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Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
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Cover: A Warty Hammer Orchid *Drakaea livida* gets pollinated by a male thynnine wasp through 'sexual deception' — a colour pencil reproduction of photos by ron_n_beths (flickr.com) and Rod Peakall; Water colour reproduction of Flame Lily *Gloriosa superba* -- photo by Passakoran_14; and a bag worm and its architectural genius (source unknown). Art work by Pannagasri G.



Butterfly diversity in Nagarahole (Rajiv Gandhi) National Park of Karnataka, India: an updated checklist

S. Santhosh¹ , V. Gopi Krishna² , G.K. Amulya³ , S. Sheily⁴ , M. Nithesh⁵ & S. Basavarajappa⁶

¹ Department of Studies in Zoology, University of Mysore, Manasagangotri, Mysuru, Karnataka 570006, India.

^{2,3,4,5} Nagarahole Conservation Society, #16, 3rd Floor, 80 ft Road, 4th Block, Koramangala, Bengaluru, Karnataka 560034, India.

⁶ Department of Studies in Zoology, University of Mysore, Manasagangotri, Mysore, Karnataka 570006, India.

¹ santhoshacharr@zoology.uni-mysore.ac.in (corresponding author), ² ncsbutterfly@gmail.com, ³ amulyagopikrishna@gmail.com,

⁴ sheilysrinivas@gmail.com, ⁵ nitheshmgowda@gmail.com, ⁶ ornithoraj11@gmail.com

Abstract: This study provides a comprehensive insight into the species richness and diversity of butterflies recorded from Nagarahole (Rajiv Gandhi) National Park (NNP), a protected area in southern Western Ghats of Karnataka, India. An updated checklist of 210 species, including previous records of 138 species, by adopting random and opportunistic sampling methods across different vegetation types of NNP from June 2021 to June 2023. The Nymphalidae was the most species-rich butterfly family, represented by 63 species, followed by Lycaenidae (57 species), Hesperidae (49), Pieridae (23), Papilionidae (16), and Riodinidae (2). Of the total, 35 species are listed under various schedules of the Wildlife (Protection) Act, 1972, including the Indian Wildlife (Protection) Amendment Act, 2022. Additionally, four species are endemic to the Western Ghats. The population status of butterflies in NNP indicates that 38% of species are very common, 19% are common, 23% are not rare, and 10% are rare. However, 20 butterfly species (10%) are classified as very rare in their status. This highlights the importance of conservation measures to protect these butterfly species in this area.

Keywords: Biodiversity hotspots, butterfly status, conservation planning, Kodagu, lepidoptera, Nilgiri Biosphere Reserve, protected species, protected area, Rhopalocera, Western Ghats.

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INTRODUCTION

The Western Ghats (WG) is recognized as one of the world's eight 'hottest hotspots' with a high level of biological diversity and endemism (Myers et al. 2000). During the last century, between 1920 and 1990, approximately 40% of its natural vegetation has been lost because of forest fragmentation (Myers et al. 2000). Out of 1,85,500 km² of preliminary forest of WG, only 6.8% of primary forest cover exists today (Myers et al. 2000; Padhye et al. 2012) and an estimated area of approximately 40,000 km² in southern stretch of the WG has experienced significant land use change, and 1.16% of forest area is degraded annually due to deforestation, and other anthropogenic activities (Jha et al. 2000). Presently, only 10% of its land cover is under protection and there are fewer opportunities to keep large tracts of native habitats (Dolia et al. 2008). Nagarahole National Park (NNP) is one of the largest Protected Areas (PA) in the southern zone of WG and harbours rich irreplaceable flora & fauna assemblages, which therefore warrant conservation importance for protection, and management.

Biodiversity inventories, carefully tested for their potential to serve as proxies for estimating general health, and conservation of overall biodiversity, and as indicators for various terrestrial ecosystems at multiple spatial scales (McGeoch 1998; Kerr et al. 2000; Naik et al. 2022), suggests that butterflies meet many of the criteria proposed for defining a definitive path in conservation planning (Ehrlich & Murphy 1987; Nelson & Andersen 1994; DeVries et al. 1997; Lomov et al. 2006; Bhuyan et al. 2013). Butterflies are often highly co-evolved with plants for their larval host and nectar plant needs, and their diversity will directly depict the plant diversity in the given area (Ehrlich & Raven 1964; Ehrlich & Murphy 1987; Nelson & Andersen 1994; DeVries et al. 1997; Hayes et al. 2009). They are very sensitive to microclimatic variations in their habitat (Kocher & Williams 2000; Sawchik et al. 2005), many of the species are strictly seasonal (Kunte 1997), migratory or locally extinct (Kunte 2000; Schtickzelle et al. 2006). Thus, butterflies are used as an umbrella group of species for insects' conservation planning, and management (Fleishman et al. 2001, 2005; Betrus et al. 2005).

India being a vast country with one of the most varied flora and fauna in the world (Rodgers 1989) hosts about 1,403 species of butterflies (Smetacek 2025) and accounts for about 8.7% of the butterfly species of the world (Kunte 2005). Out of these 1,403 species, 350

species are recorded from peninsular India, Pandhye et al. (2012) reported 334 species from Western Ghats. A more recent update by Sadasivan & Sengupta (2024) of 353 species from WG, of which 317 species, including 33 endemics to Karnataka, and 42 species are endemic to southern India (Rajagopal et al. 2011). Recently, Padhye et al. (2012) have revised the distribution and abundance of butterfly species along the latitudinal and habitat gradients in the WG, Kunte et al. (2024) has recently described new species *Cigaritis conjuncta* species from Honey Valley, which is part of the WG in Kodagu District, Karnataka, and Naicker et al. (2023) has described *Cigaritis meghamalaiensis* (Lycaenidae, Aphnaeinae) from the Meghamalai Hills of the Periyar landscape of the southern WG. But increasing global habitat destruction has resulted in modern studies of species diversity which are of vital importance in understanding biological communities and their conservation (Purvis & Hector 2000). The present study has aided a lot in the knowledge of butterfly species' diversity, and a sustained exploration was undertaken from June 2021 to June 2023 across different habitats of NNP.

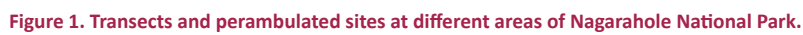
MATERIAL AND METHODS

Study area

Nagarahole National Park (NNP) or Rajiv Gandhi National Park is located in Kodagu and Mysuru districts of Karnataka State, India with a coordinate of 76.116–75.929° E, 11.836–12.346° N at 700–1002 m altitude with an area of 843 km², and is bordered by Wayanad Wildlife Sanctuary in the south-west, and by Kabini Reservoir in the southeast which further connects to Bandipur Tiger Reserve (Figure 1). Nagarhole National Park, which was established as a Wildlife Sanctuary (WS) in 1955, and NP in 1988 is one of the most important wildlife refuges in the country. The National Park derives its name from the meandering stream '*Nagarahole*', a tributary of the river Taraka which eventually joins the river Kabini. The forest type of NNP is majorly composed of moist deciduous, dry deciduous, scrub, and semi evergreen vegetation (Champion & Seth 1968) followed by very small portions of evergreen forest type at 1,002 m. The mean annual rainfall ranges from 900 mm in the east to 1,500 mm in the west (Habib et al. 2020).

Methods

We studied the butterfly diversity across eight forest ranges, viz., Anechowkur, Antharasanthe, D.B.



