

Marker L, Olson C. 2001. Report on a Mission to I. R. of Iran 15 p.

Keywords: 5IR/Acinonyx jubatus/biosphere reserve/CCF/cheetah/cheetah rescue programme/conservation/endangered species/habitat/survival

Abstract: Cheetah Conservation Fund (CCF) Executive Director Laurie Marker and Science Advisor Cynthia Olson met with government officials and researchers dealing with the Iranian cheetah rescue programme. The six day visit included meetings in Tehran and a field trip to Kharturan Biosphere Reserve in Semnan Province. Goals of the mission were to visit cheetah habitat, assess their suitability for cheetah survival, get familiar with the conservation issues affecting cheetah populations and find out how CCF can best assist I.R. of Iran in saving its endangered cheetah population.

Cheetah Conservation Fund

Report on a Mission to I.R. of Iran

9–15 November 2001

By Laurie Marker

And

Cynthia Olson

15 December 2001

Report on a Mission to I.R. of Iran

9–15 November 2001

By Laurie Marker and Cynthia Olson

>>>>>>>O<<<<<<<<<

Cheetah Conservation Fund Executive Director Laurie Marker and Science Advisor Cynthia Olson travelled to I.R. of Iran to meet with government officials and researchers dealing with the Iranian cheetah rescue programme. In addition to extensive meetings in Tehran, they visited one of the four regions where cheetahs are known to live. While in Iran, CCF representatives were hosted by the Indian Ambassador to I.R. of Iran, an active supporter of CCF activities.

>>>>>>>O<<<<<<<<<

Background

The last of the Asiatic cheetahs (*Acinonyx jubatus venaticus*) are now found primarily in Iran, with a population estimate of less than 50 individuals. Once ranging from the Red Sea to India, the few remaining Asiatic cheetah are found on the edge of Iran's Kavir Desert, where suitable prey is very scarce. Cheetah Conservation Fund (CCF) along with the World Conservation Union (IUCN) Cat Specialist Group has been encouraging international support to assist this critically endangered population. Cheetah numbers have declined from around 500 animals in the 1970s due to widespread poaching of cheetahs and their prey during the early years of the 1979 revolution. Additionally, habitat degradation due to livestock grazing, have pushed this important predator to the brink of extinction. Historically cheetahs have played a significant role in Iranian culture, trained in ancient times by emperors to hunt gazelles.

CCF's Laurie Marker and Cynthia Olson have been trying to coordinate a research expedition into I.R. of Iran since 1996 when DOE initially invited them to assist with the development of a cheetah research and conservation education community-based programme. Obtaining visas had been the limiting factor.

The Department of Environment (DOE) and United Nations Development Programme (UNDP) Global Environmental Facility (GEF) recently signed a grant entitled, "Conservation of the Asiatic Cheetah, its Natural Habitat and Associated Biota in the I.R. of Iran" (CAC). The purpose of the grant is to secure the conservation of the Asiatic cheetah in the I.R. of Iran and the related complex of rare and endangered wild species and their natural habitats with the support and collaboration of local communities. This is to be achieved through a combination of collaborative management, education and awareness capacity building, and direct action to improve enforcement of laws and regulations.

In September, field researchers George Schaller and Tim O'Brien from New York Bronx Zoo's Wildlife Conservation Society (WCS) spent six weeks in I.R. of Iran conducting baseline studies in three of the four areas where cheetahs are reported. During the WCS visit, trip cameras were placed in the field to begin to

gather data on the species in the regions where cheetahs are found. While we were there a photo from one of the trip cameras was of a cheetah, and one of the field staff saw a wild cheetah about 50 km from where the cheetah was photographed with the trip camera. There are currently six trip cameras in the Naybandan protected area. There are security issues in this area, and neither WCS nor CCF were permitted to travel there.

Subsequent to the WCS visit, Laurie and Cynthia conducted follow-up meetings with the core cheetah interest group that has developed, which included DOE, UNDP, and various individuals and NGO's. From what we have learned over the past several years in communications with many people and from Dr. Schaller's recent observations, immediate conservation actions must be taken in I.R. of Iran as their cheetah population is gravely threatened with extinction.

Acknowledgements

We spent a total of six full days in I.R. of Iran. Three days were spent in Tehran at meetings and presenting a public lecture; three days we were on a field trip to Kharturan Biosphere Reserve in Semnan Province.

