

ASSESSMENT OF BUTTERFLIES IN BIR SHIKARGAH WILDLIFE SANCTUARY, HARYANA

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Introduction

Bir Shikargah Wildlife Sanctuary, Haryana (N 30°45' 43.4", E 076°58' 38.5") is under the district jurisdiction of Panchkula in Haryana. The sanctuary was notified in 1986, and has an area of 7 km², with three beats. The altitude of the sanctuary is about 537 meters above sea level. Maximum temperatures can reach 43°C and minimum temperatures of 4°C have been recorded. The dominant floral species are chiefly *Cassia tora*, *Bamboo* sp., *Lantana camara*, *Parthenium* sp., *Ipomoea fistulosa*, *Murraya* sp., *Cassia fistula*, *Mellotes philippensis*, *Acacia catechu*, *Tectona grandis*, etc. The faunal species include monitor lizard, cobra, vipers,

python, pangolin, spotted deer, barking deer, nilgai, wild boar, jackal, fox, sambhar and leopard. It also has a rich diversity of bird fauna viz., red jungle fowl, pea fowl, grey partridge, rufous tree-pie, bee eaters, drongo, larks, babblers, shikra, crested pied serpent eagle, green pigeon, stone curlew, sunbirds, black-headed and European golden oriole, grey hornbill, etc. No documentation on invertebrate species has been recorded from the sanctuary so far. The first ever butterfly survey was carried out during the monsoon season in 2006 in order to assess the species diversity and estimate the number of individuals per species.

Table 1 List of Butterflies documented in Bir Shikargah Wildlife Sanctuary

Family	Species	Diversity status	
1. Papilionidae	1. Common mormon (<i>Papilio polytes</i>)	E	
	2. Crimson rose (<i>Tros hector</i>)	A	
	3. Lime butterfly (<i>Papilio demoleus</i>)	B	
2. Pieridae	4. Spotless grass yellow (<i>Eurema laeta</i>)	C	
	5. Three spot grass yellow (<i>Eurema blanda</i>)	B	
	6. Small grass yellow (<i>Eurema briggita</i>)	C	
	7. Dark clouded yellow (<i>Colias feldii</i>)	A	
	8. Yellow orange tip (<i>Ixias pyrene</i>)	B	
	9. Great orange tip (<i>Hebomia glaucippe</i>)	C	
	10. Common jezebel (<i>Delias eucaris</i>)	A	
	11. Common gull (<i>Cepora nerissa</i>)	D	
	12. Common emigrant (<i>Catopsilia pomona</i>)	B	
	13. Mottled emigrant (<i>Catopsilia pyranthe</i>)	E	
	14. Lemon emigrant (<i>Catopsilia crocale</i>)	F	
	3. Nymphalidae	15. Danaid eggfly (<i>Hypolimnas misippus</i>)	A
		16. Chocolate pansy (<i>Precis iphita</i>)	A
		17. Common leopard (<i>Phalanta phalantha</i>)	C
18. Orange oakleaf (<i>Kallima inachus</i>)		A	
19. Plain tiger (<i>Danaus chrysippus</i>)		A	
20. Common bush brown (<i>Mycalesis perseus</i>)		A	
21. Common crow (<i>Euploea core</i>)		A	
22. Common nawab (<i>Polyura athamas</i>)		A	
4. Lycaenidae	23. Common pierrot (<i>Castalius rosimon</i>)	A	
	24. Forget-me-not (<i>Catochrysops strabo</i>)	A	

[A= <10, B= 10-20, C= 20-30, D= 30-40, E= 40-50, F= >50]

(Numbers depict the species abundance in a 10x10 m sampling plot)

Sampling design

To assess the butterfly diversity of the sanctuary, three different transects (100 m.) in all three beats of the sanctuary were surveyed. Well established methods for the sampling of butterflies were used to determine the average density of butterflies in a 10x10 m plot in each of the three transects. The sampling was carried out in the morning hours when the butterflies show the maximum activity (0800 to 1100 hrs). Butterflies were identified by ocular observations and unidentified specimens were collected by sweep netting and identified with the help of relevant literature and references (Haribal, 1992; Singh, 1999 and Uniyal, 2004).

Observations

A total of 24 butterfly species belonging to four families viz. Papilionidae, Pieridae, Nymphalidae and Lycaenidae, were documented during the survey. A large proportion of species of Papilionidae and Pieridae were found to be engaged in mud-puddling behavior in many locations. Common mormon (*Papilio polytes*); Mottled emigrant (*Catopsilia pyranthe*) and Lemon emigrant (*Catopsilia* sp) have been observed in puddling conditions with a large number of individuals (>50) in many places (Table 1). This behavior of mud puddling is chiefly manifested by the male species in order to make up for the deficiency of sodium salts lost during copulation; the chief sources may be from contaminated ground water, dung, urine, damp earth, etc. (Plate 1). Butterflies are an important food chain component of the spiders, birds, reptiles and other predatory insects. They are good indicators of environmental changes, as they are sensitive and are directly affected by changes in their habitats, atmosphere, temperature and weather conditions (Haribal, 1992). The survival of butterflies depends mainly on the availability of larval food plants, which are generally secondary growths consisting of shrubs, creepers, saplings, etc. Increased human activities such as deforestation, construction, pollution, grazing, agricultural practices, and urbanization threatens the habitat of the butterflies. Thus, monitoring the butterfly populations in a given area provides an opportunity to find out the impact on the ecosystem at a landscape level, and help to plan

the appropriate management strategies to protect the degrading habitats.

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