 2; Kelly 2001). However, despite of regular application of this technique for a majority of larger marked cats such as tiger *Panthera tigris* (e.g. O'Brien et al. 2003, Karanth et al. 2004) and leopard *P.pardus*, (e.g. Balme et al. 2009), it has been rarely utilized for the benefit of the cheetahs, except two attempts in southern Africa (Marnewick et al. 2008, Marker et al. 2008) who investigated the use of the technique for estimating abundance.

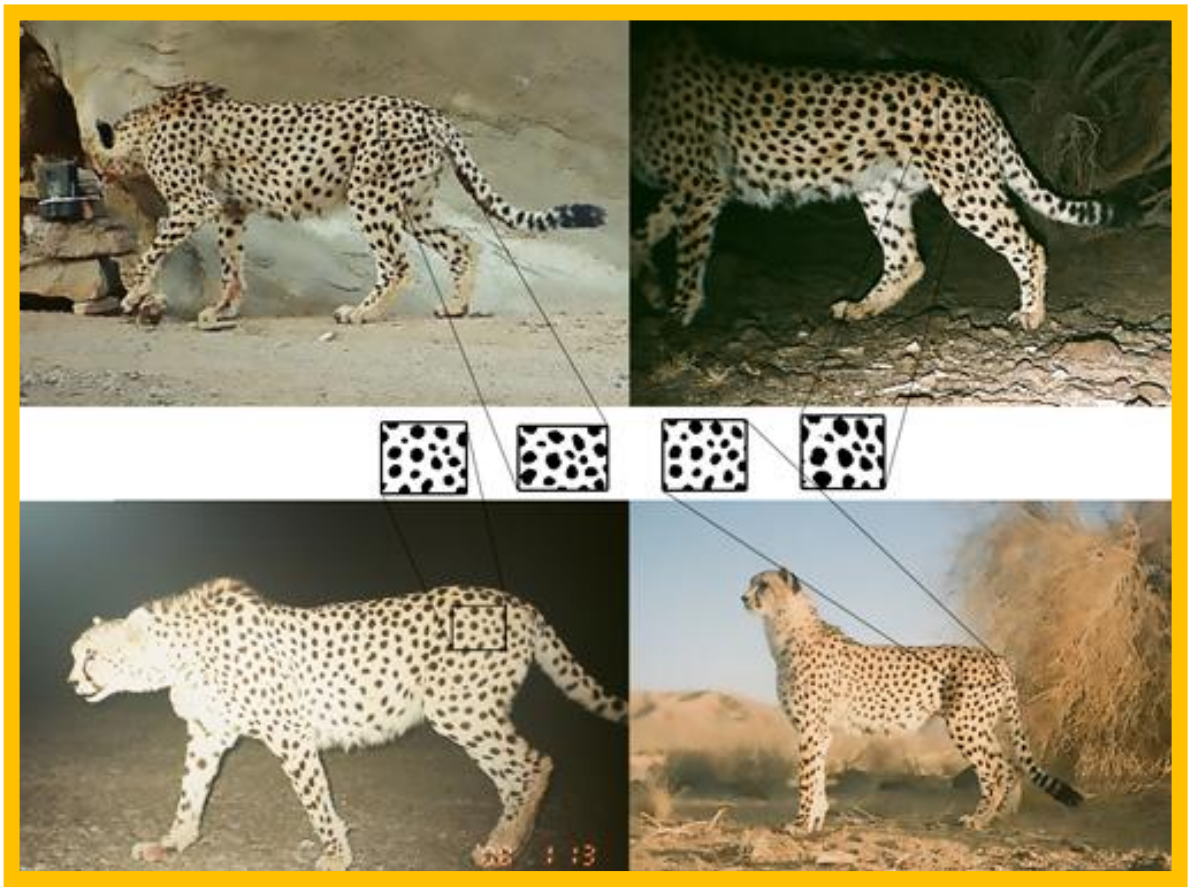

Figure 2 Individually unique spot patterns of the cheetahs enable biologist to learn about their population (CACP/UNDP/DoE/P4L/ICS)

