

Butterflies of the Karnala Bird Sanctuary, Raigad, Maharashtra

RAJU KASAMBE

B-205, Trimurti Apartment, Borkar Lane, Tilak Nagar, Dombivli (East) - 421201, Distt. Thane (Maharashtra).
E-mail: raju.bnhs@gmail.com.

Introduction

Karnala Bird Sanctuary (18°53'N and 73°7'E) is situated in Panvel taluka of Raigad district and is about 60 km from Mumbai, on the Mumbai-Goa Highway (NH-17), with an elevation range of approximately 20 mts to 450 mts. It was declared as a Sanctuary in 1968 with an area of 4.48sq.km. In 1975 the area was increased to 12.11sq.km. About 2.5km long stretch of the highway passes right through the Sanctuary dividing it into two unequal parts, the larger part with the fort and the smaller part on the West side of the Highway. Situated in the Biogeographic province of Malabar Plains Region, the Sanctuary is part of one of the spurs of the Northern Sahyadri Range in the Western Ghats. The highest point of the Sanctuary is the Karnala Fort at 450mts. The Sanctuary shows a 40% tree cover. There are five distinct habitat types in the Sanctuary, viz., Hill Forests, mostly Southern Dry Mix Deciduous Forest, Open Forest of Teak (*Tectona grandis*), Riverine Fringe Forest and isolated patches of grasslands. There are few water bodies and streams flowing through it.

Materials and Methods

Butterflies were observed opportunistically during the span of five years, i.e., 2010 to 2015 in Karnala Bird Sanctuary. Most observations were taken in monsoon and winter along the existing trails earmarked for tourists and at a pond (mud-puddling site) during summer. Some observations were taken along the national highway passing through the sanctuary. Photography of the butterflies was done during the study period for identification purpose. No specimen was collected during this study. Butterflies were identified in the field or from the photographs using two field guides on Indian butterflies (Kehimkar, 2008; Wynter-Blyth, 1957).

The present paper provides a preliminary checklist of butterflies of Karnala with notes on their abundance. Butterflies were categorized into five groups based on their occurrence during the study period on the basis of frequency of sightings. Accordingly, those species observed were categorized as:

A-Abundant-Seen on 80-100% of field visits in most habitats

C-Common-Seen on 60-80% of field visits in most habitats

U-Uncommon-seen on 40-60% of field visits in most habitats

R-Rare-seen on 20-40% of field visits in most habitats

VR-Very Rare-seen on less than 20% of field visits

Results and Discussion

A preliminary checklist of butterflies was prepared after opportunistic surveys were done in the study area during the period of five years (2010-2015). The family-wise abundance of the species recorded during the survey is Papilionidae: 10 species, Pieridae: 14 species, Nymphalidae: 38 species, Lycaenidae: 33 species and Hesperidae: 19 species (see Table 1). Thus total 114 butterfly species were recorded. The species-wise abundance was found to be Abundant:22 species, Common:22 species, Uncommon:27 species, Rare:22 species, and Very Rare:21 species.

The paper includes following three species photographed by other naturalists but not seen by the author in the study area. A Plain Puffin *Appias indra* was photographed by Nikhil Bhopale here in July 2008 (Bhopale, 2008). A Silverstreak Blue *Iraota timoleon* was photographed by Animish Mandrekar in February 2008 (Mandrekar, 2008). Omkar Godbole photographed a Common Map *Cyrestis thyodamas* here in January 2012 (Godbole, 2012).

Gaonkar (1996) had reported 208 species in the entire Western Ghats stretch of Maharashtra. Sharma & Chaturvedi (2006) had reported occurrence of 138 species in Sanjay Gandhi National Park and Mumbai region. Later Kasambe (2012) reported 172 species from the same area. Thus it can be said that, more intensive and systematic surveys will result into addition of many species in this preliminary checklist.

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Table 1. Checklist of butterflies found in Karnala Bird Sanctuary, Raigad and their abundance.

