Project title: Human Leopard Conflict Assessment
In Pir Lasora National Park Kotli, Azad Jammu and Kashmir, Pakistan

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Retaliatory killing of Common leopard (Panthera pardus) in Pir Lasora National Park.
Retaliatory killing of Common leopard (*Panthera pardus*) in Pir Lasora National Park.

Pir Lasora National Park (PLNP), located in district Kotali Azad Kashmir, is one of the most important areas due to its biodiversity and ecology. Several threatened and endangered species of mammals and birds occur in this area including *Catreus wallichi* (cheer pheasant), *Macaca mulatta* (rhesus monkey), *Panthera pardus* (common leopard) and *Axis porcianus* (barking deer). In view of presence of these important species in the area, the studies on the biodiversity and ecology of the area are initiated.

The Park is located between 33° 25.92 N to 33° 29.31 N and 74° 05.64 E to 74° 03.202 E in Tehsil Nikial, District Kotli of Azad Kashmir. It mainly consisted of one large and some patches of small hills. The large range extends southeast to northeast while the small range lies in east west position. The Pir Lasora National Park (PLNP) was established by combining the forest compartments 13 to 16, and 30 to 32 with a total area of 1080 ha. It is the 3rd largest national park of the AJ&K declared for protection and conservation of native fauna. PLNP is very close vicinity to line of control, so the park is supposed to provide an excellent shelter site for endemic and migrated species i.e. common leopard and barking deer. The valleys of the park show a typical pattern of subtropical pine forest type vegetation however the tops/mountains follow a sub-tropical dry evergreen forest pattern. As the area is at an elevation of above than 1000m, so it has been categorized as Cold and Humid Forest with respect to its climate. The average rainfall per annum is 1500 mm. On the North West side of Park, District Kotli is located while on south side Karala Majan and on east side line of control (LOC) is situated.

The most important mammalian species include *Macaca mulatta* (Rhesus monkey), *Panthera pardus* (Common Leopard) and *Vulpes vulpes* (red fox) were recorded. About 49 species of birds belonging to 33 genera, 23 families and 8 orders were recorded from Pir Lasura National Park. The Cheer Pheasant (*Catreus wallichi*) is occurring with a considerable number at the southeastern margins of the park. Species of raptors found include *Gyps fulvus* (Griffon vulture) *Aquila rapax* (Tawny eagle) and *Neophron percnopterus* (Egyptian vulture).
The leopard, *Panthera pardus*, is a member of the Felidae, or big cat family. *Panthera pardus* has the widest and most diverse distribution of all of the big cats. This large and stealthy carnivore can live in close proximity to densely populated areas without ever being detected by people. Even though *Panthera pardus* is capable of adapting to many diverse environments, this big cat is on the CITES I endangered species list. Common leopard is the key specie of Pir Lasora National Park. It is on the verge of extinction from the territory of the Park and surrounding area. Every year the retaliatory killings of common leopard have been recorded and this situation is continuous. Human wild life conflict is not a new issue in the wild life management. However, the methods of handling carnivore related problems remain unique and distinct for each species depending on the area time and resources.

As the geographical pattern of the Pir Lasora National Park provide the suitable protection sight for the common leopard. In the past good population of natural prey (Barking Deer, and Rhesus monkey) were supported the population of common leopard in pi. Illegal hunting of barking deer create threats for the food of common leopard and also increase the concept of livestock depredation. A careful perusal of the preceding account would show that several factors such as habitat destruction, decimation of prey species, conflict with grazers, direct conflict with people, threaten the survival of carnivore. Others threats that was observed by the project team include

- **Habitat degradation**
  - Stone crushing
  - Exploration of minerals from core zone of the areas, which is not only threat for common leopard but also for the other wildlife.
  - Forest cutting
  - Forest fire
- **Illegal hunting of the natural prey**
- **Lack of awareness among local community**
There is also lack of awareness among local community regarding, what is national park, what is the purpose of Pir Lasora National Park, what is the role of wildlife in our ecosystem.

Project team interviewed the local community regarding the conservation of common leopard and natural resources of the areas. 80 local community show positive response and are interested to save manage and sustainable use of the natural resources. People have good attitude for common leopard. Population of common leopard is 3-5 in and around the national park. The rate of live livestock depredation is also low.