One reason might be due to patrolling large areas of more open habitats by the cheetahs which makes identifying proper locations across vast areas difficult, comparing with other

mentioned cats which are likely to walk along trails and ridges (Karanth et al. 2004, Balme et al. 2009). On the other hand, these surveys failed to obtain a comprehensive picture of the cheetah populations, because almost all individuals identified were male (Fig 3; Marnewick et al. 2008, Marker et al. 2008), probably due to male-biased camera placements at signing trees, in contrast to trails which can even result in failure to obtain any cheetah capture in high density landscapes (e.g. Namibia: Kauffman et al. 2007; Tanzania: Pettorelli et al. 2010). Thus, despite its advances for other larger cats, the methodology has not been sufficiently applied for the cheetahs. Due to difficulty in demographic assessment of the cheetahs, all status investigations are mostly rough estimation based on expert opinions (Gros 2002, Klein 2007, Marnewick et al. 2007, Marker et al. 2007, Durant et al. 2008), which can result in a discrepancy about the species overall population.

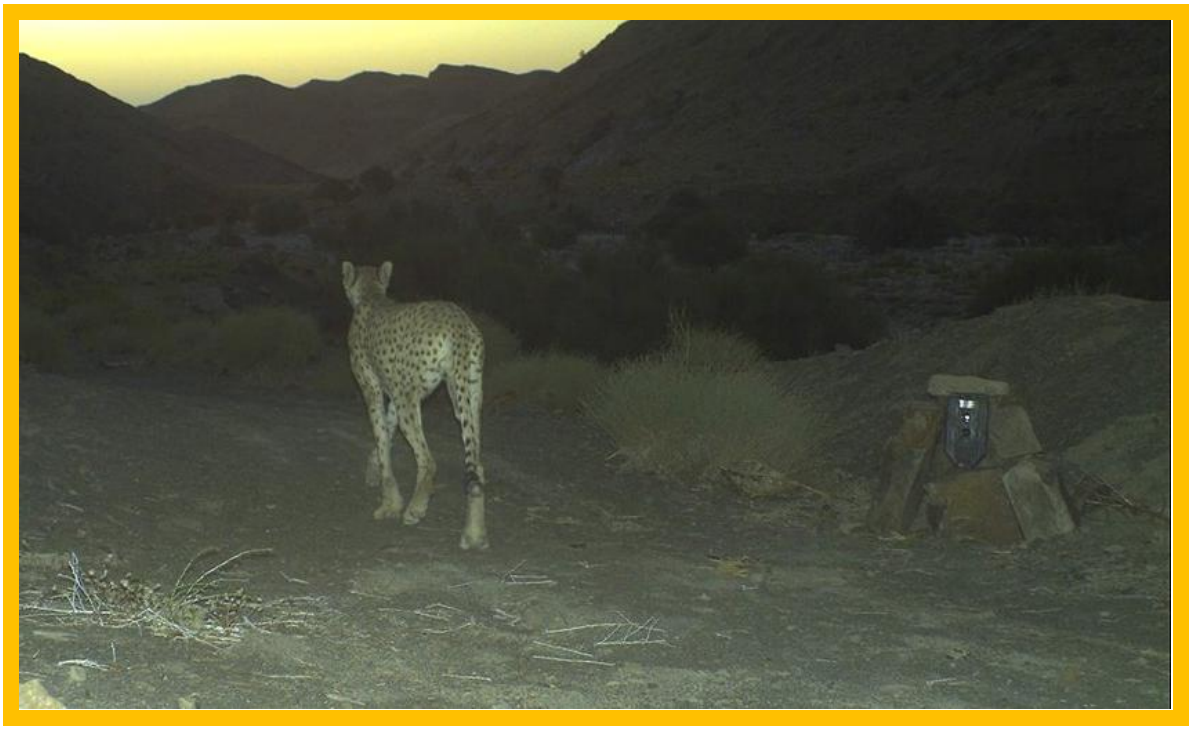

Figure 3 Camera traps are necessary tool for assessing status of rare species, such as the Asiatic cheetahs (©ICS/DoE/CACP/UNDP/Panthera)

Accordingly, a country-scale demographic assessment was established to understand population size and composition of the Asiatic cheetahs within the animal's main nucleus across the species single stronghold outside Africa. The present paper presents results of that intensive effort in order to provide a more realistic and comprehensive baseline for the state of the Asiatic cheetahs in Iran. The goal of this work was to provide a baseline for monitoring the status of the species in the country. Finally, we propose implications for the conservation of the country population.

