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## **Mitigating the Human-Leopard Conflict in Southeast Sri Lanka**

June 9-August 10, 2014 - Sri Lanka

### **OBJECTIVE**

To mitigate the human-leopard conflict in the areas surrounding Yala National Park in Sri Lanka through the construction and distribution of secure mesh enclosures that prevent leopard attacks on cattle, thereby protecting the livelihoods of the farmers and enabling people to peacefully coexist with leopards.

### **BACKGROUND**

Yala National Park, located in the southeast of Sri Lanka, is the country's most visited national park, and it is reputed to have the highest density of leopards in the world. The high density within the park creates territorial conflicts that cause many leopards to move out and live in the zones surrounding the park boundaries. The area surrounding Yala National Park is very rural, and most of the local people are very poor, earning approximately \$200/month or under \$7/day. The majority rely on livestock agriculture for their survival, rearing cows and buffalo mainly for their milk, and also for their meat.

These farms are located very close to the park borders, resulting in frequent conflict with leopards. Leopards come into the cattle farms at night in search of food and kill and eat the calves. Based on interviews with affected farmers, between 30 to 40% of the calves are killed by the leopards each year. The loss of each animal represents an enormous economic cost to each farmer as the adult females stop producing milk if they do not have calves that are suckling. This means that the farmer can no longer extract milk from the cow in order to sell the product and thereby make his living. When male calves are killed, it negatively affects the farmer's future revenue as this would deprive him of selling the bull for meat, and the death of offspring leads to a reduction in the size of the herd, thus decreasing the farmer's only assets.

The intensity of the human-leopard conflict often determines whether a farmer makes enough to sustain himself and his family, and unfortunately this results in leopards sometimes being poisoned or shot to death in retaliation by angry villagers. The death of each leopard is extremely costly in an ecological sense as the leopard is the apex predator and a keystone species vital to maintaining the balance of the ecosystem. Furthermore, it has detrimental economic impacts because tourism is an important component of Sri Lanka's GDP. Yala is a premier tourist destination, and each leopard death takes away from the attraction.

### **GOALS**

1. Protect the incomes and livelihoods of local cattle farmers and villagers through the construction and distribution of leopard-proof mesh enclosures.
2. Prevent retaliatory killings of the Sri Lankan leopard (*Panthera pardus kotiya*).
  - a. Preserve an apex predator and keystone species essential to maintain ecosystem balances.
  - b. Conserve an iconic species responsible for bringing in a significant portion of tourism revenue, thereby helping Sri Lanka to grow and develop.
3. Resolve the human-leopard conflict and replace it with peaceful coexistence between humans and leopards.

## **PROJECT SUMMARY**

The installation of mesh pens to protect against leopard invasions first came to life in 2002 when enclosures were donated to only a handful of farmers. Despite instantaneous success, other farmers were unable to implement the strategy due to the high cost of the apparatus as each pen costs almost \$600, a sum three times greater than the farmer's monthly income. John Keells Holding (JKH) PLC donated more pens in 2012 through *Project Leopard*, which was a Corporate Social Responsibility (CSR) initiative that I had the opportunity to work on. However, funding has since dried up, and unfortunately there are still a few farmers who remain in desperate need of a mesh enclosure to protect their cattle from leopards. Results from *Project Leopard* demonstrated that if calves are housed in mesh pens at night, leopards are unable to penetrate the enclosure and it is hypothesized that they give up and go in search of other (natural) prey. Over time this can become a learned behavior, and visitation to human settlements would decrease or cease.

This project will use funding from Davis Projects for Peace to build and donate mesh enclosures (\$585 each) for 12 farmers in need, thereby providing income security and avoiding leopards being killed in retaliation. Overall, this will help mitigate or even cease the human-leopard conflict, and pave the way for peaceful coexistence between humans and leopards. Furthermore, pending permission from the Wildlife Department (WD), the project could include collaborating with JKH PLC to fit a satellite collar to one of the leopards that live in the vicinity of the cattle farms. The project will take place from June 9<sup>th</sup> to August 10<sup>th</sup> 2014.

**Week 1:** Place the order for 12 leopard-proof mesh pens, based on the design used previously for *Project Leopard* in 2012. I have already acquired permission to use the same design from JKH PLC, who will also put me in contact with the manufacturer they used in 2012. Mr. Gayan Gamage of JKH PLC will assist me in hiring local labor, which will support the local economy.

**Week 2:** Locate, tranquilize, and fit satellite collar on a leopard in collaboration with JKH and WD (pending permission). Monitor its movements until the pens are installed (Week 5).

**Week 3:** Conduct site visits and interviews with cattle farmers in need of pens. Evaluate which farmers face the highest threat of leopard attacks and award pens to the 12 farmers who face the highest risk. Gather data on the frequency and number of attacks by leopards, and the resulting losses incurred by farmers.

**Week 4-5:** The pens should be ready by the middle of week 4, and distribution and installation of the enclosures will happen during weeks 4 and 5.

**Week 6-9:** Check in with farmers and inquire about any attacks that have occurred and conduct site visits to check the strength and success of the enclosures. Also monitor the leopard's movements using the satellite collar (if permission is granted) after the pens have been installed.

## **OUTCOMES**

Using mesh pens will provide security to the farmers' cattle (their assets) and incomes. This thwarts leopards from causing any physical or economic damage to farmers, preventing any need for vengeful killings, thus preventing population declines, ecosystem imbalances, and decreases in revenue for the tourism industry. Also, the installation of pens should reduce leopard visitation to human settlements. Finally, the satellite collar will deliver groundbreaking behavior and territorial data, including how the installation of the pens affects the leopard's movements. Using this information, we can map hotspots or danger zones that cattle farmers should avoid in order to prevent leopard attacks. Overall, my project will help to mitigate the human-leopard conflict in southeast Sri Lanka, ultimately enabling humans and leopards to coexist peacefully.