This weeklong intensive fact-finding mission could not have been conducted without the help and hospitality of the staffs of DOE and UNDP. We especially thank Anoshirvan Najafi, Deputy Director of DOE, who provided staff and transportation to various meetings and into the field; and Ali Reza Jourabchian, DOE manager for CAC project, who took us into the field and explained the issues in depth with extensive knowledge and compassion. Others who accompanied us and contributed significantly were Behzad Rahgoshai, DOE deputy manager for CAC project, who handled all our logistics and served as translator; Ms. Shirin Abolghassemi, DOE Senior Expert for Habitats and Protected Areas; and Mr. Roshanzamir, DOE Director of Semnan Province and Kharturan Biosphere Reserve.

We also are grateful to Mohammed Farhadinia, Kaveh Hatemi, and Morteza Eslami—founders of the recently registered NGO, Iranian Cheetah Society—who greeted us, treated us to Iranian cuisine, and saw us off at the airport. Others who made the trip so successful are Mr. Mehdi Kamyab and Mr. Xu at the UNDP office who offered background and funding details. Dr. Taghi Farvar (CEESP/IUCN) suggested ideas and means for implementing the CAC programme. Abdolhamid Amirebrahimi provided valuable insight and advice. Pardisan Park staff gave us a tour of the grounds including Marita, the seven-year-old captive Asiatic cheetah, and hosted a public lecture by Laurie Marker.

Finally, our heartfelt thanks to Ambassador and Mrs. Haer, who shared their home and with us. The Haers have been avid supporters of CCF for many years. They continue to be very generous with their time, working in I.R. of Iran with participating partners in this important conservation effort on behalf of the cheetah.

Detailed Report

The primary purpose of the mission was to learn all we could about the cheetah and its present situation in I.R. of Iran. The following goals directed our activities—

1. Meet key government officials and conservationists involved with the cheetah conservation project.
2. Visit cheetah habitat to assess the suitability for cheetah survival.
3. Become familiar with the conservation issues affecting cheetah populations.
4. Identify how CCF can best assist I.R. of Iran in saving its endangered cheetah population.

The next four sections contain trip details, which are considered as they relate the goals listed on the previous page. Each section is followed by action items discussed during the visit.

Goal 1 Meet key government officials and conservationists involved with the cheetah recovery project.

We had planned to talk with project representatives in DOE and UNDP, signatories of the GEF grant. We also wanted to talk with individuals and NGOs involved with the cheetah effort to obtain a cross section of information and viewpoints regarding the cheetah and the recovery plan.

MEETINGS WITH DOE

Mr. Najafi, Deputy Director of DOE, and several members of his staff—Mr. Ayatollahi, Director of Wildlife; Mr. Sadeghi of Parks and Regions; Shirin Abolghassemi, Senior Expert for Habitats and Protected Areas; Ali Jourabchian, manager of the CAC project; Behzad Rahgoshai, deputy manager of the CAC project; Bahareh Shahriari, secretary to Mr. Nafaji—met with CCF on a number of occasions.

In an overview of the DOE, Mr. Najafi explained that the Supreme Council of Environment (comprised of the President of I.R. of Iran and six other officials) approved some eight million hectares of Iranian land as protected areas. Over the last six years, through the support of the President, DOE has been able to increase the amount of protected areas to nine and a half million hectares, which include forests and wetlands, and efforts are underway to increase the number to 50. DOE has worked tirelessly over the past few years in recovery plans. They developed a scheme to save the nearly extinct yellow deer (fallow deer), just one among other conservation plans to protect this country's rich biodiversity.

According to DOE, the following critical habitat changes are key to improving the present situation of the cheetah:

- Increase the capacity of habitats
- Move livestock out of protected areas

DOE is committed to the continued protection of threatened species and sees the cheetah project as a window of opportunity to save cheetah habitat and prey. Earlier this year decisions were taken that demonstrate this position. In October the fine for killing a cheetah was increased from US\$2,500 to US\$12,500. Hunting this year was prohibited in 24 of the 28 provinces because the wild sheep and antelope populations also have come under pressure. A green faction in Parliament has brought together 80 lawyers who are preparing a strategy to support environmental education and national reserves. For instance, if a person hunts illegally with a gun, the offender can never again obtain a gun permit.

DOE is currently developing a biotechnology lab to record genetics of predator and prey species in I.R. of Iran. They started purchasing equipment and developing facilities one year ago, working with their experts in genetics. DOE is developing a GIS lab and has developed new maps of protected areas. World Conservation Society (WCS) has assisted with some of the mapping.