Common Name	Species Name	Abundance
Family: Papilionidae		
1	Spot Swordtail <i>Pathysa nomius</i> (Esper, 1798)	C
2	Common Jay <i>Graphium doson</i> (C. & R. Felder, 1864)	C
3	Tailed Jay <i>Graphium agamemnon</i> (Linnaeus, 1758)	A
4	Common Bluebottle <i>Graphium sarpedon</i> (Linnaeus, 1758)	C
5	Lime Butterfly <i>Papilio demoleus</i> (Linnaeus, 1758)	A
6	Blue Mormon <i>Papilio polymnestor</i> (Cramer, 1775)	C
7	Common Rose <i>Pachliopta aristolochiae</i> (Fabricius, 1775)	A
8	Crimson Rose <i>Pachliopta hector</i> (Linnaeus, 1758)	C
9	Common Mormon <i>Papilio polytes</i> (Linnaeus, 1758)	A
10	Common Mime <i>Papilio clytia</i> Linnaeus, 1758	R
Family: Pieridae		
1	Common Gull <i>Cepora nerissa</i> Fabricius, 1775	A
2	White Orange Tip <i>Ixias marianne</i> Cramer, 1779	U
3	Yellow Orange Tip <i>Ixias pyrene</i> Linnaeus, 1764	U
4	Great Orange Tip <i>Hebomoia glaucippe</i> Linnaeus, 1758	C
5	Common Jezebel <i>Delias eucharis</i> Drury, 1773	A
6	Psyche <i>Leptosia nina</i> Fabricius, 1793	A
7	Common Wanderer <i>Pareronia valeria</i> (Cramer, 1776)	C
8	Common Emigrant <i>Catopsilia pomona</i> Fabricius, 1775	A
9	Mottled Emigrant <i>Catopsilia pyranthe</i> Latreille, 1758	C
10	Plain Puffin <i>Appias indra</i> Moore, 1857	VR
11	Spotless Grass Yellow <i>Eurema laeta</i> Boisduval, 1836	C
12	Common Grass Yellow <i>Eurema hecabe</i> Linnaeus, 1758	A
13	Small Grass Yellow <i>Eurema brigitta</i> (Stoll, 1780)	U
14	Pioneer <i>Belenois aurota</i> (Fabricius, 1793)	U
Family: Nymphalidae		
1	Glassy Tiger <i>Parantica aglea</i> (Stoll, 1782)	C
2	Blue Tiger <i>Tirumala limniace</i> Cramer, 1775	A
3	Dark Blue Tiger <i>Tirumala septentrionis</i> (Butler, 1874)	R
4	Plain Tiger <i>Danaus chrysippus</i> Linnaeus, 1758	A
5	Common Or Striped Tiger <i>Danaus genutia</i> Cramer, 1779	A
6	Common Indian Crow <i>Euploea core</i> (Cramer, 1780)	A
7	Brown King Crow <i>Euploea klugii</i> Moore, 1858	R
8	Common Bushbrown <i>Mycalesis perseus</i> (Fabricius, 1775)	A
9	Dark-brand Bushbrown <i>Mycalesis mineus</i> Linnaeus, 1758	R
10	Long-brand Bushbrown <i>Mycalesis visala</i> Moore, 1857	R
11	Common Leopard <i>Phalanta phalantha</i> Drury, 1773	R
12	Tawny Coster <i>Acraea violae</i> (Linnaeus, 1758)	C
13	Commander <i>Moduza procris</i> (Cramer, 1777)	R
14	Common Sailer <i>Neptis hylas</i> Linnaeus, 1758	A
15	Short-banded Sailer <i>Phaedyma columella</i> (Cramer, 1780)	R
16	Chestnut-Streaked Sailer <i>Neptis jumbah</i> Moore, 1857	R
17	Common Baron <i>Euthalia aconthea</i> (Cramer, 1777)	C
18	Gaudy Baron <i>Euthalia lubentina</i> (Cramer, 1777)	VR
19	Baronet <i>Euthalia nais</i> (Forster, 1771)	R
20	Common Castor <i>Ariadne merione</i> (Cramer, 1777)	U

