



A review of butterflies (*Lepidoptera*) fauna in Uttar Pradesh, India

Babita Sharma¹, Sushmita Prakash¹, Ashok Kumar¹, Bipin Kumar²

¹ Department of Zoology, B.S.N.V PG College, University of Lucknow, Lucknow, Uttar Pradesh, India.

² Department of Zoology, Swami Shraddhanand College, University of Delhi, Delhi, India.

Abstract

Uttar Pradesh, India's fourth-largest state by area and the most densely populated, has exceptional butterfly diversity, although comprehensive research is still unevenly scattered among its 75 districts. In our analysis, we discovered 72 publications that show butterfly variety, distribution, and status have been investigated in only 22 districts, with the remaining districts having no scientific data yet. Lucknow, Lakhimpur-Kheri (Dudhwa National Park/Tiger Reserve), Barabanki, and Jhansi are identified as the most extensively researched regions. Previous studies conducted in the 19th and 20th centuries by lepidopterists established the groundwork for regional faunistic understanding, later extended by an increasing number of 21st-century studies. These contemporary studies range from inventories in protected and urban areas to detailed assessments of ecological patterns, seasonal dynamics, anthropogenic pressures, and rediscovery of rare or previously unrecorded species. Research has taken place in important protected areas like Dudhwa, Hastinapur, Surajpur, and Katerniaghat Wildlife Sanctuaries, as well as Ramsar sites and botanical gardens, leading to the discovery of several new species, including some that are unique or endangered, and the rediscovery of species like *Zesius chrysomallus* and some *Graphium* species after more than a hundred years. Recently published large-scale quantitative studies have documented tens of thousands of individuals, showing a high species diversity and habitat relationship. During monsoon season, families like Nymphalidae and Lycaenidae predominate in most faunal assemblages, with seasonal abundance reaching peak levels. However, studies from industrial and urban areas, like Kanpur, show significant reductions in butterflies connected with air pollution and habitat deterioration. This extensive research emphasizes the need to perform systematic assessments of biodiversity in underexplored districts, long-term ecological monitoring, and conservation planning. This review paper also highlights the crucial role of heterogeneous habitats such as wetlands, forest fragments, and urban green spaces for safeguarding butterfly diversity. The currently existing database of work provides a foundational resource for future research and policymaking in Uttar Pradesh with the aim to promote butterfly conservation and ecosystem health.

Keywords: Uttar Pradesh, biodiversity, anthropogenic activities, habitat conservation, rediscovery

Introduction

India is a large tropical country, recognized as one of the 17 megadiverse nations of the world, encompassing important global biodiversity hotspots within its borders (Marchese, 2015) [46]. At a global scale, there are approximately 28,000 species of butterflies that survive, with nearly 80% resident in tropical regions. The Indian subcontinent, recognized for its diversified topography, climate, and rich vegetation, supports a wide variety of butterfly fauna, consisting of 1379 documented species (Varshney and Smetacek, 2015; Van Gasse, 2021) [87, 86]. Butterflies are delicate insects belonging to the order *Lepidoptera*. They serve as pollinators and excellent bioindicators of climatic conditions, seasonal shifts, and ecological changes. This is because they respond quickly to environmental changes due to their short generation time, high mobility, and specific habitat preferences (Clark *et al.*, 2007; Lee *et al.*, 2014) [11, 45]. In a particular area, butterfly diversity reflects the overall plant diversity and availability of suitable habitats (Kakati, 2006) [24]. Therefore, it is crucial to examine the structure of butterfly communities in several places to assess whether modifying natural habitats has an impact on the diversity and distribution of butterflies.

In north-central India, Uttar Pradesh is the fourth largest and most populous state in the country, and as per the India State Forest Report (MOEFCC, 2023) [49], the state has a forest cover of 15,045.80 sq. km, which is 6.24% of the state's geographical area, which includes several rare and

