



**FIRST BIRD CUM
BUTTERFLY SURVEY
AT MANDAV**

DIST. DHAR (M.P.)

31st October 2021

A Survey Report

BY

Wild Warriors

***MP Forest Department
Division Dhar***



ABOUT MANDAV

The history of Mandav, also known as Mandu, is known from the Parmar period in the 8th century A.D. Later it was under Mughal rule. They called it Shadiabad, which means 'The City of Joy'. The monuments are a mix of the Hindu and Afghan style of architecture. Mandu is an ancient fort city in the central Indian state of Madhya Pradesh. It's surrounded by stone walls dotted with darwazas (gateways). It's also known for its Afghan architectural heritage. Landmark buildings include Hoshang Shah's Tomb, a domed marble mausoleum, and the vast Jami Masjid mosque, with courtyards framed by colonnades. The imposing, centuries-old Jahaz Mahal palace stands between 2 lakes

Mandu is a celebration in stone, of life and joy, of the love of the poet-prince Baz Bahadur for his beautiful consort, Rani Roopmati. The balladeers of Malwa still sing of the romance of these royal lovers, and high up on the crest of a hill, Roopmati's Pavilion still gazes down at Baz Bahadur's Palace, a magnificent expression of Afghan architecture. Under Mughal rule, Mandu was a pleasure resort, its lakes and palaces the scenes of splendid and extravagant festivities.

HOW TO REACH:

By Air

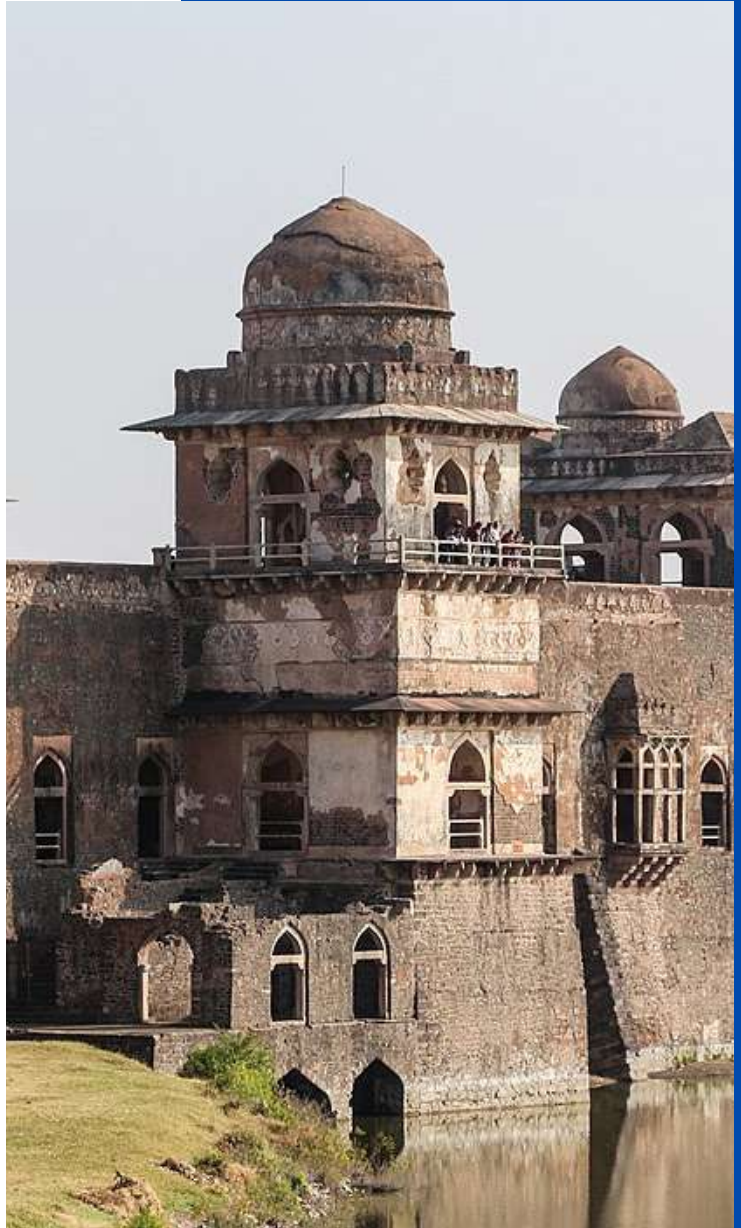
Devi Ahilyabai Holkar Airport in Indore (95kms) is the nearest airport. There are regular flights from major cities.

By Train

Indore is the nearest city having Railway Stations well connected from major stations of India.

By Road

Well connected from Indore (95 km) and Dhar (35 km). There are regular bus service from Indore to Dhar and from Dhar to mandu.



ACKNOWLEDGEMENT



SHRI H.S. MOHANTA
CHIEF CONSERVATOR OF FOREST
INDORE CIRCLE

WE WOULD LIKE TO GIVE SPECIAL THANKS TO THE CHIEF CONSERVATOR OF FOREST - INDORE CIRCLE SHRI H.S. MOHANTA FOR HIS ENORMOUS SUPPORT AS ALWAYS. THE SURVEY WAS POSSIBLE DUE TO HIS VISION AND ENTHUSIASM TO EXPLORE THE NEW AREAS AND TO DOCUMENT THE FLORA AND FAUNA OF THESE UN EXPLORED AREAS.

SHRI AKSHAY BATHOD
DIVISIONAL FOREST OFFICER
DHAR DIVISION

THE EXTENSIVE PLANNING DONE BY THE DIVISIONAL FOREST OFFICER- SHRI AKSHAY RATHOUR HELPED IN SMOOTH CONDUCTING OF THE SURVEY, HE PLANNED AND MADE DIFFERENT TRAILS ON WHICH THE SURVEY WAS CONDUCTED. ENTIRE TEAM OF WILD WARRIORS GOT HIS GUIDANCE FROM TIME TO TIME.



