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Conservation Education to Save the Endangered Persian Leopard in Iran

Final Report

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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 hopes to celebrate its first decade of biodiversity conservation soon.

To learn more about Iranian Cheetah Society (ICS)

visit: www.wildlife.ir

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Acknowledgement

The present project was initiated in late 2009 to celebrate 2010 as Year of Leopard in Iran. Preliminary plans were developed during continuous sessions by the Iranian Cheetah Society (ICS) biologists which resulted in a comprehensive educational and capacity building program for this year.

In June 2010, the project's proposal was submitted to the UK's People Trust for Endangered Species (PTES) which was recognized to receive a prestigious grant making this work possible. We would like to thank Nida Al-Fulaji and Jill Nelson for the hassle-free nature of the grant disbursement, who allowed us to use it in the best way possible to implement an organized effort for the leopards in Iran.

We are also greatly indebted to the Iranian Department of Environment (DoE) and Conservation of Asiatic Cheetah Project (CACP) because of facilitating capacity building workshops for local experts and game wardens across the country. We would also like to thank Talae Publication Ltd. who provided financial support to produce an educational pamphlet about the leopard.

The Iranian Cheetah Society (ICS) is also grateful to Dr Martina Raffel from Allwetter Zoo (Germany), Raymond van der Meer from Amersfoort Zoo (the Netherlands), and Gregory Burton from Parc des Felins (France) for provision of additional funds to cover various parts of this project. Mr Ali Zolfaghari (ICS representative in the Netherlands), Dr Majid Seyedi (ICS representative in France), Mrs Mahboubeh Shirkhorshidi (ICS representative in the UK) and Dr Katayun Afshar (ICS representative in Switzerland) helped us for fund-raising efforts which are all deeply appreciated. We are also grateful to Dr Sarah Durant and Mr Abdolhossein Vahhabzadeh who supported the ICS as referees to win a PTES grant.

A number of the ICS's volunteers participated in implementation of this project, including Saba Sohrabinia, Safura Zavarani, Sara Bagheri, Morteza Eslami, Fatemeh Hosseini-Zavarei and Bagher Nezami whose help during this project is not ignorable.

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Project Summary

As an endangered subspecies, the Persian leopard was once abundant across most mountainous and forest habitats of Iran, but it is now one of the rarest species of carnivores in the country. Recent surveys have revealed that around 65% of the wild population of the Persian leopard exists in Iran. Moreover, despite of poaching and habitat loss, the range of the leopard is still known to include large areas of Iran. Annually, a minimum of 30 to 50 leopards are confirmed to be poached in Iran which conflict with local people and unawareness are the main reasons.

2010 was the “Year of Leopard” in Iran which was a great opportunity to utilize this social event for the beneficiary of leopard conservation in Iran. Accordingly, the present project was designated in late 2009 and was implemented until March 2011 in Iran with an aim to spread leopard knowledge at various levels of the Iranian as well as international community. Therefore, specific activities were planned for various target groups.

We mainly focused on capacity building and training of local experts and game wardens, because they are mainly in charge of conservation of the species who usually suffer from lack of appropriate knowledge and training. On the other hand, an Online Center was established composing of Persian leopard literature to provide interested people easy opportunity to learn the latest findings about the Persian leopard and scientific seminars were organized for university students across the country. Mass media were fed with leopard facts to cover the Iranian community broadly. On the other hand, a dynamic database was prepared and updated regularly based on human-caused mortalities of leopards during the past decade in Iran.

After evaluating the project’s outcomes within each hotspot together with available sources of local human power (preferably in form of local NGO/CBO), political support from local stakeholders, and frequency of leopard mortalities, and achievable goals, pilot conservation education projects were planned. Additional funds were raised to launch two such projects in Lorestan (western Iran) and Kalmand (central Iran) and more areas will be covered in following years.

With respect to critical position of Iran for survival of the Persian leopard it is essential to share the knowledge with other countries to enhance leopard conservation efforts as well as building trans-boundary joint initiatives. In order to highlight the Persian leopard at international level, Persian Leopard Newsletter was born on bi-monthly basis and sent to a huge database of international wildlife conservationists. Also, a number of reports were published in international magazines and journals.

The “Year of Leopard” was a milestone for leopard conservation in Iran with a variety of effective and conservation-based achievements for sake of this vanishing cat. The Iranian Cheetah Society (ICS) invites other national/international groups to join this effort to cover the leopard’s vast range and is hopeful to continue the leopard conservation program to ensure the long-term survival of the Persian leopard in Iran.



Introduction

After disappearance of Asiatic lion (*Panthera leo persica*) and Caspian tiger (*Panthera tigris virgata*) prior to 1970s, the Persian leopard (*P.p. saxicolor*) is the largest cat in western Asia, (Nowell & Jackson 1996) with global status category of Endangered in the IUCN red list of threatened species (IUCN 2008).

Meanwhile, the main stronghold of the leopard in the Middle East is Iran with a crude national population estimation of 550 to 850 animals (Kiabi *et al.* 2002), therefore, comprising some 65% of the guesstimated total number of mature individuals of this subspecies as 871-1290 (Lukarevsky *et al.* 2007, Khorozyan 2008).

General mappings conducted by various authors indicate that the animal has been widely distributed across the country (Dareshuri & Harrington 1975, Joslin 1990, Ziaie 2008), extending along most mountainous and forest terrains across the country (Ziaie 2008) with an area of around 885300 km² (ca. 50% of the Iranian land territory) (Kiabi *et al.* 2002).

The Persian leopard has the highest mortality frequency due to anthropologic causes. Fortunately, there is a basic level of scientific knowledge about the predator, but the knowledge has rarely been applied by the conservation agencies. Also, robust research on the species is critical for the animal conservation in long-term. Common people also need to learn more about the largest existing cat in Iran and to avoid usual mis-understandings about it. Beside the leopard, several other endangered species occurs within the leopards' habitats (e.g. Asiatic cheetah, Eurasian lynx, brown bear, caracal, Asiatic wild ass, etc.) which leopard's umbrella role is a guarantee for saving their habitats.

Accordingly, the present project seeks some ways to empower various associated actors who each have a significant role for promoting the conservation of the Persian leopard in Iran. It is hopefully aimed that as a result of training and educational programs, more attention toward the leopard in the country would be raised and more collaboration between various research, education and conservation parties at local, national and international level create a more secure future for the Persian leopard in West and Central Asia.



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Threats to Leopard Survival in Iran

The animal is supposed to stand on verge of extinction within coming years, like a majority of other West Asian countries where the Persian leopard exists/existed. It has the highest annual mortality due to human factors among 8 representatives of cat family within its last viable refuge, Iran.

Our investigations indicate that the main threats for survival of the leopard in Iran are as following:

1. *Poaching*
2. *Poaching prey*
3. *Predator – human conflict*
4. *Road incidents*



These factors have caused that this magnificent cat disappears from a number of their former habitats and have a gloomy future inside its remaining refuges.



Conservation Education to Save the Endangered Persian Leopard in Iran

Project Aims and Objectives

The present project aims at ensuring the long-term survival of the Persian leopard in Iran. The objectives of this project were to increase target groups awareness about leopard status in Iran and to develop a conservation strategy including by:

1. Identification of leopard hotspots in the country where the leopard population and poaching is significantly high and monitoring leopard human-caused mortalities to evaluate conservation status of the species;
2. Developing educational materials for relevant target groups;
3. Preparation of scientific materials for training courses for experts and game wardens;
4. Establishing and updating a Leopard Online Centre to promote scientific knowledge among the Iranian academia as well as presenting educational patterns to be applied by other Iranian NGOs within leopard habitats;
5. Empowering local experts and game wardens through holding training workshops and field visits;
6. Training university students in order to promote scientific research (e.g. as thesis), mainly by means of workshops, seminars and field expeditions;
7. Publication of leopard facts within Iranian mass media;
8. Raising awareness at international level about Iran's leopard population as the last viable stronghold of the subspecies in West and Central Asia in order to establish trans-boundary collaboration for the leopard conservation;
9. Planning regional pilot conservation educational projects in leopard hotspots, preferably after identification of local eligible NGOs/CBOs.