Methods

The monitoring programme was conducted across nine reserves (Table 1, Fig. 1). The landscape of these areas comprises arid plains, hilly terrain and rolling mountains. They are predominantly covered with vegetation communities of wormwood *Artemisia sieberi* and bean caper *Zygophyllum* sp. The wild goat *Capra aegagrus* and sheep *Ovis orientalis* are the most common ungulates in most surveyed areas with small to moderate-sized populations of chinkara *Gazella bennettii*, except Miandasht where the goitered gazelle *Gazella subgutturosa* is the single dominant wild ungulate.

In order to obtain an estimate about the overall population, we followed a stratified approach. Therefore, the entire cheetah range in Iran was split into two main categories, namely as confirmed (based on hard fact data, such as photo and casualties) and non-confirmed which include areas within the historical range of the cheetahs in the country, but without any recent evidence of presence over past five years. Bahabad was also considered as part of confirmed network due to occasional recent cheetah signs, approved by experts, resulting in overall 14 sites all officially under protection by the Iran's Department of Environment which hosted exclusively the monitoring program. Due to equipment constrains and logistic challenges, priority was given to the confirmed network where the Asiatic cheetahs are known to persist.

Camera traps were systemically deployed at least three months (varying from 3 to 8 months) inside each reserve which were selected. Multiple camera brands were deployed, mainly CamTrak (CamTrak South Inc., Watkinsville, USA), Panthera (New York, USA), and Cuddeback Capture (Green Bay, USA). Camera locations were along dried watercourses or signing posts (Fig 4), where cheetahs regularly visit for scent marking. Individuals were identified using comparison of spot patterns, and sexed and aged (Fig 5). In case of cheetah cub records, if our continuous monitoring using camera traps revealed that the animals attained independence time which is their second year, they were included in analysis (e.g. Miandasht).

Figure 4 Multiple brands of camera traps were deployed (© ICS/M.Farhadinia)

Logistic constraints did not allow conducting simultaneous surveys to update status of the cheetahs in Kalmand, Bahabad, Khosh Yeilaq and Dorouneh while the latter was concluded based on occasional photos taken by game guards. Furthermore, we used available literatures based on status assessment for conclusion.

Our camera trap data was supplemented with field surveys and local interviews with local conservation practitioners (i.e. game wardens and experts) during the survey period to determine the status of the cheetahs within the confirmed network. As game guards' duty is to patrol the reserves to implement law enforcement, we collected all cheetah sightings made by them with details on location, number, and date. Also, in case that female with cubs was seen, sighting was recorded as a family observation (with details on age/sex composition). A total of 82 game guards shared their cheetah sighting during the survey period. Furthermore, we recorded all opportunistic sightings made by herders and hunters, occurred during the survey period, accepted after assessment of local herders' ability to recognize the cheetah. Furthermore, casualties including any type of mortalities were also recorded after approval based on reliable evidence. Presence data were plotted using Arc GIS v. 9.3 (ESRI, Redlands, USA) to obtain extant range of the animal in Iran.

Figure 5 Checking spot patterns after retrieving images from the field/Naybandan Wildlife Refuge (© ICS/A.Zolfaghari)

Results

Between December 2011 and November 2013, the Asiatic cheetahs were sighted 50 times within and around ten reserves in Iran, mostly by game guards (Table 1) while 16 of the mentioned total sightings were made by local people. Except two times, all sightings took place within the reserves which can be due to intensive presence of the game guards inside these areas. Almost all the cheetah sites were occupied by the cheetahs during the survey period, based on signs detected or direct sighting. Our data indicate an average of 1.68 individuals per each encounter (ranging 1 to 5 cheetahs), yielding an annual encounter rate of 25 sightings for the entire country, almost equal to fewer than two observations for each reserve during surveyed period (varying between zero and five). Touran possessed largest proportion of the cheetah direct sightings (20% of sighting times), followed by Ravar, the latter mainly by local people.