DOE is interested in captive breeding and would welcome national and international support to develop such a programme. Mr. Najafi spoke of cheetahs being used for hunting and as pets over 100 years ago. Today,

keepers would need training. Development of a captive-breeding programme in I.R. of Iran would require capacity building and training in this area. Presently Marita is the only captive cheetah the government has. Laurie urged DOE to take advantage of Marita to produce cubs.

DOE sees a great benefit to using the vast experience of international organisations, and welcomes all international organisations and institutions to assist in the CAC.

Action Items for CCF

CCF agreed to provide the following to DOE:

1. Overview drawings of CCF facilities, including holding pens and capture pens
2. Capture cages diagrams
3. Copy of plans for catch cage and transport box
4. Husbandry manual
5. Names of IUCN SSC CBSG people, Cat Specialist Group Chairs
6. Invitation for A. Jourabchian to join the Cat Specialist Group
7. Contact information for Luke Hunter to look at a meta-population biology plan with such a fragmented population (50 cats dispersed in 4 areas).
8. Contact information for canid, wolf, and hyena specialist groups – Gus Mills
9. Email to Ullas Karanth about trip cameras – how many (density for the desert).
10. Florida Panther Action Plan and other relevant recovery plans, i.e., ferret, condor
11. Contact info for Dr. Richard Jeo, CCF's Ecological Arm, who has information on rapid assessment process and the use of trip cameras.
12. Contact information for Dr. Stephen O'Brien re Bio-Technology Lab
13. Contact information for game capture people from South Africa, who have the best techniques to translocate wildlife.
14. Copy of the Game Capture book.
15. Copy the videotape from A. Jourabchian and return the original.
16. Copy of the Rangeland tape in PAL format.
17. Copy of the Field Museum Teachers Guide.

Actions Items for DOE

DOE will investigate the following and provide information to CCF where necessary:

1. Look at the Namibian Life/Conservancy model.
2. Find out about the economics. For instance, if livestock is reduced by three times, then the local economy is reduced by three times. An economist would be useful to play with numbers.
3. Find out what the legal rights are of people who use or live in the parks, reserves, and biosphere parks. What are the traditional rights for grazing?
4. Determine avenue to purchase the grazing rights. Will the people sell these rights?
5. Purchase the rights from the people to the waterholes.
6. Prepare an action plan for each area. CBSG could quickly develop a project plan
7. Bring Rangelands and Forestry Departments into the UNDP-GEF/DOE programme. Look at buying the grazing rights quickly.

8. Do not allow dogs in the game reserves with the livestock. Or at least reduce the number of dogs that a herder can have, perhaps limit to one dog only. Encourage the use of livestock guarding donkeys instead of using dogs in the game reserves.
9. Allow no dogs! Have the livestock in the reserve as a supplemental food source for cheetahs, and pay a compensation fee for loss of livestock if predated upon by cheetahs.
10. Determine why the cheetah numbers are decreasing. Are people killing them and not telling DOE? Are they breeding to extinction due to genetic and reproductive problems? What are the disease risks for the cheetahs where domestic dogs are ranging?
11. Look at meta-population biology strategy due to fragmented population. Need to learn how to catch them. Need to find out where are they.
12. Begin to develop farmer information on a weekly basis where there are radio programmes, use this medium for reaching people immediately.
13. Collect data on the ages and sexes of the sheep and antelope that A. Jourabchian has collected from cheetah kills.
14. Determine feeding strategies for striped hyenas – maybe Gus Mills or Aaron Wagner (in Kenya)
15. Develop grant or strategy for re-stocking the reserves with antelope
16. Use the Iranian cheetah video for educational purposes in the villages throughout the cheetahs' range. Make copies to use in TV video units powered by batteries and screen in villages.
17. Obtain measurement data on cheetah cubs featured in the video.

MEETINGS WITH UNDP

The meeting with the UNDP-GEF group included Shirin Abolghassemi, Behzad Rahgoshai, UNDP's Mehdi Kamyab and Mr. Xu, and Mohammad Farhadinia of ICS. From this meeting it was apparent that although the GEF grant is signed, support is needed to move the process forward into a detailed action plan.

Development of a National Action Plan to conserve complex biota is a very symbolic project for I.R. of Iran, and it provides a platform for gaining momentum to change environmental practices through policy-making and focused legislation. The grant represents a medium-size UNDP-GEF project that is at the point of implementation. Components addressing social and economic issues, especially the needs of the people who live in the parks, are at the forefront. This GEF grant supports *in-situ*, not *ex-situ*, work.

