

Porcupine, *Hystrix indica* is in Tiger's Diet, A Case Study, A Choice of Food or Habit For Survival In Corbett Tiger Reserve, Ramnagar, Uttrakhand, India

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ABSTRACT- In dry summer season, the chances of food availability become tough and hard. Prey species moves towards water resources. But tiger have a good and ample quality to survive anywhere with its intelligence and adaptability for survival with environment. To detect the food and feeding behaviour of tiger in this dry month, we had collected the tiger scat for scat analysis. Scat analysis is techniques by which we can reconstruct the tiger's diet with the help of undigested remain on which tiger had prayed. This is an indirect method to know the tiger's food and feeding behaviour, choice of food, availability of preys in dry season etc. Interspecific as well as Intraspecific struggle affects biomass consumption (daily diet & annual diet profile) of tiger and other sympatric species like Leopard in area.

Key-words- Biomass consumption, Scat analysis, Prey in dry season, Struggle, Ecological stress

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INTRODUCTION

Porcupine is a major component in tiger diet in dry summer, especially in the hot month of May & June tiger face a die-heart situation in the form of ecological stress. This case study depicts the availability of food in dry season along with perfect ability [1] or adaptability of tiger in any kind of situation. In these dry season the prey species move towards the water bodies while tiger is a territorial species, which marks the area by different and specific manner i.e. inter-specific as well as intra-specific struggle is very common. For this case study 89 tiger scats were collected and analyzed to find out the food & feeding habits [2] of big cats in these dry and hard situations. Out of 89 tiger scat the undigested remains of Porcupine (*Hystrix indica*) are more in rest of other prey species like Axis axis, Semnopithecus entellus, Cervus unicolor, Sus scrofa, *Macca mulata*, Hog deer, and *Boselaphus tragocamelus* etc.

Directly it's very rare to capture the food and feeding behaviour of tiger in the wild. Porcupines are nocturnal animal and are in vogue for diet since long time anywhere else where available at all. So as far as tiger adaptability is concerned that this is the animal having all type of ample ability to survive in any kind of situation whether negative or positive. Here positive means availability of food i.e. stress free habitat and lives while negative depicts the ecologically stressfully habitat which ultimately leads the conflict and livestock predation [3].

MATERIALS AND METHODS

Study area had been choose the Corbett tiger reserve Ramnagar, Uttrakhand which represent the beautiful landscape and land of roar. Tiger scats were collected with the help of official staff during fieldwork. Total 89 tiger scats were collected for the scat analysis. [4] with slight modification had been applied for this study. Undigested remains like hair were pealed out from the scats for scat analysis along with preparation of hair impression slide to detect the prey species. But in case of porcupine as a prey can be easily identified from the scat. The needles like thrones are visible from naked eyes. In out of 89 scats 29 belong to porcupines. The study depicts porcupine play a major role in diet composition of tiger in these months.

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Bunch of Hair



Base



Root

Fig. 1: Porcupine hair microscopic photographs

RESULTS

Table 1: Diet profile in Dry season

| Prey Species | No. of Animal (n) | % Occurrence | Animal wt. Considered (Kg) | Biomass (Kg) T | Biomass (%) |
|--------------------------------|-------------------|--------------|----------------------------|----------------|-------------|
| <i>Hystrix indica</i> | 29 | 32.5 | 18 | 522 | 7.16 |
| <i>Axis axis</i> | 15 | 16.8 | 85 | 1275 | 17.50 |
| <i>Semnopithecus entellus</i> | 12 | 13.48 | 21 | 252 | 3.46 |
| <i>Cervus unicolor</i> | 11 | 12.35 | 225 | 2475 | 33.98 |
| <i>Sus scrofa</i> | 7 | 7.86 | 230 | 1610 | 22.10 |
| <i>Macca mulata</i> | 8 | 8.98 | 11 | 88 | 1.2 |
| <i>Hog Deer</i> | 4 | 4.49 | 55 | 220 | 3.02 |
| <i>Boselaphus tragocamelus</i> | 3 | 3.37 | 280 | 840 | 11.5 |
| Total | 89 | | | 7282 | |

