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Project Future4Leopards

ANNUAL REPORT 2016

WILDCRU
Wildlife Conservation Research Unit





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Cover: Adult male leopard in Tandoureh (Photo: M.Hasanzadeh) and Right: Young female leopard in Tandoureh (Photo: A.Moudi)

Preface

There was a time when leopards were thought to be irrepressibly resilient to anything that people could inflict upon them, from remorseless persecution to urbanisation. True, one of the most expansive mammalian geographic ranges is a testament to adaptability and we might expect it to yield fascinating extremes of intra-specific variation. True, also that leopards occur from stony desert to tropical and urban jungles, and sometimes still at functionally important densities. But the reason that we at the WildCRU are increasingly focusing on this species, some might say the most beautiful of big cats, is not only because of what they can teach us about adaptation, opportunism and evolutionary success. It is also because, and from West to East, all too many of their populations are dwindling precariously. With our team and our partners striving to understand, and to conserve leopards from Zimbabwe to Sri Lanka to Indo-China and beyond, Mohammad Farhadinia's pioneering Project Future4Leopards is a jewel in the WildCRU's crown. This report, stunningly produced, touches every aspect of modern conservation and shimmers with professionalism and dedication. Above all, it is full of results, of making a difference and delivering change for the better. Congratulations on this year, and good luck for the next.



Professor David Macdonald
Director, WildCRU
The Recanati-Kaplan Centre, University of Oxford

Summarizing what has been achieved during 2016 by our small crew across multiple areas in Iran is challenging for us. It was definitely a year of tremendous efforts, great challenges, and major successes. We continued our collaring attempts in Tandoureh, two new individuals were collared, totaling six leopards, larger than the majority of collaring efforts on Asian leopards. To our surprise, in February, one of our collared leopards, the female we called Iran, was killed by a larger leopard in Tandoureh. The tragedy was a big loss for the Project, because it was the only female we had collared to date, but soon it went beyond a biological loss. The leopard's death was attributed to a neck break and suffocation (caused by the collar), a notion which unfortunately, some country's biologists, backed by animal welfare extremists, promoted through the media to stop the collaring Project, and they succeeded. The Project capturing permission was suspended until June 2016, when after attending 42 meetings to convince relevant governmental decision-makers, permission was again granted and collaring efforts brought back to life. We captured another leopard in early August 2016. In November, leopard population counts using camera traps in Tandoureh were aired on the majority of local and national media, and some photos printed on the first pages of several daily newspapers. In an interview, the Iran Department of Environment announced the largest ever known leopard population in the Middle East, still persists in Tandoureh. While we are committed to publishing results in peer-reviewed scientific papers before featuring in the media; we understand that our national stakeholders were extraordinarily thrilled to report a large population of the leopards, still in northeastern Iran. Poaching crisis threatens the majority of the planet's larger species, especially big cats which are targeted by poachers, and their prey. Poachers are a serious challenge, but there is no long-term solution if they are seen only as the problem, rather than part of the solution. In some of our sites, it was not, and still is not easy to convince local conservation practitioners to start working with poachers, because for decades they have been two sides of the battle. We are applying some innovative ways to engage poachers for the benefit of leopard conservation, from defining alternative livelihoods to engaging in research activities or increasing knowledge and awareness. We already have started to see positive results, described in the report body. We have developed our workplan for 2017, collaboratively with our local partners. We are recruiting our first Leopard Shield, to protect the leopard wilderness while our alternative livelihood plans will be continued. As always, training and equipping rangers will be a top priority for us and we are organizing the first acknowledgement ceremony for leopard rangers. There is more exciting news to come in 2017. We are fully aware that we cannot perform miracles for the leopards, especially in a region of the world that is more dominated by political and economic crisis; pushing biodiversity conservation away from the country's main priorities. Nevertheless, we aim to be successful, in some areas, based on our limited resources, capacities and knowledge. We will remain.



Mohammad Farhadinia
Founder & director
Project Future4Leopards

Mission

With a background in leopard conservation since 2001, the Project "Future4Leopards" was officially launched in 2013. Our mission is to improve the conservation status of the Persian leopard by producing cutting-edge science, enhancing law enforcement and anti-poaching, controlling contagious diseases, engaging local communities, developing the capacity of conservation practitioners and affecting policy and decision-making. Our approach is empirical, interdisciplinary and highly collaborative. Currently, the Project is pursuing its pragmatic conservation goals within multiple reserves in Iran.

Where we work

Persian leopards roam many areas, but we are focused on some areas where most needed. Currently, our team is on the ground across three regions of the country, each with unique challenges.



3 Hyrcanian temperate region:

We even work in human-dominated landscapes, where people and leopards share their land in the northern Hyrcanian temperate region. Conflict with communities is a serious challenge, plus retaliatory killing of the leopards. We work in a few areas, some not even protected by law, with the main goal of engaging communities for a collaborative management plan.



2 Drylands:

Different types of challenges are faced for the leopard conservation across drylands in central Iran. While conflict with communities is not a serious problem for the leopards in these drylands, the small size of the existing leopard populations have made them prone to a gloomy future. We work in Bafq, the most known leopard reserve in the region.



1 Steppe mountains:

Northeastern Iran is the Project's main priority, where we established a comprehensive collaring project on the subspecies found in Tandoureh National Park. Our findings revealed that although Tandoureh is a main breeding site for the leopards in the region, its long-term sustainability is dependent on conserving the broader Iran-Turkmenistan borderlands, known as Kopet Dag Biodiversity Hotspot. A trans-boundary mountain range between Iran and Turkmenistan, protected on the Iranian side with a number of well-established reserves, such as Tandoureh, Dorbadam, Gharchegheh and Ors-Sistan.



1. Science and research

Project Future4Leopards is grounded in science. With special considerations of nature and climate change, our scientists have developed innovative approaches to effectively convey the best available information. We draw on science to advance cutting-edge conservation tools and methods, connect natural and social systems, and tackle emerging threats. Our conservationists track dynamic needs and lead regional and national attempts to halt factors threatening some of the promising leopard landscapes and their sympatric species. We also rely on the scientific process to ensure that our on-the-ground conservation programs are effective and producing measurable results.

The Project field researchers conduct studies year round to gain insight about Persian leopard habitat, wild prey species, and the cats themselves. Remote camera traps photograph wild leopards as they move throughout their home ranges, while GPS collars provide us the opportunity to track an individual leopard's movements for an entire year.

Tragedy: Two female leopards found dead

In February and March 2016, two female leopards were found dead in Tandoureh and were translocated to Tehran for post-mortem necropsy. The first, which was being tracked by GPS collar, was a young female, killed by a larger leopard. The second, an old female leopard reported by a local military soldier, was found dead outside Tandoureh National Park, starved for a long time (at least one month). The skin, attached to bones was intact and no sign of shooting from hunters was found in later CT scans.

Steps for the Future: Status assessment of leopards along Iran-Turkmenistan borderland

Northeastern Iran, particularly Iran-Turkmenistan borderlands harbor some of the largest population cores of the Persian leopard in the Middle East. As the most well-known reserve in the region, Tandoureh National Park has been the main hub of the Project Future4Leopards since its establishment in 2013. However, satellite information on the collars helped to reveal that the ranging patterns are well beyond the Tandoureh reserve, which convinced the Project that there were needs to expand leopard management across the landscape, rather than focus on a single reserve. In May 2016, in partnership with Razavi Khorasan Department of Environment, multiple reserves along the border were surveyed to determine the status of the leopard and its prey species. Jangal Khajeh, Ors-Sistan, Dorbadam and Gharchagheh Protected Areas were four reserves that were visited, for which possible actions to improve conservation were also discussed with local authorities. To assist with studies on conservation methods in the regions alongside the border, a Master's student from University of Tehran was hired to carry out a systematic status assessment, supported by the Project during 2016-2017.

Highlight Zone: What leopards eat? How often do they eat?

During 2016, the Project finished data collection and lab investigation for elucidating predation patterns of the leopards in northeastern Iran. Elmira Sharbafi, a recent Master's degree graduate in Biodiversity Management, who finished her thesis on leopard food habits in Iran using fecal analysis, joined the Project to share her expertise for revealing dietary characteristics of the leopards in northeastern Iran. In addition, Iran Department of Environment lab has been extremely helpful to keep and analyze the samples collected. Thus far, around 510 fecal samples have been analyzed. Such findings are essential ecological aspects of our Project, because they shed light on the importance of different prey species across three National Parks for the leopard survival. Also, the research findings enable us to explore the extent and intensity of human-leopard conflict to take proper actions to halt threats.