unidentified species within its protected areas. The state covers a wide geographical range and is rich in several distinct types of habitats, such as forests, wetlands, agricultural fields, and urban areas, that would help with the assessment of the diversity, richness, status, and distribution of butterfly fauna in particular locations. The diversity and distribution of each species of butterfly are dependent not only on their geographical locations and their capability to be mobile but also on their ecological requirements for survival and thriving in particular conditions (Paunikar & Sharma, 2022; Sharma *et al.*, 2024) [54, 64]. Due to excessive exploitation of natural resources, expansion of urban areas, and large amounts of pollutants being emitted from the manufacturing sector into the atmosphere, the process damages the environment, which seems irreversible. These problems not only affect living beings but also affect biodiversity and ecosystems as a whole. In view of this changing scenario, to ensure vital ecosystem services are performed by butterflies, it is necessary to document these ecologically crucial, attractive, vivid-hued winged beauties. The main objectives of this review paper are to assess the current status, distribution, diversity, and abundance of *Lepidoptera* (butterflies) in the state of Uttar Pradesh; to analyse how expansion of urban areas influences the butterfly populations; and to determine the number of new butterfly species reported so far in the state.

Methods

This research paper compiles all the available published

literature, research papers, and articles from the year 2001 up to 2025. The whole data literature was compiled, and studies were categorized based on geographic location (such as protected areas, urban areas, college campuses, sanctuaries, and national parks) and year of publication. All the data are searched on several academic platforms, such as Academia (www.academia.edu), Google Scholar (www.scholar.google.com), ResearchGate (www.researchgate.net), <https://www.wti.org.in>, peer-reviewed journals, available literature, and district-specific checklist studies within Uttar Pradesh.

Results and Discussion

Uttar Pradesh exhibits a wealthy butterfly fauna, with research showing various species across distinct locations. Uttar Pradesh comprises a total of 75 districts. Out of these, most of the studies on diversity, status, distribution, and checklists are done in 22 districts of Uttar Pradesh (Fig. 1), and there is no scientific data published for the other districts in Uttar Pradesh. Out of a total of 72 published datasets, 20 papers addressed the new record, 9 checklists, and 43 papers addressed the status, diversity, and distribution of butterflies in Uttar Pradesh. At the district level, most of the publications addressed Lucknow district, followed by Lakhimpur-Kheri (Dudhwa National Park/Dudhwa Tiger Reserve), Barabanki, and Jhansi district. Most of the several new records of butterfly species are recently documented from protected areas and urban areas of Uttar Pradesh, which is listed in Table 1. Previously many scientists studied the Rhopalocera (butterfly) fauna in the 19th and 20th centuries in Uttar Pradesh state, such as Marshall and de Niceville (1882) [47], de Niceville (1886, 1890) [13, 14], Evans (1932) [19], Talbot (1939, 1947) [83, 84], and Wynter-Blyth (1957) [89]. De Rhe Philippe (1902) [17] reported 93 butterfly species from the Lucknow region. At the beginning of the 21st century, in Uttar Pradesh, Chandra *et al.*, (2002) [9] studied butterflies in Kaimur Wildlife Sanctuary in Mirzapur district and found 19 species from 13 genera and six families, including three species that were new to Uttar Pradesh, such as *Junonia lemonias vaisya* (Fruhstorfer) from the Nymphalidae family and *Euchrysops cnejus* (Fabricius) and *Catochrysops strabo strabo* (Fabricius) from the Lycaenidae family. In 2005, Saha *et al.*, [61] observed a distribution pattern and diversity of butterfly communities in Dudhwa Tiger Reserve. The authors found 17 species of butterflies occupying different landscapes and also noted that the butterfly species richness was relatively higher at Sathiana than at Dudhwa and Kishanpur. Baijal *et al.*, (2006) [5] monitored catastrophic changes in butterfly populations in their selected study sites in Kanpur, which were described with indices of abundance for different seasons. In the research, the authors focus on developing monitoring schemes that should eventually provide long-term information to prevent butterfly populations from becoming extinct. In 2007 Sharma [69] reported 20 species of butterfly, thirteen genera, and six families, such as Pieridae, Danaidae, Satyridae, Nymphalidae, Lycaenidae, and Hesperidae, of which the first five are related to the superfamily Papilionidae and the last to the superfamily Hesperioidea. The Sur Sarovar Bird Sanctuary, Agra, recorded all species of butterflies for the first time, according to the authors. Sharma 2008 [70] documented thirty-six species of butterflies, referring to twenty-eight genera and seven families, i.e., Papilionidae,