This grant process begins with an inception mission that includes a step-by-step work plan. IUCN is named in the agreement as the implementer of the inception mission, expected to begin in December or January. The agreement also calls for the development of a scientific team; hopefully the IUCN can offer Cat Specialist Group.

There is a great need for capacity building and training since DOE staff is not adequately skilled in field research techniques or related cheetah research techniques. Presently there are six trip cameras, and there is need for many more. Additionally, they are interested in catching and radio-collaring cheetahs, but the technique to catch has not been described, nor field biology protocols (i.e., blood collection and processing, morphometrics, sperm collection) to cover once the cheetahs have been caught. Additionally, educational NGOs are available and could be put into action rapidly. Teaching materials and programmes are yet to be developed.

CCF agreed to provide the following to UNDP:

1. An overview of training courses that could be offered to Iranian nationals in Namibia. This would include a 2 to 3 week course to teach CCF's over-all programmes.
2. Information as to whether CBSG and Cat Specialist Groups could help facilitate a workshop to develop a more in-depth action plan including steps to be taken and timelines. The Cat Specialist Group is looking to have their annual Core Group meeting in Dubai in April, and Iranian Cheetah Conservationist could attend.
3. A list of other organisations that may constitute a team of experts, specifically—
 - The Life Project/WWF with Chris Weaver for community development project
 - The Desert Research Foundation to assist with information on drought cycles
 - The International Livestock Research Centre (ILRC) in Kenya has knowledge of livestock grazing issues
 - The Antelope Specialist Group, the Canid Specialist Group, the Hyena Specialist Group

MEETINGS AT PARDISAN PARK

Director and curator at Pardisan Eco-Park took us into Marita's compound, Iran's sole captive cheetah. The keeper fed her a rabbit; we were able to watch her and take photos. The seven-year-old cheetah is in very good condition. We discussed health and captive breeding issues. We then saw Marita's new facility where she will be moved in the next few weeks. Copies of the 1997, 1998, and 1999 International Cheetah Studbooks (the registry of all cheetahs living in captivity worldwide) were handed over to DOE.

Laurie gave a presentation at the Pardisan Park lecture hall for the general public. She gave a detailed overview of the threats to cheetah survival in the wild and a brief look at CCF headquarters in Namibia. Questions and answer session followed.

Actions Items for DOE

DOE will follow up to ensure that:

1. Studbook disks given to Behzad are copied and given to the Pardisan Park Curator.
2. Marita is included in the next International Cheetah Studbook. Develop contact with Pardisan Park Curator via mail or email to maintain semi-annual reports from them on their cheetahs.

MEETING WITH NGOS

We met with only one NGO. Members of the new Iranian Cheetah Society (ICS) Mohammad Farhadinia, Kaveh Hatemi, and Morteza Eslami met us at the airport. Later that evening we discussed at length the cheetah situation. They are very keen to be involved as much as possible in the national effort to save the cheetah. They are increasing their membership with experts and interested students. Mohammad started his communication with DOE and CCF in 1995. He has accompanied DOE to the field for research and has written an article on cheetah reproduction, published in 2000 in DOE's quarterly, *Mohit-E-Zist*.

MEETINGS WITH INDIVIDUALS

Mr. Abdolhamid Amirebrahimi, a renewable natural resource management specialist, now the Public Participation Advisor to UNDP/Caspian Environment Programme and CCF advisor since 1997. He recommends a cheetah census in summer with the help of people living near waterholes. Believes that an inventory is needed that includes numbers & distribution of cheetah and its prey species; then make proper plans and work hard to protect them. Since the CAC project has the potential to be the flagship for Iranian wildlife conservation programmes, private stakeholders could be encouraged to invest in the project as well. Mr. Amirebrahimi supports public awareness activities and captive breeding in this case. Recommends Bijan Darreshouri as a technical advisor to the project. Suggests appealing to Islamic village councils for participation and involvement.

Dr. Taghi Farvar, CEESP/IUCN. Suggests there be training for game guards and an increase in their numbers. Recommends bringing in all stakeholders; supports systematic gathering and information sharing of all stakeholders.

Mr. Farouq Mostofi, Shell Oil. He has identified all the villages and waterholes on GPS and is willing to share the data with CCF. He says that there might be cheetahs outside the protected areas and reserves; therefore these local villagers are important.

Goal 2 Visit cheetah habitat to assess the suitability for cheetah survival

CAC deputy project manager, Behzad Rahgoshai, rode with us to Shahrud where we joined others from DOE enroute to Kharturan Biosphere Reserve. We met Mohammad Roshanzamir, DOE managing director of Semnan province, at the Semnan provincial office. Ali Jourabchian met us at the Delbar Station, our base for three days.