Highlight Zone: Counting leopards

In 2016, we carried out two rounds of leopard population surveys in two different reserves, Tandoureh and Bafq. The Project crew, assisted by local rangers in both areas spent nearly 55 days in the field to deploy and check camera traps, kindly provided by Panthera. More than 1000 leopard images were obtained, leading us to explore population size and composition of the leopards in these two areas. The pictures on the cameras offer breathtaking glimpses into the secretive world of one of the world's most elusive cats, the endangered Persian leopard!

In 2015, the Project finished camera trapping surveys in other promising leopard areas in Iran, Salouk and Sarigol National Park, revealing they harbor more leopards than what perceived before by local conservation practitioners. So far, almost 50 rangers from Iran Department of Environment have been trained on the basics of camera trapping and GPS application to empower them to conduct leopard surveys independently.



Staff highlight
Elmira Sharbafi

She joined the Project for fecal analysis in 2016, analyzing 510 leopard scats. Based in Iran Department of Environment's lab for the Project period, Elmira is a skilled expert on leopard feeding ecology who spent several months of monotonous hair identification to reveal what the leopards feed on.



Staff highlight
Pouyan Behnoud

There is only one single person in Iran who can determine if two different leopard or cheetah images belong to a same individual or not: Pouyan Behnoud. He is passionate about nature, following a career in biology after graduating with a graphic design degree. Pouyan has worked intensively to explore how many leopards live in each area, based on pattern comparisons on camera trap images.



2. Collar4Conservation Program

The Persian leopards share most of their range with humans, i.e. only around 25% of the current Persian leopard range is within protected areas. Roaming close to humans brings the leopards into direct encounters and conflict, and intentional or accidental killing committed by humans limits leopard numbers. Therefore, developing suitable management strategies outside protected areas could be a key factor in the future conservation of leopards.

“Collar4Conservation” is a novel initiative to apply high-tech satellite collars for the endangered Persian leopards in order to promote their protection in northeastern Iran. As part of Project Future4Leopards, the “Collar4Conservation” produces cutting-edge science to improve protection for the leopards.

Nevertheless, “Collar4Conservation” is not only about science, it is more grounded in conservation. Undoubtedly, understanding animal behavior is crucial to developing effective protection of populations. Satellite collars are probably the most useful and reliable equipment for closing the knowledge gap.

Hitherto, collars enable us to explore movements outside the areas’ boundaries which may place individuals at greater risk. Additionally, the effectiveness of the reserve boundaries in protecting the leopards is evaluated and plausible corridors at national and international scales are highlighted. Without this valuable information, there is no guarantee of the long-term persistence of leopard populations.

Highlight Zone: Tandoureh, 6th leopard collared in northeastern Iran

During our ongoing capturing operations carried out by the Project Future4Leopards in northeastern Iran, a new leopard was captured and fitted with a satellite collar. The leopard, an adult male weighting around 75 kg, was captured using snare traps set around a waterhole in Tandoureh National Park. Immobilization was carried out by Behrang Ekrami, a renowned Iranian vet and the animal was equipped with a satellite GPS collar. We called him Tandoureh, to remind us how important Tandoureh National Park is for the survival of Persian leopards in Iran and even beyond.

Since 2014, the Project has been working in Tandoureh to study the Persian leopard ecology, making a comprehensive effort to understand less-known aspects of leopard life in montane landscapes of west Asia. So far, a total of six Persian leopards have been fitted with satellite collars in the area and invaluable information about their ranging and behavior have been obtained to shape proper conservation plans.



Staff highlight
Iman Memarian

He is more than a busy Vet; almost all animal keepers in Tehran, from zoos to exotic pet owners refer to him for check-up and treatment. This is not simply a coincidence, rather an indication of his remarkable veterinary expertise and qualifications. Nevertheless, the Project was lucky to get him involved three times in 2016 for capturing operations while he led sampling and lab analysis to explore prevalence of Canine Distemper Virus among local dogs around Tandoureh.



3. Law enforcement and anti-poaching

Wildlife poaching is a serious threat to many wildlife species, especially large carnivores across the majority of their global range. Rangers, as frontiers in combating wildlife poaching, are key personnel to ensure the survival of large carnivores, including the leopard. However, such important frontiers are frequently overlooked.

The Project Future4Leopards predominantly focuses on improving the performance of rangers who are the key persons monitoring illegal activities and poaching. In Iran, they are hired by the DoE, but they suffer from lack of proper training, unsuitable equipment and shortage of motivation. Also, anti-poaching units are severely understaffed, meaning that local people must help the rangers in detection and stopping illegal activities. We are supporting ongoing governmental activities addressing these four main challenges.

Accordingly, local rangers are receiving training on population monitoring of the leopards, conflict resolution, trapping and ecology of the leopards. Also, an event for outstanding leopard rangers to acknowledge their efforts on a bi-annual basis has been established, to recognize several leopard rangers with highest performance (assessed based on number of poachers arrested, leopard sighted, etc.). We also support the creation and maintenance of a network of local informants, key persons who can report poachers to rangers to reduce poaching pressure on the wildlife (mostly herders). In order to support anti-poaching patrols, in partnership with local authorities, access trails are built and maintained in higher elevation with preventive gates for better controlling of illegal activities, such as poaching and fire control.

Highlight Zone: Appreciation of leopard rangers

During 2016, almost 55 rangers working within the Project sites, including Bafq, Dohezar-Sehezar, Ors-Sistan and Tandoureh received personal equipment for better patrolling in different mountainous conditions. All rangers were given high quality jackets to keep them warm in cold winters. Also, 30 rangers in Tandoureh and Ors-Sistan were given ramble walking trousers, because their own trousers are made from low quality materials, very susceptible to erosion when sitting and crawling among thorn bushes and rocks. The new Project funded trousers are suitable for such landscapes. Additionally, following three years of working together to improve leopard conservation in Tandoureh, an acknowledgement ceremony was held in Tandoureh on 18 October 2016 to thank committed rangers. The Project's manager, Mohammad Farhadinia presented a story on what happened and was achieved during three years of Project implementation in Tandoureh, then DoE managing director, Hamid Salehi endorsed the Project outcomes for improving conservation in Tandoureh. The ceremony concluded by presenting special gifts to the rangers.

As part of the Project's action plan, empowering and supporting anti-poaching and commitment by the rangers is one of the key priorities in coming years. Therefore, the majority of conservation resources raised by the Project will be spent to support them. As the first step, providing basic high-tech equipment was sourced to enhance their performance in anti-poaching.

Impact Zone: Better motorbikes for better anti-poaching patrols

Powerful motorbikes are essential for rangers to patrol effectively within harsh mountainous areas. Nevertheless, many of them are working for years within the leopard areas, sometimes up to 15 years. Inappropriate maintenance using fake parts is the main reason for poor performance of the rangers' motorbikes, resulting in regular failures and crashes. As a result, anti-poaching patrols decreased which put the leopards and their prey at more risk of poaching. We have found a solution, thanks to the generous supports from our donors, an annual motorbike fixing program has been organized for the leopard areas' rangers. Therefore, in 2016, Tandoureh National Park received 1400 GBP from the Project Future4Leopards to fix a total of seven motorbikes functioning in the Park. All motorbikes were restored using original Yamaha accessories and a complete engine check-up was carried out for each motorbike. Afterwards, the rangers were able to increase their anti-poaching effort to control poachers aiming for leopards and their prey in Tandoureh National Park.

Testimonial: Abolfazl Shabani (Chief ranger commander, Razavi Khorasan Department of Environment)

Engagement of local rangers in research and monitoring activities supplemented by improving anti-poaching infrastructures, such as motorbikes and access trails, all managed by Project Future4Leopards have resulted in more anti-poaching patrols by motivated rangers in Tandoureh National Park.



