(Enabling sustainable Environment, Society and Development)

CIN: U73100MP2021NPL057410



1st Butterfly Survey at Ratapani Wildlife Sanctuary, 2021

The 1st butterfly survey was organized in Ratapani Wildlife Sanctuary, Madhya Pradesh from 10th to 12th September 2021. The survey was a collaborative effort of the M.P. Forest Department, TINSA Ecological Foundation (a Bhopal-based NGO), and Wild Warriors (an Indore-based NGO).

The event commenced on 10th September 2021, with the arrival of the participants from different states. The orientation was conducted the same day followed by the introduction to the methodology adopted for the survey by Ms. Pinal Patel, President (President), TINSA Ecological Foundation, followed by the importance of the butterflies and their ecological importance by Mr. Sameer Kumar (Vice-president), TINSA Ecological Foundation. Mr. Vijay Kumar, DFO, Obedullahganj, briefed the volunteers about the survey and their expectations from the survey, and the takeaways for the participants from one of the first surveys conducted in the Ratapani WLS. The chief guest for the day was Mr. Aseem Shrivastava (APCCF). Mr. N.S Dungriyal (Retd. APCCF), Mr. K. Raman (APCCF) and Mr. Shubhranjan Sen (APCCF) also joined the volunteers to enhance their zeal and enthusiasm during the survey.

Study area

Ratapani Wildlife Sanctuary is located in the Raisen district of Madhya Pradesh, which is a part of the Vindhyan Range in Central India. Ratapani WLS has one of the finest teak forests in the state. The total forest area is 825.90 sq km.

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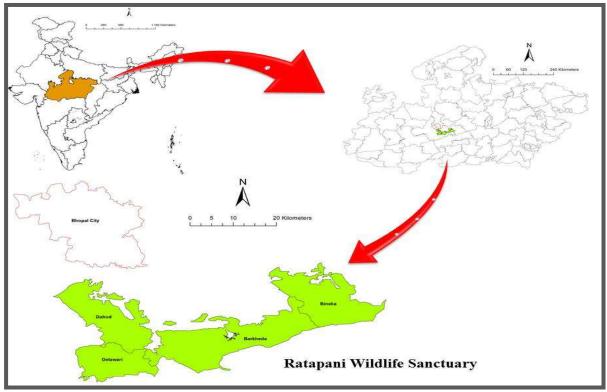


Figure 1-Study area: Ratapani Wildlife Sanctuary, Madhya Pradesh

The forest of Ratapani is dry deciduous and moist deciduous type, with teak (*Tectona grandis*) as the main tree species. About 55% of the area is covered by teak. The remaining mixed forests consist of various dry deciduous species. The sanctuary is rich in flora and fauna and a wide variety of birds and mammals call it their home. The total forest area is 825.90 square kilometers (318 sq mi) and the landscape is undulating, with hills, plateaus, valleys, and plains. Carnivores in the sanctuary include the tiger, leopard, dhole, hyena, jackal, and fox, and the herbivores include chital, sambar, nilgai, four-horned antelope, langur, and wild boar, and primates: langur and rhesus macaque. The omnivorous sloth bear is also seen often. Smaller animals, like squirrels, mongooses, gerbils, porcupines, hares, etc. are of common occurrence. Among reptiles, important species include different kinds of lizards, chameleons, snakes, etc. Among snakes, cobra, python, viper, krait, etc. are common. More than 150 species of birds are seen here.

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Objectives

The butterfly survey was one of the attempts of its kind. The objective was:

- To establish baseline data of butterflies in Ratapani Wildlife Sanctuary.
- To promote public awareness for butterflies.

