

**FEEDING ECOLOGY OF SLOTH BEAR (*Melursus ursinus*) IN
CHITWAN NATIONAL PARK, NEPAL**



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RECOMMENDATION

This is to recommend that the thesis entitled “**Feeding Ecology of Sloth Bear (*Melursus ursinus*) in Chitwan National Park, Nepal**” has been carried out by Mr. Sandip Khanal for the partial fulfillment of Master’s Degree of Science in Zoology with special paper ‘Ecology and Environment’. This is his original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree in any institutions.

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LETTER OF APPROVAL

On the recommendation of the supervisor Tej B. Thapa, Ph. D., Associate Professor, this thesis submitted by Mr. Sandip Khanal entitled “**Feeding Ecology of Sloth Bear (*Melursus ursinus*) in Chitwan National Park, Nepal**”, is approved for the examination and submitted to the Tribhuvan University in partial fulfillment of the requirements for Master’s Degree of Science in Zoology (Ecology and Environment).

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CERTIFICATE OF ACCEPTANCE

This thesis work submitted by Mr. Sandip Khanal entitled “**Feeding Ecology of Sloth Bear (*Melursus ursinus*) in Chitwan National Park, Nepal**” has been approved as a partial fulfillment for the requirements of Master Degree of Science in Zoology specializing in Ecology and Environment.

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DECLARATION

I hereby declare that the work presented in this thesis entitled “**Feeding Ecology of Sloth Bear (*Melursus ursinus*) in Chitwan National Park, Nepal.**” has been done by myself, and has not been submitted elsewhere for the award of any degree. All the sources of the information have been specifically acknowledged by reference to the author(s) or institution(s).

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ABSTRACT

Feeding ecology of species directly affects the reproductive success, ranging patterns and other behavior, therefore understanding the dietary composition is important to assess its distribution and habitat use. Feeding ecology of Sloth Bear (*Melursus ursinus*) was assessed in Chitwan National Park (CNP), Nepal to determine the diet composition, seasonal variation of diets and factors affecting diet selection. Entire study area was divided into grids (n=79), each measuring with 4×4 Km² and 40% grids were randomly selected for field survey. A total of 143 scats collected in the grids as well as along fire lines, trails and around the Machans. Diet composition was estimated and presented in terms of frequency of occurrence and percent dry weight, as well factors affecting the Sloth Bear's diet selection in the study area were observed. Kruskal- Wallis Rank Sum Test was used to find the significant difference in the diet composition of Sloth Bear in two different seasons.

Six types of plants, termites, ants, honey bees, wax, as well as mammalian hair were identified in bear scats. Although variation was observed, there was no significant difference in the diet composition between two different seasons ($X^2=0.8586$, $df=1$, $p=0.3541$, $\alpha=0.05$). Overall, insects dominated the composition, occurring in 100% of the scats followed by the plants (39.16%) and mammalian hair (3.49%). Termites and ants were the major and stable components. Termites (90%), Red ants (65%) and *Aegle marmelos* (35%) were important food for Sloth Bear in summer season but the utilization of plants was very low. During winter, insects were heavily utilized by the bear. The utilization of termites (93.97%) and *Ziziphus* species (14.45%) was higher in comparison with summer season. Utilization of fruits in this season was negligible.

Overall, on percent dry weight basis also, insects (78.98%) dominated Sloth Bear diet, followed by plants (20.99%) and mammalian hairs (0.04%). Similar types of result were also found in both the seasons. Factors like human presence, forest fires, uncontrolled cattle grazing, insect mould distributions, seasons were found to affecting the diet selection of the species in the study area.

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LIST OF ABBREVIATIONS

| Abbreviated form | Details of abbreviations |
|-------------------------|--|
| ANOVA | Analysis of variance |
| BZ | Buffer Zone |
| CDZ | Central Department of Zoology |
| CITIES | Convention on International Trade in Endangered Species of Wild Fauna and Flora. |
| CNP | Chitwan National park |
| DNPWC | Department of National Parks and Wildlife Conservation |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| ICIMOD | International Centre for Integrated Mountain Development |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational Scientific and Cultural Organization |