ALSO WE WOULD LIKE THE EXTENDED OUR GRATITUDE TOWARDS SHRI SANTOSH RANSHORE - SDO & SHRI PRAVESH PATIDAR - RFO - MANDAV AND ENTIRE TEAM WHO SUPPORTED AND DID ALL THE ARRANGEMENTS DURING THE SURVEY.

WE WOULD LIKE TO THANK SHRI ABHISHEK PALIWAL -BNHS & MEMBER OF WILD WARRIORS WHO COMPILED ALL THE DATA AND SHRI RITESH KHABIA & SHRI SWAPNIL PHANSE OF THE "WILD WARRIORS" AN NGO BASED AT INDORE FOR COORDINATING THE ENTIRE SURVEY. ALSO WE WOULD LIKE TO EXTEND OUR SINCERE THANKS TO DR VIPUL SHARMA - HOLKAR SCIENCE COLLEGE, DR POOJA SHARMA - HOD ZOOLOGY-GOVERNMENT COLLEGE MANAVAR, DISTT DHAR (MP). AND TOWARDS SHRI ANIL NAGAR - RETD. CCF AND MENTOR WILD WARRIORS SOCIETY, INDORE. LAST BUT NOT THE LEAST SPECIAL THANKS TO ALL THE PARTICIPANTS WHO PARTICIPATED WHOLEHEARTEDLY IN THE SURVEY AND WITHOUT THEIR SUPPORT IT WOULD NOT HAVE BEEN POSSIBLE TO CONDUCT THE SURVEY SUCCESSFULLY.



SHRI SANTOSH RANSHORE
SUB DIVISIONAL OFFICER



SHRI PRAVESH PATIDAR
RANGE FOREST OFFICER

MANAGING TEAM WILD WARRIORS



SHRI ANIL NAGAR (IFS)
MENTOR - WILD WARRIORS



SHRI ABHISHEK PALIWAL- BNHS & MEMBER WILD WARRIORS



SHRI RITESH KHABIA
WILD WARRIORS



SHRI SWAPNIL PHANSE
WILD WARRIORS

OBJECTIVE

MANDAV BIRD CUM BUTTERFLY SURVEY

- To document the bird & butterflies diversity in Mandav and its vicinity area.
- To have a comprehensive list of birds & butterflies species found in Mandav and its vicinity area.
- To document the different species of flora at Mandav.
- To spread awareness amongst the public and ground level staff of forest department on the birds & butterflies at Mandav.
- To draw up a base data of Flora & Fauna.
- To make future strategies for the conservation of Avifauna.
- To make local people aware about the importance of biodiversity and its significance and encourage Citizen Science and help improving the checklist on a regular and on a near real-time basis.
- To record the bird diversity on eBird, so that the compiled data is easily accessible to students, academicians, nature volunteers researchers scientists seamlessly.



METHODOLOGY & PROTOCOL USED

MANDAV BIRD CUM BUTTERFLY SURVEY



- A total of 5 different birding routes/trails were identified on which the 05 teams travelled on foot and documented the different avifauna that came across.
- Each team constituted of 04 members apart from the forest guard/chokidar. Every team was expected to be in the field for minimum 3 hours. The team walked an approximate 3-4 kms during the trail. The walk started at 7.30 hrs.
- During the survey, the list of birds is made on eBird all the eBird checklists were uploaded on the eBird site and shared with one common group account named online.
- All the butterflies & flora were observed by the experts and noted on the checklist provided to them, which was later on compiled after validation from the experts.
- The team task was to record as many species as possible, but it was more important to record correct identity of the bird, butterflies and flora, records with doubtful identifications were recorded by suitable 'slashes' (eg. Ashy/Black Drongo).
- Birders were also encouraged to record bird calls, as some of the times it is very helpful in identifying a bird species. The team leaders had the responsibility to submit the completed checklists on eBird.
- To record the bird diversity on eBird, so that the compiled data is easily accessible to students, academicians, nature volunteers researchers scientists & researchers seamlessly.

TRAILS

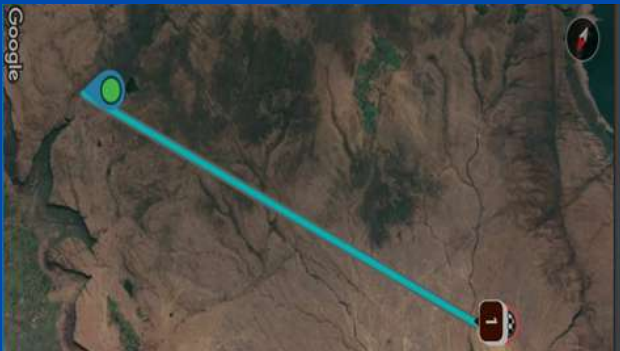
TRAIL 1



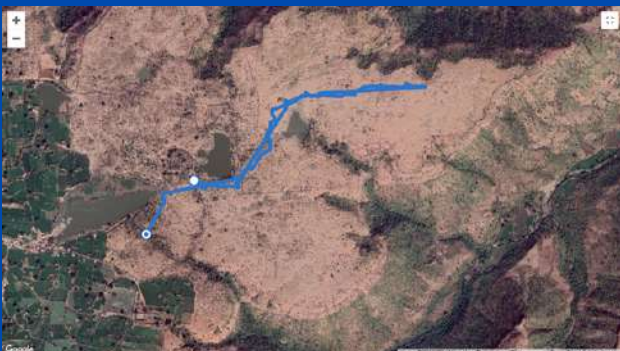
TRAIL 2



TRAIL 3



TRAIL 4



TRAIL 5



SURVEY AT A GLANCE



- SHRI SANTOSH RANSHORE - SUB DIVISIONAL OFFICER- FOREST SHRI SANTOSH RANSHORE WELCOMED ALL THE BIRDERS.
- SHRI SWAPNIL PHANSE FROM WILD WARRIORS ANNOUNCED THE TRAILS AND THE TEAMS.
- SHRI ABHISHEK PALIWAL EXPLAINED ABOUT THE USAGE OF EBIRD APPLICATION AND HOW TO FILL THE CHECKLIST FOR BUTTERFLIES & FLORA.
- ALL THE VOLUNTEERS TOOK THE BREAKFAST AND MOVED FOR THERE RESPECTIVE TRAILS AND STARTED THE SURVEY AT 7.30 AM.