Kuppe, Hunsuru (Hunsuru Wildlife Range), Kallahalla, Metikuppe, Nagarahole, and Veeranahosahalli of NNP. A total of 189 random transects were established for sampling butterflies from June 2021–June 2023, across different seasons (Monsoon, Winter and Summer) (Figure 1). Modified Pollard Walk method (Caldas & Robbins 2003) was followed for recording butterflies while walking along fixed transects. The length of each transect was 500 m, and they were traversed in a time frame of 45 minutes during two periods: from 0900–1300 h and from 1500–1800 h. Butterflies within a 5 x 5 x 5 m box around the observer were recorded. In addition to conducting transects, we also executed opportunistic surveys at mud puddles, nectar sources, jeep roads, fire lines, D lines (Dividing lines between the two ranges and beats) and other potential areas to increase the inventory (Figure 1). Photographic documentation was made using Canon and Nikon DSLR cameras, and all the photographs are copyright to Nagarahole Conservation Society (NCS), Bangalore. Butterflies were identified in the field using different field guides by Evans (1932), Wynter-Blyth (1957), Kehimkar (2016), and Bhakare & Ogale (2018). The classification followed guidelines outlined by Heppner (1998) and recent nomenclature was followed as per Sadasivan & Sengupta (2024). The protected butterfly species are recorded as per different schedules of WPA 1997 and The Indian Wildlife (Protection) Amendment Act, 2022, and population status of butterflies at NNP based on the occurrence data on the transects with status as Very Common (VC) when seen in >75% of transects, Common (C) seen in 50–75%, Not Rare (NR) seen in 25–50% transects, Rare (R) seen in 5–25%, and Very Rare (VR) is seen in <5% of the transects (Sadasivan & Sengupta 2024).

RESULTS

Analyses of results suggest that NNP is rich in butterfly diversity with 210 species, including 138 species from previous records of Basavarajappa (2015). These species belong to six families and 127 genera (Table 1), with 73 species added to the earlier record. Nymphalidae was the largest representative family with (63) species followed by Lycaenidae (57) species, Hesperidae (49 species), Pieridae (23 species), Papilionidae (16 species), and Riodinidae (2 species), which correspond to about 59.49% of the estimated species of the WG, and 24% of the state of Karnataka. *Gerosia bhagava bhagava* (Moore, [1866]) was recorded in the earlier study by Basavarajappa (2015), it was not

sighted during the present investigation. The population status of butterflies in NNP indicates that 38% of species are very common, 19% are common, 23% are not rare, and 10% are rare. However, twenty butterfly species (10%) are classified as very rare in their status, among which *Appias (Hiposcritia) indra shiva* (Swinhoe, 1885), *Elymnias caudata* (Butler, 1871), *Athyma ranga karwara* (Fruhstorfer, 1906), *Dophla evelina laudabilis* (Swinhoe, 1890), *Charaxes solon solon* (Fabricius, 1793), *Kallima horsfieldii* (Kollar, 1844), *Libythea myrrha rama* (Moore, 1872), *Thaduka multicaudata kanara* (Evans, 1925), *Zesius chrysomallus* (Hübner, 1819), *Rachana jalindra macanita* (Fruhstorfer, 1912), *Tajuria cippus cippus* (Fabricius, 1798), *Creon cleobis cleobis* (Godart, 1824), *Tarucus ananda* (de Nicéville, 1884), and *Thoressa astigmata* (Swinhoe, 1890) were recorded only once or twice during two years of study period.

Members of the subfamily Danaine, such as *Tirumala limniace exotica* (Gmélín, 1790), *T. septentrionis dravidarum* (Fruhstorfer, 1899), *Euploea core core* (Cramer, 1780) and *E. sylvestre coreta* (Godart, 1819) were most frequently recorded on *Heliotropium indicum*, and *Crotolaria* plant species during the months between October and February. These butterflies are known to migrate from the WG during the pre-monsoon period in May. Among the 210 butterflies recorded from NNP, 35 species like *Graphium tereon* (Felder & Felder, 1865), *Papilio clytia clytia* (Linnaeus, 1758), *Troides minos* (Cramer, 1779), *P. crino* (Fabricius, 1793), *P. buddha* (Westwood, 1872), *Pachliopta hector* (Linnaeus, 1758), *Eurema (Terias) andersoni shimai* (Yata & Gaonkar, 1999), *Appias (Catophaga) albina swinhoei* (Moore, 1905), *Appias lycinda latifasciata* (Moore, 1881), *Appias (Hiposcritia) indra shiva* (Swinhoe, 1885), *Charaxes bhārata* (Felder & Felder, 1867), *C. solon solon* (Fabricius, 1793), *C. psaphon imna* (Butler, 1870), *Lethe europa europa* (Fabricius, 1775), *Athyma ranga karwara* (Fruhstorfer, 1906), *Neptis jumbah nalanda* (Fruhstorfer, 1908), *Phaedyra columella nilgirica* (Moore, 1889), *Euthalia aconthea meridionalis* (Fruhstorfer, 1906), *Tanaecia lepidea miyana* (Fruhstorfer, 1913), *Dophla evelina laudabilis* (Swinhoe, 1890), *Hypolimnas misippus* (Linnaeus, 1764), *Kallima horsfieldii* (Kollar, 1844), *Arhopala alea* (Hewitson, 1862), *Thaduka multicaudata kanara* (Evans, 1925), *Catapaecilma major callone* (Fruhstorfer, 1915), *Tajuria cippus cippus* (Fabricius, 1798), *Hypolycaena othona othona* (Hewitson, 1865), *Rapala varuna lazulina* (Moore, 1879), *Cigaritis lohita lazularia* (Moore, 1881), *Anthene lycaenina lycaenina* (Felder, 1868), *Prosotas dubiosa indica* (Evans, 1925), *P. noreia hampsonii* (de Nicéville, 1885), *Jamides*

Table 1. Checklist of butterfly species recorded during study period (2021–2023) in Nagarhole National Park.