In May 2012 an adult female was photographed in Dorouneh Protected Area while in August 2011, two cheetahs were seen in Khosh Yeilaq which one of them was photographed, both by the game guards. Meanwhile, image quality only allowed spot pattern comparison in Dorouneh images, so the Khosh Yeilaq was excluded from our analysis.

Totally, 7 unique females were explored across these landscapes, living in only five reserves (Table 2), just one accompanied by cubs. Also, direct sightings during the survey period indicated presence of another female with two cubs in Touran confirmed by the game guards (Table 1). Also, an additional report from Ravar was also received from a cheetah family which was not confirmed. Accordingly, a total of two different cheetah families have been known over the course of the assessment across the entire animal's range in the country. At the same time, at least five different cheetahs have been killed during the survey period in Iran (Table 1).

During the mentioned period, a total of seven reserves were surveyed systematically using camera traps to photo-trap different cheetahs with a total trap night efforts of 16311 (Fig 6). Accordingly, 107 independent cheetah images were yielded, belonging to 13 different individuals (Table 2). Also, 2 other individuals were also detected in

In Kavir National Park, after a status assessment done by Ghadirian et al. (2009) which resulted in a single adult male, we updated the species status in the park, resulted in the same single individual. Furthermore, Touran was reported to host five different individuals during the survey period (Ashayeri et al. 2013; Table 2). As the last area approved for existence of the cheetahs, Boshrouyeh was highlighted due to an individual killed by a herder in 2011; however, we are not sure if there are more cheetahs still persisting in this area which is the only non-protected cheetah range in the country. Therefore, in combination with opportunistic images from other reserves, an additional 8 individuals were also known to exist within the conformed network, resulting in a total number of 22

individuals recorded from 11 reserves throughout Iran (Table 2), representing most of the animal's well-established reserves. Furthermore, 6 cheetahs were known to be killed during survey period, mainly in northern parts of the species range in Iran (Table 2).

However, due to some operational problems, particularly lack of security due to smugglers in eastern ranges, some areas were not completely surveyed (e.g. Naybandan and Ravar). Moreover, there are still vast landscapes where the cheetahs might roam but further surveys are needed to approve the animal's existence, then to understand population size.

