

Butterflies of Sasthamkotta Lake – A Ramsar site in Kerala, India

P. Kiran¹, Kavya Sukesh¹ and D. Dhanyaraj^{2*}

¹Department of Zoology, BJM Government College, Chavara, Kollam 691583, Kerala, India.

²Department of Zoology, S N College, Kollam 691001, Kerala, India.

Email: kirangprabhakaran@gmail.com, dhanuraj6@gmail.com*, Kavyasukesh 2000@gmail.com

ABSTRACT: In the study of butterfly diversity in the Sasthamkotta Lake of Kollam, Kerala, a total of 50 species was recorded. The species identified were of the family Pieridae (17), followed by Nymphalidae (11), Lycaenidae (9), Papilionidae (9), Hesperidae (3), and Riodinidae (1). About eight of these species are listed under the protection category of the Indian Wildlife Act 1972. The findings highlight the ecological importance of Sasthamkotta as an important habitat supporting a rich biodiversity of butterflies.

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KEY WORDS: Diversity, habitat, dominant, conservation

Butterflies are one of the most widely studied insect groups (Robbins and Opler, 1997) and are recognised as a sensitive biological indicator of the ecosystem health because (Gardner *et al.*, 1995; Wood and Gillman, 1998). The adult stages are responsible for pollination, which is essential for environmental stability (Padhye *et al.*, 2006; Tiple *et al.*, 2006). The Western Ghats butterfly checklist contains 337 species, including 42 endemic species, while the Kerala checklist contains 328 species, including 41 endemic species (Sadasivan *et al.*, 2025). Some previous documentation of butterfly species in Kerala and the surrounding areas include Mathew and Rahamathulla (1993), who reported 100 species in the Silent Valley National Park; Sudheendrakumar *et al.* (2000), who reported 124 species of butterflies in the Parambikulam National Park; Prasad *et al.* (2010) identified 52 species in the University of Kerala campus; Aneesh *et al.* (2014) reported 139 butterfly species from six

families in the campus of Kerala Agricultural University in Thrissur, and Jobiraj *et al.* (2020) reported 59 butterfly species from Thusharagiri in Kozhikode, Kerala.

A study was launched to study the butterfly diversity of the Sasthamkotta lake of Kollam district, Kerala. As no published checklist of Sasthamkotta butterflies had previously been made available, this work could serve as a basis for further research. Sasthamkotta is a village in Kerala, known for its geography characterized by a mix of highlands and low lands, including the largest fresh water lake in Kerala. situated in the Kollam district of Kerala. The area is geographically located between 9°00'-9°05' N; 76°35'- 76°40' E, at an altitude of 22 to 33m. The area covers an overall geographical area of 3,75ha with a number of sunken and emerging plants, and has a subtropical to warm-temperate climate with an average annual rainfall of 2398mm.