Pieridae, Danaidae, Satyridae, Nymphalidae, Lycaenidae, and Hesperidae, the first time from Hastinapur Wildlife Sanctuary, Uttar Pradesh, India. The first six families belong to the superfamily Papilionoidea, and the last to the superfamily Hesperioidea. In 2011, Kumar [36] evaluated the abundance and diversity of butterflies in the Jhansi region and collected 655 butterflies of 23 species belonging to 4 families. The author Sharma, in 2011 [71], studied a new species of the genus *Ypthima* (Hübner), named *Ypthima rosei sp. nov.*, from northwest India. In his findings, the author collected two male specimens from the terai region of Uttar Pradesh: one from Dudhwa Railway Station in Dudhwa National Park and the other from Mahof Forest in Pilibhit. The author provides detailed descriptions of collected specimens based on the presence of wing markings and genitalia structures, as well as the existing literature. Kumar (2012) [35] reported the abundance and foraging activity of butterflies at different locations in Jhansi and collected six hundred and thirty-seven butterflies from all study sites, which include 27 identified species belonging to five families. A few species of butterflies were collected as they were visiting various species of flowering plants in selected areas such as gardens, cultivated areas, semi-wild areas, and wild areas. In 2012, researcher Behera [6] conducted a study in the 614 km² area of Dudhwa Tiger Reserve, Uttar Pradesh, and revealed the presence of 81 species of butterflies. The author Bura *et al.*, (2013) [8] studied the ecological assessment, conservation, and management of Surajpur Wetland in Greater Noida, and here they found 52 species of butterflies belonging to 35 genera and 5 families, showing that the area has a mosaic type of habitat that supports various native and threatened floral and faunal diversity. The research by Kumar and Ratnakar (2013) [34] surveyed butterfly species in four habitats of Jhansi and found four hundred and eighty-five individuals of butterflies collected from several study sites, which includes 29 identified species belonging to five families. The researchers also highlight that anthropogenic activities influenced the population of butterflies. The investigation on the diversity and abundance of butterfly species in some urban habitats was carried out in Jhansi city by Kumar (2014) [37], identifying nine hundred and forty-eight individuals of butterflies of 38 species belonging to 29 genera. Kanaujia *et al.*, (2014b) [25] monitored the faunal diversity of Nawabganj Bird Sanctuary and reported 28 species from the order *Lepidoptera*. The authors highlight that the wetlands are very wealthy in terms of floral diversity as well as faunal diversity. Kanaujia *et al.*, (2014a) [27] studied the status of faunal biodiversity and threats to wetlands and reported 13 species of butterflies in the wetlands of the Barabanki district. In 2015, Ansari *et al.*, [3] recorded a total of 53 butterfly species that belong to 5 families, of which Nymphalidae was the most dominant, followed by Pieridae, Lycaenidae, Hesperidae, and Papilionidae. The authors focused on the previously unknown but crucial diversity of butterflies in Surajpur Wetland. They also came to the conclusion that the mosaic habitats help support a wide range of plants and animals. In 2015, Kanaujia *et al.*, [26] examined the diversity of Odonata (dragonflies and damselflies) and *Lepidoptera* (butterflies) in Nawabganj Bird Sanctuary. From the study area, the authors recorded 30 species of butterflies from 22 genera and four families. Kumar *et al.*, (2015) [30] discovered 10 orders of insects, including 28 species of butterflies, from