Success Zone: Making a new powerful motorbike for rangers

The majority of Iranian rangers ride weak trail motorbikes in contrast to their poacher counterparts who usually reach far into the reserves on powerful motorbikes. Weak motorbikes normally have higher maintenance costs and need more experienced riders due to difficulty to keep the moving motorbikes balanced in narrow mountainous trails. Our local partner in Bafq Department of Environment has found a better way: making a new motorbike out of 2-3 old broken Yamaha DT 175 motorbikes and an original new Yamaha added to make a new powerful motorbike for rough terrains. The first motorbike, made out of three old motorbikes, was supported by the Project, now used by one of the local rangers.

Impact Zone: Trails for trekking rangers

There are traditional trails within Tandoureh, some dating back two centuries and used by rangers to patrol the National Park. Some of them have been abandoned for years, making some remote areas difficult access for rangers whose duty is to monitor large areas. Sadly, some of these remote areas have created a haven for poachers, because they know that there is very low chance of encountering a ranger. In 2016, we suggested an innovative trail for rangers in Sarigol National Park, to control both poachers and possible fire. Equally important, we learned that there is haven for poachers in Tandoureh, and of course the leopards, based on numerous images of the leopards. Therefore, local workers were hired to construct a trail for 4 kilometer penetrating the National Park, on foot or motorbike. Access trails are carefully placed so they do not provide any extra accessibility to poachers, for example they are regularly started from a ranger post, so full control is expected over any plausible entry. For 2017, we are planning a big online event to raise money for constructing a trail on the periphery of the National Park, with the purposes of better accessibility for rangers as well as to improve fire control in high altitudes.

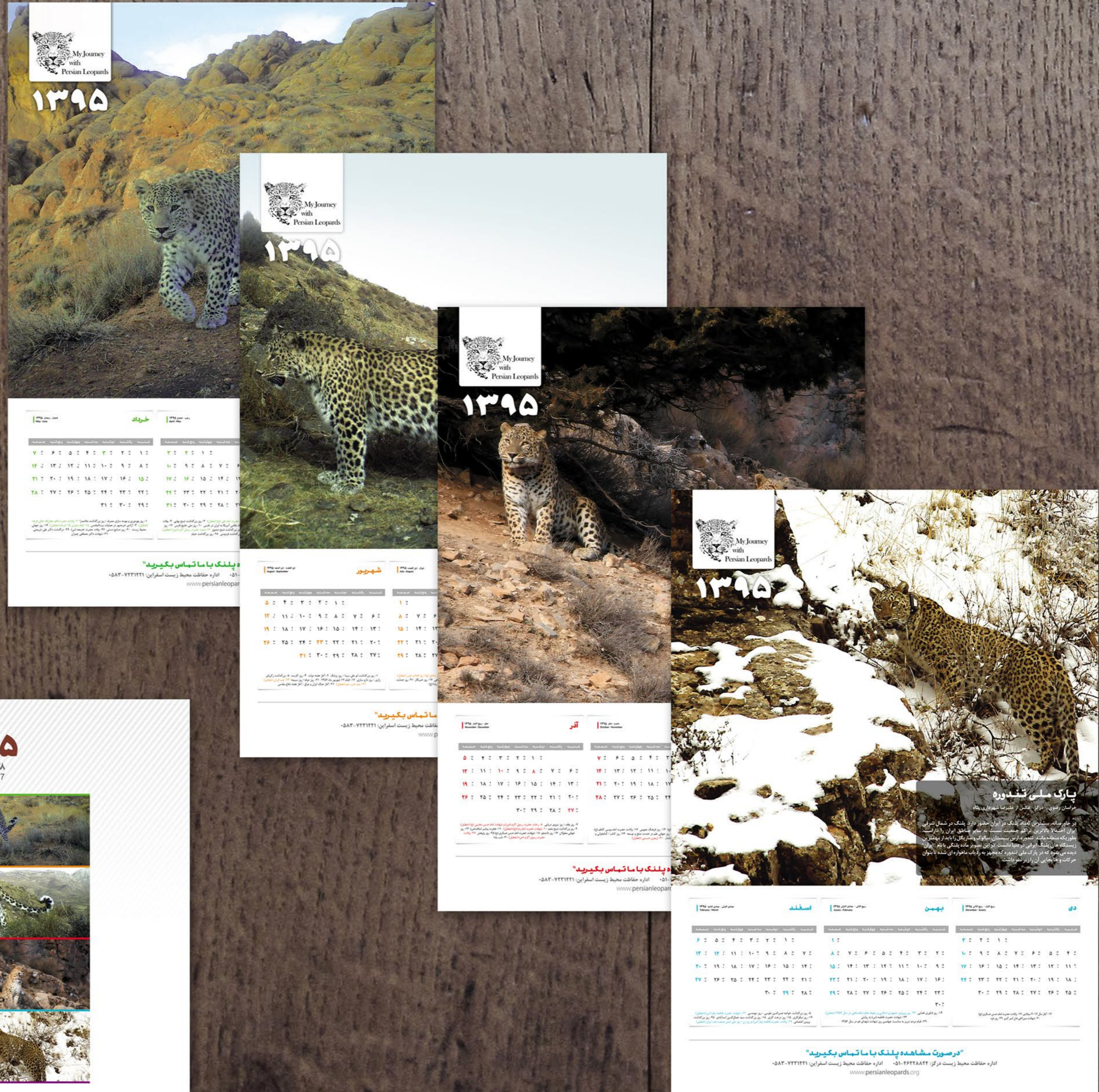


4. Community outreach programs

The majority of leopard reserves are surrounded by rural communities, some of which have schools. Many rural people help their families in livestock husbandry activities, normally as shepherds accompanying the herds during outdoor grazing. The Project Future4Leopards is addressing school kids and students, educating them on the lives of the leopards, and the hope is for them to pass on the knowledge and educate their families, as they are the next generation co-existing with the leopards. Besides educational activities and outreach festivals, the Project is organizing eco-tours to Tandoureh National Park for school kids in spring 2017 to provide them with a unique experience of wildlife, nature camps, and museums. Thus, local people who are not normally allowed to visit the National Parks can learn more about the area.

Impact Zone: Leopard Calendar on Rural Walls

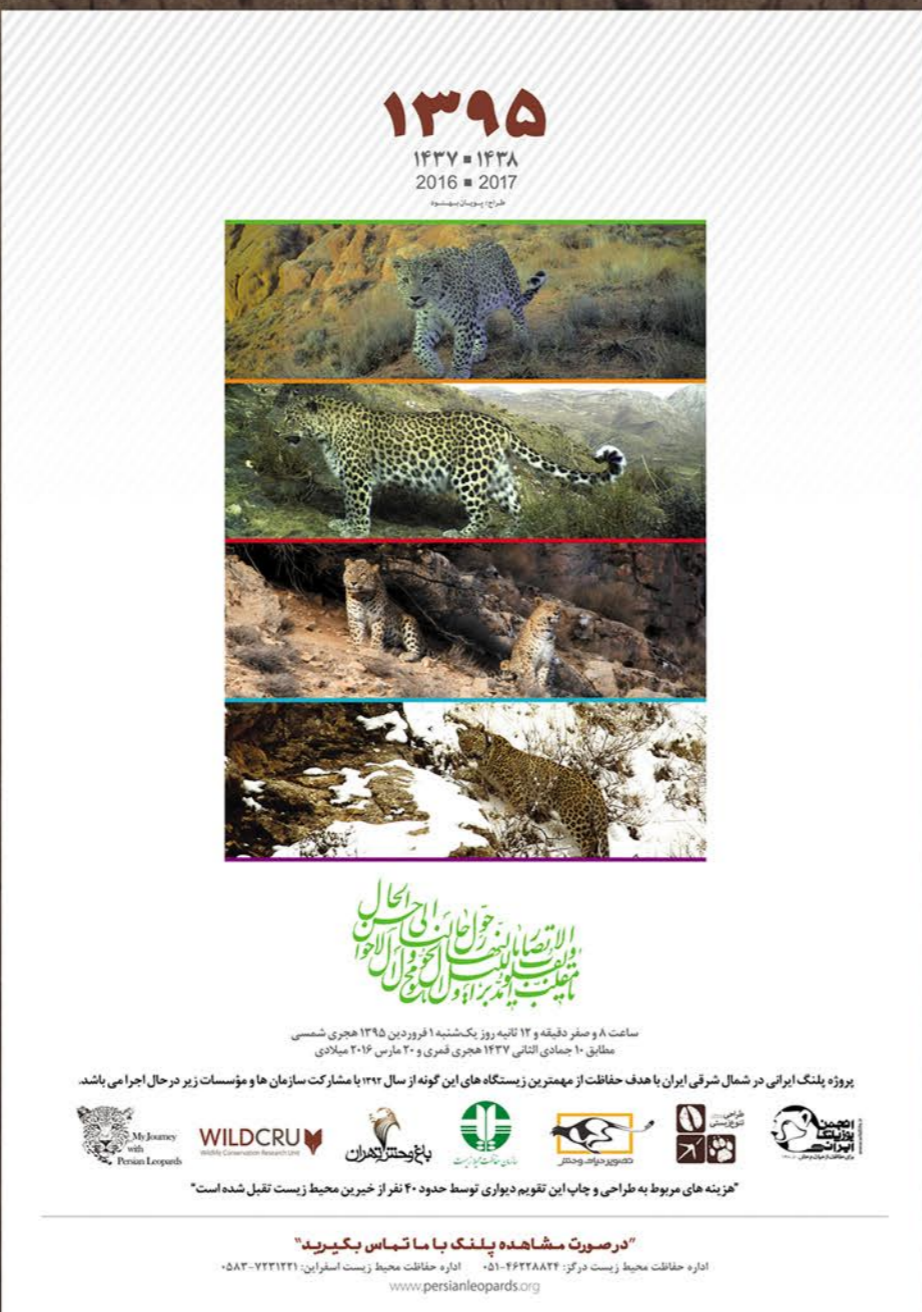
In January 2016, the Project Future4Leopards decided to share its amazing collection of Persian leopard images with hundreds of rural communities around our Project sites. We posted a request for financial support on our facebook. Surprisingly, within just two weeks, nearly 40 generous individual donors granted us their invaluable donations to raise an amount of 1640 \$, enabling us to develop and publish 2200 new Persian year wall calendar (commenced on 21 March 2016). Thanks to our Project partner, Huttell Company, all calendars were safely sent to four Project sites, Tandoureh, Sarigol, Salouk and Ors-Sistan. Over 2000 rural families received the calendar which is expected to increase their awareness about the leopard life and survival.