A caravan of three vehicles toured the Kharturan protected area. We passed a few manmade water holes, which can store 2,000 litres of water. Wild ass and jebeer use these water sources. Few cheetahs and cubs have been sighted at the holes. Cheetah cubs are born perhaps at two different times of the year; however, they didn't think it is tied to seasons. But they have seen cubs in February perhaps the same time as domestic cats are born. The antelope calves are born in March and April, followed by wild sheep, then Ibex—April to May.

Problems in Kharturan are due in part to the drought resulting in scarce food for the prey species. There are approximately 100 to 150 ml of rain annually in this reserve. DOE has provided supplementary feed for prey species in the reserves in the past, but they can't find enough right now.

We drove to a privately owned oasis inside the biosphere reserve and spoke with the owner, a 78-year-old man. Around the homestead was barbed wire, which surrounded old rows of crops. The waterhole was a bit away from the homestead. The major water reservoir is a cement pool that could hold about 900 cubic meters of water. It looked dangerous because there was no way out if animals were to fall into it.

DOE wants to buy the oasis at an approximate cost of US\$25,000 for the 20 hectares. Then they want to develop the waterhole and have flowing water to the valley below. There are high numbers of sheep and onager that come to this area in spring, summer, and autumn. But, there are also about 185,000 head of livestock that come into this area during the months of November to March, during the rains, and with this influx the game moves into higher mountains. The bushy vegetation in the reserve is said to be the result of overgrazing. The

habitat is scrub bush. No grass, only low scrub and succulent plants. In addition to livestock, camels also graze in the reserve.

We talked about the genetic vulnerability of small fragmented populations and talked about catching cheetahs from one area and moving them to Naybandan in the south, which is the most protected reserve. But there is a prey problem there as well. Not enough prey anywhere. We then discussed the possibilities of relocating more prey into Naybandan, but the grazing lands are insufficient due to the drought. The drought is so bad that animals in there need supplemental food. We were told that one-fifth of the park is core area and even in the protected areas four-fifths of the park can be used for livestock grazing.

We discussed catching and restocking certain areas with wildlife. Aerial surveys of areas were suggested to get a baseline census of the game. A. Jourabchian says they know how much game there is. As to how to catch game, South Africans are some of the best game catchers in the world. The funnel and boma catching systems were described as an effective method. Laurie asked them to consider systems and cycles: If the drought cycles are continuous and the number of game species reaches carrying capacity, how can they think of putting more wildlife into the area? If prey is plentiful then predators should be on the increase.

A. Jourabchian has followed cheetahs three times after they killed a wild sheep. He has collected 20 skeletons of sheep and antelope that cheetahs killed. He has an idea of the ages and sexes of the cheetah from these kills. It was asked whether efforts to reduce the number of striped hyena in the reserves is advisable, as there seem to be many more hyenas and perhaps they are competing with the cheetahs. Jourabchian says he has seen one hyena chase away four cheetahs from a kill. Of the two photos at the Naybandan camera trap, one was of cheetah and one was of a hyena.

We watched a superb movie on the Iranian cheetah, which contained video clips of cheetahs in the snow in Naybandan. This movie could be mass-produced and shown by education officers and livestock extension officers to villagers throughout the cheetahs' range. One of the stone paintings of cheetah with sheep is found in one of the central provinces. It would be interesting to know where this is—perhaps for tourism. The video also showed some of the cubs being measured and weighed. This data should be made available to the central data bank.

INTERVIEWS WITH HERDERS

The first herder we met, about 78 years of age, owns the oasis we stopped at. He has about 800 head of livestock that use the sweet waters of the oasis. His livestock are maintained in two herds of 400 each comprising 350 sheep and some 50 goats. The herds come in to water during the day and sleep out in the bush at night, attended by a herder and a couple dogs. He never had a loss of livestock to cheetah, but has to leopards. And one of his dogs was killed in a fight with a leopard.

As we continued driving, we came across a large herd of livestock, possibly owned by the first herder. There were three dogs with the flock that came at us running and barking. All three dogs were large; they all looked different from each other in coat coloration. One was brownish tone the other two were black and white; two of them had longish hair. They all had their ears cropped. They stayed at a distance from us typical livestock guarding dog behaviour. They eventually gathered around our car, very friendly, and after a while headed back to their flock.