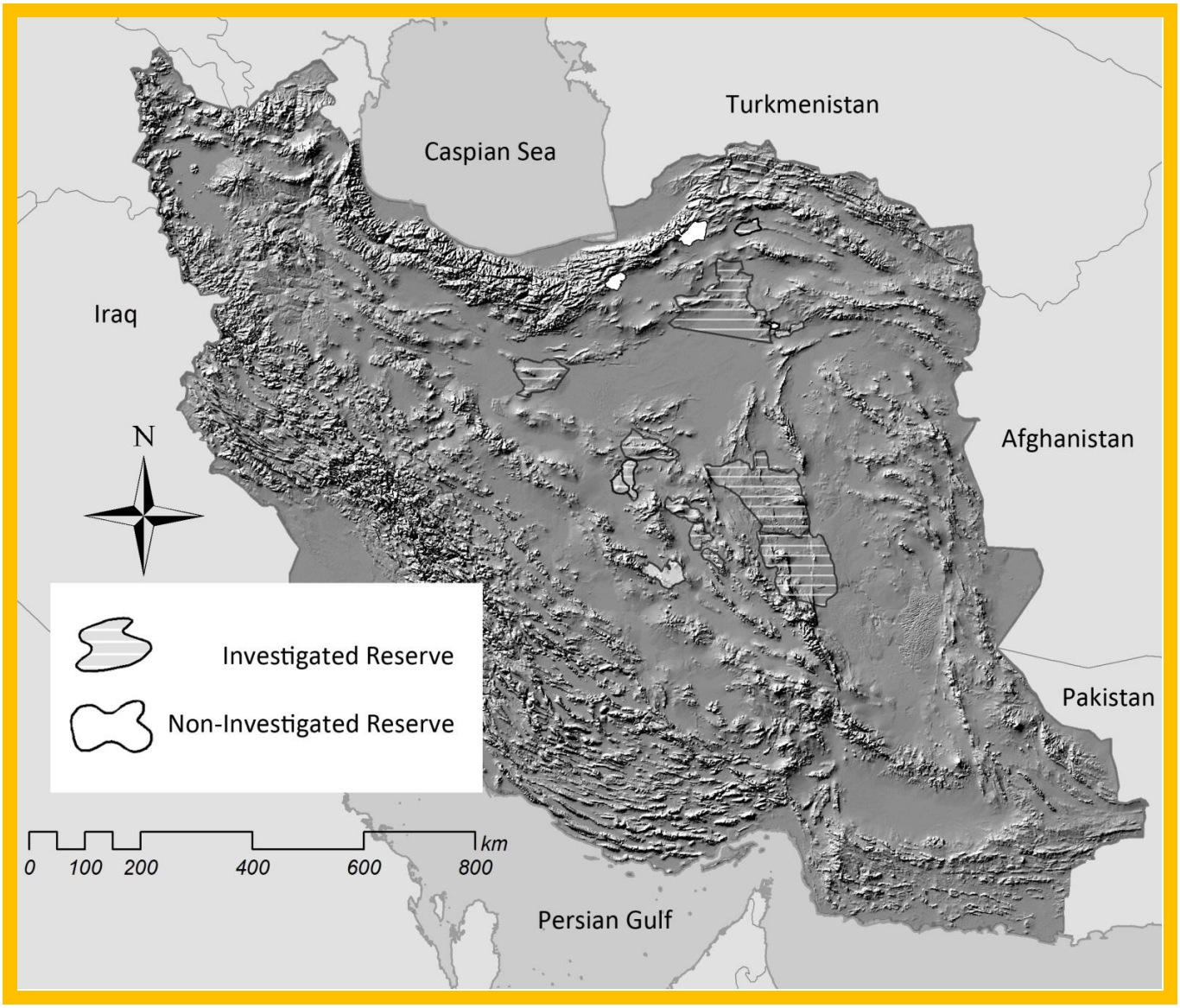

Figure 6 Location of cheetah sites which hosted this survey in Iran

Table 1: Cheetah sighting in Iran between December 2011 and November 2013

Nucleus Name	Reserve Name	No. Cheetah Sighting Times	Total No. Cheetahs Sighted	Cheetah Signs Detected	No. of Detected Mortality	No. of Recorded Cheetah Family
Northern	Miandasht	2	10	Y	0	1
	Touran	10	19	Y	4	1
	Dorouneh	6	6	Y	0	0
	Khosh Yeilaq	0	0	NA	1	0
Central	Bafq	4	4	Y	0	0
	Dare Anjir	4	8	Y	0	0
	Ariz	4	10	Y	0	0
	Siahkouh	4	4	Y	0	0
	Abbas Abad	1	1	Y	0	0
	Kalmand	0	0	Y	0	0
	Bahabad	1	1	Y	0	0
Eastern	Naybandan	4	4	Y	0	0
	Ravar	8	15	Y	0	0
Kavir	Kavir	2	2	Y	0	0
Total		**50**	**84**	**0**	**5**	**2**