Staff highlight
Reyhaneh Rouhi
 Education is crucial to protect nature, but sometimes the solution is beyond just sharing information and passion. This is when enterprise and marketing will come to the forefront, through Reyhaneh. She recently joined the Project and is currently working with local partners in Tandoureh to find achievable sustainable plans for marketing conservation products (excluding trophy hunting).



Staff highlight
Mina Aghvami
 With a background of many years working as a conservation educator, Mina joined the Project in spring 2016 to develop community-based educational materials. She led development of innovative training materials for communities sharing their lands with leopards.



Highlight Zone: Let's get to know the leopards

In fall 2016, more than one third of school kids within nine communities around Tandoureh National Park were educated about the leopards and their conservation needs. Implemented in partnership with local Department of Environment and Bureau of Education, more than 180 school kids 11-13 years attended two series of educational classes specifically developed by the Project Future4Leopards. Located on the border with Turkmenistan, Tandoureh has hosted a satellite collaring project since 2014. So far, most of the collared leopards occasionally wander into rural areas around the National Park, but very rarely depredated on livestock. Although conflict with local communities seems to be a minor challenge for leopard conservation in this area, roaming among villages, probably in search for dispersal routes or new resources, may bring the leopards into direct encounters with local people. There have been several cases in which frightened people have attempted to kill the leopards, because a wandering leopard can be perceived as a dangerous animal by non-educated people. This is why we established a comprehensive education and outreach program, to cover various social groups, starting with school children. Villages were chosen based on leopard patrolling areas derived from satellite collar data. In the coming winter, another 9 villages will host outreach programs, to reach a total of 18 educated villages around Tandoureh and even on borderland. Then, in spring 2017, school kids are invited to come along on eco-trips to visit Tandoureh National Park to obtain first-hand experience of the natural wilderness nearby.

Stay tuned: Operation Leopard

Since 2014, Wildlife Picture Institute (WPI), an award winning Iranian film production company who has produced fascinating documentaries about Iranian wildlife, is filming the Project's activities in Tandoureh. Co-directed by WPI's Nima Asgari, the film covers major activities undertaken by the Project crew to increase public awareness about leopard and its habitat. The film, named Operation Leopard, is still ongoing in the area and is expected to be aired in 2018.



Staff highlight
Alireza Shahrhiri

It is difficult to find someone more passionate of animals than Alireza Shahrhiri, whose passion has led him to educate local students across a wide variety of conservation projects in Iran, including Project Future4Leopards. He has been coordinating our outreach programs in 2016 across several communities around Tandoureh. When Alireza is speaking at local schools, transferring his love of the animals is his main focus.



Staff highlight
Atieh Taktehrani

A very lucky person to see leopards in the wild, she has sighted a leopard every time she visits Tandoureh. Atieh is working on different approaches useful to implement community outreach programs while she serves as a conservation educator in local schools around Tandoureh.



Staff highlight
Nima Asgari

While he has not been hired by the Project, he has been a key member of the Project crew for the past three years. A cameraman and documentary director working at the Project's partner Wildlife Picture Institute, he has spent dozens of days in Tandoureh, filming the Project's activities. He was lucky to film the leopards several times during 2016, which will be later used for the documentary he is co-directing with Fathollah Amiri, the renowned award-winning Iranian documentary producer, to be aired in 2018.



5. Hunters and poachers

Hunting in Iran is illegal and a serious problem for many reserves in Iran, predominantly organized by local hunters. Without necessary licenses issued by Iran Department of Environment, which is usually issued to trophy hunters (subject to cancellation sometimes based on annual prey counts), any rifles carried within any reserve is considered to be for hunting (or poaching) purposes.

As part of the Project, hunters are approached, and as expected they are in severe conflict with local rangers. In order to help with the existing discontent and disagreements between hunters and local rangers, the Project Future4Leopards has been organizing events for hunters and rangers to bring all into direct talks and discussions.

In the Project, we believe that besides general solutions, each individual hunter needs specific resolution and incentives. Therefore, we plan to support several regular hunters to address their personal life requirements such as provision of insurance coverage or scholarship for their children. They need to stay committed by avoiding hunting as long as they receive these services.

In 2016, we spent time to approach local hunters and poachers within the Project's sites. In Dohezar-Sehezar, continuous negotiations are ongoing to gain local hunters' trust. As a result, a local Telegram group was established for them to share concerns and interests. In 2017, local hunters will become more organized to hold educational seminars for hunters, to assist in camera trapping surveys and to develop a collaborative management plan for the area. In Tandoureh, at the same time, six key poachers were approached to find basic understanding about the level of poaching pressure on the wildlife. Some of them were hired by the Project at some stages for biological surveys (outside the National Park). We are planning for Tandoureh's first educational seminar for local hunters in 2017.

Impact Zone: Local hunters call for stopping deer hunting

Rutting season is when red deer are more focused on finding females to mate with rather than avoiding other threats. Local hunters, using antlers, imitate a dominant males' roar to attract them closer for a clear shot. Working closely with local hunters in Dohezar-Sehezar and creating a No Hunting Area within one of the Project sites. In fall 2016, a group of local hunters joined together to stop deer hunting during September-October rutting season. Facilitated by the Project's Coordinator Peyman Moghadas, the hunters developed a number of awareness banners and set them at entrances of key villages around the deer area. Funded partially by the Project Future4Leopards, the banners were visible by all locals passing by and showed a strong support from the community to halt deer hunting. Currently, several hundreds of red deer are believed to live across the entire Hyrcanian forests of northern Iran.

Highlight Zone: Educational seminar for hunters in Ors-Sistan Protected Area

Although the Project Future4Leopards is conducting cutting-edge scientific work on the ground, the Project team and experts around the world are fully aware that science solely cannot save the leopard and associated wildlife. Intensive action is essential if long-term resolutions are sought. The Project Future4Leopards is working closely with local hunters (and poachers), and people who are illegally harvesting leopard prey such as urial and ibex. Many meetings have been held so far.