	Taxon		WLPA	EN	ST
	Family: Papilionidae				
1	<i>Graphium agamemnon menides</i> (Fruhstorfer, 1904)	Dakhan Tailed Jay			VC
2	<i>Graphium teredon</i> (Felder & Felder, 1865)	Narrow Banded Bluebottle	Sch II		C
3	<i>Graphium doson eleius</i> (Fruhstorfer, 1907)	Dakhan Common Jay			VC
4	<i>Graphium nomius nomius</i> (Esper, 1799)	Indian Spot Swordtail			R
5	<i>Papilio clytia clytia</i> (Linnaeus, 1758)	Oriental Common Mime	Sch II		R
6	<i>Papilio dravidarum</i> (Wood-Mason, 1880)	Malabar Raven			R
7	<i>Papilio polytes romulus</i> (Cramer, 1775)	Indian Common Mormon			VC
8	<i>Papilio agenor polymnestor</i> (Cramer, 1775)	Indian Blue Mormon			VC
9	<i>Papilio daksha daksha</i> (Moore, 1889)	Sahyadri Large-spotted Helen			C
10	<i>Papilio demoleus demoleus</i> (Linnaeus, 1758)	Lime Swallowtail			VC
11	<i>Troides minos</i> (Cramer, 1779)	Sahyadri Birdwing	Sch II & IV		NR
12	<i>Papilio paris tamilana</i> (Moore, 1881)	Sahyadri Paris Peacock			NR
13	<i>Papilio crino</i> (Fabricius, 1793)	Common Banded Peacock	Sch II		NR
14	<i>Papilio buddha</i> (Westwood, 1872)	Malabar Banded Peacock	Sch II	EWG	VR
15	<i>Pachliopta aristolochiae aristolochiae</i> (Fabricius, 1775)	Indian Common Rose			C
16	<i>Pachliopta hector</i> (Linnaeus, 1758)	Crimson Rose	Sch II		VC
	Family: Pieridae				
17	<i>Eurema (Terias) hecabe hecabe</i> (Linnaeus, 1758)	Oriental Common Grass Yellow			VC
18	<i>Eurema (Terias) andersoni shimai</i> (Yata & Gaonkar, 1999)	Sahyadri One-spot Grass Yellow	Sch II		C
19	<i>Eurema (Terias) blanda silhetana</i> (Wallace, 1867)	Sylhet Three-spot Grass Yellow			VC
20	<i>Eurema laeta laeta</i> (Boisduval, 1836)	Indian Spotless Grass Yellow			NR
21	<i>Eurema drona rubella</i> (Wallace, 1867)	Red-line Small Grass Yellow			NR
22	<i>Catopsilia pyranthe pyranthe</i> (Linnaeus, 1758)	Oriental Mottled Emigrant			VC
23	<i>Catopsilia pomona pomona</i> (Fabricius, 1775)	Oriental Lemon Emigrant			VC
24	<i>Colotis amata amata</i> (Fabricius, 1775)	Desert Small Salmon Arab			NR
25	<i>Colotis danae danae</i> (Fabricius, 1775)	Indian Crimson-tip			NR
26	<i>Colotis etrida etrida</i> (Boisduval, 1836)	Indian Little Orange-tip			C
27	<i>Colotis aurora</i> (Cramer, 1780)	Plain Orange Tip			C
28	<i>Ixias marianne</i> (Cramer, 1779)	White Orange-tip			C
29	<i>Ixias pyrene sesia</i> (Fabricius, 1777)	Dakhan Yellow Orange-tip			VC
30	<i>Hebomoia glaucippe australis</i> (Butler, 1898)	Oriental Great Orange-tip			C
31	<i>Leptosia nina nina</i> (Fabricius, 1793)	Oriental Psyche			VC
32	<i>Pareronia hippia</i> (Fabricius, 1787)	Indian Wanderer			NR
33	<i>Appias (Catophaga) albina swinhoei</i> (Moore, 1905)	Sahyadri Common Albatross	Sch II		NR
34	<i>Appias libythea</i> (Fabricius, 1775)	Western Striped Albatross			NR
35	<i>Appias lyncida latifasciata</i> (Moore, 1881)	Sahyadri Chocolate Albatross	Sch II		R
36	<i>Appias (Hiposcritia) indra shiva</i> (Swinhoe, 1885)	Sahyadri Plain Puffin	Sch II		VR
37	<i>Cepora nerissa phryne</i> (Fabricius, 1775)	Dakhan Common Gull			VC
38	<i>Belenois aurota aurota</i> (Fabricius, 1793)	Indian Pioneer			VC
39	<i>Delias eucharis</i> (Drury, 1773)	Indian Jezebel			VC
	Family: Nymphalidae				
40	<i>Danaus genutia genutia</i> (Cramer, 1779)	Oriental Striped Tiger			VC

	Taxon		WLPA	EN	ST
41	<i>Danaus chrysippus chrysippus</i> (Linnaeus, 1758)	Oriental Plain Tiger			VC
42	<i>Tirumala limniace exoticus</i> (Gmélín, 1790)	Oriental Blue Tiger			VC
43	<i>Tirumala septentrionis dravidarum</i> (Fruhstorfer, 1899)	Dakhan Dark Blue Tiger			VC
44	<i>Parantica aglea aglea</i> (Stoll, 1782)	Coromandel Glassy Tiger			C
45	<i>Euploea core core</i> (Cramer, 1780)	Indian Common Crow			VC
46	<i>Euploea sylvester coreta</i> (Godart, 1819)	Double-branded Black Crow			C
47	<i>Euploea klugii kollari</i> (Felder & Felder, 1865)	Brown King Crow			R
48	<i>Charaxes bharata</i> (Felder & Felder, 1867)	Indian Nawab	Sch II		C
49	<i>Charaxes solon solon</i> (Fabricius, 1793)	Pale Black Rajah	Sch II		NR
50	<i>Charaxes psaphon imna</i> (Butler, 1870)	Indian Plain Tawny Rajah	Sch II		NR
51	<i>Discophora lepida lepida</i> (Moore, 1857)	Sahyadri Duffer			R
52	<i>Melanitis leda leda</i> (Linnaeus, 1758)	Oriental Common Evening Brown			VC
53	<i>Melanitis phedima varaha</i> (Moore, 1857)	Sahyadri Dark Evening Brown			NR
54	<i>Lethe europa europa</i> (Fabricius, 1775)	Dakhan Bamboo Treebrown	Sch I & II		NR
55	<i>Lethe rohria neelgheriensis</i> (Guérin-Méneville, 1843)	Dakhan Common Treebrown			C
56	<i>Lethe drypetis todara</i> (Moore, 1881)	Dakhan Two-eyed Treebrown			NR
57	<i>Elymnias caudata</i> (Butler, 1871)	Tailed Palmfly			VR
58	<i>Mycalesis perseus tabitha</i> (Fabricius, 1793)	Dakhan Common Bushbrown			VC
59	<i>Mycalesis mineus polydecta</i> (Cramer, 1777)	Dakhan Dark-branded Bushbrown			VC
60	<i>Mycalesis visala visala</i> (Moore, 1858)	Indian Long-branded Bushbrown			C
61	<i>Mycalesis subdita</i> (Moore, 1890)	Tamil Bushbrown			R
62	<i>Mycalesis orcha</i> (Evans, 1912)	Pale-brand Bushbrown		EWG	NR
63	<i>Mycalesis patnia junonia</i> (Butler, 1868)	Malabar Glad-eye Bushbrown			VC
64	<i>Orsotriaena medus mandata</i> (Moore, 1857)	Sahyadri Medus Brown			VC
65	<i>Ypthima asterope mahratta</i> (Moore, 1884)	Indian Common Three-ring			VC
66	<i>Ypthima huebneri</i> (Kirby, 1871)	Common Four-ring			VC
67	<i>Ypthima ceylonica</i> (Hewitson, 1865)	White Four-ring			C
68	<i>Ypthima baldus madrasa</i> (Evans, 1923)	Sahyadri Common Five-ring			VC
69	<i>Ypthima striata</i> (Hampson, 1888)	Striated Five-ring			R
70	<i>Acraea terpsicore</i> (Linnaeus, 1758)	Tawny Coster			VC
71	<i>Cirrochroa thais thais</i> (Fabricius, 1787)	Sahyadri Yeoman			C
72	<i>Cupha erymanthis maja</i> (Fruhstorfer, 1898)	Sahyadri Rustic			VC
73	<i>Phalanta phalantha phalantha</i> (Drury, 1773)	Oriental Common Leopard			VC
74	<i>Moduza procris undifragus</i> (Fruhstorfer, 1906)	Sahyadri Commander			C
75	<i>Athyma ranga karwara</i> (Fruhstorfer, 1906)	Karwar Blackvein Sergeant	Sch II		R
76	<i>Athyma selenophora kanara</i> (Evans, 1924)	Sahyadri Staff Sergeant			C
77	<i>Athyma inara inara</i> (Westwood, 1850)	Himalayan Colour Sergeant			NR
78	<i>Neptis hylas varmona</i> (Moore, 1872)	Indian Common Sailer			VC
79	<i>Neptis nata hamponi</i> (Moore, 1899)	Sahyadri Clear Sailer			C
80	<i>Neptis jumbah nalanda</i> (Fruhstorfer, 1908)	Nalanda Chestnut-streaked Sailer	Sch II		C
81	<i>Phaedyma columella nilgirica</i> (Moore, 1889)	Dakhan Short-banded Sailer	Sch II		NR
82	<i>Pantoporia hordonia hordonia</i> (Stoll, 1790)	Oriental Common Lascar			VC
83	<i>Euthalia aconthea meridionalis</i> (Fruhstorfer, 1906)	Dakhan Common Baron	Sch II		C
84	<i>Euthalia lubentina arasada</i> (Fruhstorfer, 1913)	Sahyadri Gaudy Baron			R