* Author for correspondence

Table 1 Butterfly species recorded in Sasthamkotta Lake, Kerala

Scientific name	Common name	POP	IUCN	WPA	Endemic
Family: Papilionoidea (Swallow tails)					
<i>Papilio polytes romulus</i> (Cramer, 1775)	Indian common Mormon	C	LC		
<i>P. dravidarum</i> (Wood-Mason, 1880)	Malabar Raven	VR	NE		WG
<i>P. demoleus demoleus</i> (Linn, 1758)	Lime Butterfly	C	NE		
<i>P. paris</i> (Linnaeus, 1758)	Paris Peacock	FR	NE		
<i>P. helenus</i> (Linnaeus, 1758)	Red Helen	F	NE		
<i>Graphium tereon</i>	Narrow-banded	C	LC		SI
(Felder & Felder, 1865)	Bluebottle				
<i>Pachliopta aristolochiae aristolochiae</i> (Fab, 1775)	Indian Common Rose	R	LC		
<i>P. hector</i> (Linnaeus, 1758)	Crimson Rose	C	LC	Sch I	PI& SL
<i>Troides minos</i> (Cramer, 1779)	Sahyadri Bird wing	R	LC		WG& SI
Family: Pieridae (Whites and Yellows)					
<i>Eurema blanda silhetana</i> (Wallace, 1867)	Three Spot Grass Yellow	NR	NE		
<i>Eurema hecabe hecabe</i> (Linnaeus, 1758)	Oriental Common Grass Yellow	NR	NE		
<i>Catopsilia pomonapomona</i> (Fabricius, 1775)	Oriental Lemon Emigrant	C	NE		
<i>C. pyranthe pyranthe</i> (Linnaeus, 1758)	Oriental Mottled emigrant	R	NE		
<i>Ixias pyrene sesia</i> (Fabricius, 1777)	Dakhan Yellow Orange-tip	R	NE		
<i>Hebomoia glaucippe australis</i> (Linnaeus, 1758)	Sahyadri Great Orange-tip	NR	NE		
<i>Appias libythea</i> (Fabricius, 1775)	Western Striped Albatross	R	NE	Sch IV	
<i>A. (Hiposcritia) indra shiva</i> (Swinhoe, 1885)	Sahyadri Plain Puffin	NR	NE	Sch II	
<i>A. lalage lalage</i> (Doubleday, 1842)	Himalayan Spot Puffin	VR	NE		
<i>A. albina swinhoei</i> (Moore, 1905)	Sahyadri Common Albatross	F	NE	Sch II	
<i>Pieris canidia canis</i> (Evans, 1912)	Sahyadri Cabbage White	VC	NE		
<i>Leptosia nina nina</i> (Fabricius, 1793)	Oriental Psyche	R	NE		

<i>Eurema laeta laeta</i> (Boisduval, 1836)	Indian Spotless Grass Yellow	C	NE		
<i>E. brigitta rubella</i> (Wallace, 1867)	Small Grass Yellow	C	LC		
<i>E. andersoni shimai</i> (Yata & Gaonkar, 1999)	Sahyadri One-spot Grass Yellow	VR	LC	Sch II	
<i>Appias albina swinhoei</i> (Moore, 1905)	Sahyadri Common Albatross	F	NE	Sch II	
<i>Delias eucharis</i> (Drury, 1773)	Indian Jezebel	R	NE		
<i>Hebomoia glaucippe australis</i> (Butler, 1898)	Sahyadri Great Orange-tip	NR	NE		
Family: Nymphalidae (Brush-footed butterflies)					
<i>Ypthima baldus baldus</i> (Fabricius, 1775)	Common Five-ring	C	NE		
<i>Y. huebneri</i> (Kirby, 1871)	Common Four- ring	VC	NE		
<i>Junonia hierta hierta</i> (Fabricius, 1798)	Oriental Yellow Pansy	C	LC		
<i>J. iphita iphita</i> (Cramer, 1779)	Chocolate Pansy	C	NE		
<i>Parantica aglea aglea</i> (Stoll, [1782])	Coromandel Glassy Tiger	C	NE		
<i>Tanaecia lepidea miyana</i> (Fruhstorfer, 1913)	Peninsular Grey Count	R	NE	Sch II	
<i>Tirumala septentrionis dravidarum</i> (Fruhstorfer, 1899)	Dakhan Dark Blue Tiger	VC	NE		
<i>Parantica aglea aglea</i> (Stoll, 1782)	Coromandel Glassy Tiger	C	NE		
<i>Euploea core core</i> (Cramer, 1780)	Indian Common Crow	C	LC		
<i>Cupha erymanthis maja</i> (Fruhstorfer, 1898)	Sahyadri Rustic	VR	NE		
<i>Hypolimnas misippus</i> (Linnaeus, 1764)	Danaid Egg fly	R	LC	Sch II	
Family: Lycaenidae (Blues)					
<i>Anthene lycaenina lycaenina</i> (Felder, 1868)	Dakhan Pointed Ciliate Blue	R	NE		
<i>Spalgis epius epius</i> (Westwood, 1852)	Ape fly	E	NE		
<i>Talicauda nyseus nyseus</i> (Guérin-Ménéville, 1843)	Indian Red Pierrot	R	NE		
<i>Catochrysops strabo strabo</i> (Fabricius, 1793)	Oriental Forget-me-not	R	NE		
<i>Castalius rosimon rosimon</i> (Fabricius, 1775)	Continental Common Pierro	NR	NE		
<i>Pseudozizeeria maha ossa</i> (Swinhoe, 1885)	Dakhan Pale Grass Blue	NR	NE		