Survey Design

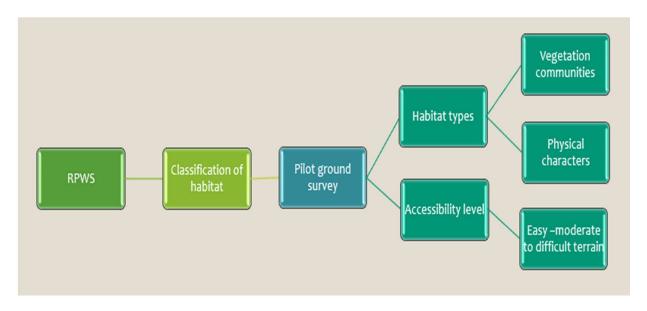


Figure 2 Study design

The butterfly survey was designed using scientific a scientific approach. The survey design was an attempt to incorporate scientific data collection methods into the citizen science initiative to get the best of the possible scenario. Sampling units were various trails identified in the four ranges of the sanctuary. Trails were identified with the help of the forest ground staff and google earth imagery. The final selection of the trails was based on the number of volunteers, accessibility of trails from camps, and butterfly diversity at these trails during the pilot survey. Habitat types were also considered while setting up trails and selecting the same. Trails were categorized into different categories depending on the physical characters, vegetation structure and composition, and difficulty level of trails. These trails were then allocated to different volunteer groups considering their level of expertise, fitness level, age, and accommodation available at camps. Each team was created in such a manner that each team has one expert, one photographer/wildlife enthusiast, and one amateur.

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A total of 88 nature enthusiasts from 14 states volunteered in the survey. The participants were divided into 34 teams with 2-3 volunteers (an expert, a photographer, and an amateur) in each team accompanied by forest staff. The teams were allotted different camps in the four ranges. Each team had to cover a maximum of 3 and a minimum of 2 trails in two mornings and an evening session on 11th and 12th September 2021. The Kml file of the trails was provided to the teams in advance which they followed on the Locus map application on their mobile phones for navigation.

Butterfly Survey Method

The butterfly sampling was done using the "Pollard's walk", a type of transect walk primarily used for butterfly surveys, where the observers record butterflies within a 2.5-meter band on both sides of a transect while walking at a slow and steady pace and 5- meters ahead of the walk.

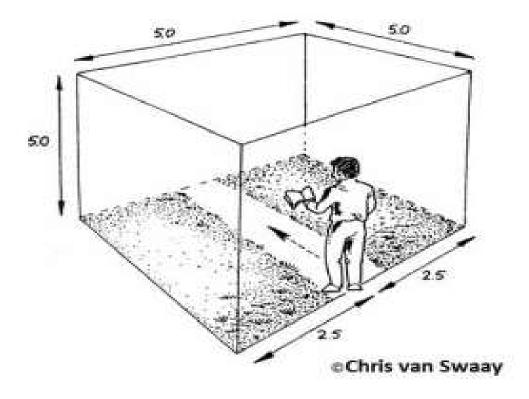


Figure 3-Illustration of Pollard's walk

The observations were recorded in the datasheet provided which entailed the details of the butterfly species, their count, activity pattern, and remarks on the host plant species.

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Conclusion ceremony

At the end of the survey, a checklist of 103 species of butterflies was obtained which had a few important records of species found in the study area, namely Crimson rose, Plum Judy, Double-branded plum Judy, Common short Silverline, Common Red flash, Vindhyan bob, Painted Jezebel, Common tree brown, etc. Grass Jewel (size ranges from 15- 22 mm), the smallest butterfly was sighted in the survey. The survey concluded with certificate distribution and keynotes from the chief guests, Mr. K. Raman (APCCF), Mr. Sanjay Shukla (APCCF), and Mr. Ramnish Geer (Joint Director, CBI), and a vote of thanks by the DFO, Mr. Vijay Kumar.