Table 2: Details of population assessment surveys conducted in Iran

Nucleus Name	Reserve Name	No. Camera Stations	Trap Night Effort	No. Independent Cheetah Captures	No. Cheetah Individuals	Source
Northern	Miandasht	43	2429	13	4(2F & 2M)	This survey
	Touran	110	8958	56	5(2F & 3M)	Ashayeri et al. (2013)
	Dorouneh[1]	NA	NA	NA	1(1F)	See footnote
	Khosh Yeilaq[2]	NA	NA	NA	NA	See footnote
Central	Bafq	42	2439	5	7 (2F, 4M, 1U)	This survey
	Dare Anjir	26	1756	40		This survey
	Ariz	10	792	24		This survey
	Siahkouh	23	1051	3		This survey
	Abbas Abad	35	1889	0	0	This survey
	Kalmand	NA	NA	NA	NA	Not surveyed
	Bahabad	NA	NA	NA	NA	Not surveyed
Eastern	Naybandan[3]	48	2662	19	2(1M & 1U)	This survey
	Ravar	22	3293	0	0	This survey
Kavir	Kavir	6	NA	3	1 (1M)	This survey and Ghadirian et al. 2009
Total					**20 (7F, 11M, 2U)**	

[1] A single female was photographed by guards on multiple times in 2012.

[2] Not surveyed, only one cheetah was photographed by game guards in August 2011 which was excluded from analysis due to blur quality of the image.

[3] Before establishment of systematic camera trapping assessment, two individuals were photo-captured by National Geographic Team in late 2011 which are included in our analysis. However, they were not present in the area during population assessment in 2012.

Discussion

The Asiatic cheetahs are relatively widespread, but sporadic across vast ranges in eastern half of Iran. The country's cheetah population cannot be considered as fragmented patches throughout most of its extant range, because individuals were found to move between reserves at least within each population nucleus in central country up-to 150 km (Farhadinia et al. 2013), indicating necessity of management under meta-population framework. Nevertheless, spatial distribution of the reserves outlines three main breeding patches of reserves that any emigration to others appears to be unlikely. During the survey period, we found only a single record of a cheetah poached by herders in Boshruyeh, located between Northern and Eastern nucleuses. Located far from the main breeding sources, Kavir National Park must be considered as a single separate patch and efforts should be taken into account to create biological corridors to the other cheetah reserves.

While the cheetahs are mainly limited to the reserves, they are even scarcely seen there with quite low annual encounter rate. Over the course of 2011 to 2013, average total group size in Iran has been lower than eastern Africa (2.4 ± SE 0.06; Gros 2002), while sighting of groups was not nationwide, only reported from less than half of the reserves. During 2000s, a total of 75 cheetah cubs have been detected in Iran (Fig 7; Farhadinia et al. In press) which with respect to 2-2.5 mean litter size (based on direct sighting at age of 3-6 months; Farhadinia 1999), an average of 3 to 4 females have given birth on an annual basis before 2010s. In contrast, only three cheetah families with totally nine cubs have been confirmed in Iran during survey period, despite highest ever monitoring efforts ever within the cheetah reserves.

Figure 7 One of few detected cheetah families in recent years, Miandasht Wildlife Refuge (© ICS/DoE/CACP/UNDP/Panthera)

Since 2001 when cheetah conservation efforts in Iran were enforced, the mortality rate due to poaching decreased from exceeding 2 individuals per year belonging to 1990s to less than one annually (Jourabchian & Farhadinia 2008). In other words, besides 11 cheetahs killed in road incidents over 2000s, 13 other individuals were killed by humans. In contrast, recent mortalities revealed an accelerating increase of 2 to 3 individuals per year (Fig 8), mainly adults. It has been shown that adult survival has substantial impact on population growth in the cheetahs (Kelly & Durant 2000). While no cheetah has been killed on roads during current decade, human-caused mortality is experiencing a similar rate comparing to pre-cheetah conservation efforts in 1990s.

Figure 8 Two different cheetahs killed by local herders in Touran during 2013 (© Semnan DoE)

On the basis of small cheetah number detected (22 individuals based on images), concentration of cheetah sighting records within or near main sites, and lower level of recorded breeding, we strongly believe that former published population data (70-100; Ziaie 2008) is unlikely to exist in Iran. However, it is practically difficult to judge about the population trend because no similar database is present for past decade. Nevertheless, increased human-caused mortalities as well as failure to find evidence of widespread breeding are significant alarms for a not-increasing population trend.