the Sandi Bird Sanctuary in Hardoi district. Sharma and Kumar (2015) ^[68] identified butterflies using specimens that were collected by different Zoological Survey of India survey parties, external contributions, and also the available specimens in the old National Zoological Collection of the Zoological Survey of India. The authors identified 32 species or subspecies from 19 genera and 4 families in their research report. The Nymphalidae family comprised 22 species or subspecies from 13 genera, the Satyridae family included 8 species or subspecies from 4 genera, and both the Acraeidae and Riodinidae families each contained one species from Uttar Pradesh. At Katarniaghat Wildlife Sanctuary in the Bahraich district, Kumar *et al.*, (2016) ^[32] found 42 species of 31 genera of butterflies, of which the documented Papilionidae family has 6 species, the Pieridae have 11 species, the Lycaenidae have 4 species, and the Nymphalidae have 21 species. At Ewing Christian College in the Gaughat, Allahabad district, Kumar *et al.*, (2016) ^[40] documented twenty-five species of butterflies and concluded that the diversity of butterflies of the Gangetic region represents the common species from both the northeastern region and the Western Ghats regions, but they are closer to the northeastern region. Behera (2016) ^[7] documented 85 species of butterflies from Dudhwa Tiger Reserve in the Terai region of Uttar Pradesh. Apart from this, the author highlights that this study adds 46 species to the known fauna of the Tiger Reserve, bringing the total number of butterfly species recorded from the reserve to 99 species. Kumar (2017) ^[39] monitored the diversity and dynamics of butterfly populations across seasons and some urban habitats in Jhansi and focused on enhancing biodiversity conservation for sustainable development. Kumar and Rana (2018) ^[33] described the species diversity and community structure of butterflies and focused on the conservation of butterfly species that are declining through some of the anthropogenic activities. The observation of five urban forest fragments at Lucknow totals 643 butterflies, which belong to five families of 26 genera. In the updated version of Gasse 2018 ^[20], the checklist on butterfly studies clearly explained the distributional ranges of most Rhopalocera (butterfly) species found in Uttar Pradesh. In 2018, Sarkar and Mandal ^[62] provided baseline information on butterfly diversity and prepared a comprehensive checklist at the Narora Atomic Power Plant Township. Researchers documented 23 species of butterflies that are related to the families Papilionidae, followed by Pieridae, Nymphalidae, Lycaenidae, and Hesperidae. They observed the most common species, such as Mottled Emigrant (*Catopsilia pyranthe*), Lime Butterfly (*Papilio demoleus*), Plain Tiger (*Danaus chrysippus*), and Striped Pierrot (*Tarucus nara*). Dubey and Dubey (2019) ^[18] reported for the first time ten species of butterflies belonging to four families of the order *Lepidoptera* from Allahabad and nearby districts. In 2019, Abdullahi *et al.*, ^[1] prepared a checklist on the diversity of butterflies in the Prayagraj district, Uttar Pradesh. In their research, they recorded a total of 316 individuals and 21 species across four butterfly families. Of all of these, the family Nymphalidae shows the highest species richness, followed by Pieridae and Papilionidae, while Lycaenidae has the lowest richness. Kumar (2020) ^[38] examined the distribution and status of butterfly fauna across some habitats in Lucknow City. Throughout the study period, a total of nine hundred and thirty butterfly individuals from the multiple

selected study sites were identified as 35 species, which are related to 27 genera and six families. The author points out that the broad distribution of butterflies within the study site plays an important role in the dynamics of the urban ecosystem. Tiwari *et al.*, (2020) ^[85] provided significant information on the diversity of butterfly fauna in the Kaptanganj block, Basti district. The authors reported 47 species of butterflies in different seasons from the study area that were previously unreported. The rediscovery of the Redspot butterfly, *Zesius chrysomallus*, from the Varanasi district of Uttar Pradesh, with a new record of larval host plants for India documented by Kumari and Sheikh (2021) ^[42] after 108 years. In the summer season of 2021, Sushmita *et al.*, ^[82] surveyed the status of the butterfly fauna at Lucknow Zoo. The authors reported 58 species of butterflies, divided into 44 genera and five families. The Wildlife Protection Act of 1972 protected five of these species. Their research highlights a butterfly park as a better way to protect biodiversity, and it shows how wildlife can be kept out of the way and protected near cities without getting in the way of development. Sharma *et al.*, (2021) ^[67] evaluated the diversity and relative abundance of butterflies in the Butterfly Park of Nawab Wajid Ali Shah Zoological Garden, Lucknow, and documented 62 butterfly species, which include 45 genera and five families. The Nymphalidae family was the most dominant, with 24 species, followed by Lycaenidae (16), Pieridae (14), Papilionidae (6), and Hesperidae (2). Singh *et al.*, (2021) ^[76] documented an assessment of the diversity of major insect orders from the Gonda district and 41 species of *Lepidoptera*. Gupta and Mittal (2021) ^[22] assessed the diversity and seasonality of butterflies at Kisan PG College in the Hapur district. There are a total of 53 butterfly species, with 23 species belonging to the Nymphalidae family, 12 species to the Pieridae family, 8 species to the Lycaenidae family, 7 species to the Hesperidae family, and 3 species to the Papilionidae family documented from the study site. The primary inventory of the diversity of butterflies at the Upper Ganga River Ramsar site, where 44 species were documented for the first time from 34 genera and five families by De *et al.*, 2022 ^[12]. In their study, the authors indicate the need to enhance our knowledge about butterfly biodiversity in these regions, as the butterfly fauna in Indian Ramsar wetlands remains undocumented. In 2022, Srivastava *et al.*, ^[77] analyzed the population status of butterfly species and their dispersion in the Lucknow region. A total of 40 species belonging to five families of the order *Lepidoptera* were identified. Their results showed a marked diversified pattern of butterfly species. The individual variation in the lime butterfly *Chilades lajus*, as studied based on collected specimens from Barabanki district by Sushmita *et al.*, (2022a) ^[81], shows that the features proposed as distinctive for this species are not consistent and therefore not reliable; instead, they vary individually from specimen to specimen. Although the features are distinctive when they appear, they do not always occur in every specimen. De *et al.*, ^[15] reported 79 species of butterflies, belonging to 56 genera and five families, from the Shaheed Chandra Shekhar Azad Bird Sanctuary in 2023. They provided baseline data to aid future studies on the diversity of *Lepidopteran* species and their habitat use. Kumari *et al.*, (2023) ^[41] studied the status and diversity of butterfly fauna in Deendayal Upadhyay Kisan Park, Lucknow, and recorded 30 species of butterflies. Their