On 27 May 2016, Kalat Bureau of Department of Environment organized the first gathering of local hunters in the city's main hall. Kalat is located near Ors-Sistan Protected Area, a main reserve for wildlife near Turkmenistan border. With generous support from donors, the Project has been able to fund this gathering. Additional resources are sought to organize the next gathering in Tandoureh, aiming at bringing hunters and rangers face to face to share their concerns and to discuss any plausible partnership. Also, to raise local hunters' awareness about the leopard, its prey and nature conservation.

At the gathering, useful information such as governmental regulation, impact of hunting on wildlife, leopard and its ecology, religious aspects of conservation, and more were presented to the hunters present in the meeting. Following the meeting, hunters and rangers were invited to have lunch together; a chance to get to know each other, and a stunning image of the area's wildlife was presented to each hunter as a gift.

A recent prey survey revealed the existence of some 700 wild ungulates in Ors-Sistan Protected Area as well as 10 to 15 leopards in an area of 1000 square kilometers, revealing potential high poaching pressure. Almost 110 local hunters were invited, 60 of them attended the gathering, observed several presentations and discussions about the importance of nature conservation.

The Protected Area is extremely understaffed regarding number of rangers, but they have been successful in stopping 26 poaching cases during 2015. Therefore, the Project decided to extend its support by engaging local hunters for better poaching control along the vast range of leopard mountainous landscapes along the border with Turkmenistan.

Impact Zone: Income generation for an unemployed poacher

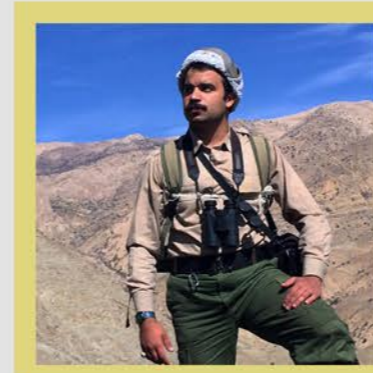
A well-known poacher around Tandoureh who used to shoot leopard within the National Park for the past decade was approached in 2016 to build trust. At the same time, Heydar Shokati from Huttell Company, a local philanthropist based in Tehran was also kindly requested to find an alternative job (in case poaching could be considered as a job for him). Finally, it was agreed that he would be hired in H.Shokati's company so he can be covered by social insurance until he retires. At the same time, as a small-scale honey producer, the Project facilitated honey selling in Tehran, at a higher price than what is sold locally.

Education is essential to decrease poaching pressure on wildlife, but if poachers shoot the animals for the bush meat trade and income generation, raising awareness alone is not enough. In Project Future4Leopards, we seek out individual solutions for poachers to reduce their impact on wildlife; any poacher taken out of the National Park means at least one more leopard with enough prey, according to our poaching and predation rate estimations. Although income alternatives are crucial in halting poaching crisis, friendship is definitely an essential first step.

Testimonial: Hamid Sadeghi (Ex-head of Kalat Bureau of Department of Environment)

When I was assigned as head of Kalat Bureau of Department of Environment in 2015, I was shocked by the number of poachers as well as the extremely low level of environmental awareness among communities. I focused on two key priorities, i.e. raising awareness as well as engaging local poachers.

Thanks to special support from Razavi Khorasan Department of Environment as well as Project Future4Leopards, we distributed over 200 leopard wall calendars among local poachers and informants, followed by the first educational seminar specifically organized for local poachers. Accordingly, our local informant network grew and social support for nature conservation was welcomed, both among people as well as authorities. Therefore, the number of illegal environmental activities (such as poaching, live capturing, logging, etc.), 74 cases during 2015 preceding to educational activities reduced to fewer than half. We are extremely grateful to both of our partners, particularly the Project Future4Leopards, for supporting all poacher-related activities over the past year.



Staff highlight Peyman Moghadas

As the Project Coordinator in Dohezar-Sehezar No Hunting Area, Peyman has been working closely with hunting and herding communities across a wide range of altitudes, from 1000 to just below 4000 m.a.s.l. His passion to enhance current protection performance in such a human-dominated area is incredible, pushing him to spend more time in the mountains rather than at home.



6. Veterinary services

Project Future4Leopards has conducted comprehensive surveys to understand patterns of co-existence between people and predators. Our baseline surveys indicate that local people lose more domestic animals due to disease than to predators. Accordingly, we need to assess prevalence of infectious diseases among both local livestock and herd dogs existing around the National Park, paying attention to FMD and PPR for livestock and Canine Distemper for dogs. On the basis of the sampling and lab investigations, treatment and vaccination regimes are proposed and implemented in close partnership with local stakeholders.

Equally important, we have learned that absence of proper veterinary services due to lack of necessary expertise is a main problem among local vets which have caused a high rate of financial loss for local people due to misidentification and mistreatment of livestock. Accordingly, parallel to disease assessment, we provide training for local vets for qualified prevention, diagnosis, reporting and treatment of infectious and contagious diseases among local livestock which could be problematic for wildlife.

Also, we address local shepherds through provision of training courses to enable them for better prevention and diagnosis of important diseases common among local livestock. The Project expects this to increase their health status which can cause problems not only for the livestock, but for people's livelihood as well.

Highlight Zone: Leopards may fall to dogs' diseases?

Big cats, such as tigers and lions are susceptible to contagious diseases carried by dogs, particularly Canine Distemper Virus (CDV) which is known to kill large numbers in Africa and Russia. However, it has not been found in wild leopards, only in captivity. In northeastern Iran, leopards kill dogs for food and recently local dogs show symptoms of CDV. Therefore, there is a potential for an elusive threat to affect the leopard population.

Therefore, more than 80 dogs belonging to nine major communities around Tandoureh National Park were sampled during winter 2015-2016 to understand prevalence of the CDV among the local population, a major source of prey for part of Tandoureh's leopard population. ELISA kits were bought to test blood samples by a veterinary student, hired to carryout lab investigation in University of Tehran's Faculty of Veterinary Medicine. Additionally, blood samples taken from 8 different leopards from the region were shared for analysis. The results will be published soon, but preliminary findings show high exposure of the dogs to CDV, while no leopard was diagnosed as infected.



7. Conflict resolution

As a serious and escalating problem, conflict between communities and large carnivores has resulted in removal of many animals as well as economic loss for people. Fortunately, in 2016, the Iran Department of Environment in partnership with Ma Insurance Company launched "Persian Leopard Insurance Program" to cover compensation costs of depredation by leopards.

However, regardless of performance and sustainability of a state-run compensation program, there are additional challenges for management of large carnivore conflicts in Iran. Lack of necessary training among conservation practitioners, including experts and rangers have resulted in improper management when a serious conflict occurs, particularly with the case of the leopard. During 2000s, some 10 leopards have been killed by rangers or military soldiers after approaching communities, such as entering a pen or settlement. In many cases, the rangers had never received enough training for such scenarios.

Accordingly, a rescue team has been established for quick response to urgent occurrences of human-leopard conflict throughout the country. The rescue team's goals are to provide expertise for effective analysis dealing with the animal and human and to assist in identification and follow-up actions. Furthermore, in case of urgent actions, we provide technical support to Iran Department of Environment for safe capture and translocation of problem leopards, after making sure that the animal has no chance to persist within its current habitat.

In 2016, the Project crew provided expertise to local conservation practitioners in seven conflict cases and visited the affected areas four times, including Kiasar National Park, Paband National Park, Dohezar-Sehezar No Hunting Area and Dorbadam Protected Area. Technical support mainly included proper identification of the animal, recording and monitoring, as well as management actions when conflict is serious.

Equally important, upon a request from Iran Department of Environment, we are developing a national Conflict Resolution Manual, the first comprehensive guideline for conservation practitioners and other stakeholders for effective management and prevention of conflict with large carnivores. The Manual will be shared with local experts and proper training will be provided for improved management of somewhat regular conflict cases in many of the leopard reserves.



The adult male leopard travelled from Tandoureh to neighboring Dorbadam and killed a dog (Photo: B.Ghavidel)

Impact Zone: Conflict scene inspected to prevent leopard persecution near Turkmenistan border

A herd dog carcass, reportedly killed by a leopard was visited in Dorbadam Protected Area by the Project team upon a request from our national partner, Razavi Khorasan Department of Environment.