	Taxon		WLPA	EN	ST
85	<i>Symphaedra nais</i> (Forster, 1771)	Baronet			VC
86	<i>Tanaecia lepidea miyana</i> (Fruhstorfer, 1913)	Peninsular Grey Count	Sch II		C
87	<i>Dophla evelina laudabilis</i> (Swinhoe, 1890)	Sahyadri Redspot Duke	Sch II		VR
88	<i>Cyrestis thyodamas indica</i> (Evans, 1924)	Indian Map Butterfly			NR
89	<i>Ariadne merione merione</i> (Cramer, 1777)	Dakhan Common Castor			VC
90	<i>Ariadne ariadne indica</i> (Moore, 1884)	Indian Angled Castor			VC
91	<i>Kaniska canace viridis</i> (Evans, 1924)	Sahyadri Blue Admiral			VR
92	<i>Vanessa indica pholoe</i> (Fruhstorfer, 1912)	Sahyadri Red Admiral			VR
93	<i>Junonia orithya swinhoei</i> (Butler, 1885)	Pale Blue Pansy			VC
94	<i>Junonia hierta hierta</i> (Fabricius, 1798)	Oriental Yellow Pansy			VC
95	<i>Junonia iphita iphita</i> (Cramer, 1779)	Oriental Chocolate Pansy			VC
96	<i>Junonia atlites atlites</i> (Linnaeus, 1763)	Oriental Grey Pansy			VC
97	<i>Junonia almana almana</i> (Linnaeus, 1758)	Oriental Peacock Pansy			VC
98	<i>Junonia lemonias lemonias</i> (Linnaeus, 1758)	Chinese Lemon Pansy			VC
99	<i>Hypolimnas bolina jacintha</i> (Drury, 1773)	Oriental Great Eggfly			VC
100	<i>Hypolimnas misippus</i> (Linnaeus, 1764)	Danaid Eggfly	Sch II		VC
101	<i>Kallima horsfieldii</i> (Kollar, 1844)	Sahyadri Blue Oakleaf	Sch II		VR
102	<i>Libythea myrrha rama</i> (Moore, 1872)	Sri Lankan Club Beak			VR
	Family: Lycaenidae				
103	<i>Curetis thetis</i> (Drury, 1773)	Indian Sunbeam			NR
104	<i>Curetis acuta dentata</i> (Moore, 1879)	Indian Acute Sunbeam			C
105	<i>Spalgis epius epius</i> (Westwood, [1851])	Oriental Apefly			R
106	<i>Arhopala centaurus pirama</i> (Moore, 1881)	Tamil Centaur Oakblue			VR
107	<i>Arhopala alea</i> (Hewitson, 1862)	Sahyadri Rosy Oakblue	Sch I		VR
108	<i>Thaduka multicaudata kanara</i> (Evans, 1925)	Karwar Many-tailed Oakblue	Sch II		VR
109	<i>Zesius chrysomallus</i> (Hübner, 1819)	Redspot			VR
110	<i>Amblypodia anita dina</i> (Fruhstorfer, 1907)	Indian Purple Leaf Blue			VC
111	<i>Horaga onyx onyx</i> (Moore, 1858)	Variable Common Onyx			VR
112	<i>Loxura atymnus atymnus</i> (Stoll, 1780)	Sahyadri Yamfly			R
113	<i>Catapaecilma major callone</i> (Fruhstorfer, 1915)	Sahyadri Common Tinsel	Sch II		NR
114	<i>Rathinda amor</i> (Fabricius, 1775)	Monkey Puzzle			NR
115	<i>Rachana jalindra macanita</i> (Fruhstorfer, 1912)	Sahyadri Banded Royal			VR
116	<i>Tajuria cippus cippus</i> (Fabricius, 1798)	Indian Peacock Royal	Sch II		VR
117	<i>Creon cleobis cleobis</i> (Godart, 1824)	Bengal Broad-tail Roya			VR
118	<i>Hypolycaena othona othona</i> (Hewitson, 1865)	Oriental Orchid Tit	Sch I		NR
119	<i>Virachola isocrates</i> (Fabricius, 1793)	Common Guava Blue			R
120	<i>Deudorix epijarbas epijarbas</i> (Moore, 1857)	Oriental Cornelian			R
121	<i>Rapala manea schistacea</i> (Moore, 1879)	Bengal Slate Flash			VC
122	<i>Rapala varuna lazulina</i> (Moore, 1879)	Lazuli Flash	Sch II		VC
123	<i>Cigaritis lohita lazularia</i> (Moore, [1881])	Tamil Long-banded Silverline	Sch II		R
124	<i>Cigaritis vulcanus vulcanus</i> (Fabricius, 1775)	Indian Common Silverline			R
125	<i>Cigaritis schistacea</i> (Moore, 1881)	Plumbeous Silverline			R
126	<i>Leptotes plinius plinius</i> (Fabricius, 1793)	Asian Zebra Blue			VC
127	<i>Anthene emolus emolus</i> (Godart, 1824)	Bengal Common Ciliate Blue			C