findings highlight the focus on initiating further research endeavors on butterfly conservation that ultimately contribute to their long-term survival and well-being. Rai and Chaudhary (2023) ^[60] conducted a study on the diversity of butterfly species in Hastinapur Wildlife Sanctuary. The study included 1171 individuals from 27 species, spanning 22 genera and five families. Their result findings indicate that the Meerut region of Hastinapur Wildlife Sanctuary is home to a diverse variety of butterfly species and suggest that more research should be conducted to understand how the diversity of butterfly species varies in different habitats. In 2023, Chaudhary *et al.*, ^[10] provided a preliminary report on the diversity of butterflies in the Agra district of Uttar Pradesh, and a total of 52 species were recorded. Based on their findings, the authors concluded that it is required to raise more awareness about butterflies and their ecological importance among local residents and government officials. Abrar *et al.*, ^[2] conducted the study on butterfly diversity in and around the NBRI botanical garden in 2023, documenting a total of 30 species of butterflies during the study period. Prateek *et al.*, (2023) ^[59] found 38 species of butterflies from 27 groups and 6 families while studying the diversity and status of butterflies in different seasons at Joggers Park, Lucknow. Shukla *et al.*, (2023) ^[75] studied the status of faunal diversity at Isabella Thoburn College, Lucknow, and found 10 species of *Lepidoptera* there. Sharma *et al.*, ^[64] studied the diversity and distribution of butterflies at the Hulas Khera archaeological site and recorded a total of 46 butterfly species in 2024. In the year 2024d, Prakash *et al.*, ^[56] recorded 42,468 individuals of butterflies, representing 97 species from five families in the Barabanki district. The authors indicate that a wide range of diverse varieties of habitats should be conserved and maintained because it is crucial for the health of butterfly populations and ecosystems. Pandey ^[50] studied the effect of industrialization and air pollution on butterflies in Kanpur City in 2024. Her study demonstrated that activities in industrial areas, air pollution, and urban development in natural habitats negatively impact the diversity of butterflies and their growth in various stages. Khan *et al.*, 2024 ^[29] documented new records and also provided an updated checklist of the Hesperidae family from Pilibhit Tiger Reserve, Uttar Pradesh. In their study, the authors documented 31 new species of butterflies from this family and also mentioned their digital photographs, host plants, and ecological notes. The already existing butterfly species of Two Band Plum Judy (*Abisara bifasciata suffusa*) had its first confirmatory photographic evidence recorded from Lakhimpur Kheri district in the year 2024 by De *et al.*, ^[16]. Two species of the genus *Graphium scopoli*, described in 1777, were rediscovered in Uttar Pradesh from Pilibhit Tiger Reserve by Pandey *et al.*, ^[52] in 2025. In 2025, Jaiswal and Kumar ^[23] examined the diversity and abundance of butterfly populations in the Ayodhya district. Researchers documented a total of 11,256 individuals of butterflies from 45 species across five different families. They concluded

that the study area has minimal anthropogenic disturbance and rich floral diversity, implying a high richness and abundance of butterfly species. In Lucknow district, Sharma *et al.*, (2025) ^[63] surveyed the diversity and seasonal dynamics of butterflies and, totaling 39,151 individuals of 90 species, recorded them from three selected protected areas. Their findings show that the families Lycaenidae and Nymphalidae exhibited the highest diversity during the rainy seasons (including pre- and post-monsoon), suggesting that, compared to summer and winter, butterflies are most likely to prefer wet climatic conditions.