Conservation Education to Save the Endangered Persian Leopard in Iran

Objectives 1: Identification of Leopard hotspots and monitoring Leopard human-caused mortalities

Together with habitat loss, accidental and deliberate killing is traditionally believed to have detrimental effect on leopard populations (Kiabi et al. 2002, Khorozyan et al. 2005). For Persian leopards in Armenia, Khorozyan (1999) has shown the strict dominance of accidental mortality over vitality-related counterpart due to intensive poaching.

Presently, there is no clear understanding about the leopard mortality directly caused by human in different parts of Iran which its significance on the populations as a whole is unknown (Joslin 1990). On the other hand, due to its protected status, it is probably difficult to achieve to reliable extent of direct killing of the leopards (Kiabi et al. 2002).

The purpose of this study therefore, was to gather information on mortality due to human causes to quantitatively explore a realistic extant and characteristics of the leopard mortality in Iran. It is hopefully aimed that the knowledge could evaluate efficacy of current network of protected areas and national parks in Iran to save the endangered Persian leopards. Finally, we provide recommendations for reducing human-caused mortality in existing leopard populations in Iran.

Accordingly, an online database was developed on the ICS website to gather information on sighting Iranian cats, including the leopard (dead/alive) in the wild. Also, interview was done with more than 200 Iranian experts, hunters, herders, taxidermists, etc. who might have any reliable data on leopard. All reports were verified based on images, Bluetooth, remains, etc.

The screenshot shows a web-based questionnaire titled "Iran Cat Database Questionnaire". It is divided into several sections: "General Information" with fields for First name, Last name, Phone number, E-mail address, Job, and Postal address; "Which species of cats did you see?" with radio buttons for Leopard, Lynx, Pallas' Cat, Cheetah, Sand Cat, Wild Cat, Caracal, and Jungle Cat; "Observation details" with fields for Number(s), Date, Time, Location, and GPS (UTM) with Y and X coordinates; "In which habitat type the cat species was observed?" with checkboxes for Mountain, Woods, Open plain, Hills, Dry Lands, Sea-side, Sub urban/rural, and Others (explain); and a final section "Did you record the cat?". The footer includes "Iranian Cheetah Society" and "© 2002-2010 ICS. All rights reserved."

Fig. 1 : Layout of Iran Cat Database on the ICS website

A total of 97 records of leopards mortalities due to human factors were gathered between 2002 to 2010 in Iran which adults accounted for the main proportion (77.3%, n=75). Sub-adults and cubs comprised relatively equal abundance (10 and 12, respectively). Among adults, 41 individuals were sexually identified (54.7%), highly skewed toward males (26 vs. 14).



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Alborz region composing Golestan to Qazvin provinces along Alborz mountains owned the highest proportion of mortalities, as 46.4% (n=45). 21.6% of animals belonged to northeastern Iran, namely as Khorasan region where encompasses three provinces of North, South and Khorasan Razavi, meanwhile, the same amount were killed in Zagros region. Almost 9% of mortalities occurred in central and southern parts of the country. The sex ratio of leopards was strongly male biased. Lowest occurrence of leopard mortalities in central and southern Iran is in accordance to Kiabi et al. (2002) general status assessment that concluded north and western Iran holds higher abundance of the leopard.

Since the database is still updating, the above-mentioned results are only preliminary and after final analysis, a scientific paper will be published on human-caused mortalities of the Persian leopards in Iran.



Fig. 2: An adult male shot in Ardebil (© Ardebil DoE)



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Objectives 2: Developing educational materials

In order to educate people about the leopards, particularly at local level, two types of educational materials were designed and developed, namely as Leopard pamphlet and Leopard poster. They were both funded by Talaee Publication Company (brochure) and Achilan Door Company (poster). Also, a brochure was prepared by Sajjad Samyi (ICS young volunteer) on the leopards of Lorestan which was published by local GOs. Before 2010, the ICS produced leopard notebook.



Fig. 3: Leopard pamphlet



Fig. 4: Leopard brochure published by Lorestan DoF



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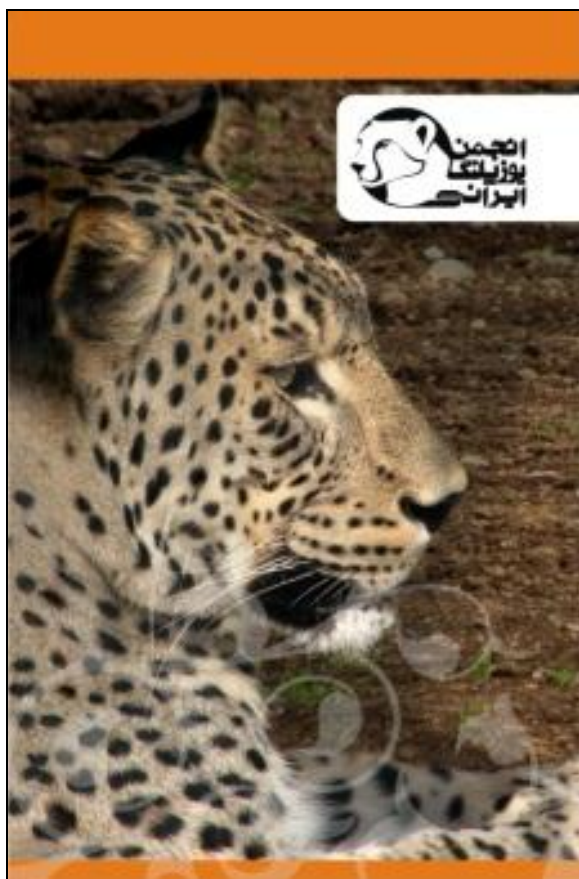


Fig. 5: Leopard notebook cover

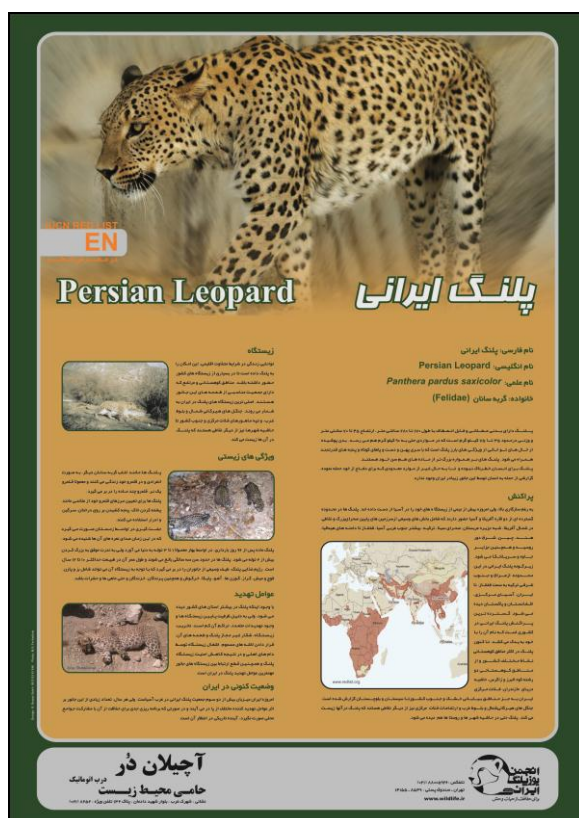


Fig. 6: Leopard poster



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Objective 3: Preparation of scientific materials for training courses for experts and game wardens

Lack of language skills among Iranian experts is a main obstacle to learn latest scientific achievements in the world, so they are not capable to communicate with international community for experience exchange. This is a serious issue, particularly in recent years when translocation and (re)introduction have become to a top topic for the cats in Iran. Accordingly, suitable literature on the leopards were found and translated, then they were printed and distributed freely to a complete database of the Iranian experts across the country. So far, the following papers have been used as Technical Manual:

- *Reproductive ecology of Persian leopard in Sarigol National Park, northeastern Iran*
- *Persistence of Persian leopard in a buffer habitat in northeastern Iran*
- *Mortality in a protected leopard population in South Africa*
- *Translocation as a tool for mitigating conflict with leopards in Human-dominated landscapes of India*