<i>Rathinda amor</i> (Fabricius, 1775)	Monkey Puzzle	FR	NE		
<i>Jamides celeno celeno</i> (Cramer, 1775)	Oriental Common Cerulean	VC	NE		
<i>Euchrysops cnejus cnejus</i> (Fabricius, 1798)	Oriental Gram Blue	C	NE	Sch II	
Family: Hesperidia (Skippers)					
<i>Badamia exclamationis</i> (Fabricius, 1775)	Brown Awl	FR	NE		
<i>Celaenorrhinus fusca</i> (Hampson, 1888)	Dusky Spotted Flat	C	NE		PI
<i>Aeromachus dubius dubius</i> (Elwes & Edwards, 1897)	Sahyadri Dingy Scrub Hopper	C	NE		
Family: Riodinidae (Metal marks)					
<i>Abisara echerius prunosa</i> (Moore, 1879)	Lankan Plum Judy	VR	NE		

Note: POP-Population status as VC-Very Common, C- Common, NR-Not Rare, R- Rare, VR-Very Rare and S-Stragglers, WG-Western Ghats, PI-Peninsular India, SL- Sri Lanka, SI-South India, IUCN -IUCN Red List Status, WPA-Indian Wildlife Protection Act Schedule as Sch.

Recognised as a Ramsar site since 2002 has 375-hectare lake famous for its purity. Butterfly fauna was surveyed weekly during 6.00am to 5.00pm, between January and June 2025. The species were photographed with the Nikon D3500 camera from various angles to allow for a positive identification. Butterflies have been identified in the field primarily using field guides. The general taxonomic classification and checklists are based on the works of Evans (1926, 1949), Wynter-Blyth (1957), Larsen (1987, 1988), Gaonkar (1996), Nitin *et al.* (2018), Kunte *et al.* (2022), and Sadasivan *et al.* (2025). The red list status is based on the IUCN website, according to the IUCN 2021 global population inventory, iucnredlist.org, the conservation status is in line with IWPA (1972) and CITES (2012).

The survey documented 50 species, representing six families (Table 1). The species recorded were of the family Pieridae (17), followed by Nymphalidae (11), Lycaenidae (9), Papilionidae (9), Hesperidae (3), and Riodinidae (1). About eight of these species are listed under the protection category of the Indian Wildlife Act 1972. The

number of individuals was more in Pieridae, probably because of their affinity for gardens and open spaces (Gupta and Kumar, 2024). Conversely, the Hesperidae and the Riodinidae have a lower abundance of species, probably due to their specific host preference and limited dispersal capacity (Lodh and Agarwal, 2016). Ten butterfly species found in the area are listed as least concern (LC) in the International Union for Conservation of Nature (IUCN), while the status of the remaining 40 species is not evaluated (NE). According to the IUCN Red List of endangered species, none of the butterflies reported are endangered or threatened worldwide. Four species of Sasthamkotta butterflies are considered to be of an endemic nature. *Papilio dravidarum* was exclusively native to the WG. Eight species were covered by the WPA Schemes and Amendments. There are six species in Schedule II, one in Schedule I and one in Schedule IV. The presence of butterflies in a particular area is of great importance as pollinator and as a biological marker. Their presence or absence may give an indication of the health and stability of the ecosystem.

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