The conservation of butterflies in a region indirectly supports the protection of several plants, trees, and other flora species. So, studying the ecology of butterfly populations tells us a lot about the status of other taxa in a specific terrestrial ecosystem (Weber *et al.*, 2008) ^[88]. Many *Lepidoptera* species display strict seasonality and have specific habitat preferences, which makes them particularly useful for ecological assessments (Kunte, 1997) ^[43]. Reserved protected areas are home to a plethora of wildlife, such as mammals, birds, and reptiles, as well as butterflies. The proper and sustained growth of these species depends highly on the conservation of their natural habitats. Butterflies, in particular, are considered one of the best taxa for potential ecological indicators of environmental health. The survival and diversity of butterflies reflect the quality of habitats and availability of host plants. Uttar Pradesh hosts a significant number of butterfly species, many of which are sensitive to changes in land use, pollution, and habitat fragmentation. Consequently, butterfly habitat conservation also supports broader biodiversity aims. Expansion of land-use pressures and growing human populations lead to habitat loss and human-animal conflicts. To mitigate these issues, it is essential to restore habitats, create wildlife corridors, and promote eco-sensitive zones throughout all wildlife-sensitive protected areas in Uttar Pradesh by implementing landscape-level conservation plans that ensure coexistence between humans and nature.

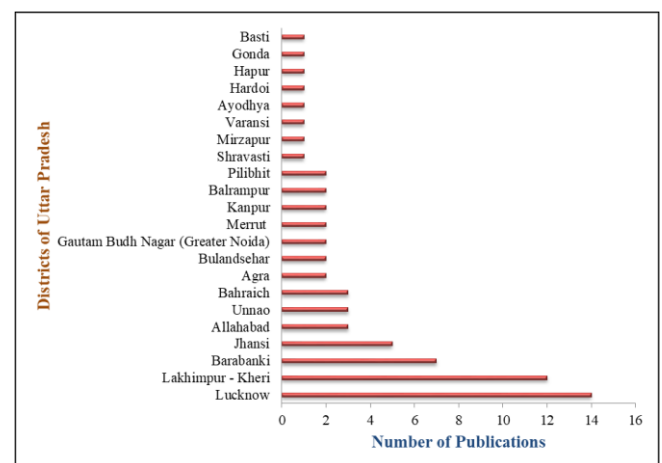


Fig1: District-wise number of studied publications data on butterflies of Uttar Pradesh.

Table1: List of recently documented new records of butterfly species and contributed authors from Uttar Pradesh.

S.N.	Scientific Name/ Common Name	Family	Contributed Authors	Districts
1.	<i>Euploea klugii</i> (King Crow)	Nymphalidae	Mishra <i>et al.</i> , 2016 ^[48]	Bahraich (Katarniaghat Wildlif Sanctuary)
2.	<i>Vagrans egista sinha</i> (Himalayan Vagrant)	Nymphalidae	Kumar <i>et al.</i> , 2020 ^[31]	Balrampur (Khairman Reservoir)
3.	<i>Bibasis sena</i> (Orange-tailed Awl)	Hesperidae	Gupta, A 2021 ^[21]	Lakhimpur- Kheri (Dudhwa Tige Reserve)
	<i>Poritia hewitsoni</i> (Common Gem)	Lycaenidae		
4.	<i>Anthene emolus</i> (Common Ciliateblue)	Lycaenidae	Sushmita <i>et al.</i> , 2021a ^[79]	Lucknow (Lucknow Zoo)