Similar to many African countries that suffer from lack of a country scale population estimates with proper confidence intervals (Purchase et al. 2007), our final conclusion about the cheetah population still suffers from low precision which does not let for reliable assessment of the country's conservation efforts in long-term. However, it is a critical alarm after more than one decade of intensive conservation investment that Iran's cheetah population is still so tiny and fragile that reveals high importance of promoting conservation efforts. Monitoring and surveillance of the cheetah and prey populations must be further advanced with involvement of the reserves management and game guards (Breitenmoser et al. 2009). In case that robust monitoring and baseline development is underestimated and is considered as an under-budgeted task in conservation projects, evaluation of the

endeavors' efficiency would be highly problematic, if not impossible.

As land use changes continue to occur, understanding cheetahs' population status and trends is an issue of great importance for assessing efficacy of conservation action. However, the main problem is that there is currently no single low-technology, low-cost technique that can be used to provide repeatable estimates of cheetah abundance across the range of its habitats (Marker et al. 2007), particularly for low density Asiatic cheetahs. With respect to wide ranging behavior of the animal (Marker 2003, Farhadinia et al. 2013), large numbers of camera traps are required to sample vast landscapes (Marnewick et al. 2008). Also, further understanding of female cheetahs' movement and habitat selection is essential to avoid extremely low capture probability for females (Marker et al. 2008). Therefore, it is recommended that while camera traps are crucial for monitoring purposes, particularly with active involvement of trained game guards and local experts, fecal DNA-based population studies must be initiated in order to reveal population status of the cheetahs (Busby et al. 2009) and to understand social and genetic population structure of the cheetahs (Dalton et al. 2013). At the same time, since the Asiatic cheetahs are known to move extensively outside of the reserves (Farhadinia et al. 2013, Jowkar et al. Unpublished report), a country-scale habitat suitability analysis is critical to explore the animal's hotspots and to predict their land tenure system in regard to existing network of the reserves. Finally, parallel to enhancing long-term conservation programs in reserves, sound scientific monitoring should be conducted on the species in order to better evaluate effective conservation action and population management.

Figure 9 An adult male cheetah, named Arash in Naybandan Wildlife Refuge, eastern Iran. This image was selected as "Overall Winner of the Research" categories and "Winner of the Rare Species" category by BBC Wildlife Magazine in 2014, the prize will be used to buy additional camera traps (© ICS/DoE/CACP/UNDP/Panthera)

Sharing knowledge and findings to improve conservation

In order to develop capacity of local conservation practitioners (game wardens and experts) as well as to share findings with them to apply in conservation plans, a number of training workshops at different levels were organized. Also, attending game wardens in monitoring program were acknowledged. Totally, around 12,000 $ was presented to the game wardens as gift for monitoring efforts.

Our sharing plan was developed based on different audience groups, to address all influential people in the country's main conservation agency, i.e. Iran Department of Environment.

Figure 10 In order to deliver project findings with highest media coverage and governmental attention, we organized a national conference of Iranian cheetah in October 2013.

1. Local level: **Workshops for game wardens working within each reserve (5 events)**

Game wardens are key partners in this project who are in charge of anti-poaching and protection. Therefore, a total of five workshops were held in various reserves, attended by all the area's game wardens to provide research findings and to discuss their management implications. Also, they received acknowledgment prizes due to their active involvement in the survey.

Figure 11 Several training and acknowledging workshops for game wardens in reserves (© ICS)

2. Regional level: **Seminars for chief wardens, experts and university professors in capital of each province (5 events)**

Five seminars were organized in 4 different cities, each capital of a province and a total of 260 Iranian experts attended the events. During each seminar, the project findings were shared with more scientific scheme with regional decision-makers and scientists. Also, additional research topics for university students were proposed. The project was described for audience, emphasizing impact of large carnivores on each other which is crucial to better management of multiple endangered carnivore ecosystems.