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Appendix I: Media Coverage



रायसेन 12-09-2021

रातापानी में मिली चॉकलेट पेन्सी और प्लेन टाइगर प्रजाति की तितलियां

1971 के बाद 55 नई प्रजातियां मिली

ये है लेमन पैन्सी

देश में 1622 प्रजातियां इनमें से 360 मप्र में

प्रजाहित्य मिली हैं। 1971 के बाद यह पहला मौजा जब में प्रकार की तितिस्यां देखी गई हैं। यन विभाग व 100 विशेषत्रों की टीम ने रातापानी अभ्यादाग के ओबेसुस्लागंज बन मंद्रत के 2 किसों के एरिया में 100 ट्रैक बनाकर तितिस्यों का सर्वे किया। सर्वें दल के सरस्य तितली विशेषत्र मेंद्रत होंसे तीस्त ने बताया कि तिताली हमारे पर्यावरण के किया बस्त महत्वार्था के किया

गौंडरगंव। तितिस्यों को प्रजातियों में स्वच्छता का प्रतीक है। भारत के संख्यण के लिए शनिवार से में लगभग 1622 प्रजातियां पाई शुरू हुए सर्वे के पहले दिन 55 जाती हैं, जिनमें से तकरीबन प्रजातियां मिली 1971 के बाद 360 से अधिक प्रजाति यह पहला मीका जब नई प्रकार म्प्यप्रदेश में पाई जाती हैं। की तितिल्यां देखी गई हैं। वन ये प्रजातियां मिली

कॉमन प्राप्त खलो, क्रिशमन रोज, कॉमन जेजेबल, प्लेन टाइगर, येरोनेट, बॉकलेट पेन्सी, ब्लू पेन्सी, ग्रेट एगफ्लाई प्रमुख है। बन्य प्राणी संस्क्षण अधिनया 1972 के तहत संरक्षित प्रजातियां जैसे कॉमन पायरट, ग्राम ब्लू,



तितली गिन रहा वन विभाग

्^{पहली बार} विभागीय अमले के साथ 100 वॉलिटियर्स ने किया 50 प्रतिशत से ज्यादा सर्वे

तितलियों की प्रजाति के संरक्षण के लिए तिनसा इकोलॉजिकल फाउंडेशन ने किया सर्वे कुछ दुर्लभ प्रजाति की मिली तितलियाँ मध्य स्वदेश 🔳 औबैदुल्लागंज

जलवायु परिवर्तन के प्रति संवेदनशील रहने वाली तितलियों के संरक्षण और उनकी प्रजाति पहचानने के उद्देश्य से औबेदु्रह्मागंज वन मंडल में तितलियों का सर्वे चल रहा हैं। इस तीन दिवसीय सर्वे के बारे में बताते हुए तितली विशेषज्ञ मेहुल सिंह तोमर ने बताया की तितली हमारे पर्यावरण के लिए बहुत महत्वपूर्ण है क्योंकि इनकी मौजूरगी वातावरण में स्वच्छता का प्रतीक है भारत में लगभग 1622 प्रजातियां पाई जाती हैं जिनमें से



यह सर्वे रातापानी अभ्यारण क्षेत्र के 872 वर्ग किलोमीटर में किया जाएगा। विभागीय अमले के साथ देश के 80 तितली विशेषज्ञ भी शामिल हैं।

मध्यप्रदेश में पाई जाती हैं रातापानी अध्यारण में इस सर्वेक्षण से यहां मौजूद प्रजातियों के बारे में जानकारी मिलेगी एवं उन प्रजातियों को सूचीबद्ध किया जाएगा ताकि उनका संवर्धन और संरक्षण किया जा सके तितलियाँ निचले स्तर पर पाई जा सका ततालामा ।नचल स्तर पर पाइ काने वाली खाब श्रंखला की प्रजाति है उनकी प्रजाति को उनकी और यह चिड़ियों एवं रेंगने वाले जीवो का बाद सत्यापन और गिनती होगी। सर्वेश्वण एसंदीदा भोजन है तितलियों खाब श्रंखला में एकत्र खटा बाद के वर्षों के सर्वेश्वण का

तितिलयों की गणना करने के लिए हो पर चलकर सभी के विशेषज्ञों ने आज के सेशन में लगभग 50 प्रतिशत काम पूर कर लिया है इस सर्वे में लगी टीम के सदस्य तितिलयों का फोटो खींचकर