Located at a local fisheries facility, the dog carcass was visited a few consecutive nights by a leopard which was perceived to be a mature adult. However, images obtained by local nature fans revealed a remarkable journey, from Tandoureh National Park to the depredation site, some 30 km aerial distance. The animal, a very old male was previously photographed in Tandoureh by our camera traps in July 2015 and was detected again based on his individually unique rosette patterns. In contrary to local requests to capture and translocate the animal, we decided that the animal cannot be subjected to intervention, because it has committed depredation only once. Presence of the dog carcass could keep the leopard around for longer which might result in poaching the animal by local illegal hunters.

The Project experts recommended that the dog carcass be removed from the fisheries facility to prevent the leopard from returning to this place. Additionally, intensive monitoring is crucial to obtain any possible report of conflict from the area, so in case the animal would turn into a problem animal, intervention measures could be decided. Fortunately, after removing the carcass, the leopard took the kill to a hide place and then left there. After two months, no similar record was received by the local rangers.



8. Training and capacity development

We actively share our findings and expertise with other conservation practitioners, particularly rangers and experts. Additionally important, university students and scholars are also joining our capacity development programs. We expect that increased capacity would help define conservation priorities for leopard conservation based on evidence and science.

In 2016, we organized two seminars for Iranian scholars describing latest findings of the collaring project in Tandoureh, each attended by some 65 people (both in Tehran). Also, a lecture was given to some 40 graduate students in Science and Research University of Tehran. Importantly, two regional workshops were held in northeastern Iran, for local conservation practitioners as well as rangers to share the Project findings, in Mashad (April 2016) and Tandoureh (October).

Impact Zone: Do not shoot the leopards! We can coexist.

In September 2016, we were successful to convince the Iran Department of Environment to host a national "Human-Large Carnivores Conflict Mitigation Workshop". Currently, various methods have been developed to prevent and manage conflict with large carnivores, but lack of proper training for local conservation practitioners have obscured safe and sustainable applications of these methods. Most carnivores engaged in conflict have suffered from unnecessary stress when they have been rescued and translocated. Additionally, many conflict cases have resulted in compensation but with a long delay, without improving preventive measures.

The Workshop was attended by 70 regional governmental experts in Kordan Zoo (near Tehran) for two days, we covered a wide range of topics dealing with prevention and management of conflict with three large carnivores, i.e. Persian leopard, brown bear and grey wolf. Fortunately, the workshop courses were found to be useful and applicable, according to a post-workshop opinion survey.

Staff highlight Behrang Ekrami



Ultra friendly, and a reliable Vet who joined the Project in August 2016. Behrang, based in Sari, northern Iran, has been engaged in various human-large carnivore conflict cases and co-authored with the Project in developing an emergency veterinary guide for non-vets. He also joined the Project on its last capturing operation in 2016 to collar a leopard in Tandoureh, where he confidently anesthetized an adult male.



9. Policy and partnership

While working actively on the ground, particular attention is paid to organizational partnership development, policy making and managers' capacity building. The Project's findings and progress are regularly shared with key stakeholders and decision makers in the government, from local to national level in order to leverage support for leopard protection across the Project's sites and even beyond. Regular meetings and debates are organized with key decision makers so they can learn about the Project progress and outcomes.

In 2016, we had at least two planning meetings for each Project's site with our key stakeholders, Iran Department of Environment at local level. In April and December 2016, activities were planned for the year with Razavi Khorasan Department of Environment, following multiple debate groups with local rangers in Tandoureh and Ors-Sistan.

Similarly, a meeting was organized in October 2016 in Sari with key authorities of Mazandaran Department of Environment to develop a baseline plan for the Project in Dohezar-Sehezar No Hunting Area. As a follow-up, a full-day planning workshop was organized in November 2016 for all reserve staff in Tonekabon to develop a collaborative management plan for free areas located between state-managed reserves for the leopard and its prey.

Lastly, a meeting was held in the Project's other site, i.e. Bafq to discuss how the Project can contribute to current protection works led by Yazd Department of Environment in central Iran. We believe that any management developed without active engagement of local rangers and conservation practitioners is unlikely to succeed, so regular planning with them as key stakeholders is a priority for the Project.

Nevertheless, conservation is not only in the hands of practitioners, but engagement of governmental authorities and local decision-makers is essential. In May and November 2016, we attended two planning meetings with local political leaders, philanthropists and entrepreneurs from Dargaz (township near Tandoureh) to integrate conservation concerns in their development plans for the region.

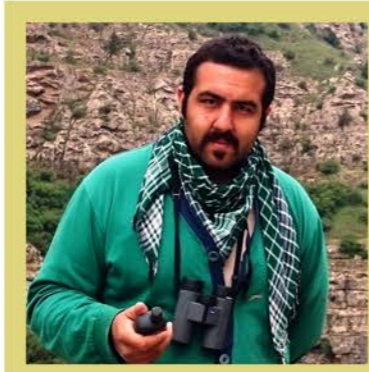
Impact Zone: Trans-boundary movement calls for trans-boundary partnership

Two collared male leopards crossed the Iran-Turkmenistan border several times. Borzou, the old male who was a frequent visitor to boundary villages for their sheep and dogs, wandered hundreds of meter into the neighboring Turkmenistan, but finally he returned to Tandoureh National Park, some 20 km within the Iranian territory. In contrast, Kaveh, a young male, which was collared in early September 2015, left Iran in late February 2016 and never returned to Iran. His ranging patterns indicated that he is killing some animals to feed along the forbidden borderland, and one of them was found to be a wild boar.

Kaveh lost his collar after six months within Turkmenistan. Nearly two kilometers within the military zone of borderland, the collar sent mortality alarms, indicating it has been immobile for at least one day. The Project crew worked closely with local authorities to return the collar. While most of the data has been received through the satellite, still part of the data stored on board needs to be downloaded directly from the collar.

Meet the stakeholders: Conservation planning for Tandoureh

In order to share progress reports as well as to develop a participatory action plan, a half-day workshop was organized in Razavi Khorasan Department of Environment in Mashhad which manages Tandoureh National Park and its adjacent reserves. Attended by some 20 local and provincial experts and managers at different levels of decision-making, the Project briefed the attendees about the Project's past activities and preliminary findings, particularly from telemetry studies. Afterwards, the Project presented a draft action plan which was developed based on preceding meetings and discussion with Tandoureh's rangers on a wide range of objectives, including science and monitoring, law enforcement, outreach and community engagement, veterinary services as well as capacity building. Experts provided their insights and comments on every aspect of the action plan and the final participatory action plan was endorsed by the managing director of the DoE, to be implemented for the next five years in Tandoureh as well as neighboring areas.



Staff highlight
Kaveh Hobeali

The Project has a housekeeper, making sure everything is where it should be. As the Project Manager, Kaveh Hobeali is doing his best to deliver the Project results when they are expected. His attempts are extremely useful to keep all Project aspects interrelated and to resolve various challenges. This is why one of the Project's collared leopards was named after him, Kaveh.



Staff highlight
Fatemeh Hosseini-Zavarei

It is boring not to look after the leopards in the wild, but keeping track of all financial records for Project staffs when they return from a successful field trip. As Project accountant, Fatemeh makes sure that everything spent is reasonable, properly recorded and is not irrelevant to our commitment to the donors. Due to her dedicated work on our finances, we have been able to present a clear financial report, likely never done before in Iran.



10. Tales for Project friends

In 2016, we were lucky to host two donors in Tandoureh. Ali Zolfaghari (upper photo), our long standing friend based in the Netherlands kindly donated 17 winter jackets to rangers in Bafq. He visited us in August for a week to have a quick tour around a number of well-known leopard sites.

Saman Golriz (lower photo), a well-known Iranian chef who has been teaching on national TV for the past 21 years, visited the Project in late October. Upon arriving in the park, he was more than lucky to encounter an adult leopard, known as Borna who once carried a GPS collar. The leopard, seen with a spotlight at 10 PM, calmly walked away from the vehicle and crouched on nearby outcrops for nearly one hour, giving a full glimpse of a rare Persian leopard in the wild.