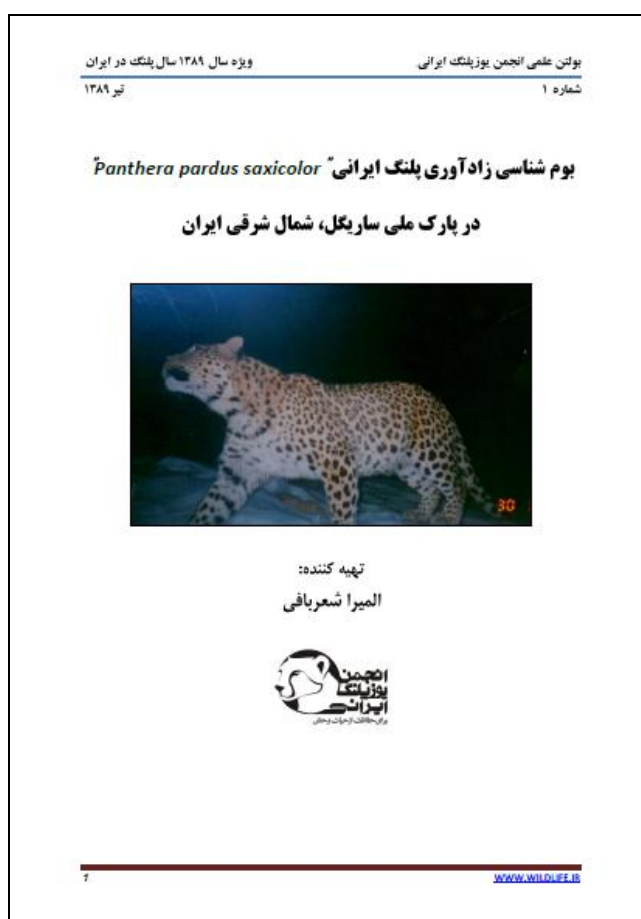


Fig. 7: Sample layout of the Persian Leopard Technical Manual prepared for local experts




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Objective 4: Establishing and Updating a Leopard Online Center

The Persian leopard has been one of the least-studied subspecies of one of the most studied cat species in the world (i.e. leopard) until early 2000s when the animal has been subject to a number of ecological investigations in western Asia. Also, the animal has attracted intensive attention of the Iranian biologists in recent years which has resulted in publication of more than 10 papers as well as almost 10 university dissertations.

However, since Persian leopard literatures have never been centralized in a scientific database, it is not easy to start an appropriate research on the animal. Also, there is no clear perception on about extent of our scientific knowledge on the animal due to sporadic literature and therefore, implementation of any science-based conservation program could be difficult.

Accordingly, establishing a “Leopard Online Center” was planned in the Year of Leopard which was regularly updated with new literatures found. All literatures have been organized in a database in the ICS’ website “Leopard Bibliography” and a pdf file was uploaded after getting permissions from author(s) for distribution. So far, more than 40 documents have been gathered which has made it the most comprehensive database for the Persian leopard in the world and of course, free to use! See appendix 1 for details of the documents on the database.



Country	Journal	Year	Author(s)	Title	No.
Germany	Zoo Biology 1: 33-37	1982	B. L. Dresser, L. Kramer, B. Reese and P.T. Russell	Induction of ovulation successful artificial insemination in a Persian leopard (<i>Panthera pardus saxicolor</i>)	1
Iran	International Leopard Studybook	1988	Paul Joslin	Leopards (<i>Panthera pardus</i>) in Iran	2
USSR	Pacific Institute of Geography	1989	Anatoley P. Bregin	A short review on the status of the leopard <i>Panthera pardus ciscaucasia</i> (<i>saxicolor</i>) in the southwest in the USSR	3
Turkey	Conference Proceeding	1991	Aydin Akin	The status of the leopard in Turkey	4
Turkmenistan	Full Book	1996	Victor Lukarevsky	Modern distribution, location and number of Persian leopard (<i>Panthera pardus</i>) in Turkmenia	5
Armenia	Int.J.Sustain.Dev.World Ecol. (5)	1998	Igor Khorazyan	Leopard in Armenia: Basic trends, dangers and hopes	6
Armenia	Coll. Art. Young Res., Nat. Sci. 1: 24-27	1999	Igor Khorazyan	Modeling mortality pattern Armenian leopard population	7
Armenia	CAT NEWS 34:14-17	2001	Igor Khorazyan	Human attitudes to the leopards in Khosrov Reserve	8

Fig. 8: Layout of the Persian leopard online database on the ICS website



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Objective 5: Empowering local experts and game wardens

Despite of being a charismatic species, but the leopard is surprisingly less-known among experts and game wardens who are expected to protected this species as well as biodiversity. In preliminary assessment, it was concluded that they do not have a comprehensive perception about the animal, its ecology and needs for survival. Territoriality, population dynamics and ranging activities are the main scientific drawbacks of the game wardens and experts which motivate them to suppose that their habitats sustain high densities of the leopards with small home ranges even when prey has depleted drastically. Also, general belief among expert is that since the leopard is seen more regularly in recent years, so their population has increased. As a result, they declare that hunting permission can be issued for the leopards in some areas. However, our field studies have shown that prey scarcity has made the leopards to roam much more around human settlements which mean more chance of encounter, not more population density. Accordingly, in order to share the latest scientific knowledge on the leopards in Iran and abroad, these workshops. During this project, a total of 15 workshops were held for experts and game wardens across the country with following details:

Workshop No.1

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	July 2009
Location:	Lorestan Department of Environment
Audience:	Experts

Workshop No.2

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	September 2009
Location:	Zanjan Department of Environment
Audience:	Experts

Workshop No.3

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	June 2010
Location:	Esfahan Department of Environment
Audience:	Experts



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Fig. 9: Leopard training workshop for experts in Esfahan

Workshop No.4

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	November 2010
Location:	Yazd Department of Environment
Audience:	Experts



Fig. 10: Leopard training workshop for experts in Yazd



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Workshop No.5

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	December 2010
Location:	Parvar Protected Area
Audience:	Game wardens



Fig. 11: Leopard training workshop for game wardens in Parvar Protected Area

Workshop No.6, 7 and 8

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	January 2011
Location:	Kerman Department of Environment (Khabr National Park)
Audience:	Experts, game wardens and villagers

Three workshops were held in Khabr National Park.



Fig. 12: Leopard training workshop for game wardens and villagers in Khabr National Park



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Workshop No.9

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	January 2011
Location:	Gilan
Audience:	DoE experts

Workshop No.10

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	February 2011
Location:	Lorestan Department of Environment
Audience:	Experts and game wardens



Fig. 13: Leopard training workshop for game wardens and experts in Khorram Abad, Lorestan

Workshop No.11

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	February 2011
Location:	Zanjan Department of Environment
Audience:	Experts and game wardens



Fig. 14: Leopard training workshop for game wardens and experts in Zanjan



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Workshop No.12

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	February 2011
Location:	Sorkh Abad Protected Area, Zanjan
Audience:	Game wardens



Fig. 15: Leopard training workshop for game wardens in Sorkh Abad PA

Workshop No.13

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	February 2011
Location:	Iranian Department of Environment, Tehran
Audience:	Experts and managers



Fig. 16: Training workshop for managers and experts of Iranian Department of Environment



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Workshop No.14

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	February 2011
Location:	West Azarbayjan Department of Environment
Audience:	Experts



Fig. 17: Leopard training workshop for game wardens and experts in West Azarbayjan, Uromyah



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Objective 6: Training university students in order to promote scientific research (e.g. as thesis) on the leopard and relevant species

One of the main objectives of the leopard conservation in Iran is to facilitate scientific research on the species and associated biota with aim of academia. Accordingly, seminars and conferences were held for university students in various centers in Iran. Other than leopard issues, Quick Surveys Methods were also presented for the students to be capable for research efforts.