रायसेन 13-09-2021

दो दिन में मिलीं तितलियों की 103 प्रजातियां, 20 साल बाद दिखी पचमढी बुशब्राउन तितली

सर्वेक्षण: रातापानी अभयारण्य में 80 विशेषज्ञों में 20 महिला विशेषज्ञ, दो दिन से तितलियों की प्रजातियों का पता लगा रहे हैं

भारकर संवाददाता। गौहरगंज

रातापानी अभयारण्य में दो दिन से तितली विशेषज्ञों द्वारा तितलियों की पहचान करने के लिए सर्वे किया जा रहा है। दूसरे दिन यहां पर पचमढ़ी में पाई जाने वाली पचमढ़ी बुशब्राउन तितली 20 साल बाद यहां पर मिली है। इसके अलावा अन्य कई दुर्लभतम प्रजाति की तितलियां पर यहां पर देखी गई है, जो आसानी से नहीं

आसानी से नहीं दिख पाती है, आसानों से नहीं दिखा पाती है, लेकिन तातानानों में यह आसानी से मिली हैं। दो दिन के सर्वेकण में 103 प्रजातियों को तितिस्ता मिली हैं, जो अपने आप में एक सरप्राइच हैं। तिनसा फाउंडेशन की अपन्यं पीनल पटेल ने कहा कि हमने उम्मीद नहीं की थी कि हस तरह की सफतता हमें यहां मिलीगी तितिस्ता का सर्व काफी अलांबा अन्य कहें दुल्पतम मिल्ला। तितित्या का सर्व काफो प्रजावि की तितित्या पर यहाँ पर पूर्वितिष्ण रें यहाँ पर पूर्वितिष्ण रें यहाँ हैं, लेकिन यह देखी गई है, जो आसानी से नहीं काफ़ी ग्रामंच और उत्साह से भग दिख्ती, किसमें एमान्सन नावा, हा। बहुल्ड जॉरिंग्स संस्था के स्माल लेपर्ड, जॉमन शॉट सिल्लर प्रमुख सर्चिन मटकर ने बताया कि लाइन प्रजाति की तितर्दा ग्रामंत यहां जगल भी हैं और मैदानी है। इस प्रकाद तीतितर्दायां जंगल इलांक भी, यह अभयारण्य के बहुत अंदर तक होती हैं और



यहां दुर्तमतम प्रजाति को पचमदी बुशस्राउन है, जो लगभग 20 सालों के बाद रातापानी में देखने को मिली हैं, इस सर्वेक्षण की यह बड़ी सफलता मानी जा सकती हैं।



एंगलेड पाइरेट







कॉमन मॉरमॉन



(Enabling sustainable Environment, Society and Development)

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Appendix II: Activities During the Butterfly Survey





Inaugural Session: Day 1







Closing Ceremony: Day3

Registered Address:

House no. 1A, Anshul Vihar Extension, Bairagarh-chichali, Kolar Road, Bhopal-462042

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Registered Address:

House no. 1A, Anshul Vihar Extension, Bairagarh-chichali, Kolar Road, Bhopal-462042

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Teams During the Butterfly Survey: Day 2