We encountered the second herder in the afternoon near Abu Yahya. He was a younger man, about 35 years of age. He had been in the reserve area only one month so far this year. Last year he stayed in the reserve for four months. He had 300 head of livestock; he had one dog that passed us about 15 minutes earlier. He said the dog was on its way back to the camp.

When asked if he has seen cheetah, the herder answered that there are none here. He has seen cheetah on other side of area near the mountains; he saw two or three cheetahs last year...at night. He has seen cheetahs on the other side of the mountain in his summer pastures, near Tehran. None of the big cats has fought with his dogs. His dog works very well and barks at anything that is not a part of the herd. Says he saw a lion, which was the same size as a cheetah. Herder didn't know what a cheetah was. We showed him a photo and he said leopard. Thought that cheetahs come in different shapes and sizes. When asked if he has seen wildlife he said he has seen onager, wild ass, and antelope.

The third herder we met was new to the area. He was originally situated in the first area we visited (near the oasis) but moved here only to find there is no water. He owns 400 goats and sheep, probably those with the second herder we spoke with. This seventy-year-old has never seen a leopard or cheetah. He told us that cheetahs are smaller and the leopard is bigger. He loses one or two head of livestock per year from leopard. He always has used a dog because he couldn't protect his livestock without one. He said that cheetahs are "bad animals and they have to be killed." Ali explained passionately about cheetahs and told the herder he was not to kill them any more.

Goal 3 Become familiar with the conservation issues affecting cheetah populations

There are a number of threats facing the cheetah population in the four main areas where cheetah are believed to be. Major issues impacting the welfare of the cheetah today include drought, poor grazing, reduced wildlife species, no prey for cheetahs, increased livestock. In addition, forest and range organisations own the lands and national resources. The wildlife is conserved and managed by DOE.

LIVESTOCK AND CAMELS

Great pressure on the cheetah comes from livestock and grazing in the protected areas. The livestock numbers are too high, i.e., livestock numbers are three to four times the carrying capacity of the land. *The presence of livestock keeps wildlife away and keeps cheetahs away, no food for cheetah to prey upon.* High livestock numbers, which present a problem in varying degrees in each of the national reserves, then become social and economic issues. Camels also graze in the same protected areas and finding the owners has proved difficult.

HABITAT DEGRADATION

The cheetahs and other large cats are suffering from habitat and land degradation, due in part to a continuing drought. In addition, there is habitat loss. Statistics show that cheetah numbers in the past 20 years have decreased as the livestock numbers have grown and rural cities and other human activities have increased. For example, roads built for coal-mining operations near Naybandan make the area more accessible to the general public.

FOOD SHORTAGE

Sheep are not the main prey for cheetahs here mainly because the livestock is too well protected by livestock guarding dogs and herders. *The presence of livestock keeps wildlife away and keeps cheetahs away, no food for cheetah to prey upon.* The cheetahs are chased away; but then there is not enough wild prey elsewhere for them to hunt. The prey is also chased away by the dogs and herders. However, cheetahs may behave differently in I.R. of Iran than in areas of Africa: Experts think that cheetahs in Iran prefer sheep to gazelle.

POACHING

Iran already has taken steps to protect the cheetah from poachers by increasing the fine for killing a cheetah from US\$2,500 to US\$12,500. Furthermore, it is believed that cheetahs have been captured in Iran and shipped to Dubai to be used for hunting on private lands.

CAPTIVE BREEDING

Kabudan Island in the northwest has a substantial sheep population and could be used for breeding and keeping cheetahs. This would be a very interesting project for long-term protection of the cheetah. Housing facilities would have to be constructed.

Goal 4 Identify how CCF can assist I.R. of Iran in saving its endangered cheetah population.

In meetings with organisations and individuals, it became clear where CCF's strengths could be best used in the Iranian cheetah project. Field training in Namibia and in-country training in Iran are two of the first steps. Other opportunities would be conferences organised by other international conservation organisations that DOE staff should try to attend. Some of these will convene in countries near Iran, such as Dubai.

TRAINING FOR DOE STAFF

DOE staff is not sufficiently trained in field research techniques or related cheetah research techniques. The training for this could be done in Namibia.