SURVEY AT A GLANCE



- SURVEY GOT OVER AT 11.00 AM ALL THE RESPECTIVE TEAMS CAME BACK FROM THERE TRAILS WITH THERE FINDINGS AND OBSERVATIONS.
- IN THE DE BRIEFING SESSION MR. AKSHAY RATHORE- DIVISIONAL FOREST OFFICER EXTENDED A HEARTFELT THANKS TO ALL THE VOLUNTEERS WHO WOKE UP EARLY IN THE MORNING AND JOINED THE FIRST BIRD CUM BUTTERFLY SURVEY AT 'THE CITY OF JOY'- MANDAV.
- ALL THE TEAMS CAME UP WITH THERE FINDINGS AND OUTCOMES.
- DR VIPUL KIRTI SHARMA MS GRISHMA TRIVEDI & SHRI PRAVESH PATIDAR -RFO SHARED THERE EXPERIENCE OF THE SURVEY AND DR VIPUL THANKED THE FOREST DEPARTMENT FOR TAKING SUCH INITIATIVES.
- SHRI ANIL NAGAR PRAISED THE ENTHUSIASM WITH WHICH THE FOREST DEPARTMENT IS WORKING NOW A DAYS.
- MR ABHISHEK PALIWAL SHARED THE POSSIBLE OUTCOME OF THE SURVEY.
- SHRI SANTOSH RANSHORE- SDO INVITED ALL FOR THE DELICIOUS LUNCH OF DAL PANIA.'





 **First Bird Cum Butterfly Survey**
At
Mandav 

SNAP SHOT

TOTAL TRAILS : 05

TOTAL Volunteers : 18

TOTAL NO. OF BIRDS SPECIES REPORTED : 78

TOTAL NO. OF BUTTERFLIES SPECIES REPORTED : 44

TOTAL NO. OF PLANTS SPECIES REPORTED : 39

UNIQUE BUTTERFLY SPECIES REPORTED

1. African Babul Blue
2. Conjoined Swift
3. Wanderer
4. Common Rose
5. Forget Me Not



AFRICAN BABUL BLUE

UNIQUE BIRD SPECIES REPORTED

1. Indian Eagle Owl
2. Common Chif Chaff
3. Indian Night Jar
4. Tawny Billed Pipit



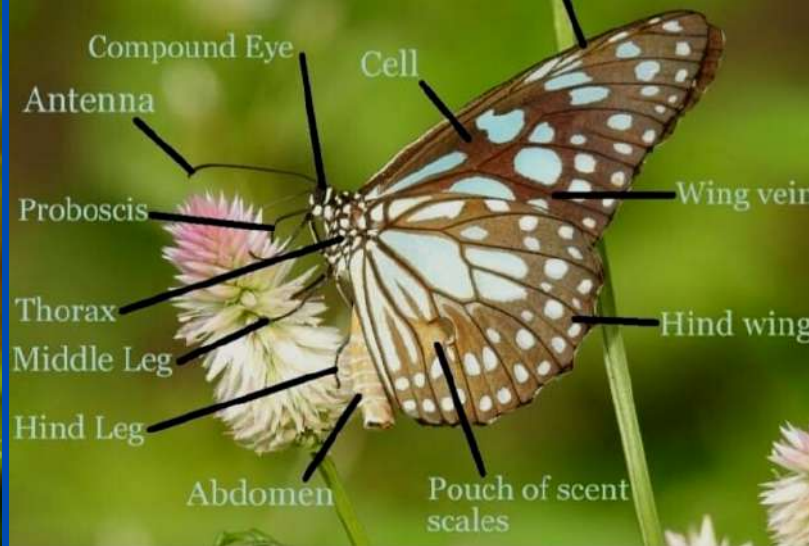
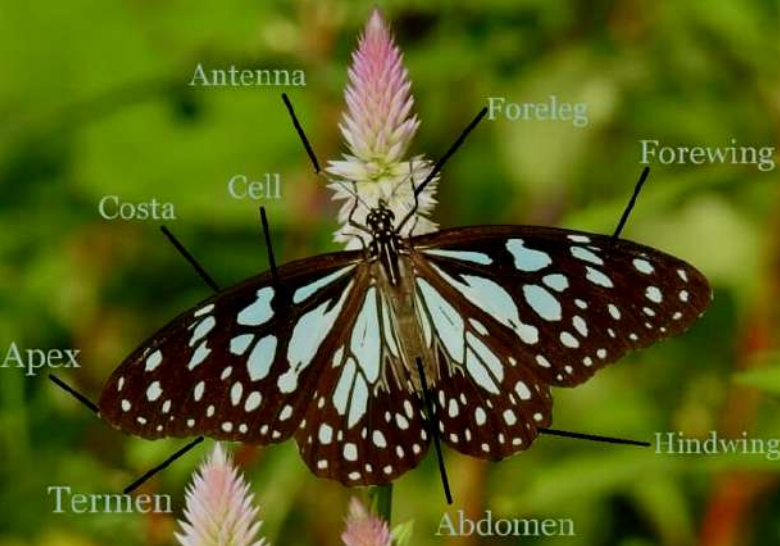
INDIAN EAGLE OWL