Appendix III: List of Butterflies observed during the survey

S No.	Family	Species	Scientific Name	Conservation Importance	
				IUCN	WPA 1972
1	Hesperiidae	Brown Awl	Badamia exclamationis		
2		Ceylon Swift	Parnara bada		
3		Common Banded Awl	Hasora chromus		
4		Common Branded Swift	Pelopidas subochracea		
5		Conjoined Swift	Pelopidas conjuncta		
6		Grass Demon	Udaspes folus		
7		Indian Dartlet	Oriens goloides	Not evaluated	
8		Indian Grizzled Skipper	Spialia galba	Not evaluated	
9		Indian Palm Bob	Suastus gremius	Not evaluated	
10		Rice Swift	Borbo cinnara	Not evaluated	
11		Tri-colour Pied Flat	Coladenia indran		
12		Vindhyan Bob	Arnetta vindhiana		
13	Lycaenidae	Angled Pierrot	Caleta decidia	Least Concern	
14		Common Cerulean	Jamides celeno		
15		Common Guava Blue	Deudorix isocrates	Not evaluated	
16		Common Hedge Blue	Acytolepis puspa	Not evaluated	
17		Common Line blue	Prosotas nora		
18		Common Pierrot	Castalius rosimon	Not evaluated	Schedule I - Part IV
19		Common Shot Silverline	Cigaritis ictis		
20		Common Silverline	Cigaritis vulcanus	Not evaluated	
21		Dark cerulean	Jamides bochus		
22		Dark Grass Blue	Zizeeria karsandra	Least Concern	
23		Forget-me-not	Catochrysops strabo	Not evaluated	
24		Gram Blue	Euchrysops cnejus	Not evaluated	Schedule II - Part II
25		Grass Jewel	Freyeria trochylus	Least Concern	
26		Indian Cupid	Chilades parrhasius	Not evaluated	
27		Leaf blue	Amblypodia anita		
28		Lesser Grass Blue	Zizina otis	Not evaluated	
29		Lime blue	Chilades lajus		
30		Pale Grass Blue	Pseudozizeeria maha	Not evaluated	

Registered Address:

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31		Pea Blue	Lampides boeticus	Least Concern	Schedule II - Part II
32		Plains Cupid	Chilades pandava	Not evaluated	
33		Red Pierrot	Talicada nyseus	Not evaluated	
34		Red Flash	Rapala iarbus		
35		Rounded Pierrot	Tarucus extricatus		
36		Striped Pierrot	Tarucus nara		
37		Tailless Lineblue	Prosotas dubiosa		Schedule II - Part II
38		Tiny Grass Blue	Zizula hylax	Not evaluated	
39		Zebra Blue	Leptotes plinius	Not evaluated	
40		Dull Babul Blue	Azanus uranus		
41	Nymphalidae	Angled Castor	Ariadne ariadne	Not evaluated	
42		Anomalous Nawab	Charaxes agrarius	Not evaluated	
43		Baronet	Euthalia nais	Not evaluated	
44		Black Rajah	Charaxes solon	Not evaluated	
45		Blue Tiger	Tirumala limniace	Not evaluated	
46		Blue Pansy	Junonia orithya	Not evaluated	
47		Chocolate Pansy	Junonia iphita	Not evaluated	
48		Commander	Moduza procris		
49		Common Nawab	Polyura athamas		
50		Common Baron	Euthalia aconthea	Not evaluated	
51		Common Leopard	Phalanta phalantha	Not evaluated	
52		Common Bushbrown	Mycalesis perseus		
53		Common Castor	Ariadne merione	Not evaluated	
54		Common Crow	Euploea core	Least Concern	Schedule IV
55		Common evening brown	Melanitis leda	Not evaluated	
56		Common Four-ring	Ypthima huebneri	Not evaluated	
57		Common Sailor	Neptis hylas	Not evaluated	
58		Common Three ring	Ypthima asterope		
59		Common Treebrown	Lethe rohria		
60		Danaid Eggfly	Hypolimnas misippus	Not evaluated	Schedule II - Part II
61		Dark-branded Bushbrown	Mycalesis mineus	Not evaluated	Schedule II - Part II
62		Glassy Tiger	Parantica aglea	Not evaluated	Schedule II - Part II
63		Great Eggfly	Hypolimnas bolina	Not evaluated	
64		Grey Pansy	Junonia atlites	Not evaluated	
65		Lemon Pansy	Junonia lemonias	Not evaluated	
	·				

Registered Address:

