

Checklist of Butterfly Diversity Dwelling in the Forest Strip along Sirhind Canal Mainline in Punjab, India

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Abstract: Under a Minor Research Project funded by the UGC, New Delhi repeated survey cum sampling tours were undertaken between April 2010 to October 2011 in the forest strip extending 50 Km along Sirhind Canal Mainline in Punjab. A total of 54 species of butterflies belonging to 37 genera referable to 7 families viz., Lycaenidae (10 species under 9 genera), Nymphalidae (11 species under 7 genera), Danaidae (04 species under 2 genera), Satyridae (06 species under 4 genera), Pieridae (16 species under 9 genera), Papilionidae (03 species under 2 genera) and Hesperidae (04 species under 4 genera) have been recorded from the study area.

Keywords: Butterflies, Punjab, biodiversity, Sirhind Canal, checklist.

1. INTRODUCTION

The Sirhind Canal System inaugurated in 1882 is one of the oldest and biggest canal irrigation systems of Punjab. The canal mainline off-takes from river Satluj waters at Ropar headworks (261m ASL, 30°58'59.99" N and 76°31'0.01" E) in the Rupnagar district in Punjab and leads southwards about 53 Km to Doraha (30° 49' 0" N, 76° 1' 0" E) where it subdivides into three branches viz., Bathinda branch, Patiala branch and Abohar branch. The strip forest along the canal mainline is of mixed type vegetation including trees, shrubs, bushes and grasses, and along with the adjoining cropland, it harbours varied components of biodiversity. In fact, there exists a dire need to document different biodiversity components dwelling in such habitats of conservation value. A scrutiny of the relevant literature reveals that only a few studies have been undertaken to document the butterfly diversity dwelling in the state of Punjab^[1,2,3,4,5,6]. During the present study, an effort has been made to document the butterfly diversity dwelling in the unexplored unique environs of the forest strip along Sirhind Canal Mainline in Punjab.



2. MATERIAL AND METHODS

Survey cum collection tours were undertaken during different seasons between April 2010 and October, 2011 and the available butterfly diversity was documented. Only a representative sample was collected using a sweeping net (ring circumference 37", pole length 35" and bag depth 31") while other individuals were released after examination in the field. Subsequently, the specimens were pinned, stretched and preserved as per the standard technique^[7]. Photography has been done

using a Fuji Film Finepix S2500HD Camera fitted with an 18X Zoom Lens. The identification of the material has been made on basis of morphological characters such as wing maculation, legs, dry examination of wing venation and wing shape etc. ^[8,9,10,11,12,13,14,15,16]. The expertise available at Zoological Survey of India, High Altitude Research Station, Solan (Himachal Pradesh) and Punjabi University, Patiala (Punjab) have also been consulted.

3. OBSERVATIONS AND RESULT

The identification of the sample includes the following 54 species under families, Lycaenidae (10 species), Papilionidae (03 species), Nymphalidae (11 species), Danaidae (04 species), Satyridae (06 species), Pieridae (16 species) and Hesperidae (04 species).

Scientific Name	Common Name	Fig. No., Sex
Family: Lycaenidae		
<i>Castalius rosimon</i> (Fabricius)	The Common Pierrot	1, ♂
<i>Lampides boeticus</i> (Linnaeus)	The Pea Blue	2, ♀
<i>Zizina otis</i> (Fabricius)	The Lesser Grass Blue	3, ♂
<i>Pseudozizeeria maha</i> (Kollar)	The Pale Grass Blue	4, ♂
<i>Zizeeria karsandra</i> (Moore)	The Dark Grass Blue	5, ♂
<i>Syntarucus plinius</i> (Fabricius)	The Zebra Blue	6, ♂
<i>Tarucus extricatus</i> Butler	The Rounded Pierrot	7, ♂
<i>Euchrysops cnejus</i> (Fabricius)	The Gram Cupid	8, ♂
<i>Spindasis ictis</i> Hewitson	The Common Shot Silverline	9, ♀
<i>Spindasis vulcanus</i> (Fabricius)	The Common Silverline	10, ♂
Family: Nymphalidae		
<i>Precis hierta</i> (Fabricius)	The Yellow Pansy	11, ♀
<i>Precis orithyia</i> (Linnaeus)	The Blue Pansy	12, ♂
<i>Precis almana</i> (Linnaeus)	The Peacock Pansy	13, ♂
<i>Precis iphita</i> (Cramer)	The Chocolate Pansy	14, ♂
<i>Cynthia cardui</i> (Linnaeus)	The Painted Lady	15, ♂
<i>Phalanta phalantha</i> (Drury)	The Common Leopard	16, ♂
<i>Hypolimnas bolina</i> (Linnaeus)	The Great Eggfly	17, ♂
<i>Neptis hylas</i> (Linnaeus)	The Common Sailor	18, ♂
<i>Euthalia garuda</i> (Moore)	The Baron	19, ♀
<i>Ergolis merione</i> (Cramer)	The Common Castor	20, ♀
<i>Ergolis ariadne</i> (Johanssen)	The Angled Castor	21, ♂
Family: Danaidae		
<i>Danaus chrysippus</i> (Linnaeus)	The Plain Tiger	22, ♂
<i>Danaus plexippus</i> (Linnaeus)	The Common Tiger	23, ♂
<i>Danaus limniace</i> Cramer	The Blue Tiger	24, ♂
<i>Euploea core</i> (Cramer)	The Common Indian Crow	25, ♂
Family: Satyridae		
<i>Elymnias hypermnestra</i> Linnaeus	The Common Palmfly	26, 27, ♂; 28, ♀
<i>Ypthima inica</i> Hewitson	The Lesser Threewing	29, ♂
<i>Ypthima avanta</i> Moore	The Jewel Fourring	30, ♂
<i>Mycalesis mineus</i> (Linnaeus)	The Dark-Brand Bushbrown	31, ♂
<i>Melanitis leda</i> (Drury)	The Common Evening Brown	32, ♂ WSF 33, ♂ DSF
<i>Melanitis phedima</i> Cramer	The Dark Evening Brown	34, ♂ WSF
Family: Pieridae		
<i>Leptosia nina</i> (Fabricius)	The Psyche	35, ♂
<i>Eurema brigitta</i> (Cramer)	The Common Grass Yellow	36, ♂
<i>Eurema hecabe</i> (Linnaeus)	The Common Grass Yellow	37, ♂
<i>Eurema laeta</i> (Boisduval)	The Spotless Grass Yellow	38, ♂
<i>Colias electo</i> (Linnaeus)	The Dark Clouded Yellow	39, ♂
<i>Ixias marianne</i> (Cramer)	The White Orange Tip	40, ♂; 41, ♀
<i>Ixias pyrene</i> (Cramer)	The Yellow Orange Tip	42, ♂ WSF 43, ♀ WSF 44, ♂ DSF 45, ♀ DSF
<i>Anahaes aurota</i> (Fabricius)	The Pioneer	46, ♂; 47, ♀