BUTTERFLY SPECIES DOCUMENTED

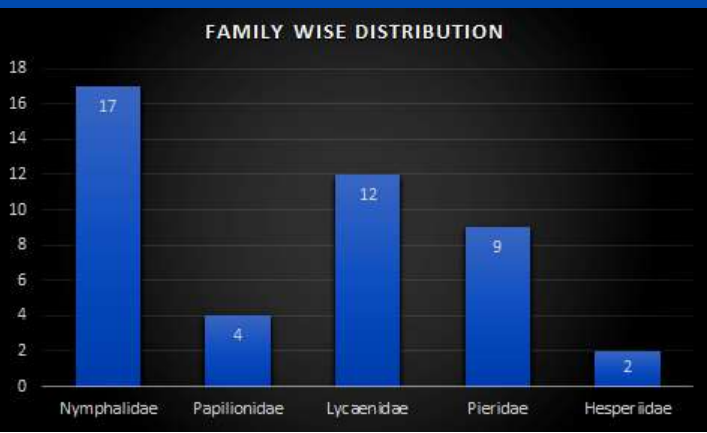
Sr. No.	Species Name	Scientific Name
<i>Nymphalidae</i>		
1	Great Eggfly	<i>Hypolimnas bolina</i>
2	Danaid Eggfly	<i>Hypolimnas misippus</i>
3	Peacock Pansy	<i>Junonia almana</i>
4	Grey Pansy	<i>Junonia atlites</i>
5	Yellow Pansy	<i>Junonia hierta</i>
6	Lemon Pansy	<i>Junonia lemonias</i>
7	Yellow Pansy	<i>Junonia orithya</i>
8	Blue Tiger	<i>Tirumala limniace</i>
9	Common Leopard	<i>Tirumala limniace</i>
10	Common Sailer	<i>Neptis hylas</i>
11	Baronet	<i>Euthalia nais</i>
12	Common Castor	<i>Ariadne merione</i>
13	Plain Tiger	<i>Danaus chrysippus</i>
14	Striped Tiger	<i>Danaus genutia</i>
15	Common Evening Brown	<i>Melanitis leda</i>
16	Dark Evening Brown	<i>Melanitis phedima</i>
17	Common Crow	<i>Euploea core</i>
<i>Papilionidae</i>		
18	Common Rose	<i>Pachliopta aristolochiae</i>
19	Lime	<i>Papilio demoleus</i>
20	Common Mormon	<i>Papilio polytes</i>
21	Tailed Jay	<i>Graphium agamemnon</i>

BUTTERFLY SPECIES DOCUMENTED

Sr. No.	Species Name	Scientific Name
<i>Lycaenidae</i>		
22	Common Pierrot	<i>Castalius rosimon</i>
23	Forget-me-not	<i>Catochrysops strabo</i>
24	Lime Blue	<i>Chilades lajus</i>
25	Plains Cupid	<i>Luthrodes pandava</i>
26	Gram Blue	<i>Euchrysops cnejus</i>
27	Grass Jewel	<i>Chilades trochylus</i>
28	Pea Blue	<i>Lampides boeticus</i>
29	Zebra Blue	<i>Leptotes plinius</i>
30	Tiny Grass Blue	<i>Zizula hylax</i>
31	African Babul Blue	<i>Azanus jesus</i>
32	Tailless Lineblue	<i>Prosotas dubiosa</i>
33	Grass Blue sp.	
<i>Pieridae</i>		
34	Common Emigrant	<i>Catopsilia pomona</i>
35	Mottled Emigrant	<i>Catopsilia pyranthe</i>
36	Common Gull	<i>Cepora nerissa</i>
37	White Orange Tip	<i>Ixias marianne</i>
38	Common Jezebel	<i>Delias eucharis</i>
39	Common Grass Yellow	<i>Eurema hecabe</i>
40	Three-spot Grass Yellow	<i>Eurema blanda</i>
41	One-spot Grass Yellow	<i>Eurema andersonii</i>
42	Common Wanderer	<i>Pareronia valeria</i>
<i>Hesperiidae</i>		
43	Conjoined Swift	<i>Pelopidas conjuncta</i>
44	Rice Swift	<i>Borbo cinnara</i>



Morphology Illustration image and identification text taken from book of Dr Raju Kasambe -Butterflies of Western Ghat Edition-2



During the survey almost 40% of the butterflies identified were of Nymphalidae family as they can grow mostly in all type of habitat, than followed by Lycaenidae family with 28% of its presence rest families are in small numbers but still we got 5 families of the butterflies in 3 hours survey.

FEATURES FOR IDENTIFICATION

HESPERIIDAE: THE SKIPPERS

- 1) A LARGE, HAIRY BODY
- 2) A LARGE HEAD, AT LEAST AS WIDE OR WIDER THAN THE THORAX
- 3) FULLY DEVELOPED AND FUNCTIONING FORELEGS IN BOTH SEXES
- 4) SMALL, POINTED WINGS
- 5) UNIQUE PATTERN OF VEINATION ON THE FOREWING
- 6) CURVED OR HOOKED ANTENNAE TIPS.

PAPILIONIDAE: SWALLOWTAILS

- 1) HAVE TAILS AT THE REAR OF THE HINDWING
- 2) MEDIUM TO LARGE IN SIZE
- 3) UNIQUE PATTERN OF WING VEINATION ON THE WINGS
- 4) FULLY DEVELOPED AND FUNCTIONING FORELEGS IN BOTH SEXES.

NYMPHALIDAE: BRUSH-FOOTED BUTTERFLIES

- 1) SIZE OF THE FORELEGS IS REDUCED (EXCEPT FEMALE OF BEAKS), THUS THEY USE ONLY FOUR LEGS TO WALK OR PERCH
- 2) MEDIUM TO LARGE IN SIZE AND BRIGHTLY AND/OR UNIQUELY MARKED
- 3) THE PATTERN OF WING VEINS OF THE FOREWING IS UNIQUE.
- 4) THE RIGID ANTENNAE HAVE CLUB SHAPED TIPS.

LYCAENIDAE: BLUES

- 1) SMALL SIZE,
- 2) REDUCED FORELEGS IN MALES BUT FULL-SIZED FORELEGS IN FEMALES; THUS THEY USE ONLY THE REMAINING FOUR LEGS. FEMALES HAVE NORMAL SIX LEGS.
- 3) A SLIGHTLY DIFFERENT PATTERN OF WING VEINS.