Figure 12 Two of the seminars held in Birjand, eastern Iran (up) and Tehran (below) (© ICS)

3. National level: **Conference for national decision-makers, media representatives and domestic donors**

The conference on Iranian cheetah was held at Iran's Department of Environment's International Conferences Hall in Tehran on Saturday 5 October 2013. Attended by the country's vice president and head of DoE Dr Masoumeh Ebtekar as well as many national and regional authorities and experts, the conference was organized by the Iranian Cheetah Society (ICS) in partnership with Iran DoE and Conservation of Asiatic Cheetah Project.

Morteza Eslami, ICS CEO presented a short speech on last demographic status of the cheetahs across the country, based on three years of national cheetah monitoring efforts conducted by the Iranian Cheetah Society (ICS) and Iran DoE with cooperation of Conservation of Asiatic Cheetah Project and Panthera. Accordingly, the country's cheetah population was concluded to be 40 to 70 individuals, fewer than what already was declared. In the meantime, he alarmed conservation agencies about increasing rate of human-caused mortalities of the cheetahs in Iran, doubled during 2010s comparing to 2000s. He also added that "around one third of cheetah range game guards do not have proper job security which needs essential attention from the DoE". "Bafq road, overgrazing in Touran and iron mines in Abbas Abad and Naybandan are the main threats to the cheetahs within these ranges which together with their fragile status, indicate necessity for more conservation investment.

Finally, Dr Masoumeh Ebtekar, the new DoE head gave the final lecture. After thanking the ICS for organizing the ceremony, she added "the Iranian

Cheetah Society is an outstanding model for conservation NGOs in Iran which despite various obstacles and limitations has remained an active player in the field of cheetah conservation with a truthfully passion and scientific perspective". She also mentioned that "NGOs are key partners for nature protection across the world and I am sure that a better future would be provided for them in coming years to be more influential."

Dr Ebtekar said "it is essential to revise cheetah conservation efforts in the country in order to apply lessons learned for future achievements and all NGOs are invited to share their expertise and experience not for the cheetahs, but to revise the country's National Environment Document to be finalized for the Iranian president."

Figure 14 National conference of Iranian cheetah held in Tehran (© ICS)

Figure 15 Outstanding game wardens were acknowledged during National conference of Iranian cheetah held in Tehran (© ICS)

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Iranian Cheetah Society (ICS) is a non-governmental, non-profitable organization in order to save the last remains of the Asiatic cheetah as well as other large carnivores, particularly the Persian leopard. Besides grey wolf, brown bear and striped hyena, the Iranian Cheetah Society (ICS) is a sophisticated NGO devoted to save the Iranian "Big Five" Carnivores which are normally in conflict with local communities. Meanwhile, the Asiatic cheetah is still the flagship of conservation, not for the ICS, but for Iran. The ICS has been established in 2001 (registration number 13640) and celebrated its first decade of wildlife conservation recently.

Missions:

- Investigation to find more on the ecology and status of large carnivores through an ecosystem-based approach;
- Public awareness about the Iranian large carnivores and their associated biota through education mainly at the local communities;
- Reducing human-large carnivores conflicts via implementing socio-economic plans;
- Conserving the large carnivores in their natural habitats, particularly through public participation.

Due to lack of wildlife science on the Iranian species, particularly the Five Big, ICS has focused a remarkable part of its activities on field investigations in order to apply its results to public awareness campaign among local communities. Accordingly, local applicable solutions are developed to reduce human-carnivore conflicts. Meanwhile, juveniles and youths are the main educational targets, particularly at local communities and should be satisfied to co-exist with them. More information on ICS activities is available on www.wildlife.ir.

Honors:

As the oldest Iranian NGO still active on wildlife conservation, the ICS has been recognized to receive various well-known awards, such as:

- National Environment Award (2005), Iran
- Future Conservationist Award (2006), UK
- White Rootser Award for Protection of Animals (2007), Iran
- Pasargad Award (2008), Iran
- Future for Nature Award (2009), Netherlands
- Cinema Verite (2009), Iran
- The Outstanding Iranian Champion (2010), Iran
- International Fajr Film Festival (2010), Iran