21	Angled Castor	<i>Ariadne ariadne</i> Linnaeus, 1763	U
22	Painted Lady	<i>Vanessa cardui</i> (Linnaeus, 1758)	U
23	Gray Pansy	<i>Junonia atlites</i> (Linnaeus, 1763)	A
24	Peacock Pansy	<i>Junonia almana</i> (Linnaeus, 1758)	A
25	Yellow Pansy	<i>Junonia hierta</i> (Fabricius, 1798)	VR
26	Chocolate Pansy	<i>Junonia iphita</i> (Cramer, 1779)	A
27	Lemon Pansy	<i>Junonia lemonias</i> (Linnaeus, 1758)	A
28	Blue Pansy	<i>Junonia orithya</i> (Linnaeus, 1758)	R
29	Great Eggfly	<i>Hypolimnas bolina</i> (Linnaeus, 1758)	U
30	Danaid Eggfly	<i>Hypolimnas misippus</i> (Linnaeus, 1764)	C
31	Blue Oakleaf	<i>Kallima horsfieldi</i> Kollar, 1844	R
32	Black Rajah	<i>Charaxes solon</i> (Fabricius, 1793)	R
33	Tawny Rajah	<i>Charaxes bernardus</i> (Fabricius, 1793)	VR
34	Common Fivering	<i>Ypthima baldus</i> (Fabricius, 1775)	VR
35	Common Evening Brown	<i>Melanitis leda</i> (Linnaeus, 1758)	C
36	Common Nawab	<i>Polyura athamas</i> (Drury, 1773)	R
37	Anomalous Nawab	<i>Polyura agraria</i> (<i>Charaxes agrarius</i>) Swinhoe, 1887	VR
38	Common Map	<i>Cyrestis thyodamas</i> Boisduval, 1836	VR
Family: Lycaenidae			
1	Plum Judy	<i>Abisara echerius</i> (Moore, 1901)	C
2	Red Pierrot	<i>Talicauda nyseus</i> Guérin, 1843	U
3	Common Pierrot	<i>Castalius rosimon</i> Fabricius, 1775	A
4	Angled Pierrot	<i>Caleta caleta</i> Hewitson, 1876	U
5	Rounded Pierrot	<i>Tarucus nara</i> Kollar, 1848	VR
6	Malayan	<i>Megisba malaya thwaitesi</i> (Horsfield, 1828)	C
7	Common Hedge Blue	<i>Acytolepis pupa</i> (Horsfield, 1828)	U
8	Lime Blue	<i>Chilades laius</i> (Cramer, 1782)	U
9	Plains Cupid	<i>Chilades pandava</i> (Horsfield, 1829)	R
10	Dark Grass Blue	<i>Zizeeria karsandra</i> (Moore, 1865)	U
11	Lesser Grass Blue	<i>Zizina otis</i> (Fabricius, 1787)	U
12	Tiny Grass Blue	<i>Zizula hylax</i> (Fabricius, 1775)	U
13	Grass Jewel	<i>Freyeria trochylus</i> (Freyer, 1845)	C
14	Gram Blue	<i>Euchrysops cnejus</i> (Fabricius, 1798)	U
15	Pointed Ciliate Blue	<i>Anthene lycaenina</i> (C. & R. Felder, 1868)	VR
16	Forget-me-not	<i>Catochrysops strabo</i> (Fabricius, 1793)	U
17	Pea Blue	<i>Lampides boeticus</i> (Linnaeus, 1767)	C
18	Dark Cerulean	<i>Jamides bochus</i> Stoll, 1782	U
19	Common Cerulean	<i>Jamides celeno</i> (Cramer, 1775)	A
20	Common Lineblue	<i>Prosotas nora</i> (Felder, 1860)	R
21	Tailless Lineblue	<i>Prosotas dubiosa</i> (Semper, 1879)	R
22	Indian Sunbeam	<i>Curetis thetis</i> (Drury, 1773)	U
23	Angled Sunbeam	<i>Curetis acuta</i> Moore, 1877	VR
24	Leaf Blue	<i>Amblypodia anita</i> Hewitson, 1862	R
25	Yamfly	<i>Loxura atymnus</i> (Cramer, 1782)	R
26	Monkey Puzzle	<i>Rathinda amor</i> (Fabricius, 1775)	VR
27	Silverstreak Blue	<i>Iraota timoleon</i> (Stoll, 1790)	VR
28	Common Silverline	<i>Spindasis vulcanus</i> (Fabricius, 1775)	R
29	Peacock Royal	<i>Tajuria cippus</i> (Fabricius, 1798)	VR
30	Cornelian	<i>Deudorix epijarbas</i> (Moore, 1875)	VR