Workshop No.1

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	December 2009
Location:	Iranian Cheetah Society (ICS)
Audience:	Students and volunteers



Fig. 18: Training workshop for the ICS volunteers



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Workshop No.2

Workshop Title	Ecology and Status of Persian Leopard in Iran Quick Survey Methods Wildlife Research Techniques
Date:	April 2010
Location:	Nour Natural Resources University (northern Iran)
Audience:	Students



Fig. 19: Training workshop for students in Nour University

Workshop No.3

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	May 2010
Location:	Darabad Museum of Wildlife, Tehran
Audience:	Common people and NGOs volunteers



Fig. 20: Leopard workshop in Darabad Museum, Tehran



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Workshop No.4

Workshop Title	Ecology and Status of Persian Leopard in Iran
Date:	November 2010
Location:	Yazd, central Iran
Audience:	Students of Yazd University

Workshop No.5

Workshop Title	Ecology and Status of Persian Leopard in Iran Quick Survey Methods
Date:	9999
Location:	University of Lahijan, northern Iran
Audience:	Students



Fig. 21: Training workshop in Lahijan university



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Also, two MSc master dissertations have been defended in the year of leopard by the ICS biologists in two universities in Tehran with following details:

Thesis No.1

Title	Phylogeny, genetic diversity and craniometric analysis of Persian leopard <i>Panthera pardus saxicolor</i> in Iran
Investigator:	Mohammad S. Farhadinia
Date:	2010/2/22
Location:	University of Tehran
Audience:	Students



Fig. 22: University of Tehran

Thesis No.2

Title	Food habits of Persian leopard <i>Panthera pardus saxicolor</i> in Golestan National Park
Investigator:	Elmira Sharbafi
Date:	2010/9/6
Location:	Azad University of Tehran
Audience:	Students



Fig. 23: Azad University of Tehran



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Objective 7: Publication of Leopard facts within Iranian mass media

Publication No.1

Subject:	Persian Leopard; Brave predator, Proud invader
Journal/Magazine:	Sarzamin-e Man Magazine
Date:	February 2010
Audience:	Public people
Author(s):	Mohammad S. Farhadinia

Publication No.2

Subject:	Persian leopards in Iran
Mass media:	Sedaye Ashena Redio
Date:	March 2010
Audience:	Public people
Interviewee(s):	Mohammad S. Farhadinia

Publication No.3

Subject:	
Mass media:	National TV (Channel one)
Date:	August 2010
Audience:	Public people
Interviewee (s):	Mohammad S. Farhadinia

Publication No.4

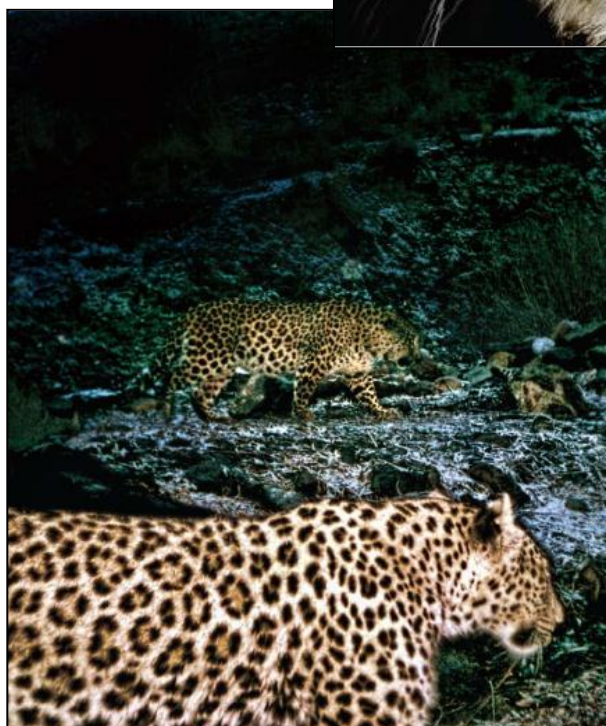
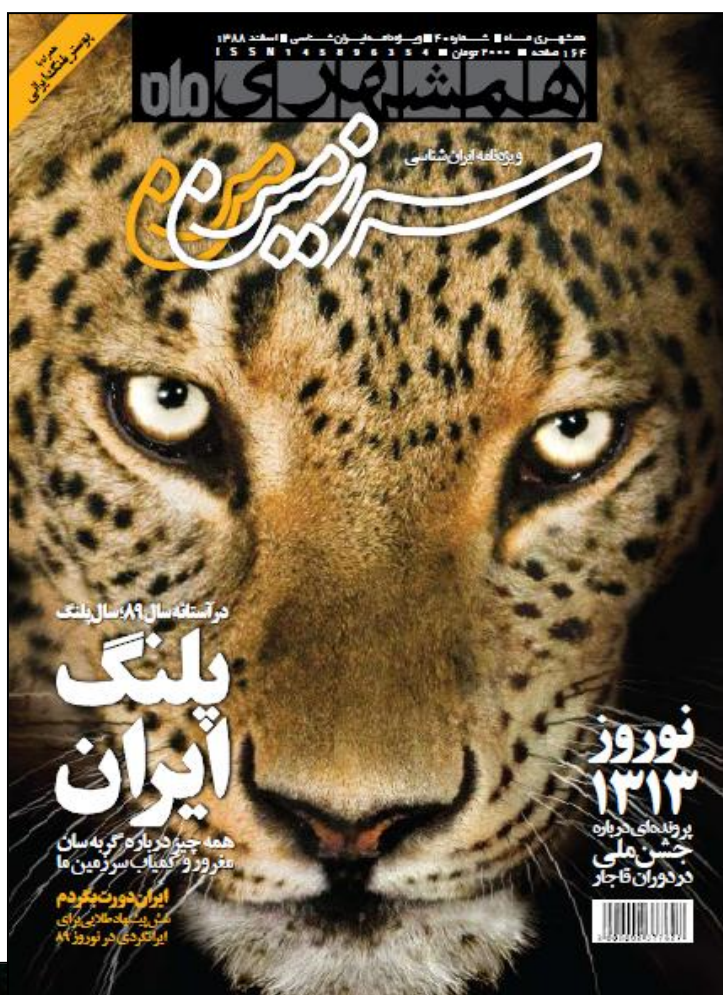
Subject:	Year of leopard
Mass media:	Farhang (Culture) Radio
Date:	October 2010
Audience:	Public people
Interviewee (s):	Morteza Eslami

Publication No.5

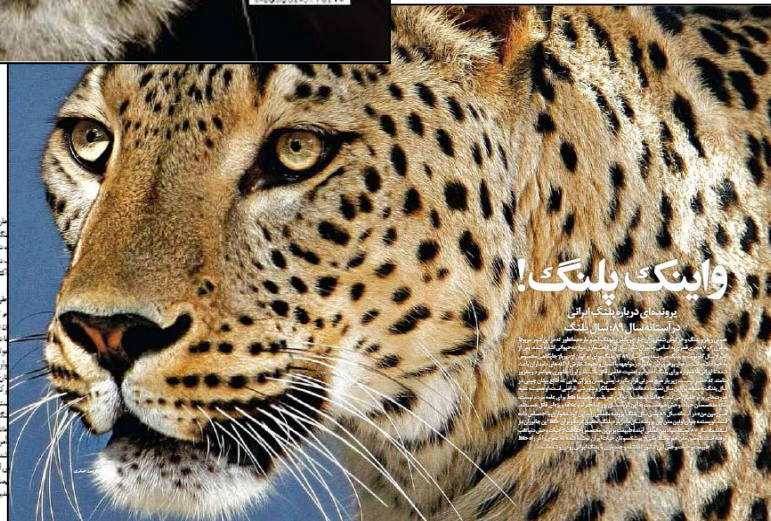
Subject:	
Newspaper/Magazine:	Hamshahri Newspaper
Date:	September 9, 2010
Audience:	Public people
Author(s):	Farshid Jafarzadeh

Publication No.6

Subject:	Steps to know the leopard in Iran
Journal/Website:	Greenpress News Agency
Date:	May 2010
Audience:	Public people
Author(s):	Mohammad S. Farhadinia



این تصویر که در پارک ملی سارایل در افراسان شمالی گرفته شده، تنها تصویر از یک جفت پلنگدار و عاقد در غرب آسیاست. پلنگداران که همواره به صورت تفریق زناشویی می‌کنند در سال فقط چند بچه را به جفت خود می‌گذارند و پس از آن نوزاد به تنهایی بازمی‌گردند. این تصویر یک جفت پلنگدار در کنار هم را در کارستان، سیستان، شمال غرب افغانستان نشان می‌دهد. در کنار تصویر، یک جفت پلنگدار در کنار هم در کارستان، سیستان، شمال غرب افغانستان نشان می‌دهد.