	Taxon		WLPA	EN	ST
128	<i>Anthene lycaenina lycaenina</i> (Felder, 1868)	Dakhan Pointed Ciliate Blue	Sch II		VC
129	<i>Caleta decidia</i> (Hewitson, 1876)	Angled Pierrot			VC
130	<i>Discolampa ethion ethion</i> (Westwood, 1851)	Oriental Banded Blue Pierrot			VC
131	<i>Castalius rosimon rosimon</i> (Fabricius, 1775)	Continental Common Pierrot			VC
132	<i>Tarucus ananda</i> (de Nicéville, 1884)	Dark Pierrot			VR
133	<i>Petrelaea dana</i> (de Nicéville, 1884)	Dingy Lineblue			VC
134	<i>Nacaduba kurava canaraica</i> (Toxopeus, 1927)	Karwar Transparent Six-Lineblue			NR
135	<i>Nacaduba beroe gythion</i> (Fruhstorfer, 1916)	Assam Opaque Six-Lineblue			NR
136	<i>Prosotas nora ardates</i> (Moore, 1875)	Indian Common Lineblue			VC
137	<i>Prosotas dubiosa indica</i> (Evans, 1925)	Indian Tailless Lineblue	Sch II		VC
138	<i>Prosotas noreia hamptonii</i> (de Nicéville, 1885)	Indian White-tipped Lineblue	Sch II		NR
139	<i>Jamides bochus bochus</i> (Stoll, 1782)	Indian Dark Cerulean			VC
140	<i>Jamides celeno celeno</i> (Cramer, 1775)	Oriental Common Cerulean			VC
141	<i>Jamides alecto euryaces</i> (Fruhstorfer, 1915)	Himalayan Metallic Cerulean	Sch II		NR
142	<i>Catochrysops strabo strabo</i> (Fabricius, 1793)	Oriental Forget-me-not			VC
143	<i>Talicauda nyseus nyseus</i> (Guérin-Ménéville, 1843)	Indian Red Pierrot			C
144	<i>Lampides boeticus</i> (Linnaeus, 1767)	Pea Blue			VC
145	<i>Pseudozizeeria maha ossa</i> (Swinhoe, 1885)	Dakhan Pale Grass Blue			VC
146	<i>Zizeeria karsandra</i> (Moore, 1865)	Dark Grass Blue			VC
147	<i>Zizina otis indica</i> (Murray, 1874)	Indian Lesser Grass Blue			VC
148	<i>Zizula hylax hylax</i> (Fabricius, 1775)	Indian Tiny Grass Blue			VC
149	<i>Freyeria putli</i> (Kollar, 1844)	Black-spotted Grass Jewel			VC
150	<i>Azanus jesous gamra</i> (Lederer, 1855)	Syrian Babul Blue			NR
151	<i>Cupido lacturnus syntala</i> (Cantlie, 1963)	Dakhan Orange-crowned Cupid			VC
152	<i>Chilades parrhasius parrhasius</i> (Fabricius, 1793)	Parrhasius Small Cupid			VC
153	<i>Euchrysops cnejus cnejus</i> (Fabricius, 1798)	Oriental Gram Blue			VC
154	<i>Chilades lajus lajus</i> (Stoll, 1780)	Indian Lime Blue			VC
155	<i>Neopithecops zalmora dharma</i> (Moore, 1881)	Sri Lankan Common Quaker			VC
156	<i>Megisba malaya thwaitesi</i> (Moore, 1881)	Tailless Malayan	Sch II		VC
157	<i>Acytolepis puspa felderi</i> (Toxopeus, 1927)	Common Hedge Blue			C
158	<i>Celastrina lavendularis lavenduris</i> (Moore, 1877)	Sri Lankan Plain Hedge Blue			NR
159	<i>Udara akasa mavisa</i> (Fruhstorfer, [1917])	Sahyadri White Hedge Blue			NR
	Family: Riodinidae				
160	<i>Abisara bifasciata suffusa</i> (Moore, 1882)	Suffused Double-banded Judy			VC
161	<i>Abisara echerius prunosa</i> (Moore, 1879)	Lankan Plum Judy			NR
	Family: Hesperidae				
162	<i>Hasora chromus chromus</i> (Cramer, 1780)	Oriental Common Banded Awl			VC
163	<i>Badamia exclamationis</i> (Fabricius, 1775)	Brown Awl			VC
164	<i>Abaratha angulata angulata</i> (Felder, 1862)	Oriental Chestnut Angle			NR
165	<i>Abaratha ransonnetti potiphera</i> (Hewitson, 1873)	Dakhan Golden Angle			NR
166	<i>Sarangesa dasahara davidsoni</i> (Swinhoe, 1912)	Indian Common Small Flat			C
167	<i>Sarangesa purendra hopkinsi</i> (Evans, 1921)	Dakhan Spotted Small Flat			NR
168	<i>Pseudocoladenia dan</i> (Fabricius, 1787)	Fulvous Pied Flat			C
169	<i>Coladenia indrani indra</i> (Evans, 1926)	Dakhan Tricolour Pied Flat			C

	Taxon		WLPA	EN	ST
170	<i>Gerosis bhagava bhagava</i> (Moore, 1866)	Bengal Common Yellow-breasted Flat			VR
171	<i>Tagiades litigiosa litigiosa</i> (Möschler, 1878)	Sylhet Water Snow Flat			NR
172	<i>Tagiades silvia</i> (Evans, 1934)	Dakhan Suffused Snow Flat			C
173	<i>Tagiades obscurus</i> (Mabille, 1876)	Common Snow Flat			C
174	<i>Spialia galba galba</i> (Fabricius 1793)	Indian Grizzled Skipper			VC
175	<i>Taractrocera maevius</i> (Fabricius, 1793)	Grey-veined Grass Dart			VC
176	<i>Cupitha purreea</i> (Moore, 1877)	Wax Dart			VR
177	<i>Telicota bambusae bambusae</i> (Moore, 1878)	Oriental Dark Palm-Dart			R
178	<i>Telicota colon colon</i> (Fabricius, 1775)	Indian Pale Palm-Dart			R
179	<i>Cephenes acalle oceanica</i> (Mabille, 1904)	Variable Plain Palm-Dart			R
180	<i>Oriens goloides</i> (Moore, 1881)	Smaller Dartlet			C
181	<i>Oriens concinna</i> (Elwes & Edwards, 1897)	Sahyadri Dartlet		EWG	NR
182	<i>Potanthus pseudomaesa</i> (Moore, 1881)	Common Dart			VC
183	<i>Potanthus palnia palnia</i> (Evans, 1914)	Palni Dart			NR
184	<i>Potanthus diana</i> (Evans, 1932)	Chinese Dart			NR
185	<i>Potanthus pava pava</i> (Fruhstorfer, 1911)	Pava Dart			NR
186	<i>Gangara thyrus thyrus</i> (Fabricius, 1775)	Oriental Giant Redeye			R
187	<i>Borbo cinnara</i> (Wallace, 1866)	Rice Swift			C
188	<i>Pseudoborbo bevani</i> (Moore, 1878)	Bevan's Swift			C
189	<i>Parnara bada bada</i> (Moore, 1878)	Ceylon Swift			C
190	<i>Parnara ganga</i> (Evans, 1937)	Continental Swift			C
191	<i>Baoris farri</i> (Moore, 1878)	Paint-brush Swift			C
192	<i>Caltoris canaraica</i> (Moore, 1884)	Karwar Swift			C
193	<i>Caltoris kumara kumara</i> (Moore, 1878)	Sahyadri Blank Swift			NR
194	<i>Caltoris philippina philippina</i> (Herrich-Schäffer, 1869)	Continental Philippine Swift			NR
195	<i>Pelopidas subochracea subochracea</i> (Moore, 1878)	Bengal Large Branded Swift			NR
196	<i>Pelopidas mathias mathias</i> (Fabricius, 1798)	Dakhan Small Branded Swift			NR
197	<i>Pelopidas agna agna</i> (Moore, 1866)	Bengal Obscure Branded Swift			NR
198	<i>Pelopidas conjuncta narooa</i> (Moore, 1878)	Sahyadri Conjoined Swift			NR
199	<i>Polytremis lubricans lubricans</i> (Herrich-Schäffer, 1869)	Oriental Contiguous Swift			R
200	<i>Ampittia dioscorides dioscorides</i> (Fabricius, 1793)	Indian Bush Hopper			VC
201	<i>Aeromachus pygmaeus</i> (Fabricius, 1775)	Pygmy Scrub Hopper			VC
202	<i>Iambrix salsala luteipalpis</i> (Plötz, 1886)	Southern Chestnut Bob			VC
203	<i>Suastus gremius gremius</i> (Fabricius, 1798)	Indian Palm Bob			NR
204	<i>Arnetta vindhiana</i> (Moore, 1884)	Vindhyan Bob			NR
205	<i>Ancistroides curvifascia curvifascia</i> (Felder & Felder, 1862)	Restricted Demon			C
206	<i>Ancistroides paralyos mangla</i> (Evans, 1949)	Common Banded Demon			C
207	<i>Ancistroides folus</i> (Cramer, 1775)	Grass Demon			VC
208	<i>Halpe hindu</i> (Evans, 1937)	Sahyadri Banded Ace	Sch II		NR
209	<i>Halpe porus</i> (Mabille, 1877)	Bispos Banded Ace			R
210	<i>Thoressa astigmata</i> (Swinhoe, 1890)	Southern Spotted Ace		EWG	VR

Note: Legal protection status as per the Wildlife Protection Act (1972) and the Wildlife (Protection) Amendment Act, 2022 (WPA), WLPA Schedules (Sch.). Status of butterflies at Nagarahole National Park with their population status (ST): VC—Very common | C—Common | NR—Not Rare | R—Rare | VR—Very Rare | EWG—Endemic to Western Ghats.

allecto euryaces (Fruhstorfer, 1915), *Megisba malaya thwaitesi* (Moore, 1881), and *Halpe hindu* (Evans, 1937) are enlisted under different schedules of WPA 1972 and The Indian Wildlife (Protection) Amendment Act, 2022. However, four species *Papilio buddha* (Westwood, 1872), *Mycalesis orcha* (Evans, 1912), *Oriens concinna* (Elwes & Edwards, 1897), and *Thoressa astigmata* (Swinhoe, 1890) are endemic to the WG (Sadasivan & Sengupta 2024).