Why the retaliatory killing of common leopard high in and around the Pir Lasora National Park national park? Project team observed the reason, in spite the lees availability of natural prey some major causes have been observed as the Pir Lasora National Park is situated near the LOC, although the local community existed between the area, the forest of the disputed area continued with the Pir Lasora National Park. During the summer season when corn is cropped this provide safe way for the wildlife movement between these areas, including common leopard and its natural prey. Every year leopard sighting observed with cubs which prove their breeding in this area. As this season ended after the cutting of crops and grass (fodder for summer) the safe movement of wildlife disturbed. Forest fire is also major problem in this area which forces the wildlife to move from this area as a result of which hunting and retaliatory killing occurred. So when leopard move from the park area to the disputed area conflict happened with community existed between these areas, which end on retaliatory killing of the leopard. Last year two cubs one dies and other lives captured by the local community.

Forest fire damages the habitat of the prey so leopard for the feeding of their young one move to the villages and suffered from retaliatory killing. Boundary or bar between the disputed areas is harmful for the movement of wildlife. It is the big problem for the wildlife conservation in Pir Lasora National Park.
Retaliatory killing and Capturing of the common leopard in Pir Lasora National Park Capturing of the common leopard.

As human population expand and encroach ever further into natural habitats, humans and wildlife increasingly has to compete over living space and food. Asian big cats are suffering not only from significant habitat loss, but also from decline in their prey species within the habitat that remains. As a result, cats are moving into more marginal areas searching food, finding easy prey in domestic livestock and also attack humans. Many communities in Asia are heavily dependent on their livestock for sustenance and income, and therefore when livestock predation occurs, cats are captured, killed in retaliation or actively persecuted to prevent similar events happening in the future. These killings are a significant threat to the survival of many Asian cat species.

A specific questionnaire was developed to collect information regarding human leopard conflict and retaliatory killing of common leopard. A total of 12 leopards were killed, 02 were trapped from the area and 03 human beings were attacked and badly injured by the leopard at different locations.

8retailiatry killing of common leopard occurred in different parts and around the protected areas. This is in addition to the killings that might have done without being noticed or reported. Detail of the capturing and retaliatory killing of common leopard described as below

- **Two leopard’s cub have been captured**
  - A leopard was captured before the 2000. That leopard was gifted to the PM of Pakistan which was later donated to the zoo in Pakistan.
  - According to community watcher the cub was captured by local community, from them the police department snatched, after the successful approach of AJK wildlife department got the cub. Cub was ill and unfortunately it could not recover, and died in captive condition.

- **2 leopard shot dead in simmtty (2008).**
Local community has shot dead two common leopards saying it threatened their lives. The killing took place in simmty village, some 3 kilometers eastern of PLNP. The leopard had left its habitat and descended on the village where he was shot dead by villagers allegedly in self-defense.

- **2 Rare leopard shot dead in Pehli (Before 2000).**
Local community has shot dead two leopards saying it threatened their lives. The killing took place in Pehli khandar village, on eastern side of PLNP.

- **Leopard shot dead in Bhermoch (Before 2000).**
During the survey we came to know about a old case of illegal killing of leopard in bhermoch village, on western side of the national park. Local community has shot dead a rare leopard saying it threatened their lives. When wildlife staff inquired they found, villagers hanged the flesh of cub with tress, use for the medicinal purpose, it can also be the cause of leopard killing.

- **Leopard shot dead in Mehra (Before 2000)**
A leopard entered the village mehra and killed by the local community. According to local community they did not killed the leopard illegally but they do so with the permission of assistant commissioner of their area. Accordin to wild life staff leopard was ill.

- **Leopard shot dead in Billnailan shahgajan (Before 2000)**
After that another case was brought in front of us that a leopard killed by the local community but they buried that due to the fear of wild life department. They buried the leopard after his illegal killing when they come to know that WL department gets informed with this killing and will punished them. But wildlife department went to place and after successful operation of investigation brought out the buried leopard.

- **Leopard shot dead in Majhan (Before 2000)**
A leopard shot dead after live sock depredation in the village majhan.

- **Dead leopard's cub in Majhan (2009)**
Dead leopard’s cub was found in majhan outside the national park.
Two leopards poisoned in Nakial (2010)

2 leopards found dead in Gharbi region of the national park. Both the leopards were poisoned by the local community. Leopards depredated the livestock in this area before the some days of killing.

One Leopard killed in qamrooti (2010)

A leopard was killed by the community after the leopard attacked and injured the person.