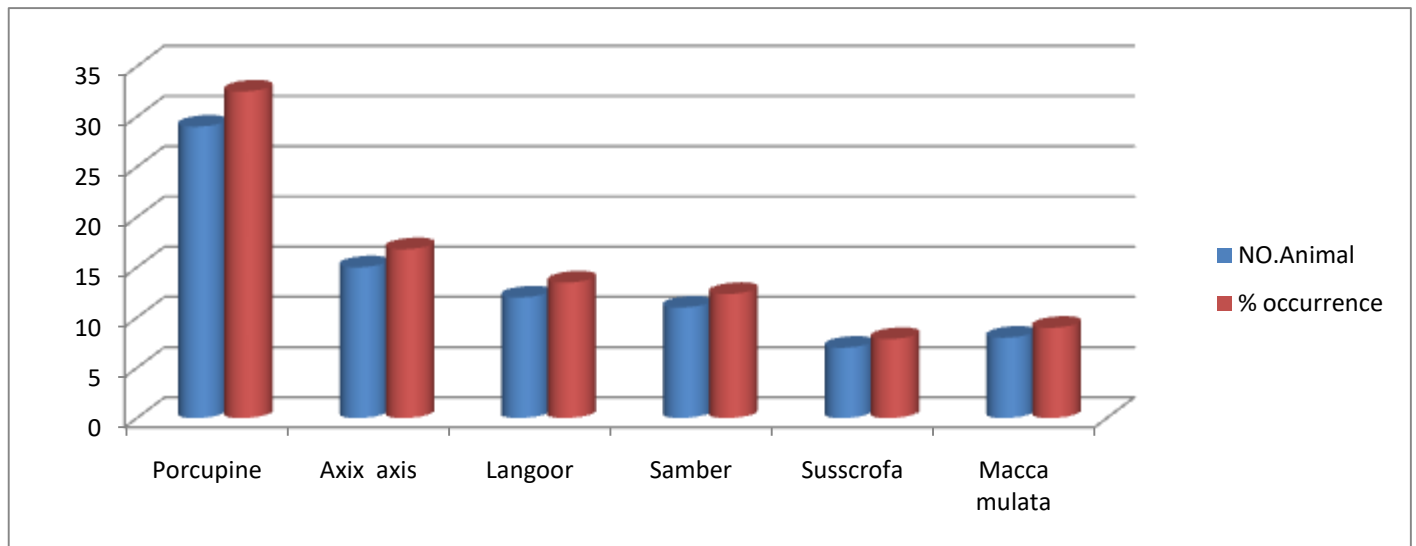


Fig. 2: Graphical representation of diet profile in dry season (May & June)

Daily Consumption by Tiger in dry season

$$C = T/N \times n, \quad 7282/7921 = 0.919 \text{ Kg. Near about per tiger per day}$$

Calculation Daily consumption (c)

$$C = T/N \times n, \quad 7282/7921 = 0.919 \text{ Kg. (Near about 1 Kg. per day)}$$

Annual Consumption $0.919 \times 365 = 967.25 \text{ Kg}$

DISCUSSION

Total 89 scats were analyzed to get the food and feeding profile in these two months. Result shows that porcupine is a major component in tiger diet in these two months. Overall per day consumption is near about 1 kg which is very less and not up to ecological fulfillment [5] of a wild tiger. At least 4-5 Kg diet is required for a healthy tiger in wild. But this study depicts the very less amount of daily consumption. In these dry seasons the tiger faces very die

heart situation for food and feeding. On the other hand 116 or more leopards as sympatric species are dwelling and also depend upon the same prey biomass in the same habitat shared by the tiger. Result shows that 0.919 Kg per day/per tiger. On the basis of such result if we calculate annual consumption it will be 335.43Kg/annum/tiger. At least daily requirement of a tiger is 4-5 Kg food is highly needed to survive for a tiger. During these months conflict cases are rises. But tiger is so intelligent animal along with large

range of adaptability to survive. In these two months results show that some area of Corbett Tiger Reserve tiger attack on elephants and preyed upon porcupine to dwell at all. These types of situation compel the conflict and live stock predation [6] If the movement of tiger lingers on in the communities for live stock predation it brings a critical situation on the ground of conservation.

CONCLUSIONS

Porcupine is always found to be the part of diet of a tiger, but this is not the case of choice it is just to survive, some time it happened that during die-heart situation or depletion of prey biomass in the habitat tiger can attack on elephant as unusual choice of food. Table 1 depicts that highest percentage of occurrence i.e. 32.5 % as result shown after scat analysis. At least a wild tiger need 4 to 5 kg food as its daily diet but the study depicts very less amount of food consumption which is ecologically not up to mark. Such types of condition change the tiger movement pattern from wild core area to buffer zone or human settlement to get easy domestic prey i.e. livestock predation. This condition will be critical for both the man & big cats depict the loss of lives.

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