و اما در مورد دیدن قمر از میانه دست

در این مقاله، با استفاده از یک سیستم سنجش داده‌های کالبدی و رفتاری، به بررسی رابطه بین تغییرات در وزن بدن و تغییرات در رفتار اجتماعی در یک گروه از ماهی‌ها پرداخته می‌شود. نتایج نشان می‌دهد که تغییرات در وزن بدن با تغییرات در رفتار اجتماعی مرتبط است. این یافته‌ها می‌تواند برای درک بهتر از رفتار اجتماعی در ماهی‌ها و همچنین برای استفاده از این سیستم سنجش داده‌ها در سایر گونه‌های ماهی‌ها، مفید باشد.

روایتی که چهره را از دهنش آفران می‌دهد، ترجیح می‌دهد. مسافران در خدمت خدمتکاران رده که گنجینه‌ها را در بوزن خدمتکاران می‌دهد، در میان خدمتکارانی که هر شش‌هفته یک بار از خدمت رستوران می‌روند، یک‌هفته را در خانه می‌گذرانند. این کار را با یکدیگر می‌کنند. خدمتکاران رده که در هر روز که در خدمت قرار دارند، با یکدیگر می‌روند و در میان خود یک روز را در خدمت می‌گذرانند. خدمتکاران رده که یک‌هفته را در خدمت قرار دارند، با یکدیگر می‌روند و در میان خود یک روز را در خدمت می‌گذرانند. خدمتکاران رده که یک‌هفته را در خدمت قرار دارند، با یکدیگر می‌روند و در میان خود یک روز را در خدمت می‌گذرانند.

٥٦ [مكتوبه - روزنامه اطلاعات - مرداد ۱۳۵۱]

Fig. 24: Layout of Hamshahri Sarzamn-e-Man



Conservation Education to Save the Endangered Persian Leopard in Iran

Objective 8: Raising awareness at international level about Iran's leopard status

As mentioned earlier, Iran is home to more than two third of wild population of the Persian leopard in the world. The species has recently been subject to various research and educational efforts by a variety of GOs and NGOs in Iran. However, in order to exchange lesson learned and latest achievements, it is necessary to raise awareness at international level. Also, it is very important to attract international attention toward the disappearing leopard in Iran. Accordingly, following activities were done:

Activity 8-1: Publication of relevant papers and articles in international journals and magazines

Paper No.1

Subject:	A Year for the Endangered Persian Leopard
Journal/Magazine:	Wildlife Middle East (www.wmenews.com)
Date:	September 2010
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki, Elmira Shaerbafi, Saba Sohrabinia and Mohammad S. Farhadinia

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2010: A YEAR FOR THE ENDANGERED PERSIAN LEOPARD

Ehsan M. Moqanaki, Elmira Shaerbafi, Saba Sohrabinia and Mohammad S. Farhadinia
Iranian Cheetah Society, # 134, Sholeghah Ave., North Amirabad Ave., Tehran, Iran. persianleopard@wildlife.ir
Keywords: Year of leopard, Persian leopard, newsletter, 2010, conservation

The leopard has lost most of its' historical range throughout Asia with at least five subspecies of Asian leopards on the verge of extinction. The Middle East is home to two endangered and critically endangered subspecies, namely the Persian leopard (*Panthera pardus saxicolor*) and the Arabian leopard (*P. p. nimr*).

The Persian leopard meta-population, which once covered the Iranian plateau, Caucasus and Central Asia, is now reduced to a few fragmented areas. This is due in part, to anthropological activity in recent decades. It is known that Iran is the stronghold of the Persian leopard containing almost 65% of the total 871-1290 estimated population, despite this fact this glorious cat has not received any appropriate attention (Khalil et al. 2002, Khorramyan 2008). Unfortunately the Iranian population is under growing pressure within the country's borders and this is leading the animal closer to extinction. The dependence of adjacent small populations on the Iran's leopard population highlights the necessity of immediate national and international conservation efforts.

Historically Persian leopards existed in most parts of Iran, except along the shores of the Sea of Oman and the Persian Gulf in the south as well as the Caspian Sea in north. They avoid the centrally located hot deserts of Lut and Kavir. Presently, their range is confined to less-disturbed areas where prey is still available. Based on the latest status assessment of the Persian leopard in Iran, they are confirmed to roam at least 130 areas throughout the country. Their habitats are less fragmented in the northern half of Iran, particularly along the Hyrcanian forests and Khorasan in the northeast. They also occur in patchy habitats in the south which is a serious concern for the species long-term survival. Additionally, the annual mortality rate has increased considerably with at least 30-50 individuals dying each year because of human-animal conflicts (Farhadinia 2010).

Traditionally Iranian culture has had a long association with wildlife which is evident within many traditional rituals. The "12-animal calendar", inherited from the Mongol invasion of the 13th century,

Fig. 1: A male Persian leopard poached at vicinity of Yasul, Iran. Paw, tail, mustache and eyes are removed probably for traditional medical purposes. © A. Shafaeipour 2009

Fig. 2: Persian Leopard Newsletter: Cover Page
is just an example of this relationship. Although this calendar has now been replaced by Jashn (Jashn) calendars the animal signs are still thriving as a symbol of the annual ceremonies. Leopard, as the twelfth animal, is the symbol of Iranian New Year (1389) which began in the spring of 2010.

With a history of nearly one decade of big cat conservation in Iran, the Iranian Cheetah Society (ICS) has enhanced its efforts to celebrate this year for the Persian leopard in order to help to save this vanishing creature. We consider this year to be a great opportunity to increase research efforts on this elusive cat, and deal more significantly with the conservation needs of the species to ensure its survival within the country. In support of this, the electronic Persian Leopard Newsletter (PLN) is published to reflect the latest research, news, education, conservation activities and achievements about the species in Iran. PLN is also a network linking experts around the world to provide ideas for standardizing schedules and programs which define the priorities of Persian leopard conservation. It is published every two months and will cover all leopard related activities throughout the Year of the Leopard in Iran. The newsletter is available on www.wildlife.ir

References: Full references can be found on website www.wmenews.com


Fig. 3: Female Persian leopard (probably) poisoned by local people in Pol Dokhtar, Lorestan. Carcass of her two cubs found some kilometers away at Gogol. © Lorestan Department of the Environment 2009.

3. Wildlife Middle East

Fig. 25: Published article in Wildlife Middle East Magazine



Paper No.2



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Leopards of Iran – Under threat

Written by **Mohammad Farhadinia** of the Iranian Cheetah Society

An endangered subspecies, the Persian leopard was once abundant across most mountain and forest habitats in Iran, but it is now one of the rarest species of carnivores in the country. Recent surveys have revealed that around 65% of the wild population of the Persian leopard in western Asia exist in Iran. Moreover, despite of poaching and habitat reduction, the range of the leopard is still known to include large areas of Iran, and it is guessestimated that there are about 550-850 leopards still surviving in the country. Presently, there are a number of mountainous areas throughout Iran where the leopards live, but various threats have resulted in formation of small, probably isolated population



Wildlife of Iran

Poaching threatening survival
Despite recent efforts to study the leopards in Iran,

Keyword search



Paper No.3

Subject:	Conservation model for the Persian leopard
Journal/Magazine:	Cat News (www.catsg.org)
Date:	Autumn 2010
Audience:	Regional and international experts
Author(s):	Mohammad S. Farhadinia, Alireza Mahdavi, Fatemeh Hosseini-Zavarei, Kambiz Baradarani, Mohammad Taghdisi and Reza Habibi

[illegible]