- Sample collection and sample processing. Artificial breeding using sperm collection should be a part of the training that DOE field biologists receive. This is important for long-term genetic management of this population and should be a part of the recovery programme. The training for this could be done in Namibia working with CCF's partners from the National Zoo/Smithsonian Institution headed by Dr. David Wildt and the Cincinnati Zoo headed by Dr. Terry Roth (trained with Dr. Wildt's team). During 2002, a Post Doc. from Dr. Wildt's lab who will be working at CCF to train Namibian student biologists in these field techniques. Artificial breeding is still in its infancy with regards to wild animal species. The Dr. Wildt team is the best in the world for cheetahs, as they have over 25 years experience in understanding cheetah reproductive physiology. Even with this, less than 20% of the A-I's conducted on female cheetahs have been successful.
- Captive Breeding Programme. CCF could supply an African male for Marita for hybridising. However, there are no guarantees that mating would occur, as breeding success in cheetahs is very poor even at the best facilities in the world. They could bring in cubs. They could maximise their chances as they have park areas

and an island as a possible place for breeding. Problem is then how to put the cubs back into the wild without a wild dam (mother). The global captive-cheetah breeding group might be interested in helping.

- Cheetah Keepers. London Zoological Society Dr. Nick Lindsey has offered assistance in captive breeding efforts. CCF can offer training to cheetah keepers to assist in captive breeding.
- Radio-collaring cheetahs. This training will follow once the technique to catch the cheetah and field biology protocols (i.e., blood collection and processing, morphometrics, sperm collection) to cover once the cheetahs have been caught have been described.

CONNECTING DOE WITH ANIMAL SPECIALISTS WORLDWIDE

CCF has very good relationships with animal specialists groups around the world, and many have already indicated an interest in supporting the CAC programme. Laurie will provide contact information to DOE for individuals and organisations prepared to assist DOE in its CAC programme.

Some references include—

- Dr. David Wildt, US National Zoo/Smithsonian Institution
- Dr. Terry Roth, Cincinnati Zoo
- Dr. Nick Lindsey
- Dr. Stephen O'Brien
- Dr. Richard Jeo, CCF Ecologist
- Gus Mills and Aaron Wagner, Canid, Wolf, and Hyena Specialists Group
- Antelope Specialist Group
- Cat Specialists Group Chairpersons

ADDITIONAL TRAINING COURSE IDEAS FROM CCF

From the days spent with CAC personnel, it is suggested that CCF provide field training to DOE staff, specifically—

1. How to catch and handle cheetahs safely and effectively; proper use of drugs and equipment.
2. Biomedical collections of captured cheetahs, including collection of samples and proper field preparations.
3. Reproductive physiology analysis on male cheetahs including field freezing of sperm for a Genome Resource Bank. Hormone analysis on female cheetahs to begin to understand regional norms. Marita could be collected for these studies.
4. Understanding cheetah behaviour; understanding cheetahs' needs in the wild.
5. Proper care and handling of cheetahs in captivity in short-term and long-term holding areas.
6. Proper design of capture cages and holding pens.
7. Radio-tracking techniques: How to use equipment, how to effectively do data entry and analysis.
8. Field techniques including conducting and analysing spoor counts, game count methodologies, camera traps, understanding cheetah prey, habitat analysis.
9. Developing a public and community programme through formal education and community work.
10. Understanding livestock/predator problems.
11. Competition with cheetah and other predators.

12. Faecal/scat analysis to look at prey consumption.
13. Conservancies and how they can be useful to Iranian population groups.
14. Field trip to community conservancies in Damaraland and to Namibia's Etosha National Park.

Recommendations

The following recommendations encompass primarily emergency measures and require that DOE enlist the support of all segments of society and government to make the CAC plan work. The points below are not inclusive; there are many other actions that can be utilised to propel the programme forward. Obtaining the commitment of stakeholders to implement a community-based action plan will set the stage for continuation and completion of the project. The monies provided under the GEF grant should be leveraged to seek and obtain additional funding for a long-term and thorough environmental programme.