DISCUSSION

A thorough investigation of regional biodiversity is essential before implementing conservation measures for the respective taxa of interest. The present study provides comprehensive baseline data on butterfly diversity in NNP, a regional segment of the WG. Peninsular India hosts 350 species (Padhya et al. 2012) and more recent update by Sadasivan & Sengupta (2024) of 353 species from WG, of which 317 species including 33 endemics to Karnataka. We did not expect to record as many butterfly species in smaller sites like NNP, as it lacks evergreen and shola forests at higher elevations (>1,000 m). The area is mainly composed of dry deciduous, moist deciduous, and scrub forests. However, our study documented 210 butterfly species. The total numbers of species reflect their family-wise richness for the subtropical regions of southern WG, which is a part of Karnataka. The 210 species recorded correspond to about 59.49% of the estimated species of the WG and 66.24% of the state of Karnataka.

During the present investigation 38% of species were found to be very common, 19% common, 23% not rare, and 10% are rare, while 20 species (10%) were classified as very rare to their population status. *Papilio dravidarum* (Wood-Mason, 1880), *Papilio buddha* (Westwood, 1872), *Discophora lepida lepida* (Moore, 1857), *Lethe europa europa* (Fabricius, 1775), *Athyma ranga karwara* (Fruhstorfer, 1906), *Euthalia lubentina arasada* (Fruhstorfer, 1913), *Dophla evelina laudabilis* (Swinhoe, 1890), *Kallima horsfieldii* (Kollar, 1844), *Rachana jalindra macanita* (Fruhstorfer, 1912), *Tajuria cippus cippus* (Fabricius, 1798), *Creon cleobis cleobis* (Godart, 1824), *Tarucus ananda* (de Nicéville, 1884), *Abisara echerius prunosa* (Moore, 1879), and *Gerosia bhagava bhagava* (Moore, 1866) were recorded predominantly in moist deciduous forest of NNP. Whereas *Horaga onyx onyx* (Moore, 1858), *Catapaecilma major callone* (Fruhstorfer, 1915), *Appias* (*Hiposcritia*) *indra shiva* (Swinhoe, 1885), and *Libythea*

myrrha rama (Moore, 1872) are recorded very rarely towards Coorg (Kodagu) part of NNP. But *Elymnias caudata* (Butler, 1871) was recorded towards the fringe areas of the forest towards Veeranahosahalli Range of NNP. The distribution pattern of these butterflies emphasizes the need for further studies and conservation measures.

Studies of Kunte (2005) and Vinayan et al. (2023) have documented the migration of *Tirumala limniace exotica* (Gmélin, 1790), *T. septentrionis dravidarum* (Fruhstorfer, 1899), *Euploea core core* (Cramer, 1780) and *E. sylvester coreta* (Godart, 1819) from WG to eastern plains, likely to avoid the extreme conditions of the south-west monsoon. The congregation of these butterflies on *Heliotropium indicum* and *Crotolaria* plant species during the months of October to February observed in the present study is consistent with these earlier findings. Vinayan et al. (2023) recorded breeding activity of *E. core* in the Wayanad Forest Division, highlighting the need for further studies to confirmation of breeding of these species within NNP.

Additionally, this number contributes to the existing tally of 138 species of butterflies reported from Basavarajappa (2015) at NNP. The species diversity includes 35 species which are listed under Schedules I & II of WPA 1972 and The Indian Wildlife (Protection) Amendment Act, 2022 and four species are endemic to the WG. This could help to develop better conservation measures for the protected and endemic butterfly species in their natural habitats. Thus, NNP not only possesses large number of legally protected butterfly species but also supports enough endemic species indicating the vegetation richness of the forest. Therefore, NNP should be considered as top priority within the protected areas of southern WG for long term conservation of butterfly species to avoid regional extinction and safeguard butterflies against human induced disturbances (Watson et al. 2014; Maxwell et al. 2020). Further, information on habitat preference, distribution, seasonality, larval host plants distribution, and status of endemic, and protected species listed under the Wildlife (Protection) Amendment Act, 2022, are still lacking as their diversity is largely dependent on floral richness (Gordon & Kerr 2022). Therefore, a more thorough study would surely result in identification of more species at NNP and there is a further need for periodic assessment of habitat, and host plant preferences which will help enhance the depth of historical data, and be used as an elementary tool to mitigate species loss, and plan further conservation measures.



Image 1–15. 1—*Graphium agamemnon menides* | 2—*Graphium tereon* | 3—*Graphium doson eleius* | 4—*Graphium nomius nomius* | 5—*Papilio clytia clytia* | 6—*Papilio dravidarum* | 7—*Papilio polytes romulus* | 8—*Papilio agenor polymnestor* | 9—*Papilio daksha daksha* | 10—*Papilio demoleus demoleus* | 11—*Troides minos* | 12—*Papilio paris tamilana* | 13—*Papilio crino* | 14—*Papilio buddha* | 15—*Pachliopta aristolochiae aristolochia*. © Gopi Krishna, Surya & Santhosh S.



Image 16–30. 16—*Pachliopta hector* | 17—*Eurema (Terias) hecabe hecabe* | 18—*Eurema (Terias) andersoni shimai* | 19—*Eurema (Terias) blanda silhetana* | 20—*Eurema laeta laeta* | 21—*Eurema drona rubella* | 22—*Catopsilia pyranthe pyranthe* | 23—*Catopsilia pomona pomona* | 24—*Colotis amata amata* | 25—*Colotis danae danae* | 26—*Colotis etrida etrida* | 27—*Colotis aurora* | 28—*Ixias marianne* | 29—*Ixias pyrene sesia* | 30—*Hebomoia glaucippe australis*. © Gopi Krishna, Nithesh & Santhosh S.



Image 31–45. 31—*Leptosia nina nina* | 32—*Pareronia hippia* | 33—*Appias (Catophaga) albina swinhoei* | 34—*Appias libythea* | 35—*Appias lyncida latifasciata* | 36—*Appias (Hiposcritia) indra shiva* | 37—*Cepora nerissa phryne* | 38—*Belenois aurota aurota* | 39—*Delias eucharis* | 40—*Danaus genutia genutia* | 41—*Danaus chrysippus chrysippus* | 42—*Tirumala limniace exoticus* | 43—*Tirumala septentrionis dravidarum* | 44—*Parantica aglea aglea* | 45—*Euploea core core*. © Gopi Krishna, Nitshesh & Santhosh S.



Image 46-60. 46—*Euploea sylvester coreta* | 47—*Euploea klugii kollari* | 48—*Charaxes bharata* | 49—*Charaxes solon solon* | 50—*Charaxes psaphon imna* | 51—*Discophora lepida lepida* | 52—*Melanitis leda leda* | 53—*Melanitis phedima varaha* | 54—*Lethe europa europa* | 55—*Lethe rohria neelgheriensis* | 56—*Lethe drypetis todara* | 57—*Elymnias caudata* | 58—*Mycalesis perseus tabitha* | 59—*Mycalesis mineus polydecta* | 60—*Mycalesis visala visala*. © Gopi Krishna, Nithesh & Santhosh S.