Fig. 27: Published article in Cat News



Conservation Education to Save the Endangered Persian Leopard in Iran

Paper No.4

Subject:	Leopard conservation in the Caucasus
Journal/Magazine:	Cat News (www.catsg.org)
Date:	Autumn 2010
Audience:	Regional and international experts
Author(s):	Urs Breitenmoser, I.Shavgulidze, E.Askerov, I. Khorozyan, M.S. Farhadinia, E. Can, C. Bilgin and N. Zazanashvili

<p style="text-align: center;"><u>news from around the world</u></p> <p>URS BREITENMOSE¹, IRAKLE SHAVGULIDZE², ELSHAD ASKEROV³, IGOR KHOROZYAN⁴, MOHAMMAD FARHADINIA⁵, EMRE CAN⁶, CAN BILGIN⁷ AND NUSZAR ZAZANASHVILI⁸</p> <h3>Leopard conservation in the Caucasus</h3> <p>The leopard <i>Panthera pardus</i> is a Critically Endangered flagship species of the Caucasus. In 2007, conservation experts and institutions from all six Caucasian countries joined to develop a Strategy for the Conservation of the Leopard in the Caucasus Ecoregion, based on a review of the status of the leopard population and its prey (Cat News Special Issue 2, 2007). Now, three years later, the IUCN/SSC Cat Specialist Group, WWF and NACRES organised a discussion group at the annual conference of the International Bear Association IBA in Tbilisi, Georgia. The meeting was part of the symposium "Large Carnivores in the Caucasus", organised and supported by the Secretariat of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The leopard is listed as a strictly protected species in Appendix II of the Bern Convention. The aim of the meeting was to discuss the status of the leopard, the implementation of the Strategy and next steps with wildlife conservationists from the Caucasian countries.</p> <p>The Strategy has so far been endorsed by the relevant authorities of four countries, Georgia, Azerbaijan, Armenia, and Turkey. The participants from the six countries presented a brief review of the situation of the leopard and leopard conservation activities.</p> <p>Russia: No representative from Russia attended the Tbilisi meeting. Russia has both a National Strategy and a National Action Plan for the conservation of the Persian leopard (V. Kriev, pers. comm.). According to recent information from Russian colleagues (V. Rozhnov, V. Lukarevski, V. Kriev, pers. comm.), the breeding and rehabilitation facilities at the Sochi reintroduction site are ready, and four leopards (two males from Turkmenistan and two females from Iran) are at the site. However, the suitability of the specimens as founders for a captive bred population for future releases is questionable. More founder individuals either from the conservation breeding programme of EAZA or from the wild are needed. The participants of the Tbilisi meeting expressed the wish that the Russian reintroduction programme should become a part of the common effort for the conservation of the leopard in the whole ecoregion. Without any doubt, the best source would be the population in NW Iran, which is at the same time the only source population for a natural recolonisation of the Caucasus.</p> <p>In Daghestan, initial works by means of camera-trapping was conducted by colleagues from Daghestan Center of Russian Academy of Sciences (Yuri Yarovanko, pers. comm.).</p> <p>Obviously cross-border cooperation with Georgia could provide more precise information regarding leopard. Current political circumstances make cooperation on governmental level difficult, but technically coordinating the efforts of NGOs and scientists is realistic.</p> <p>Georgia: Camera-trapping based monitoring started last year in Tusheti region of Georgia, Eastern Greater Caucasus – bordering to Daghestan, Russian Federation. This region (Tusheti, Khvetsurati, Daghestan) was identified as an area of a leopard sub-population in the Caucasus (see Status Report). In Tusheti, NACRES conducts this work with support of WWF, the Agency of Protected Areas and Tusheti National Park staff. The male leopard "Noah", pictured regularly for several years in Vashlovani NP, was not discovered in 2009. In April 2009, the WWF Caucasus Programme Office and NACRES organised a workshop to develop a national action plan, the Leopard Conservation Action Plan for Georgia. The meeting held in Tbilisi united 20 participants representing the Agency for Protected Areas, National Park Administrations, Institute of Zoology, Biodiversity Protection Service of the Ministry of Environment, several NGOs, Ilia State University, IUCN South Caucasus Office, and various interest groups. The National Action Plan was submitted to the national authorities, but is not yet officially endorsed.</p> <p>Azerbaijan: Azerbaijan has started to do opportunistic surveys in various known or expected leopard areas in the south and northwest of the country. The efforts have confirmed the presence of leopards, but the exact distribution, the number of specimens and the travel routes are not known. The capacity for a systematic surveillance is lacking. Azerbaijan's ministry of environment has developed a National Action Plan for the conservation of the leopard (Ministerial Decree N 514/U from 14.09.2009). No scheme for compensation of livestock attacks by leopard has been established, because this task proved to be politically delicate. The most important advance has been made in establishing protected areas. Since 2000, the total area under protection has increased from 4780 km² to 9551 km².</p> <p>Armenia: The National Action Plan for Leopard Conservation in Armenia, based on the ecoregional strategy, was developed in winter 2008 and endorsed by the Ministry of Nature Protection in spring 2009. One of the important issues is to improve the monitoring of leopards in Armenia, which is however hampered by methodological flaws and budget restraints (I. Khorozyan: A brief concept on how to bolster up the leopard monitoring in Armenia and adjacent countries of the Caucasus ecoregion, unpublished report 2010). As the survival of leopards in Armenia clearly depends on immigration of individuals from Iran, a close cooperation regarding monitoring and conservation between these two countries is ultimate.</p> <p>Iran: Based on the IUCN Red List (www.iucn-redlist.org), more than 65% of wild Persian leopards live in Iran. According to the last status assessment, at least 500 leopards exist in Iran, of which 10–20% in NW Iran. More than 10 areas are confirmed to hold leopards; most are officially conserved by the Iranian Department of Environment. Recent food habits surveys conducted by the Iranian Cheetah Society (ICS) in northern Iran revealed that predation on livestock leads to high conflict with local people and is the main cause of mortality for leopards even within protected areas. 75% of poached animals discovered are males, mainly young and old individuals, apparently occupying home ranges outside the area of the established population. Presently, genetic investigation is ongoing on the Persian leopards, and various research and educational efforts are aiming to conserve the species in Iran.</p>	
<p>CATnews 53 Autumn 2010</p>	

Fig. 28: Published article in Cat News



Conservation Education to Save the Endangered Persian Leopard in Iran

Activity 8-2: Persian Leopard Newsletter

The newsletter was planned and published and a complete contact list was developed composed of nearly 1000 international well-known experts and the newsletters were regularly sent to the contacts. All newsletters are available at (<http://www.wildlife.ir/ShowInfo.aspx?Lang=2&Infold=95>).

Newsletter No.1

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none"> • A Year for Leopards • Facts about Leopards in Iran • The Persian Leopards in Iranian Baluchestan • Leopard Training Courses for Experts • Leopard Footage • Mortalities • Leopard Loss Counter • Sarigol National Park • Iran Helps to Restore Persian Leopard in Russia
Date:	April 2010
Audience:	Regional and international experts
Author(s):	Mohammad S. Farhadinia, Elmira Sharbafi, Saba Sohrabinia and Ehsan M. Moqanaki

Newsletter No.2

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none"> • Hunting a Leopard: Symbol of Loyalty among Persian Kings • Are the Persian Leopards the Largest Subspecies? • Training of Trainers Attained 10%; Still a Long Way • Leopard Footage • Persian Leopard Card • Leopards in Alamute: A Persecuted Population • Leopard Loss Counter • Golestan National Park • Efforts to Save the Persian Leopard in the Caucasus
Date:	June 2010
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki, Saba Sohrabinia, Elmira Sharbafi and Mohammad S. Farhadinia



Conservation Education to Save the Endangered Persian Leopard in Iran

Newsletter No.3

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none">• The Leopard Story; a Fable of the Vanity• Are Conservation Efforts Enough for Long-Term Survival of Persian Leopard?• Leopard Footage• A Library for the Persian Leopards!• Leopard Crisis in Lorestan• Leopard Loss Counter• Tandureh National Park• A road to Annihilation
Date:	August 2010
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki, Mohammad S. Farhadinia and Saba Sohrabinia