5.	<i>Matapa aria</i> (Common Redeye)	Hesperiidae	Sushmita <i>et al.</i> , 2021b ^[78]	Barabanki (Ramsanehi Ghat)
6.	<i>Arhopala atrax</i> (Indian Oakblue)	Lycaenidae	Sushmita <i>et al.</i> , 2022b ^[80]	Barabanki (Ram Nagar)
7.	<i>Charaxes bernardus hierax</i> (Variabl Tawny Rajah)	Nymphalidae	Prakash <i>et al.</i> , 2024a ^[55]	(Bhing Range) Shravasti
8.	<i>Pelopidas thrax</i> (Pale Small Branded Swift)	Hesperiidae	Prakash <i>et al.</i> , 2024b ^[57]	Barabanki (Ramnagar)
	<i>Pelopidas subochracea</i> (Large Branded Swift)			Barabanki (Ramsanehi Ghat)
9.	<i>Tarucus hazara</i> (Hazara Pierrot)	Lycaenidae	Prakash <i>et al.</i> , 2024c ^[58]	Barabanki (Ramsanehi Ghat)
10.	<i>Polyura agrarius</i> (Anomalous Nawab)	Nymphalidae	Sharma <i>et al.</i> , 2021 ^[66]	Lucknow (Kukrail Reserve Forest)
11.	<i>Graphium doson eleius</i> (Common Jay)	Papilionidae	Sharma <i>et al.</i> , 2022 ^[65]	Lucknow
12.	<i>Acraea issoria</i> (Yellow Coster)	Nymphalidae	Sheikh <i>et al.</i> , 2023 ^[73]	Bhraich (Katarniaghat Wildlife Sanctuary)
13.	<i>Phaedyma columella ophiana</i> (Sikkim short-banded Sailer)	Nymphalidae	Sheikh <i>et al.</i> , 2024a ^[72]	Lakhimpur Kheri (Dudhwa National Park)
14.	<i>Spalgis epius</i> (Apefly)	Lycaenidae	Sheikh <i>et al.</i> , 2024b ^[74]	Lakhimpur-Kheri (Dudhwa National Park)
	<i>Tarucus nara</i> (Striped Pierrot)			
	<i>Azanus jesous</i> (African Babul Blue)			
	<i>Freyeria putli</i> (Small Grass Jewel)			
	<i>Remelana jangala</i> (Chocolate Royal)			
15.	<i>Rapala pheretima petosiris</i> (India Copper Flash)	Lycaenide	Pandey <i>et al.</i> , 2023 ^[53]	Lakhimpur-Kheri (Dudhwa National Park)
	<i>Flos adriana</i> (Variegated Plushblue)			Lakhimpur-Kheri (Dudhwa National Park)
16.	<i>Charaxes bhārata</i> (Indian Nawab)	Nymphalidae	Pandey <i>et al.</i> , 2024 ^[51]	Maharajganj (Sohagi Barwa Wildlife Sanctuary)
	<i>Athyma perius</i> (Common Sergeant)			
	<i>Athyma inara</i> (Colour Sergeant)			
17.	<i>Tagiades litigiosa</i> (Water Snow Flat)	Hesperiidae	Khan <i>et al.</i> , 2024a ^[29]	Pilibhit (Pilibhit Tiger Reserve)
	<i>Coladenia indrani</i> (Tricolour Pied Flat)			
	<i>Hyarotis adrastus</i> (Tree Flitter)			
	<i>Telicota colon</i> (Pale Palm-Dart)			
18.	<i>Flos asoka</i> (Spangled Plushblue)	Lycaenidae	Khan <i>et al.</i> , 2024b ^[28]	Lakhimpur-Kheri (Dudhwa Tiger Reserve)
19.	<i>Kallima inachus</i> (Orang Oakleaf)	Nymphalidae	Antil <i>et al.</i> , 2024 ^[4]	Balrampur (Suhelwa Wildlife Sanctury)
20.	<i>Caprona ransonnetti</i> (Golden Angle)	Hesperiidae	Lal <i>et al.</i> , 2025 ^[44]	Lakhimpur-Kheri (Dudhwa National Park)
	<i>Burara oedipodea</i> (Branded Orange Awlet)			

Conclusions

We performed a comprehensive review according to all available literature, articles, and data pertaining to butterfly research in Uttar Pradesh. Only 22 districts in Uttar Pradesh have conducted butterfly studies, and the remaining districts lack data. The authors found that there has been some progress in butterfly studies, butterfly species rediscovery, and documenting new butterfly records from Uttar Pradesh recently. In protected areas, the researchers have observed significant progress, but we need to initiate systematic surveys, monitoring, and conservation plans to gather additional information on butterflies. These efforts will contribute significantly to enhancing our understanding of butterflies and will play a crucial role in guiding future research on butterfly fauna in the region.

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