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66		Long-brand Bushbrown	Mycalesis visala		
67		Painted Lady	Vanessa cardui	Not evaluated	
68		Peacock Pansy	Junonia almana	Least Concern	
69		Plain Tiger	Danaus chrysippus	Least Concern	
70		Short-banded Sailer	Phaedyma columella		Schedule I - Part IV
71		Striped Tiger	Danaus genutia	Not evaluated	
72		Tawny Coster	Acraea terpsicore	Not evaluated	
73		Yellow Pansy	Junonia hierta		
74	Papilionidae	Common Bluebottle	Graphium sarpedon		
75		Common Jay	Graphium doson	Not evaluated	
76		Common Mime	Papilio clytia		Schedule I - Part IV
77		Common Mormon	Papilio polytes	Not evaluated	
78		Common Rose	Pachliopta aristolochiae	Least Concern	
79		Common Swallowtail	Papilio machaon		
80		Crimson Rose	Pachliopta hector	Least Concern	Schedule I - Part IV
81		Indian Spot-swordtail	Graphium nomius		
82		Lime Butterfly	Papilio demoleus	Not evaluated	
83		Tailed Jay	Graphium agamemnon	Not evaluated	
84	Pieridae	Common Albatross	Appias albina		
85		Common Gull	Cepora nerissa	Not evaluated	Schedule II - Part II
86		Common Emigrant	Catopsilia pomona	Not evaluated	
87		Common grass Yellow	Eurema hecabe	Not evaluated	
88		Common Jezebel	Delias eucharis	Not evaluated	
89		Common Wanderer	Pareronia valeria		
90		Large Cabbage White	Pieris brassicae		
91		Mottled Emigrant	Catopsilia pyranthe	Not evaluated	
92		One-spot grass yellow	Eurema andersonii		
93		Painted Jezebel	Delias hyparete	Not evaluated	
94		Pioneer	Belenois aurota	Not evaluated	
95		Psyche	Leptosia nina		
96		Small Grass Yellow	Eurema brigitta	Not evaluated	
97		Spotless Grass Yellow	Eurema laeta	Not evaluated	
98		Three-spot Grass Yellow	Eurema blanda		
99		White ornage tip	Ixias marianne	Not evaluated	
100		Yellow orange tip	Ixias pyrene	Not evaluated	
101		Double-banded Judy	Abisara bifasciata	Not evaluated	

Registered Address:

House no. 1A, Anshul Vihar Extension, Bairagarh-chichali, Kolar Road, Bhopal-462042

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102	Riodinidae	Double-banded Judy	Abisara bifasciata	Not evaluated
103		Plum Judy	Abisara echerius	Not evaluated

Appendix IV: Pictures of Butterflies observed during the survey



Gray Pansy. © Anshuman Sharma



Tawny coster. © Anshuman Sharma



Black Rajah. ©Gavrav Nigam



Tri-coloured Pied flat ©Radheshyam baghel

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Anomalous Nawab © Gaurav Nigam



Double banded Plum Judy ©Amod



Rice swift. ©Akash



White orange tip ©Adarsha Mukherjee



Peacock pansy ©Geeta yadav



Common Silverline ©Geeta yadav

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Gram Blue ©Amit kumar



Angled Pierrot © Harvinder Singh



Lime butterfly © Harwinder Singh



Common sailor ©Harwinder Singh



Yellow pansy © Harwinder Singh



Common Evening Brown©Surendra

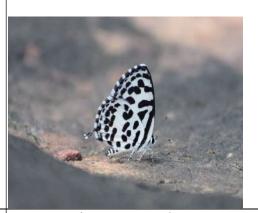
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Common Jezebel © Surendra



Common Pierrot © Surendra



Indian Grizzled Skipper © Surendra



Greater Eggfly © Surendra



Long-Brand Bushbrown © Anup Prakash | Tiny Grass Blue © Anup Prakash



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Grass Demon © Anup Prakash





Common Crow ©AnupPrakash

Common Baronet ©Anup Prakash





Chocolate Pansy © Anup Prakash

Common Mormon © Pallavi Vaze

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Blue Pansy © Pallavi Vaze



Commander © Pallavi Vaze



Crimson Rose © Sameer



Common Redflash © Sameer



Common leopard butterfly © Shailesh



Common Emigrant © Sameer

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Common Gull © Rakesh Ahlawat

Blue Tiger © Rakesh Ahlawat