Retaliatory killing of common leopard

<table>
<thead>
<tr>
<th>No. of killed</th>
<th>Site</th>
<th>year</th>
<th>Area(NP)</th>
<th>M/F or Uk</th>
<th>Villages</th>
<th>Killed by</th>
<th>GPS reading</th>
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<tbody>
<tr>
<td>2</td>
<td>Village</td>
<td>Before 2000</td>
<td>Inside</td>
<td>M/F</td>
<td>Pehli Khandar</td>
<td>Shoot</td>
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<td>2</td>
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<td>Outside</td>
<td>M/F</td>
<td>Simti</td>
<td>Un Known</td>
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<td>Before 2000</td>
<td>Outside</td>
<td>M</td>
<td>Mehra</td>
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<td>Village</td>
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<td>Outside</td>
<td>M</td>
<td>Nailan</td>
<td>Shoot</td>
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<tr>
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<td>F</td>
<td>Bermoch</td>
<td>Shoot</td>
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<tr>
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<td>Before 2000</td>
<td>Outside</td>
<td>M</td>
<td>Majhan</td>
<td>Shoot</td>
<td>33,27.094 74,07.483 3963</td>
</tr>
<tr>
<td>1</td>
<td>Village</td>
<td>2009</td>
<td>Outside</td>
<td>M</td>
<td>Majhan</td>
<td>Unknown</td>
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<tr>
<td>1</td>
<td>Forest</td>
<td>2010</td>
<td>Inside</td>
<td>M</td>
<td>Gharbi</td>
<td>Poisoned</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Forest</td>
<td>2010</td>
<td>Inside</td>
<td>F</td>
<td>Latehri</td>
<td>Poisoned</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Forest</td>
<td>2010</td>
<td>Outside</td>
<td>unknown</td>
<td>Qamrooti</td>
<td>Stones, axe</td>
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</tbody>
</table>

Details of leopard trapped by community

<table>
<thead>
<tr>
<th>S .No</th>
<th>Village</th>
<th>year</th>
<th>M/F or Uk</th>
<th>Status</th>
<th>GPS</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Turkundi</td>
<td>Before(2000)</td>
<td>M</td>
<td>Alive</td>
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<tr>
<td>1</td>
<td>Khuratta</td>
<td>2009</td>
<td>M</td>
<td>Alive</td>
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</table>
Attacks on human beings

<table>
<thead>
<tr>
<th>S.No</th>
<th>Village</th>
<th>Killed/injured</th>
<th>Location</th>
<th>Date</th>
<th>GPS</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Pehli</td>
<td>Injured</td>
<td>Inside</td>
<td>Before(2005)</td>
<td>33,28.42, 74,07.00, 4266</td>
</tr>
<tr>
<td>2</td>
<td>Seri Tangal</td>
<td>Injured</td>
<td>Inside</td>
<td>Before(2005)</td>
<td>33,28.21, 74,05.14, 4854</td>
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<tr>
<td>3</td>
<td>Qamrooti</td>
<td>Injured</td>
<td>Outside</td>
<td>2010</td>
<td></td>
</tr>
</tbody>
</table>

- **Recommendation.**

As the common leopard is endangered species there is a need and it's a time to save this beautiful member of our wildlife society. There is a need of a big awareness and conflict management project as soon as possible, otherwise will deprive of our beautiful species. There is alarming stage for the leopard in Pir Lasora National Park. The following conservation strategies are suggested to safeguard the future of common leopard.

- There is the capacity and good habitat around the national. Increase the area of park which will provide the more space for leopard (The ones that currently exist are insufficient to guarantee their survival, yet the conflicting pressures of land use make difficult the acquiring of sufficiently Large, completely protected areas.)
- Provide or declare the safe way for the movement of wildlife
- Awareness, There is very little consciousness of the important role that predators play in maintaining the communities of their natural prey, and the integrity of natural ecosystems. Educates local groups village level communities, the public will be more cooperative in case of leopard situation in the areas. Human-leopard conflict mitigation programmes often form part of a wider portfolio of conservation action, and their efficacy can be considerably increased.
- Need for deciding upon social approaches (scientific information being least helpful in addressing the retaliatory killings)
- Identification of available options (people killing of leopards)? Any part of the incidence that may have relevance to people etc)
Discovering peoples knowledge linked to the issue of leopards attack on people and their livestock (Insurance schemes and awareness)

Relevance of scientific data linked to indigenous knowledge on this particular aspect of conservation

Livestock compensation schemes.

Compensation scheme. Compensation scheme for live stock may substantially increase tolerance among communities. The most immediate to human-wildlife conflicts is the provision of compensation to the herder/farmer. Suitable amount change the attitude of livestock owner against the leopard for some extent.

Involvement and interest of Government organizations and NGOs in this human-leopard conflict issue.

Leopard’s cub Captured from Pir Lasora National park
Pictures of Pir Lasora National park