PIERIDAE: WHITES AND YELLOWS

- 1) MEDIUM SIZE
- 2) THE TIPS OF THE LEGS, CALLED THE CLAWS, ARE FORKED
- 3) THE FORELEGS OF MALES AND FEMALES ARE FULL-SIZED AND FULLY FUNCTIONAL
- 4) MANY EXHIBIT SEXUAL DIMORPHISM, MEANING THAT MALE AND FEMALE BUTTERFLIES OF THE SAME SPECIES LOOK DIFFERENT. SEVERAL SPECIES SHOW SEASONAL VARIATIONS, LIKE DRY SEASON FORMS (DSF) AND WET SEASON FORMS (WSF). THEY LOVE BASKING IN THE SUNLIGHT WITH WINGS OPEN, HENCE MAJORITY ARE FOUND IN OPEN COUNTRY. MALES OF MANY SPECIES GATHER AT WET PATCHES FOR MUDPUDDLING.

BIRDS SPECIES DOCUMENTED

S.No	Species	Scientific Name
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>
2	Ashy Prinia	<i>Prinia socialis</i>
3	Ashy-crowned Sparrow-Lark	<i>Eremopterix griseus</i>
4	Asian Koel	<i>Eudynamys scolopaceus</i>
5	Asian Openbill	<i>Anastomus oscitans</i>
6	Bay-backed Shrike	<i>Lanius vittatus</i>
7	Black Drongo	<i>Dicrurus macrocercus</i>
8	Black Redstart	<i>Phoenicurus ochruros</i>
9	Black-rumped Flameback	<i>Dinopium benghalense</i>
10	Black-winged Stilt	<i>Himantopus himantopus</i>
11	Bronze-winged Jacana	<i>Metopidius indicus</i>
12	Cattle Egret	<i>Bubulcus ibis</i>
13	Common Babbler	<i>Argya caudata</i>
14	Common Chiffchaff	<i>Phylloscopus collybita</i>
15	Common Iora	<i>Aegithina tiphia</i>
16	Common Myna	<i>Acridotheres tristis</i>
17	Common Sandpiper	<i>Actitis hypoleucos</i>
18	Common Tailorbird	<i>Orthotomus sutorius</i>
19	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>
20	Crested Serpent-Eagle	<i>Spilornis cheela</i>
21	Dusky Crag-Martin	<i>Ptyonoprogne concolor</i>
22	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>
23	Eurasian Coot	<i>Fulica atra</i>
24	Eurasian Kestrel	<i>Falco tinnunculus</i>
25	Gray Francolin	<i>Ortygornis pondicerianus</i>
26	Gray Heron	<i>Ardea cinerea</i>
27	Gray Wagtail	<i>Motacilla cinerea</i>
28	Great Cormorant	<i>Phalacrocorax carbo</i>
29	Great Egret	<i>Ardea alba</i>
30	Great Gray Shrike	<i>Lanius excubitor</i>
31	Greater Coucal	<i>Centropus sinensis</i>
32	Green Bee-eater	<i>Merops orientalis</i>
33	Indian Golden Oriole	<i>Oriolus kundoo</i>
34	Indian Gray Hornbill	<i>Ocyrceros birostris</i>
35	Indian Nightjar	<i>Caprimulgus asiaticus</i>
36	Indian Peafowl	<i>Pavo cristatus</i>
37	Indian Pond-Heron	<i>Ardeola grayii</i>
38	Indian Robin	<i>Copsychus fulicatus</i>
39	Indian Silverbill	<i>Euodice malabarica</i>
40	Indian White-eye	<i>Zosterops palpebrosus</i>

BIRDS SPECIES DOCUMENTED

S.No	Species	Scientific Name
41	Intermediate Egret	<i>Ardea intermedia</i>
42	Jungle Babbler	<i>Argya striata</i>
43	Large Gray Babbler	<i>Argya malcolmi</i>
44	Laughing Dove	<i>Streptopelia senegalensis</i>
45	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>
46	Little Cormorant	<i>Microcarbo niger</i>
47	Little Egret	<i>Egretta garzetta</i>
48	Little Grebe	<i>Tachybaptus ruficollis</i>
49	Little Ringed Plover	<i>Charadrius dubius</i>
50	Little Swift	<i>Apus affinis</i>
51	Long-tailed Shrike	<i>Lanius schach</i>
52	Oriental Magpie-Robin	<i>Copsychus saularis</i>
53	Pied Kingfisher	<i>Ceryle rudis</i>
54	Plain Prinia	<i>Prinia inornata</i>
55	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
56	Purple Sunbird	<i>Cinnyris asiaticus</i>
57	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>
58	Red Collared-Dove	<i>Streptopelia tranquebarica</i>
59	Red-vented Bulbul	<i>Pycnonotus cafer</i>
60	Red-wattled Lapwing	<i>Vanellus indicus</i>
61	River Tern	<i>Sterna aurantia</i>
62	Rock Eagle-Owl	<i>Bubo bengalensis</i>
63	Rock Pigeon	<i>Columba livia</i>
64	Rose-ringed Parakeet	<i>Psittacula krameri</i>
65	Rufous Treepie	<i>Dendrocitta vagabunda</i>
66	Rufous-tailed Lark	<i>Ammomanes phoenicura</i>
67	Shikra	<i>Accipiter badius</i>
68	Spotted Dove	<i>Streptopelia chinensis</i>
69	Spotted Owlet	<i>Athene brama</i>
70	Sulphur-bellied Warbler	<i>Phylloscopus griseolus</i>
71	Taiga Flycatcher	<i>Ficedula albicilla</i>
72	Tawny-bellied Babbler	<i>Dumetia hyperythra</i>
73	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>
74	White-browed Fantail	<i>Rhipidura aureola</i>
75	White-browed Wagtail	<i>Motacilla maderaspatensis</i>
76	White-eyed Buzzard	<i>Butastur teesa</i>
77	White-throated Kingfisher	<i>Halcyon smyrnensis</i>
78	Yellow-throated Sparrow	<i>Gymnoris xanthocollis</i>

FLORA DOCUMENTED

A special team from Government College Manavar Dist. Dhar helped in identifying the flora of Mandav, in this way involvement of locals was also ensured and they also learned about birds & butterflies.