With help from our rangers, he also had a long drive through the park and observed multiple species, such as urial sheep, ibex, lammergeyer, griffon vulture, wild cat, stone marten and common fox, making this short trip very productive and memorable. Following his field visit, a meeting was arranged with Dargaz town's governor to discuss how he can contribute to leopard conservation in the area, with very promising decisions for the future. Saman was also lucky to attend thanksgiving ceremony for the rangers, to acknowledge their contribution to the Project during the past three years. Upon return, he has decided to remain committed to leopard conservation in Tandoureh, an area which is unbelievably important for safeguarding the leopards across Kopet Dag region along Iran-Turkmenistan borderland.



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11. Publications

The Project Future4Leopards has authored and co-authored a number of peer-reviewed academic articles. These contributions are vital to improving the strategic management of the ecosystem in which we work. Scientific papers also assist other researchers in their efforts on a global level. In 2016, we published our findings on a number of carnivores, such as Persian leopard, Asiatic cheetah, etc.

● **Socio-economic consequences of cattle predation by the Endangered Persian leopard in a Caucasian conflict hotspot, northern Iran (Journal Oryx)**



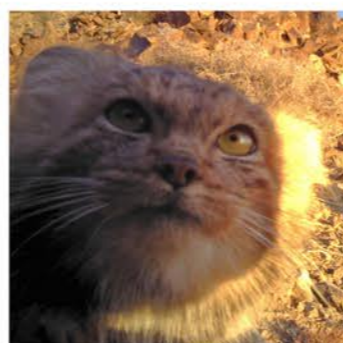
● **Leveraging trans-boundary conservation partnerships: Persistence of Persian leopard in the Iranian Caucasus (Journal Biological Conservation)**



● **Leopard status, distribution, and the research efforts across its range (Journal PeerJ)**



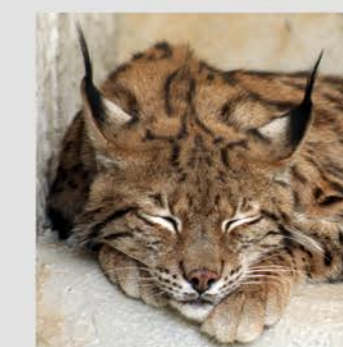
● **Baseline information and status assessment of the Pallas's cat in Iran (Cat News Special Issue Iran)**



● **The caracal in Iran - current state of knowledge and priorities for conservation (Cat News Special Issue Iran)**



● **The largest lesser cat in Iran - current status of the Eurasian lynx (Cat News Special Issue Iran)**



● **A review of ecology and conservation status of Asiatic cheetah in Iran (Cat News Special Issue Iran)**



● **Wandering the barren deserts of Iran: Illuminating high mobility of the Asiatic cheetah with sparse data (Journal of Arid Environments)**



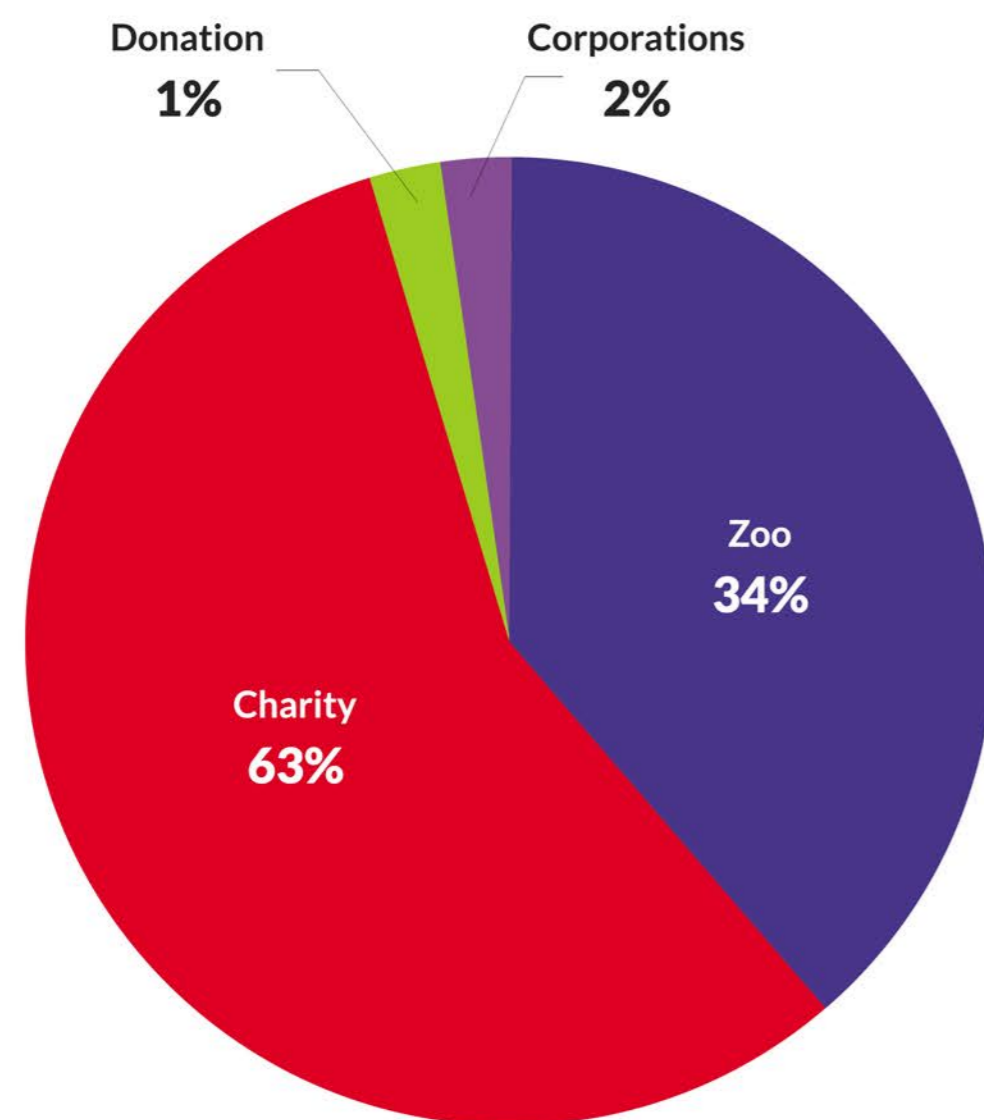
● **The global decline of cheetah *Acinonyx jubatus* and what it means for conservation (PNAS)**