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<i>Cepora nerissa</i> (Fabricius)	The Common Gull	48, ♂; 49, ♀
<i>Pontia daplidice</i> (Linnaeus)	The Bath White	50, ♂
<i>Pieris brassicae</i> (Linnaeus)	The Large Cabbage White	51, ♀
<i>Pieris canidia</i> (Sparman)	The Indian Cabbage White	52, ♂; 53, ♀
<i>Catopsilia crocale</i> (Cramer)	The Common Emigrant	54, ♂
<i>Catopsilia pomona</i> (Fabricius)	The Lemon Emigrant	55, ♂; 56, ♀
<i>Catopsilia pyranthe</i> (Linnaeus)	The Mottled Emigrant	57, ♂
<i>Catopsilia florella</i> (Linnaeus)	The African Emigrant	58, ♀
Family: Papilionidae		
<i>Papilio polytes romulus</i> (Cramer)	The Common Mormon	59, ♀ <i>cyrus</i> 60, ♀ <i>romulus</i> 61, ♀ <i>stichius</i>
<i>Papilio demoleus</i> Linnaeus	The Lime Butterfly	62, ♂
<i>Graphium doson</i> (C. & R. Felder)	The Common Jay	63, ♂
Family: Hesperidae		
<i>Astychus pythias</i> (Mabille)	The Dark Palm Dart	64, ♂
<i>Pelopidas mathias</i> (Fabricius)	The Small Branded Swift	65, ♂
<i>Hasora chromus</i> (Cramer)	The Common Banded Awl	66, ♂
<i>Saustus gremius</i> (Fabricius)	The Indian Palm Bob	67, ♂

As far as the enlisting of different species in the Wildlife (Protection) Act, 1972 is concerned, out of the 54 species recorded from the study area, 05 species are enlisted in the Act. These includes 03 species of family Lycaenidae: *Castalius rosimon* (Fabricius) in Schedule I, Part IV; *Euchrysops cnejus* (Fabricius) in Schedule II, Part II; *Lampides boeticus* (Linnaeus) in Schedule II Part II; 01 species of family Nymphalidae: *Euthalia garuda* (Moore) in Schedule II, Part II and 01 species of family Pieridae: *Cepora nerissa* (Fabricius) in Schedule II, Part II.

Punjab is primarily an agrarian state with 84 per cent of the area under intensive cultivation and only 5.7 per cent under forests. During and after the period of Green Revolution, there has been a sea change in the local environment scenario of Punjab. Owing to anthropogenic factors such as deforestation, industrialization, increased transportation network, modern agricultural practices and urbanization, a lot of habitat deterioration has taken place. Major part of forestland has been cleared for non-forestry purposes such as agriculture and other developmental activities. As a result, the present day Punjab has lost much of its forest and biodiversity. The remaining small populations are largely confined to the wildlife sanctuaries, wetland areas, Shivalik foothills and other forest strips in the state. In this context, the present study will prove helpful in devising appropriate conservation measures for the butterfly diversity dwelling in the forest strip along the Sirhind Canal mainline in Punjab.

Butterflies of Sirhind Canal Mainline in Punjab





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