1. **PALASH** (*Butea monosperma*)



Palash is a species of Butea native to tropical and sub-tropical parts of the Indian Subcontinent and Southeast Asia, ranging across Pakistan, India, Bangladesh, Nepal, Sri Lanka, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, and western Indonesia

2. **SILVER COCK'S COMB** (*Celosia argentea*)



Celosia argentea, commonly known as the plumed cockscomb or silver cock's comb, is a herbaceous plant of tropical origin, and is known for its very bright colors. In India and China it is known as a troublesome weed.

3. **COAT BUTTON** *Tridax procumbens*



Tridax procumbens, commonly known as coatbuttons or tridax daisy, is a species of flowering plant in the daisy family. It is best known as a widespread weed and pest plant. It is native to the tropical Americas, but it has been introduced to tropical, subtropical, and mild temperate regions worldwide.

4. **LANTANA SPECIES** (*Lantana camara*)



Lantana is a genus of about 150 species of perennial flowering plants in the verbena family, Verbenaceae. They are native to tropical regions of the Americas and Africa but exist as an introduced species in numerous areas, especially in the Australian-Pacific, South & Northeastern part of India. The genus includes both herbaceous plants & shrubs growing to 0.5–2 m (1.6–6.6 ft) tall.

5. **NEEM** (*Azadirachta indica*)



Azadirachta indica, commonly known as neem, nimtree or Indian lilac, and in Nigeria called dogoyaro or dogonyaro, is a tree in the mahogany family Meliaceae. It is one of two species in the genus *Azadirachta*, and is native to the Indian subcontinent and most of the countries in Africa.

6. **SAGWAN** (*Tectona grandis*)



Sagwan / Teak is a tropical hardwood tree species in the family Lamiaceae. It is a large, deciduous tree that occurs in mixed hardwood forests. *Tectona grandis* has small, fragrant white flowers arranged in dense clusters at the end of the branches. These flowers contain both types of reproductive organs

7. **SITAPHAL /CUSTARD APPLE** (*Annona squamosa*)



Custard apple (Sitaphal) flourishes best in the dry and hot climate. It requires light soil and is generally grown on the slope of hills. The plants are raised from seeds and bear fruit in about 3 to 4 years. The plant flowers from April to May and bears fruit between August and November

8. **BABUL** (*Vachellia nilotica*)



Babul is a tree 5–20 m high with a dense spheric crown, stems and branches usually dark to black coloured, fissured bark, grey-pinkish slash, exuding a reddish low quality gum. The tree has thin, straight, light, grey spines in axillary pairs, usually in 3 to 12 pairs, 5 to 7.5 cm (3 in) long in young trees, mature trees commonly without thorns.

9. **KHIRNI**

(*Manilkara hexandra*)



Khirni is a tree species in the tribe Sapoteae, in the family Sapotaceae. It is native to much of south Asia (China: Hainan and southern Guangxi provinces; the Indian Subcontinent: Bangladesh, India, and Sri Lanka; Indo-China: Cambodia, Myanmar, Thailand and Vietnam.

10. **BAMBOO**

(*Butea monosperma*)



Bamboos are a diverse group of evergreen perennial flowering plants in the subfamily Bambusoideae of the grass family Poaceae. In bamboo, as in other grasses, the internodal regions of the stem are usually hollow. Most bamboo species are native to warm and moist tropical and to warm temperate climates

11. **SALAI**

(*oswellia serrata*)



Salai a plant that produces Indian frankincense. It is also known as Indian oli-banum, Salai guggul, and Sallaki in Sanskrit. The plant is native to much of India and the Punjab region that extends into Pakistan

12. **CHIROL**

(*Holoptelea integrifolia*)



Chirol, commonly known as coatbuttons or tridax daisy, is a species of flowering plant in the daisy family. It is best known as a widespread weed and pest plant. It is native to the tropical Americas, but it has been introduced to tropical, subtropical, and mild temperate regions worldwide.

13. **BAOBAB**

(*Adansonia*)



Baobabs are long-lived deciduous, small to large trees with broad trunks and compact crowns. Young trees usually have slender, tapering trunks, often with a swollen base. The trunk is made of fibrous wood arranged in concentric rings. Tree diameter fluctuates with rainfall so it is thought that water may be stored in the trunk. Baobab trees have two types of shoots—long, green vegetative ones, and stout, woody reproductive ones.

14. **RATANJYOT** (*Alkanna tinctoria*)



Ratanjyot or *Jatropha curcas* is a species of flowering plant in the spurge family, Euphorbiaceae, that is native to the American tropics, most likely Mexico and Central America. It is originally native to the tropical areas of the Americas from Mexico to Argentina, and has been spread throughout the world in tropical and subtropical regions around the world, becoming naturalized or invasive in many areas

15. **KHAIR**

(*Senegalia catechu*)



Khair is a deciduous, thorny tree which grows up to 15 m in height. The plant is called khair in Hindi, and kachu in Malay, hence the name was Latinized to "catechu" in Linnaean taxonomy, as the type-species from which the extracts cutch and catechu are derived.

16. **CHANDAN/INDIAN SANDALWOOD** (*Santalum album*)



Chandan or Indian sandalwood, is a small tropical tree, and the traditional source of sandalwood oil. It is native to southern India and Southeast Asia. It is considered sacred in some religions like Hinduism, and some cultures place great significance on its fragrant and medicinal qualities.

17. **AMALTAS** (*Cassia fistula*)



Amaltas, commonly known as golden shower, purging cassia, Indian laburnum, or pudding-pipe tree, is a flowering plant in the subfamily, Caesalpinioideae of the legume family, Fabaceae. The species is native to the Indian subcontinent and adjacent regions of Southeast Asia.