Financial review

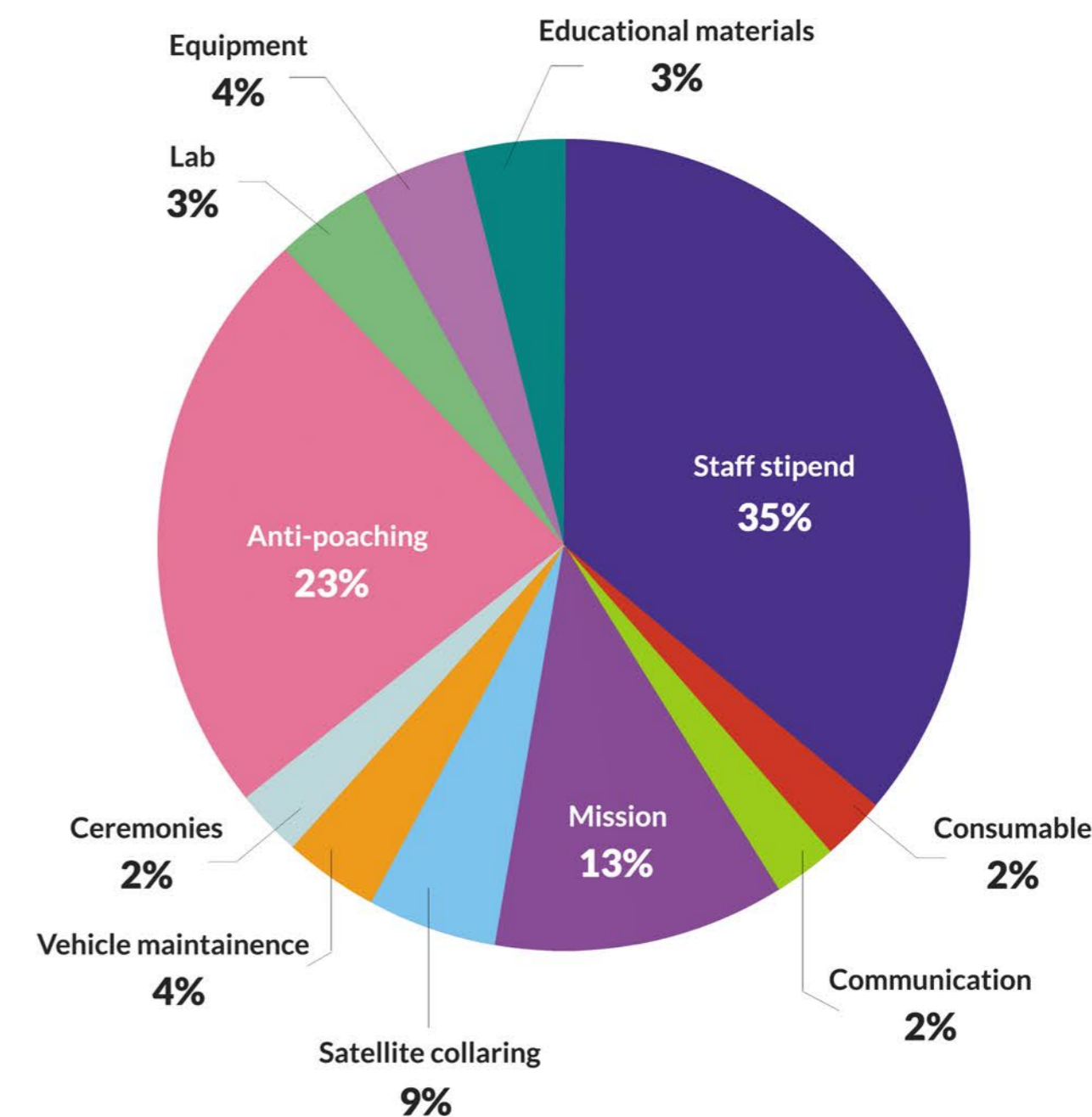


2016 - WHERE OUR INCOME CAME FROM



Income	GBP
Zoo	13962.33
Charity	25957.31
Donation	562.5
Corporations	583.3
Total	41065.473

2016 - WHAT OUR MONEY WAS SPENT ON



Expenses	GBP
Staff stipend	13785.4
Consumable	752.6
Communication	662.2
Mission	5010.5
Satellite collaring	3559.7
Vehicle maintenance	1779.2
Ceremonies	807.4
Anti-poaching	9175.4
Lab	1351.6
Equipment	1580.8
Educational materials	1145.8
Total	39610.7

PARTNERS & DONORS

Partners

The Project Future4Leopards is an initiative shaped by a group of Iranian senior biologists and conservationists. Based in **Wildlife Conservation Research Unit (WildCRU)**, as part of University of Oxford's Department of Zoology, it works closely with Iran Department of Environment, from national to local levels. **Panthera**, the international NGO devoted to save the cats, has provided majority of necessary equipment. Faculty of Natural Resources of **University of Tehran** also assists the Project for laboratory genetic investigation.

Furthermore, **Wildlife Picture Institute (WPI)**, an Iranian documentary corporation is partnering with the Project Future4Leopards to produce wildlife documentaries. **Tehran's Eram Zoo** also is contributing to the Project through provision of veterinary services. **Biodiversity Design** and **Infogram**, two Iranian private foundations are also assisting the Project in graphic design and website development.

Donors

The Project Future4Leopards could not do its work without the invaluable support of many individuals and organizations around the globe. Below, we recognize our key donors, but there are also many other people who have contributed to our work, either through personal donations, or investing their time and energy to help the Project succeed. We would like to take this opportunity to extend a huge thank you to all – you really are making an incredibly important difference to both people and leopards in the Project landscapes.

Major donors (2016)

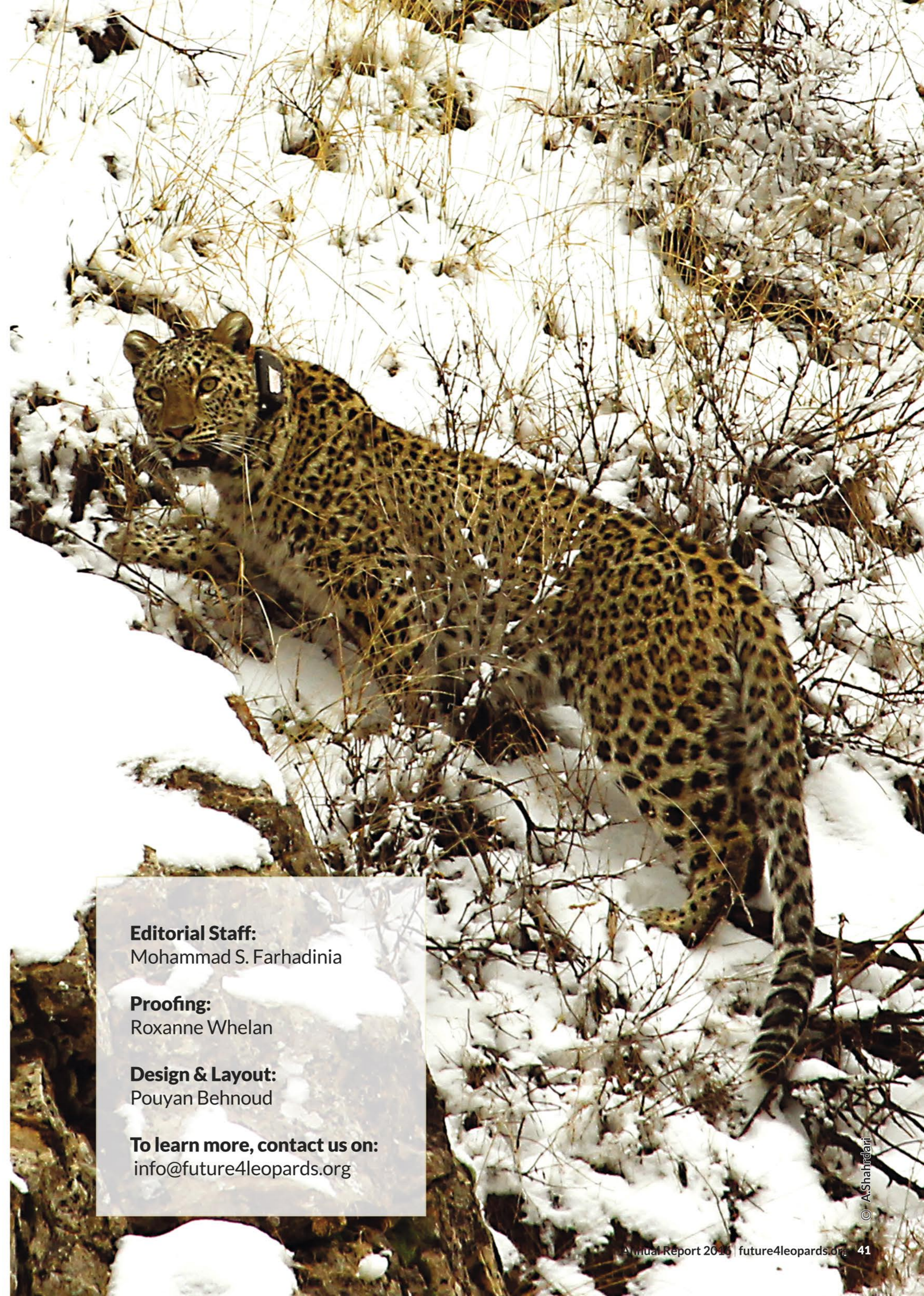
- Panthera
- People's Trust for Endangered Species (PTES)
- Zoologische Gesellschaft für Arten- & Populationschutz e.V.
- Rufford Foundation
- Columbus Zoo, Ohio
- Quagga Conservation Fund

Minor donors (2016)

- IdeaWild
- Association Francaise des Parcs Zoologiques
- Le Parc des Felins
- Huttell Compnay

Individual donors (2016)

- Soudabeh Majidi
- Mohammad Goudarzi
- Behfar Ardehali
- Ashkan Rezvani Naraghi
- Vaheed Nezhadali
- Mehdi Gharasoo
- Behfar Ardehali
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Editorial Staff:
Mohammad S. Farhadinia

Proofing:
Roxanne Whelan

Design & Layout:
Pouyan Behnoud

To learn more, contact us on:
info@future4leopards.org