31	Common Guava Blue	<i>Virachola isocrates</i> Fabricius, 1793	VR
32	Indian Red Flash	<i>Rapala iarbus</i> (Fabricius, 1787)	VR
33	Zebra Blue	<i>Leptotus plinius</i> (Fabricius, 1793)	C
Family: Hesperidae			
1	Brown Awl	<i>Badamia exclamationis</i> (Fabricius, 1775)	C
2	Common Awl	<i>Hasora badra</i> (Moore, 1857)	U
3	Plain Banded Awl	<i>Hasora vitta</i> (Butler, 1870)	VR
4	Common Banded Awl	<i>Hasora chromus</i> (Cramer, 1780)	VR
5	Conjoined Swift	<i>Pelopidas conjuncta</i> (Herrich-Schäffer, 1869)	VR
6	Small Branded Swift	<i>Pelopidas mathias</i> (Fabricius, 1798)	U
7	Indian Skipper	<i>Spialia galba</i> (Fabricius, 1793)	VR
8	Chestnut Bob	<i>Iambrix salsala</i> (Moore, 1865)	U
9	Vindhyan Bob	<i>Arnetta vindhiana</i> (Moore, 1883)	U
10	Indian Palm Bob	<i>Suastus gremius</i> (Fabricius, 1798)	U
11	Dark Palm Dart	<i>Telicota ancilla</i> (Herrich-Schäffer, 1869)	U
12	Golden Angle	<i>Caprona ransonnetti</i> (Felder, 1868)	U
13	Black Angle	<i>Tapena thwaitesi</i> (Moore, 1881)	R
14	Common Spotted Flat	<i>Celaenorrhinus leucocera</i> (Kollar, 1848)	C
15	Tricoloured Pied Flat	<i>Coladenia indrani</i> (Moore, 1865)	R
16	Common Small Flat	<i>Sarangesa dasahara</i> (Moore, 1865)	A
17	Spotted Small Flat	<i>Sarangesa purendra</i> (Moore, 1882)	C
18	Common Redeye	<i>Matapa aria</i> (Moore, 1865)	VR
19	Grass Demon	<i>Udaspes folus</i> (Cramer, 1775)	U

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Tallest Mother and Son in India Guinness World Record

Karan Singh's parents were a worried lot when he started school. He was to be admitted to kindergarten but he was already 5 feet tall.

"When he started school, other kids used to run away from him because he was so unusually big. My wife and I worried for him. We wondered how he would fit in society. With time the kids got used to him, and now he has many friends," says Sanjay Singh, Karan's father.

Karan Singh holds the Guinness World Record for being the tallest kid for his age—in a few months, he will turn six years. He stands 5 feet 7 inches tall. He was 4 feet

5 inches when he was just two-and-a-half-years old.

But he is not alone. His 25-year-old mother, Shweatlana Singh, is 7 feet 2 inches tall. What is more, the family claims she is still growing, at about four inches every two years.

Till 2012, Shweatlana held the Guinness record for being India's tallest woman. Siddiq Parveen, from West Bengal, at 8 feet 2 inches, recently displaced her.

Sanjay Singh of Meerut (U.P.), says of his wife: "She grows taller by at least four inches every two years." Singh is a dietician, and Shweatlana is an International Basket Ball Coach.