1. Prepare an action plan for each of the four cheetah population centres to include improved protections in all parks. Install more camera traps. Ascertain what the cheetah's main prey is. DOE is now in the process of increasing the number of game guard facilities and personnel in the reserves. Additionally, DOE wants to act quickly in Naybandan to develop an emergency implementation plan based on strategy and vision. DOE already is working on upgrading the status of the Naybandan reserve and considers it to be the main area for cheetah population rescue. Use CBSG; a project plan could be developed quickly.
2. Change the status of the four cheetah areas to "wildlife refuge." The laws & regulations of this category prohibit grazing and hunting.
3. Stop all hunting completely to allow land and animals to recover.
4. Move livestock out of the reserves. DOE should address the livestock issues and talk to stakeholders. An action plan is key to successfully implementing this activity. They also should move the camels out of the areas. But moving camels and livestock cannot be done until the stakeholders and government agree and make a plan together.
5. Buy rights of local people for land and water for game use only. DOE is considering a strategy to purchase rights to waterholes and land from the people who have taken over the reserves.
6. Immediately start a captive-breeding programme for cheetah. Captive breeding is not covered in the GEF grant, but is one of the conservation strategies to be considered. Although cheetahs very seldom breed in captivity, since Marita is getting old, attempts should be made to breed her soon. One possibility would be to try to breed her to an African cheetah. This way if she does breed, she may be then receptive to breeding with another male if indeed an Iranian cheetah male were opportunistically captured, or if sperm could be frozen from a wild Iranian male and A-I techniques could be tried. The advantage to this is that if she did get pregnant, her cubs would have 50% Iranian blood. If one were to try to recover a statically pure Iranian cheetah, these cubs could be bred back to Iranian cheetahs (if more were brought into captivity), and in several generations nearly pure Iranian bloodlines could be restored. If Marita is not given a chance to breed, no bloodlines will be available for the future and her genetic representation into the population will be lost completely. Look at putting the project on Kabudan Island where there are wild sheep and adequate land.

7. Protect cubs from livestock. When cubs are seen in the wild, pull a few for the captive-breeding programme. If this practice is made part of an overall recovery plan, it should be clearly stated in the recovery plan document and adhered to closely. Using the Florida Panther Recovery Plan would be a good document to review, as many of the same issues are being discussed here with the Iranian cheetah.
8. Reduce issuance of annual gun licenses.
9. Seek national and international cooperation, expertise, and funding. DOE needs the support of the local and international community in the development of a captive-breeding programme, attainment of field skills, and community-based outreach programmes. Development of a captive-breeding programme in I.R. of Iran also would require capacity building and training. Cheetah keepers need to be trained. Additionally, educational NGOs are available and could be put into action rapidly, but there is a need to develop the teaching materials and programmes. DOE is ready to have close cooperation with CCF and other international groups to put these programmes in place.
10. After field skills training for DOE staff, obtain quality samples from Marita. Genetic studies have not been able to fully answer a sub-species question. The reason for this is that the samples sent to Dr. Stephen O'Brien's genetics lab were not of requisite quality for definitive analysis. Samples sent to date include a knee bone and skin from the upper palette of a dead cheetah. The best samples for performing genetic analysis include properly processed blood samples that include separated white cells.
11. Complete the biotech lab for predators and prey with funding to record genetics and genes of all animals.
12. Work towards a conservancy that encourages mixed livestock and wildlife and sustainable use. Buy livestock and develop adequate numbers of wildlife. Developing a conservancy takes time.

Contacts in Iran

People we met with—

1. Mr. Najafi, Deputy Head of DOE, Natural Environment & Biodiversity
2. Dr. Maroofi, Director General, Public Relations & International Affairs, DOE
3. Mustafa Khalili, Field guide, DOE
4. Ali Jourabchian, CAC Project Manager, DOE
5. Behzad Rahgoshai, CAC Deputy Project Manager, DOE
6. Ambassador and Mrs. Haer, Indian Embassy, Tehran
7. Bahareh Shahriari, Secretary to Mr. Najafi, DOE
8. Mr. Ayatollahi, General Director of Wildlife Office, DOE
9. Mr. Sadeghi, General Director of Parks and Regions, DOE
10. Shirin Abolghassemi, Senior Expert for Habitats and Protected Areas, DOE
11. Mohammad Roshanzamir, Director Semnan Province, DOE
12. Mehdi Kamyab, Programme Manager & GEF Coordinator, UNDP
13. Haoliang Xu, Deputy Resident Representative, UNDP
14. Mohammad Reza Khosravi, UNDP office, Tehran
15. Dr. Taghi Farvar, Chairman, Commission on Environmental, Economic, and Social Policy, IUCN
16. Kaveh Hatemi, Morteza Eslami, Mohammed Farhadinia, founders, Iranian Cheetah Society (ICS)
17. Abdolhamid Amirebrahimi, UNDP/Caspian Environment Programme
18. Hormoz Asadi, spoke with him on the telephone
19. Ellen Tavakoli, Mazandaran Siberian Crane Conservation Association

People we hoped to meet but didn't—

1. Ms Ebtekar, Director of DOE
2. Dr. Asghar Mohammad Fazel, General Director, Natural History Museums
3. Mr. Farhad M. Razi, Education & Exhibition Director, Nature and Wildlife Museum
4. Mr. Bijan Darreshouri
5. Mr. S. M. Ghasempouri