Newsletter No.4

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none">• Persian Leopard in Literatures• The Largest Leopard Skull in the World• Leopard's Technical Manuals• Leopards of Iran in the Wildlife Middle East• Education for Conservation in Yazd• Touran National Park and Biosphere Reserve• The First Persian Leopard in Europe!
Date:	October 2010
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki, Mohammad S. Farhadinia and Elmira Sharbafi



Conservation Education to Save the Endangered Persian Leopard in Iran

Newsletter No.5

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none">• Greeting from the Persian Leopard in Iran!• Persian Leopard Food Habits in Golestan National Park• Conservation Model for the Persian Leopard• Biodiversity Education in Kalmand, Central Iran• Bafgh Protected Area• Fatal Encounter in Gilan
Date:	November & December 2010
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki, Mohammad S. Farhadinia, Elmira Sharbafi and Saba Sohrabinia

Newsletter No.6

Subject:	Persian Leopard
Contents:	<ul style="list-style-type: none">• A Year after Year of Leopard• Caucasian Leopard Conservation Workshop in Turkey• Training for Conserving the Leopards• More Advances in Leopard Movie• Leopard Loss Counter• Through the Year of Leopard• Thanks to All the Persian• Leopard Supporters!
Date:	May 2011
Audience:	Regional and international experts
Author(s):	Ehsan M. Moqanaki and Mohammad S. Farhadinia



Conservation Education to Save the Endangered Persian Leopard in Iran



Fig. 29: Covers of Persian Leopard Newsletters



Conservation Education to Save the Endangered Persian Leopard in Iran

Activity 8-3: International Meetings

The leopard is a critically endangered flagship species of the Caucasus. In 2007, conservation experts and institutions from all six Caucasian countries joined to develop a Strategy for the Conservation of the Leopard in the Caucasus Ecoregion, based on a review of the status of the leopard population and its prey (Cat News Special Issue 2, 2007).

The Strategy has so far been endorsed by the relevant authorities of four countries, Georgia, Azerbaijan, Armenia, and Turkey. However, despite of possessing the largest viable population in the region, Iran has not been actively involved in the project and the Iranian authorities had never seen the Strategy. A few representatives from the Iranian NGOs in the 2007 meeting were not able to draw attention of the Iranian Department of Environment to be integrated in the project; therefore, no success was achieved on the Iranian side.

Accordingly, it was discussed during a meeting to develop an Action Plan for Conservation of Asiatic Cheetah Project in Saanen, Switzerland (March-May 2010), hosted by the IUCN/SSC Cat Specialist Group that it is highly essential that Iran has to play an active role in the initiative. After more discussion with the Iranian Department of Environment's authorities, Mohammad Farhadinia was selected as the Iranian delegation to the informal meeting in Tbilisi, Georgia aiming at facilitation of Iran's involvement to secure long-term survival of the Persian leopard in collaboration with other countries within the Caucasus ecoregion. Attendance in the meeting was funded by the IBA organizers and Allwetter Zoo, Germany. The IUCN/SSC Cat Specialist Group, WWF and NACRES organized the informal meeting on May 18 during the IBA conference in Tbilisi, Georgia (May 16 – 22, 2010.), to discuss the status of the leopard, the implementation of the strategy and next steps with wildlife conservationists from the Caucasian countries.



Fig. 30: Caucasus region



Conservation Education to Save the Endangered Persian Leopard in Iran



Fig. 31: Presentation about the leopards in Iran in the IBA meeting

In March 2011, follow-up meeting was organized in Istanbul, Turkey, namely as “Workshop on the Conservation of the Leopard in the Caucasus” which the ICS played a facilitatory role to connect the initiative to the Iranian Department of Environment. Two experts were invited to the meeting in companion of the ICS delegation. Objectives of the meeting were as following:

1. Review of progress made since the strategic planning workshop in Tbilisi, Georgia, in May 2007.
2. Discussion and identification of problems/obstacles in development of leopard conservation program in the Caucasus and elaboration of the relevant recommendations.
3. Discussion on a synchronized monitoring and the capacities needed.



Fig. 32: Participants in Caucasian Leopard Conservation Workshop, Istanbul, March 2011



Conservation Education to Save the Endangered Persian Leopard in Iran

Objective 9: Planning regional pilot conservation educational projects in leopard hotspots

Conservation education as intensive projects in local communities has not been expected in this project. We were hopeful that by the end of the year of leopard, regional pilot conservation educational projects within leopards' hotspots would be planned. However, we are already achieved our goal, because during 2010, we successfully established two different projects in central and western Iran to educate local people about the leopards in Iran. Projects' sites were selected based on Mortality Database we developed for the Iranian leopards (Objective 1), particularly Lorestan that around one leopard was confirmed to be poached on a monthly basis in 2010. Due to budget constraints, successful fundraising was done to secure the projects. Details of the projects are as following:

Activity 9.1. Conservation Education of Local Community in Kalmand-Bahadoran Protected Area, Central Iran

Subject:	Conservation Education of Local Community in
Location:	Kalmand-Bahadoran Protected Area, Central Iran
Duration:	October 2010- May 2011
Audience:	Local people and authorities
Co-funds:	Royal Dutch Embassy in Tehran
Staffs:	Sima Babrgir (director), Safura Zavarani-Hosseini, Yasaman Hasanbeygi, Morteza Eslami and Saba Sohrabinia
Activities:	<ul style="list-style-type: none">• Holding workshops for Mehriz City & Kalman-Bahadoran Protected Area's game wardens;• Introducing project to Mehriz authorities;• Dissemination of the project activities & achievements in local mass media;• Preparing training programs for local students;• Holding educational workshops for students;• Holding field visits for local students and teachers.



Conservation Education to Save the Endangered Persian Leopard in Iran



Fig. 33: Training courses for students



Fig. 34: Field excursion for local students



Fig. 35: Game wardens train local students in the field



Conservation Education to Save the Endangered Persian Leopard in Iran

Activity 9.2. Conservation Education of Local Community in Lorestan, Western Iran

Subject:	Conservation Education of Local Community
Location:	Lorestan, Western Iran
Duration:	November 2010- October 2011
Audience:	Local experts and game wardens, local people and authorities
Co-funds:	Amersfoort Zoo, the Netherlands and Iranian Department of Environment
Staffs:	Bagher Nezami (director), Mehdi Mojtahedi, Fatemeh Hosseini-Zavarei and Mohammad S. Farhadinia
Activities:	<ul style="list-style-type: none"> • Preparation of information baseline about Persian leopard; • Training experts and game wardens; • Assessment of human attitude toward the leopard and extant of possible conflict with predators; • Publication of educational materials; • Holding educational workshops and festivals for local people; • Educating local shepherds.



Fig. 36: Training game wardens to use camera traps



Fig. 37: Interview surveys with shepherds



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Conservation Education to Save the Endangered Persian Leopard in Iran

