CONSERVATION AND MONITORING OF FISHING CATS (PRIONAILURUS VIVERRINUS) IN THE HILL COUNTRY OF SRI LANKA

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The Fishing cat *Prionailurus viverrinus* (Carnivora: Felidae) is the second largest endangered wild cat inhabiting hill country wet zone and dry zone forests in Sri Lanka. They can be also found in the Himalayan foothills, along India's east coast, Indonesia's island of Java and in Pakistan [1]. The fishing cat is considered as a medium sized cat categorized along with some other cat species under the umbrella term *Prionailurus*, and the members of this family are characterized by noticeable stripes and spot patterns on the head, face and body. Fully grown male is about 70-76 cm in length (body length) and weights 8 to 14 kg, whereas the female weight from 5 to 9 kg [2].

The coat is a camouflaging grizzled grey and the soft coat is tinged with olive–brown and has unique spots and stripes. Six to eight black lines run from the forehead to the neck and break up into shorter lines and longitudinal spots on the shoulders. It has broad head with vertical markings above eyes. The flattened nose is a deep brick colour. Its short, muscular tail, marked with about six or seven incomplete dark bands, distinguishes it from the leopard cat (*Prionailurus bengalensis*). The double coated fur has water resistant ability that is important to keep the body dry while diving into the water to catch fish. Its legs are short but equipped with long claws that function as fishing hooks [3].

The local populations are highly threatened due to an array of threats of which road kills, poisoning, hunting pressure, and habitat destruction are prominent. Road kills are often the result of high degree of fragmentation of the species' habitat due to rapid expansion of the national road network [4, 5]. The species is often victimized by local communities due to misconception. Fishing Cats are also highly sensitive to degradation of wetlands, which is one of their key habitats. This species is a good focal species for the conservation and management of protected areas since they are habitat specialists and require marshy areas that have an adequate prey base [6-8]. They also qualify as a flagship species due to their charismatic value, but are fast earning a negative reputation due to their conflicts with the people living around protected areas [9, 10].

The study was carried out in Gannoruwa Forest Reserve, Upper Hanthana Forest. In addition, observations from three districts in Central province were used. During the study population trends, ecology, and threats were monitored by camera trapping, scat collections, pug mark censusing, veterinary records and interviews with local community [12, 13]. Threat analysis was done for identifying the problems in different locations. Then Niche modelling of fishing cats was carried out for study areas using ArcGIS (10.1) and MODIS NDVI data as this will be important in locating potential fishing cat conservation sites and in environmental impact assessments in the future.

Figure 1: Fishing cat in Gannrouwa Forest Reserve (5.27 a.m.)

Awareness programs and youth camps were organized targeting school children and villagers in the target sites and school children were selected as the target audience considering their undisrupted thinking process and convincing ability. The first awareness rising program was held on 27th February 2014 to educate school children about conserving our wild cats. And it was a first step of a massive awareness program organized by the Fishing Cat Conservation Project. As the second program Fishing Cat Youth camp was held on 9th of June in Maragamuwa natural forest for 25 selected university students who were willing to contribute to future awareness rising programs. On this program students are educated with field techniques, general description, conservation actions and how they could work on conservation.

Figure 2: Rusty spotted cat in Gannoruwa Forest Reserve

Placing road signs in major road kills area are currently ongoing. This will be completed within the next three months and after that this will spread throughout the country with the permission of Road Development Authority.

Results to date indicate 28 recordings of fishing cats within the three districts considered for the research. Road kills, poaching, electric fencing and poisoning are the main threats they faced throughout the area. Kandy district holds the highest number of kills in the central province which was eight road kills two poaching and one electric fencing deaths in past 18 months.

During the study period 13 scat samples were collected. Eight scat samples were collected from Gannoruwa Forest Reserve and Upper Hanthana Forest and other five samples were collected from other districts including Kandy. Scat samples were analysed using hand picking method and microscope. According to results four preys were identified to family and order level. Such as Family Soricidae, Parathelphusidae, Oreder Diplopoda and Blattodea.

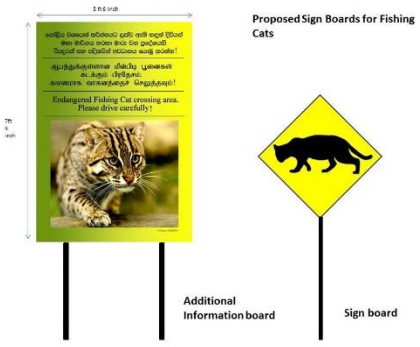

Figure3: Proposed signs for fishing cats

Figure 4: Awareness programs

Discussion

The highest numbers of threats are due to human caused activities and most are recorded from the Kandy District. This may be due to the habitat fragmentation caused by expanding highway system in the area.

Poisoning and electric fencing was occurring due to misunderstanding and misconception of people. Awareness rising is the best solution to overcome this problem.

Eight photographs of fishing cat were obtained using camera traps after 1200 trapping hours in Gnroruwa Forest Reserve. Camera trapping helped to identify the home ranges of fishing cats by using capture software. Most of the positive records were found through vegetation which is close to home gardens**.**

At the same place fishing cat and Rusty spotted cats (*Prionailurus rubiginosus*) were recorded in a same camera trap and rusty spotted cat was recorded marking his territory using urinary sparing. This proves that they were territorial and marking their own territory to prevent the territorial overlapping.

Fishing cats can often survive on alternative food such as crustacean's, cockroaches, rats and mice when it becomes hard to find proper food. Fish becomes less common on stream systems at higher altitudes.

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