18. **INDIAN SCREW TREE** (*Helicteres isora*)



Helicteres isora, sometimes called the Indian screw tree, is a small tree or large shrub found in southern Asia and northern Oceania. It is usually assigned to the family Malvaceae, but it is sometimes assigned to the family Sterculiaceae.

19. **AMLA/ INDIAN GOOSBERRY** (*Phyllanthus emblica*)



Amla, also known as emblic, emblic myrobalan, myrobalan, Indian gooseberry, Malacca tree, from the Sanskrit amalaki, is a deciduous tree of the family Phyllanthaceae.

20. **JAMUN** (*Syzygium cumini*)



Jamun, commonly known as Malabar plum, Java plum, black plum, jamun or jambolan, is an evergreen tropical tree in the flowering plant family Myrtaceae, and favored for its fruit, timber, and ornamental value.

21. **SHRINGI** (*Pistacia integerrima*)



Shringi is a species of pistachio tree native to Asia, commonly called zebrawood. It is often classified as *Pistacia chinensis* ssp. *integerrima*. It is used for a variety of purposes in India, including timber, dye, and fodder. The leaf galls are used in traditional herbalism for cough, asthma, fever, vomiting, and diarrhea.

22. **AMRUD** (*Psidium guajava*)



One of the most gregarious of fruit trees, *Psidium guajava* is almost universally known by its common name Guava or Amrud in India. ... The fruit, exuding a strong, sweet, musky odor when ripe, may be round, pear-shaped.

23. **MARIGOLD** (*Tagetes erecta*)



Tagetes is a genus of annual or perennial, mostly herbaceous plants in the sunflower family Asteraceae. They are among several groups of plants known in English as marigolds.

24. **BER** (*Ziziphus mauritiana*)



Ber is a spiny, evergreen shrub or small tree up to 15 m high, with trunk 40 cm or more in diameter; spreading crown; stipular spines and many drooping branches. The fruit is of variable shape and size. It can be oval, obovate, oblong or round, and can be 1-2.5 in (2.5-6.25 cm) long, depending on the variety. The flesh is white and crisp. When slightly underripe, this fruit is a bit juicy and has a pleasant aroma. The fruit's skin is smooth, glossy, thin but tight.

25. **LIME** (*Citrus aurantiifolia*)



Lime is native to tropical Southeast Asia. It has a spherical fruit, 25–50 mm (1–2 in) in diameter. The Key lime is usually picked while it is still green, but it becomes yellow when ripe.

26. **BAHEDA** (*Terminalia bellirica*)



Terminalia bellirica, known as baheda, bahera, beleric or bastard myrobalan, is a large deciduous tree common on plains and lower hills in Southeast Asia, where it is also grown as an avenue tree. The basionym is *Myrobalanus bellirica* Gaertn.

27. **GAMHAR** (*Gmelina arborea*)



Gamhar is a fast-growing tree, which grows on different localities and prefers moist fertile valleys with 750–4500 mm rainfall. It does not thrive on ill-drained soils and remains stunted on dry, sandy or poor soils; drought also reduces it to a shrubby form. The tree attains moderate to large heights of up to 30 m, with a girth of 1.2 to 4 m.

28. **PAPPYA** (*Parthenium hysterophorus*)



The papaya, papaw, or pawpaw is the plant *Carica papaya*, one of the 22 accepted species in the genus *Carica* of the family *Caricaceae*. Its origin is in the tropics of the Americas, perhaps from Central America and southern Mexico

29. **CARROT GRASS** (*Syzygium cumini*)



Parthenium hysterophorus is a species of flowering plant in the aster family, *Asteraceae*. It is native to the American tropics. Common names include Santa-Maria, Santa Maria feverfew, whitetop weed, and famine weed. In India, it is locally known as carrot grass, congress grass or Gajar Ghas

30. **SHISHAM / INDIAN ROSEWOOD** (*Pistacia integerrima*)



Indian Rosewood, known commonly as North Indian rosewood or shisham, is a fast-growing, hardy, deciduous rosewood tree native to the Indian subcontinent and southern Iran. *D. sissoo* is a large, crooked tree with long, leathery leaves and whitish or pink flowers.

31. **SHIVLINGI** (*Bryonia Laciniosa*)



Annual slender herbs; Leaves palmately 5-lobed, scabrous above, smooth beneath, margin denticulate; Peduncle (in male flowers); Calyx tube 2-4x3-6 mm, lobes spreading; Corolla greenish-yellow, shortly papillose, lobes ovate, acute; Female flowers fasciculate; Fruits spherical, yellowish-green, six striped; seeds grey, belted, attenuate with raised projections on both faces. Flowering and fruiting April to December in Indian conditions.

32. **TINSA** (*Ougeinia oojeinensis*)



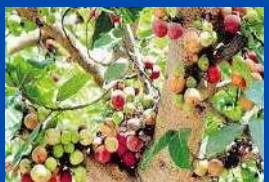
Tinsa belongs to the family *Fabaceae*. It is an herb found all around the world, and all parts of India mostly in the outer Himalayas and sub-Himalayan tracts from Jammu to Bhutan. Commonly it is known as Tinsa, Sandan, Panjan

33. **GADHA PALASH** (*Erythrina variegata*)



Gadha Palash is a plant species in the genus *Erythrina*. This plant is a climbing herb that grows up to 6 m long, and has compound leaves with petioles that are 5–6 cm long. Its leaflets emerge in groups of three, and are 7–9 cm long and 5–8 cm wide. Its leaflets emerge in groups of three, and are 7–9 cm long and 5–8 cm wide. The plant's young leaves, flowers and pods are consumed as vegetables.

34. **GULAR** (*Ficus racemosa*)



Ficus racemosa, the cluster fig, red river fig or gular, is a species of plant in the family *Moraceae*. It is native to Australia and tropical Asia. It is a fast-growing plant with large, very rough leaves, usually attaining the size of a large shrub, although older specimens can grow quite large and gnarled.