Appendix 1. Persian Leopard Online Center Contents

Country	Journal	Year	Author(s)	Title	No.
Germany	Zoo Biology 1: 55-57	1982	B. L. Dresser, L. Kramer, B. Reece and P.T. Russell	Induction of ovulation successful artificial Insemination in a Persian leopard (<i>Panthera pardus saxicolor</i>)	1
Iran	International Leopard Studbook	1988	Paul Joslin	Leopards (<i>Panthera pardus</i>) in Iran	2
USSR	Pacific Institute of Geography	1989	Anatoley P. Bragin	A short review on the status of the leopard <i>Panthera pardus ciscaucascia</i> (saxicolor) in the southwest in the USSR	3
Turkey	Conference Proceeding	1991	Aydin Akin	The status of the leopard in Turkey	4
Turkmenistan	Full Book	1996	Victor Lukarevsky	Modern distribution, location and number of Persian leopard (<i>Panthera pardus</i>) in Turkmenia	5
Armenia	Int.J.Sustain.Dev.World Ecol. (5)	1998	Igor Khorozyan	Leopard in Armenia: Basic trends, dangers and hopes	6
Armenia	Coll. Art. Young Res., Nat. Sci. 1: 24-27	1999	Igor Khorozyan	Modeling mortality pattern Armenian leopard population	7
Armenia	CAT NEWS 34:14-17	2001	Igor Khorozyan	Human attitudes to the leopards in Khosrov Reserve	8
Iran	Zoology in the Middle East 26: 41-47	2002	Bahram H. Kiabi, Bijan F. Dareshouri, Ramazan Ali Ghaemi and Mehran Jahanshahi	Population status of Persian leopard (<i>Panthera pardus saxicolor</i> Pocock 1927) in Iran	9
Armenia	Societa Zoologica La Torbiera	2003	Igor Khorozyan And Alexander Malkhsyan	Ecology of the leopard in Khosrov Reserve, Armenia: Implications for conservation	10
Turkey	Endangered Species UPDATE Vol.20 No.3	2003	Kirk johnson	Status and distribution of the leopard (<i>Panthera pardus</i>) in Turkey and the Caucasus mountains	11
Armenia	Final Report Submitted to PTES	2003	Igor Khorozyan	Camera photo-trapping of the endangered leopards (<i>Panthera pardus</i>) in Armenia: A key species status assessment	12
Armenia	Zoology in the Middel East 30: 25-36	2003	Igor Khorozyan	Habitat preferences by Persian leopard(<i>Panthera pardus saxicolor</i> Pocock 1927) in Armenia	13



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Turkey	Oryx Vol 38, No 2	2004	Sagdan Baskaya and Ertugrul Bilgili	Does the leopard <i>Panthera pardus</i> still exist in the eastern Karadeniz mountains of Turkey?	14
Caucasus	Beitrage zur Jajd-und Wildforschung Bd.29: 303-319	2004	Victor Lukarevsky, Elshad Askerof and Grachik Hazaryan	Condition of the leopard population in Caucasus	15
Armenia	Endangered Spcies UPDATE Vol.22 No.2	2005	Igor Khorozyan, Alexander Malkhasyan and Shushanik Asmalyan	The Persian leopard prowls it is a way to survival	16
Armenia	Russian Conservation News No.39	2005	Igor Khorozyan And Alexander Malkhasyan	Research and conservation of the Persian leopard in Armenia	17
Iran	CAT News	2006	Mohammad Farhadinia, Bagher Nezami, Alireza Mahdavi and Kaveh Hatami	Photos of Persian leopard in Alborz mountains, Iran	18
Caucasus	Russian Journal of Theriology	2006	Igor G. Khorozyan, Gennady F. Baryshnikov and Alexei V. Abramov	Taxonomic Status of the Leopard, <i>Panthera pardus</i> , (Carnivora, Felidae) in the Caucasus and Adjacent Areas	19
Armenia	BIOLOGY BULLETIN; Vol. 34 No. 4	2007	G. Khorozyan, A. Cazon, A. G. Malkhasyan, and A. V. Abramov	Using Thin-Layer Chromatography of Fecal Bile Acids to Study the Leopard (<i>Panthera pardus ciscaucasica</i>) Population	20
Turkey	CAT News, Special Issue No. 2	2007	Victor Lukarevsky, Mujigit Akkiev, Elshad Askerov, Ali Agili, Emre Can, Zurab Gurielidze, Anatoliy N. Kudaktin, Alexander Malkhasyan and Yuriy A. Yarovenko	Status of the Leopard in the Caucasus	21
Caucasus	CAT News, Special Issue No. 2	2007	Fridolin Zimmermann, Victor S. Lukarevsky, Giorgi Beruchashvili, Christine Breitenmoser-Würsten and Urs Breitenmoser	Mapping the Vision – Potential Living Space for the Leopard in the Caucasus	22
Caucasus	Zoology in the Middle East	2007	Igor G. Khorozyan and Alexei V. Abramov	The Leopard and Its Resilience to Human Pressure in the Caucasus	23
Iran	Zoology in the Middle East 44: 101-103	2008	Arash Ghodousi, Amirhossein Khaleghi Hamidi, Taher Ghadirian, Delaram Ashayeri, Mona Hamzepour, Hamed Moshiri, Hamid Zohrabi and Leila Joulayi	Territorial marking by Persian Leopard (<i>Panthera pardus saxicolor</i> Pocock 1927) in Bamu National Park, Iran	24



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Armenia	Integrative Zoology (3): 322–332	2008	Igor G. Khorozyan, Alexander G. Malkhasian and Alexei V. Abramov	Presence–absence surveys of prey and their use in predicting leopard (<i>Panthera pardus</i>) densities: a case study from Armenia	25
Iran	CAT NEWS 48	2008	Asghar Abdoli, Taher Ghadirian, Amirhossein Khaleghi Hamidi, Hossein Mostafavi, Hamed Moshiri, Sadegh Pour salem and Arash Ghoddousi	First evidence of Persian leopard from Khaeez area, Southern Iran	26
Iran	CAT NEWS 48	2008	Arash Ghodousi, Amirhossein Khaleghi Hamidi, Taher Ghadirian, Delaram Ashayeri, Hamed Moshiri and Igor Khorozyan	The status of the Persian leopard in Bamu National Park	27
Caucasus	Journal of Applied Ecology 45: 579-588	2008	Alexander Gavashelishvili and Victor Lukarevskiy	Modelling the habitat requirements of leopard <i>Panthera pardus</i> in west and central Asia	28
Iran	Zoology in the Middle East 48: 13-16	2009	Mohammad S. Farhadinia, Alireza Mahdavi and Fatemeh Hosseini-Zavarei	Reproductive ecology of Persian leopard, <i>Panthera pardus saxicolor</i> , in Sarigol National Park, northeastern Iran	29
Iran	CAT NEWS 51: 34-36	2009	Mohammad Farhadinia, Bagher Nezami, Fatemeh Hosseini-Zavarei and Mousa Valizadeh	Persistence of Persian leopard in a buffer habitat in north eastern Iran	30
Armenia	Complexity, Informatics, and Wildlife Conservation	2010	Igor G. Khorozyan, Alexander G. Malkhasyan, Shushanik G. Asmaryan, and Alexei V. Abramov	Using Geographical Mapping and Occupancy Modeling to Study the Distribution of the Critically Endangered Leopard (<i>Panthera pardus</i>) Population in Armenia	31
Iran	Veterinary Parasitology 164: 350–352	2009	Gholamreza Mowlavi, Gianluca Marucci, Iraj Mobedi, Farzaneh Zahabiioon, Hamed Mirjalali and Edoardo Pozio	<i>Trichinella britovi</i> in a leopard (<i>Panthera pardus saxicolor</i>) in Iran	32
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Germany	Der Zoologische Garten	1964	Zukowsky	Weitere Mitteilungenuber Persische Panther	34



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Iran	Environmental Science & Technology	2010	Omidi, Kaboli, Karami, Mahini&Kiabi	Habitat suitability model for Persian leopard using ENFA in KolahQazi NP, Esfahan	35
Iran	Oryx	2010	Ghoddousi, Hamidi, Ghadirian, Ashayeri and Khorozyan	The status of the endangered Persian leopard in Bamu National Park, Iran	36
Iran	Wildlife Middle East	2010	Moqanaki, Shaerbafi, Sohrabinia and Farhadinia	2010: A year for the endangered Persian leopard	37
Iran	Cat News	2010	Farhadinia, Mahdavi, Hosseini-Zaverei, Baradarani, Taghdisi and Habibi	Conservation model for the Persian leopard	38
Iran	Seventh Congress and the Second Regional Conference of Parasitology and Parasitic Diseases in Iran	2010	Esfandiari, Yousefi, AbouhosseiniTabari	A nematode in Persian leopard	39
Iran	The first national conference on diseases and veterinary (Islamic Azad University of Babol)	2010	Yousefi, Hosseini, Moubedi, Esfandiari and Hosseini	A study on Persian leopard parasites	40
Caucasus	Cat News	2010	Breitenmoser, Shavgulidze, Askerov, Khorozyan, Farhadinia, Can, Bilgin and Zazanashvili	Leopard conservation in the Caucasus	41