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Attack on Elephant by Tiger, A Choice of food or Struggle for Survival, Ecological Study in Corbett Tiger Reserve, Ramnagar and Uttrakhand, India

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ABSTRACT- Corbett Landscape and Corbett Tiger Reserve is a beautiful place of roar and trumpets. Tiger is a very intelligent animal and are able to survive in any situation. In dry summer season the fulfillments of vital need become tight and tough for all. Especially prey species aggregates near water bodies. On the other hand tiger is territorial animal. Dry season depicts extra efforts to catch the prey by tiger. Different dynamics of Predator-prey relationship is recorded in this season. Total 8 cases of elephant's mortality with tiger attack sign were ceased. Total 120 scats were analyzed. Scat analysis resulted less daily requirement of tiger. Ecological requirements are 4-5 kg per day. But scat analysis resulted very less in rest of proper daily consumption. Mostly attacks on elephant recorded in the month of June or in dry season. Such type of tough situation the tiger movement become in human-dominated landscape for easy prey (Livestock predation). The chances of conflicts are more and more in these periods. Increasing rate of conflicts is always die heart for tiger as well as human beings.

Key-words- Conservation, Scat analysis, Conflict, Ecological requirements

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INTRODUCTION

Corbett Landscape is a beautiful place of roar. In Corbett Tiger Reserve now ecological stress leads conflict and livestock predation. Ramnagar forest division is an important division for tiger population along with vital Kosi River and Ramnagar forest division. In dry summer season (June etc.) tiger face hard to get prey biomass. This study depicts the elephant mortality cases by tiger. Sign of tiger attacks on Caracas of elephant were recorded and noted during postmortem with forest officials and veterinarian. Elephant is not proper choice of food in tiger's diet profile. Total 8 cases in a year were recorded with tiger's attack marks on body. On the other hand the cases of livestock predation show that easy way to get prey and food requirements which lead conflict situation. Scat analysis shows that less availability of prey in these seasons.

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It shows a kind of stress on tiger's habitat in the form of prey biomass [1] depletion which ultimately leads to develop a kind of habit to prey upon elephant. This situation shows the ample & perfect habit of tiger to survive in any tough and die heart situation. The entire situation provides the intelligence of tiger, the ultimate animal of world. This study depicts the ecological need and habitat stress of tiger in the form of unconditional food choice by tiger.

MATERIALS AND METHODS

Study Area: Corbett Tiger Reserve had been selected for the study to collect the scat and other relevant data for this study. This Reserve cum national park is situated in Ramnagar, Uttrakhand, India. In the year of 2015, dry season. June and July months had been selected and with the help of Corbett staff the scats were collected during the field work.

Study Material: Tiger scats collected with the help of staff and during field work. Total 120 scats were analyzed for food and feeding profile of tiger.

Methodology: Tiger scats are tough to collect in open space. Scats are found to be less coiled and having larger distance between two successive constrictions within a single piece of scat, when compared to leopard which were mostly coiled and have similar distance between constrictions.

In open area it is very tough to track the tiger food and its feeding behaviour. But scats analysis is a technique by which we can reconstruct the tiger's diet. Collection of scats containing hair as undigested remains, which will reveal the animal preyed upon by the tiger. In case of elephant mortality due to tiger attack direct observation had been facilitated during postmortem. Tiger attack's sign had been observed on the body of elephant. [2] Method is applied for scat analysis with slight modification. The biomass consumed per animal/ day was calculated by using the formula: **C=T/N.n.**

Where, C= Biomass consumption
T= Total biomass in Kg. (determined from hair remains in each scats)
Observation of one type of hair indicates one animal consumed / killed
Two different types of hair indicate two different types of animal consumed/ killed. The ideal weights of these animals are considered for biomass calculation
N= Number of scats collected
n= Number of animals consumed/killed

Table 1: Prey profile species wise and biomass consumption of *Panthera tigris*

Prey Species	No. of Animals (N)	% occurrence	Animal Weight Considered (Kg.)	Biomass Kg. (T)	% Biomass
Hystrix indica	22	18%	18	396	3.3%
Axis axis	24	20%	85	2040	17%
Cervus unicolor	18	15%	225	4050	35%
Sus scrofa	15	12.5%	230	3450	29.3%
Hog deer	5	4%	55	275	2.3%
Semnopithecus entellus	20	17%	21	420	3.5%
Macca mulata	12	10%	11	132	1.1%
Boselaphus tragocamelus	4	3%	280	1120	9.4%
TOTAL	**120**			**11883**	

RESULTS

Daily consumption (c)

$$C = \frac{T}{N \times n} = \frac{1183}{14400} = .825 \text{ Kg. / day / Tiger}$$

Annual Consumption: 0.825 x 365= 301.25 Kg

Table 2: Daily consumption by Tiger in Corbett

Formula	Total biomass of Fecal contents Kg (T)	Year and nuber of scats	No. of animals	Daily consumption (Kg)
$C = \frac{T}{N \times n}$	11883	2015	120	.825 kg/day/Tiger

Table 3: Diet Profile in Dry Season (May & June)

Prey Species	No. of Animals (N)	% occurrence	Animal Weight Considered (Kg.)	Biomass Kg. (T)	% Biomass
Hystrix indica (Porcupine)	19	40%	18	342	25%
Axis axis (Cheetal)	5	10%	85	425	30%
Cervus unicolor (Samber)	1	3%	225	225	16%
Semnopithecus entellus	15	31%	21	315	23%
Macca mulata	8	17%	11	88	6%
TOTAL	48			1395	

Daily consumption is 1395/ 2304= .605 Kg

Near about 0.600 gram per day which is very less amount for survival.

DISCUSSION

Total 48 tiger scats were analyzed to know the food and feeding behaviour of the big cat. In dry season (May & June), Mostly the June results were shown that there were scarcities in biomass. Scat analysis revealed that daily consumption of prey [3] biomass (.605 or nearly 600 gram) is very less amount and this is a very critical situation. This situation creates the abnormal choice of food like elephant. In die heart and adverse condition, for search of food tiger dwells in human-dominated areas which leads the stress and conflict. During these two months of dry season tiger attacks on elephant. Other reasons of attacking are the census of elephant. The number of elephants increasing in the Corbett. So there are some possibilities of any stress in the carrying capacity of habitat. Depilation and less availability of prey and food in the dry seasons is the major cause of another choice for food in one hand while rise up in elephant's number is another reason. Increasing of elephant census determine the occupancy of animal and species [4] More than 9 hundred elephant are dwelling in the Corbett while near about 230 tiger roaring in the same area along with near about 120 leopards with other species. So in short area of habitat there may be a lot of Interspecific as well as intra-specific struggle [5] Over all study depicts the depletion in prey biomass specially this two month s of dry season in year of 2015.

CONCLUSIONS

Study shows that daily consumption of tiger is .605 gram in theses dry months which is very less amount up to the ecological investigation of food and feeding big cat in wild habitat. On the other hand two species of prey biomass Hystrix indica (19 %) while Semnopithecus entellus (31%) as a big and dominant percentage of occurrences. I am not summarizing that in these two months the tiger depends upon only two prey species but it played a major role to overcome from the critical situation in the form of ecological stress. Wild tiger needs near about four to five Kg/day but here the study shows that very less amount of food. This condition is not full filling the daily ecological requirements. At least small prey up to near about 20 kg are required for one time consumption is highly needed in the area by which tiger will ecologically satisfied in the form of prey biomass consumption.

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