35. **PEEPAL** (*Ficus religiosa*)



Ficus religiosa or sacred fig is a species of fig native to the Indian subcontinent and Indochina that belongs to *Moraceae*, the fig or mulberry family. It is also known as the bodhi tree, pippala tree, peepul tree, peepal tree, pipal tree, or ashvattha tree.

36. **DHOBAN** (*Dalbergia lanceolaria*)



Dalbergia lanceolaria is a species of tree in the subfamily Faboideae and tribe Dalbergieae. It is a medium-sized tree growing to 20m tall and is native to: India, Sri Lanka, Nepal, Burma and Indo-China. The bark of the tree is traditionally used as an analgesic and anti-diarrhoeal. The apiose isoflavone compound lanceolarin is found in its root bark.

37. **REONJA / SAFED BABUL** *Acacia leucophloea*



Trees; to 20 m high; bark yellow to yellowish-brown, rough, exfoliating in irregular scales; blaze light red; branchlets yellowish-velvety. Leaves bipinnate, alternate, stipulate; stipular spines in pairs, upto 1 cm, grey, straight, puberulous; rachis 9-14 cm stout, pulvinate, grooved above, pubescent; pinnae 5-15 pairs, opposite, even pinnate, 3.5-6 cm,

38. **DUDHI**



Wrightia tinctoria

Bark yellowish brown, flakes irregular. Slash drips with profuse milky fluid. Young stem yellowish. Leaves simple, opposite with narrow tip. Fruit cylindrical, blackish green speckled with white, long horn-like and united at tip, brown flat seeds with bunch of white hairs.

39. **SEENA**



(*Cassia angustifolia*)

Senna, any plant of the genus *Sennia* (formerly placed in *Cassia*), leguminous herbs, shrubs, and trees of the family Leguminosae (pulse family), most common in warm regions. Some species are cultivated for ornament, but sennas are best known as medicinal plants. The dried leaves are used as a purgative and are chiefly obtained from *S. acutifolia* (Alexandria senna) and *S. angustifolia* (Indian senna); both trees are cultivated especially in S India

Mandu Ki Imli or African Baobab Tree

A research study conducted in 2015 by Karen L. Bell, Haripriya Rangan, Christian A. Kull and Daniel J. Murphy called The history of introduction of the African baobab (*Adansonia digitata*, Malvaceae: Bombacoideae) in the Indian subcontinent (source) found that:

The introduction of Baobabs in the Indian subcontinent took place across multiple instances throughout history, possibly even dating back to prehistoric times. The genetic analysis of these trees indicate that the trees in Mandu belong to the same species of *Adansonia digitata* that are found in Eastern Africa, and present less genetic diversity as compared to their counterparts. This leads one to infer that the Baobab trees in India have not been present here long enough to genetically diversify and become indigenous. However, genetic analysis also indicates the presence of private alleles (variant genes) that are not found in African Populations. This points to the fact that the introduction of these Baobabs occurred long before the assumed period of Arab trade relations and the Ghuri Dynasty's rule on Mandu around the 1400s. When combined with the existing historical data about trade relations between East Africa and the Indian Subcontinent and cultural similarities between both regions surrounding the trees, it can be inferred that the Mandu Baobab trees were introduced by Africa Diaspora that arrived and thrived in India across various centuries.

Text source: internet/wikipedia/ Piccute -Mr Shubham Purohit



THE VOLUNTEERS



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16	Mr Ramesh Patel
17	Mr Rakesh Chaudhary
18	Mr Rupesh Chauhan

WINGED JEWELS



BLUE TIGER



STRIPED TIGER



PLAIN TIGER



LIME SWALLOWTAIL



COMMON JEZEBEL



TAWNY COASTER



COMMON EMIGRANT



COMMON LEOPARD



COMMON SAILOR



BARONET



INDIAN WANDERER



COMMON CASTOR



DANAID EGGFLY



GREAT EGGFLY



COMMON CROW

WINGED JEWELS



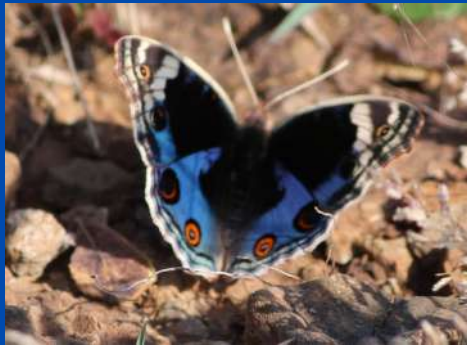
PEACOCK PANSY



GREY PANSY



LEMON PANSY



BLUE PANSY



YELLOW PANSY



COMMON PIERROT



COMMON GULL



RICE SWIFT



CONJOINED SWIFT



WHITE ORANGE TIP



COMMON ROSE



TAILED JAY



PLAINS CUPID



GRAM BLUE



ZEBRA BLUE

FLYING JEWELS



WHITE-THROATED KINGFISHER



ASIAN OPENBILL



SPOTTED OWLET



BLACK RUMPED WOODPACKER



LONG TAILED SHRIKE



ORIENTAL MAGPIE ROBIN



ASHY PRINIA



BLACK RED START



BRONZE WINGED JACANA



BLACK DRONGO



PIED KINGFISHER



INDIAN GREY HORNBILL



GOLDEN ORIOLE



GREEN BEE EATER



BLACK WINGED STILT

FLYING JEWELS



COMMON KESTREL



CRESTED SERPENT EAGLE



GREATER COUCAL



COPPERSMITH BARBET



PLUM HEADED PARAKEET



COMMON IORA



INDIAN SILVER BILL



SHIKRA



RIVER TERN



WHITE-EYED BUZZARD



WHITE BREASTED WATERHEN



BAYBACKED SHRIKE



LITTLE RINGED PLOVER



LESSER WHISTLING DUCK



INDIAN WHITE-EYE

THANK YOU



**MP Forest
Department
Dhar Division**



**Wild Warriors
Society
Indore**