Image 61–75. 61—*Mycalesis subdita* | 62—*Mycalesis orcha* | 63—*Mycalesis patnia junonia* | 64—*Orsotriaena medus mandata* | 65—*Ypthima asterope mahratta* | 66—*Ypthima huebneri* | 67—*Ypthima ceylonica* | 68—*Ypthima baldus madrasa* | 69—*Ypthima striata* | 70—*Acraea terpsicore* | 71—*Cirrochroa thais thais* | 72—*Cupha erymanthis maja* | 73—*Phalanta phalantha phalantha* | 74—*Moduza procris undifragus* | 75—*Athyma ranga karwara*. © Gopi Krishna, Santhosh S & Surya.



Image 76–90. 76—*Athyma selenophora kanara* | 77—*Athyma inara inara* | 78—*Neptis hylas varmona* | 79—*Neptis nata hampsoni* | 80—*Neptis jumbah nalanda* | 81—*Phaedyra columella nilgirica* | 82—*Pantoporia hordonia hordonia* | 83—*Euthalia aconthea meridionalis* | 84—*Euthalia lubentina arasada* | 85—*Symphaedra nais* | 86—*Tanaecia lepidea miyana* | 87—*Dophla evelina laudabilis* | 88—*Cyrestis thyodamas indica* | 89—*Ariadne merione merione* | 90—*Ariadne ariadne indica*. © Gopi Krishna, Amulya & Santhosh S.



Image 91–105. 91—*Kaniska canace viridis* | 92—*Vanessa indica pholoe* | 93—*Junonia orithya swinhoei* | 94—*Junonia hierta hierta* | 95—*Junonia iphita iphita* | 96—*Junonia atlites atlites* | 97—*Junonia almana almana* | 98—*Junonia lemonias lemonias* | 99—*Hypolimnas bolina jacintha* | 100—*Hypolimnas misippus* | 101—*Kallima horsfieldii* | 102—*Libythea myrrha rama* | 103—*Curetis thetis* | 104—*Curetis acuta dentata* | 105—*Spalgis epius epius*. © Gopi Krishna, Surya & Santhosh S.



Image 106–120. 106—*Arhopala centaurus pirama* | 107—*Arhopala alea* | 108—*Thaduka multicaudata kanara* | 109—*Zesius chrysomallus* | 110—*Amblypodia anita dina* | 111—*Horaga onyx onyx* | 112—*Loxura atymnus atymnus* | 113—*Catapaecilma major callone* | 114—*Rathinda amor* | 115—*Rachana jalindra macanita* | 116—*Tajuria cippus cippus* | 117—*Creon cleobis cleobis* | 118—*Hypolycaena othona othona* | 119—*Virachola isocrates* | 120—*Deudorix epijarbas epijarbas*. © Gopi Krishna, Amulya & Santhosh S.



Image 121–135. 121—*Rapala manea schistacea* | 122—*Rapala varuna lazulina* | 123—*Cigaritis lohita lazularia* | 124—*Cigaritis vulcanus vulcanus* | 125—*Cigaritis schistacea* | 126—*Leptotes plinius plinius* | 127—*Anthene emolus emolus* | 128—*Anthene lycaenina lycaenina* | 129—*Caleta decidia* | 130—*Discolampa ethion ethion* | 131—*Castalius rosimon rosimon* | 132—*Tarucus ananda* | 133—*Petrelaea dana* | 134—*Nacaduba kurava canaraica* | 135—*Nacaduba beroe gythion*. © Gopi Krishna, Santhosh S & Nithesh.



Image 136–150. 136—*Prosotas nora ardates* | 137—*Prosotas dubiosa indica* | 138—*Prosotas noreia hampsonii* | 139—*Jamides bochus bochus* | 140—*Jamides celeno celeno* | 141—*Jamides alecto euryaces* | 142—*Catochrysops strabo strabo* | 143—*Talicauda nyseus nyseus* | 144—*Lampides boeticus* | 145—*Pseudozizeeria maha ossa* | 146—*Zizeeria karsandra* | 147—*Zizina otis indica* | 148—*Zizula hylax hylax* | 149—*Freyeria putli* | 150—*Azanus jesous gamra*. © Gopi Krishna, Santhosh S & Nitlesh.

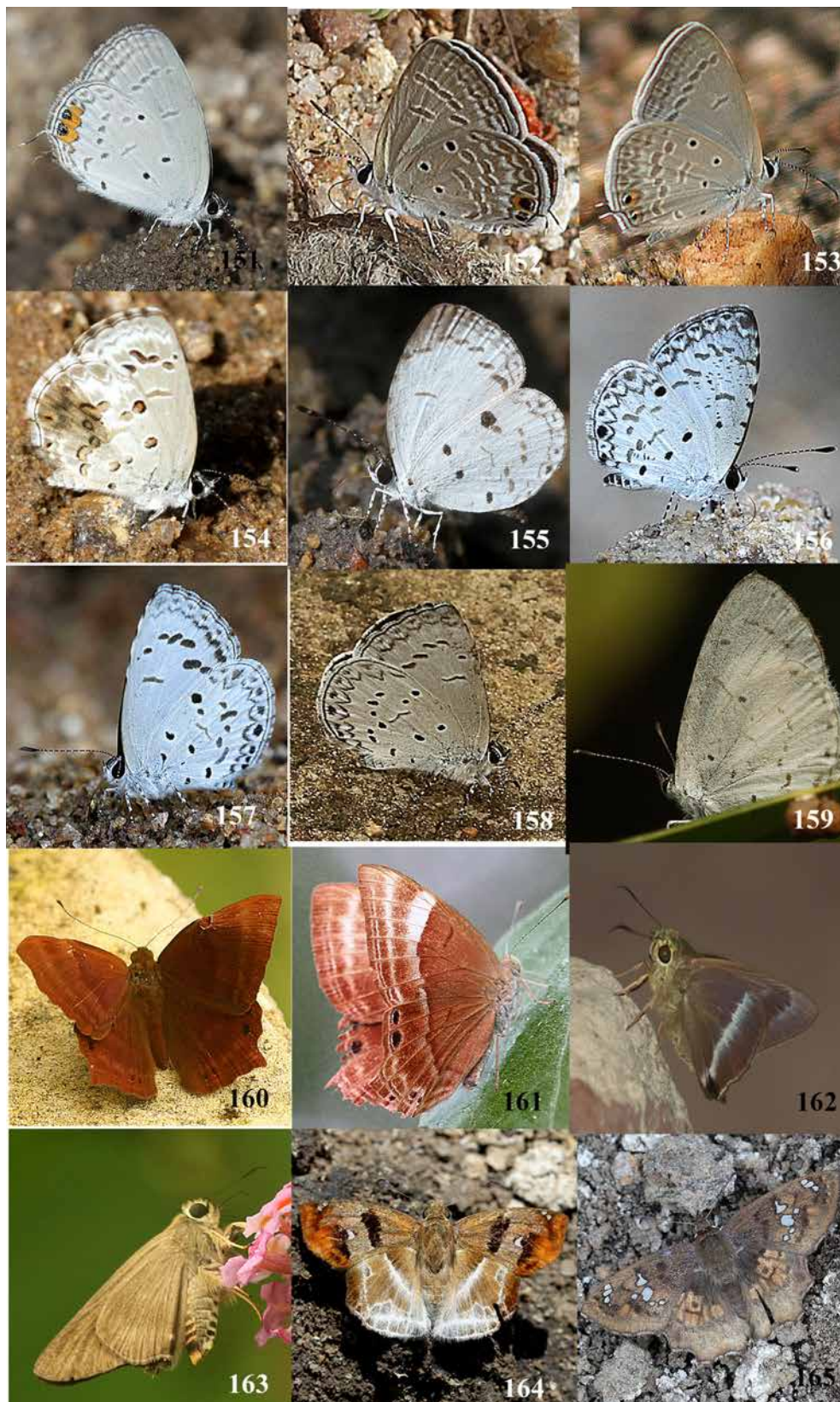


Image 151–165. 151—*Cupido lacturnus syntala* | 152—*Chilades parrhasius parrhasius* | 153—*Euchrysops cnejus cnejus* | 154—*Chilades lajus lajus* | 155—*Neopithecops zalmora dharm* | 156—*Megisba malaya thwaitesi* | 157—*Acytolepis puspa felderi* | 158—*Celastrina lavendularis lavendularis* | 159—*Udara akasa mavisa* | 160—*Abisara bifasciata suffusa* | 161—*Abisara echerius prunosa* | 162—*Hasora chromus chromus* | 163—*Badamia exclamationis* | 164—*Abaratha angulata angulata* | 165—*Abaratha ransonnnettii potiphera*. © Gopi Krishna, Amulya & Santhosh S.



Image 166–180. 166—*Sarangesa dasahara davidsoni* | 167—*Sarangesa purendra hopkinsi* | 168—*Pseudocoladenia dan* | 169—*Coladenia indrani indra* | 170—*Gerosis bhagava bhagava* | 171—*Tagiades litigiosa litigiosa* | 172—*Tagiades silvia* | 173—*Tagiades obscurus* | 174—*Spialia galba galba* | 175—*Taractrocera maevius* | 176—*Cupitha purreea* | 177—*Telicota bambusae bambusae* | 178—*Telicota colon colon* | 179—*Cephrènes acalle oceanica* | 180—*Oriens goloides*. © Gopi Krishna, Nithesh & Santhosh S.



Image 181–195. 181—*Oriens concinna* | 182—*Potanthus pseudomaesa* | 183—*Potanthus palnia palnia* | 184—*Potanthus diana* | 185—*Potanthus pava pava* | 186—*Gangara thyrsis thyrsis* | 187—*Borbo cinnara* | 188—*Pseudoborbo bevani* | 189—*Parnara bada bada* | 190—*Parnara ganga* | 191—*Baoris farri* | 192—*Caltoris canaraica* | 193—*Caltoris kumara kumara* | 194—*Caltoris philippina philippina* | 195—*Pelopidas subochracea subochracea*. © Gopi Krishna, Sheily & Santhosh S.



Image 196–210. 196—*Pelopidas mathias mathias* | 197—*Pelopidas agna agna* | 198—*Pelopidas conjuncta narooa* | 199—*Polytremis lubricans lubricans* | 200—*Ampittia dioscorides dioscorides* | 201—*Aeromachus pygmaeus* | 202—*Iambrix salsala luteipalpis* | 203—*Suastus gremius gremius* | 204—*Arnetta vindhiana* | 205—*Ancistroides curvifascia curvifascia* | 206—*Ancistroides paralysos mangla* | 207—*Ancistroides folus* | 208—*Halpe hindu* | 209—*Halpe porus* | 210—*Thoressa astigmata*. © Gopi Krishna & Santhosh S.

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Author details: DR. SANTHOSH S serves as the principal investigator of the project and is a faculty member in the Department of Studies in Zoology, University of Mysore. He specializes in entomology, wildlife research and conservation biology. His research primarily focuses on butterfly species distribution, community ecology and conservation biology. MR. GOPI KRISHNA V is the co-investigator of the project and president of the Nagarahole Conservation Society (NCS). Professionally trained as an architect and engineer, he is deeply engaged in wildlife research and the conservation of natural resources. MRS. AMULYA G.K. is the co-founder of NCS. Her research interests lie in wildlife ecology and conservation biology. MRS. SHEILY S is a project assistant at NCS with a keen interest in conservation biology and field-based biodiversity research. MR. NITHESH M is a project fellow at NCS and holds an MSc degree in wildlife studies and management from the Department of Wildlife Studies and Management, Kuvempu University. His research interests encompass wildlife ecology and conservation practices. DR. BASAVARAJAPPA S is a professor in the Department of Studies in Zoology, University of Mysore. His areas of specialization include entomology, silkworm pathology, and wildlife conservation. His current research emphasizes the nest-site fidelity, behavioral ecology of wild honey bees and conservation of pollinators.

Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.
Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK
Dr. George Mathew, Kerala Forest Research Institute, Peechi, India
Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Kareen Schnabel, NIWA, Wellington, New Zealand
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
Dr. M. Nithyanandan, Environmental Department, La Ala Al Kuwait Real Estate. Co. K.S.C., Kuwait
Dr. Himender Bharti, Punjabi University, Punjab, India
Mr. Purnendu Roy, London, UK
Mr. Saito Motoki, The Butterfly Society of Japan, Tokyo, Japan
Dr. Sanjay Sondhi, TITLI TRUST, Kalpavriksh, Dehradun, India
Dr. Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Dr. Nitin Kulkarni, Tropical Research Institute, Jabalpur, India
Dr. Robin Wen Jiang Ngiam, National Parks Board, Singapore
Dr. Lionel Monod, Natural History Museum of Geneva, Genève, Switzerland.
Dr. Asheesh Shivam, Nehru Gram Bharti University, Allahabad, India
Dr. Rosana Moreira da Rocha, Universidade Federal do Paraná, Curitiba, Brasil
Dr. Kurt R. Arnold, North Dakota State University, Saxony, Germany
Dr. James M. Carpenter, American Museum of Natural History, New York, USA
Dr. David M. Claborn, Missouri State University, Springfield, USA
Dr. Kareen Schnabel, Marine Biologist, Wellington, New Zealand
Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
Dr. Priyadarsanan Dharma Rajan, ATREE, Bengaluru, India
Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
Dr. Keith V. Wolfe, Antioch, California, USA
Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
Dr. John D.L. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
Dr. Priyadarsanan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

Dr. Topiltzin Contreras MacBeath, Universidad Autónoma del estado de Morelos, México
Dr. Heok Hee Ng, National University of Singapore, Science Drive, Singapore
Dr. Rajeev Raghavan, St. Albert's College, Kochi, Kerala, India
Dr. Robert D. Sluka, Chiltern Gateway Project, A Rocha UK, Southall, Middlesex, UK
Dr. E. Vivekanandan, Central Marine Fisheries Research Institute, Chennai, India
Dr. Davor Zanella, University of Zagreb, Zagreb, Croatia
Dr. A. Biju Kumar, University of Kerala, Thiruvananthapuram, Kerala, India
Dr. Akhilesh K.V., ICAR-Central Marine Fisheries Research Institute, Mumbai Research Centre, Mumbai, Maharashtra, India
Dr. J.A. Johnson, Wildlife Institute of India, Dehradun, Uttarakhand, India
Dr. R. Ravinesh, Gujarat Institute of Desert Ecology, Gujarat, India

Amphibians

Dr. Sushil K. Dutta, Indian Institute of Science, Bengaluru, Karnataka, India
Dr. Annemarie Ohler, Muséum national d'Histoire naturelle, Paris, France

Reptiles

Dr. Gernot Vogel, Heidelberg, Germany
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Other Disciplines

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ravi@threatenedtaxa.org & ravi@zooreach.org

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