



College Code : (Sr.) 405

Digras Vibhagiya Shikshan Prasarak Mandal's
**Bapuraoji Butle Arts, Narayanrao Bhat Commerce & Bapusaheb Patil Science
College, DIGRAS DIST. YAVATMAL.**

Affiliated to Sant Gadge Baba Amravati University,
Amravati Maharashtra.

[NAAC Re-accredited 'A' (CGPA. 3.16)]

College Code : (Jr.)

Pay Unit – 146

Board – 08.04.002

Website : www.bbnbbpcollege.org

E-Mail : principal.bnbcollege@gmail.com

AQAR

2023-2024

1.3.2 Number of courses that include experiential learning through project work/field work/internship during the year.2023-2024

List of Students BA II Semester III & IV Students who take project on Environmental Studies.

S.NO.	Name of Students
1.	AADESH DEVIDAS TAYADE
2.	AARTI PANDURANG JADHAO
3.	ABHAY KISHOR RATHOD
4.	ABHISHEK RAMESH CHAVHAN
5.	ACHAL YUVRAJ PAWAR
6.	AISHWARYA SANTOSH DHORE
7.	AJAY DEVICHAND RATHOD
8.	AJAY RAMA RUDE
9.	AKANKSHA MOHAN KAMBLE
10.	ANAND SUKHDEV GAVHANE
11.	ANANTA ASHOK LOKHANDE
12.	ANIKET RAMPRASAD PAWAR
13.	ANJALI ASHOK SHIKARE

14.	ANJALI BALU KHARTADE
15.	ANJALI NAMDEV RATHOD
16.	ANKITA DURGADAS JADHAV
17.	ASHVINI VITTHAL RATHOD
18.	BAHAR IBRAHIM KHAN
19.	BHAGYASHRI ASHOK RATHOD
20.	BHAGYASHRI RUPSING ADE
21.	BHAKTI SANTOSH WANKHADE
22.	BHUDEV DILIP RATHOD
23.	CHAKULI SANJAY PADADHANE
24.	DAKSHATA SURESH CHAVHAN
25.	DEVANAND MADHUKAR LANDAGE
26.	DHIRAJ SURAJ SUROSHE
27.	DIMPAL RAJESH MORE
28.	DIPALI PANDURANG DAWALE
29.	DNYANESHWAR RAJESH CHAVHAN
30.	DNYANESHWAR SUNIL RATHOD
31.	DURGA DILIP KAMBLE
32.	DURGESH BHAGVAN BHAGYAWANT
33.	FALGUNI SANTOSH INGOLE
34.	GAJANAN JAGDEV TADASE
35.	GANESH KISAN KALE
36.	GAURAV DIGAMBAR DHANGAR
37.	GAYATRI LAXMAN LADKE
38.	GAYATRI VILAS POTE
39.	GOPAL SUKHADEO ADE
40.	KARINA PANDIT RATHOD
41.	KOMAL SUKHADEO KHADE
42.	LAXMI NAMDEV BODKHE
43.	NAMRATA DHANESHWAR JADHAV

44.	NANDANI PRABHAKAR KHANDARE
45.	NIKHIL BABARAO BODKHE
46.	NIKITA SHIVAJI FUKHE
47.	NIKITA SHUBHASH JAGADLE
48.	NITA SANTOSH JADHAO
49.	NIVRUTTI RAMESH RATHOD
50.	OMU HEMANT RATHOD
51.	PANKAJ SITARAM MORE
52.	PAYAL MILIND SAGANE
53.	PAYAL NARAYAN POHANKAR
54.	PAYAL SANTOSHRAO KADAM
55.	PAYAL VINOD HAJARE
56.	POOJA MAHADEV JAWAKE
57.	POOJA VITTHAL SANDVAKAR
58.	PRACHI BHAGWAN BHAGYAWANT
59.	PRAKASH RAMRAO MIRASE
60.	PRUTHVIRAJ DADARAO KAMBLE
61.	PUNAM KISHOR RATHOD
62.	RAHUL MAHADEV BHOYAR
63.	RAHUL VASANTA HOLGARE
64.	RANI GOVERDHAN PAWAR
65.	RANI RAMESH CHANDEL
66.	RAVI KISHOR RANMALE
67.	RAVI ROHIDAS RATHOD
68.	RESHMA VILAS TALE
69.	RISHIKESH JAYCHAND SHERE
70.	ROSHAN ASHOK HOLGARE
71.	ROSHANI BHIMRAO RATHOD
72.	ROSHANI MANOHAR SHEMBADE
73.	ROSHANI SAKHARAM CHAVHAN

74.	RUPALI DINESH DEWALE
75.	RUPALI GAJANAN JAVAKE
76.	RUPALI PRAKASH JAISWAL
77.	RUTUJA GAJENDRA KHERE
78.	SAKSHI KAILAS VIDULKAR
79.	SALONI PREMSING RATHOD
80.	SALONI VASANTA ADE
81.	SANDHYA DNYANESHWAR PATRE
82.	SAPNA HAJUSING RATHOD
83.	SARIKA NAVNATH TARPHE
84.	SAURABH NAGORAO JADHAO
85.	SAYALI DHANSING CHAVHAN
86.	SHIVANI BHAGVAN KADAM
87.	SHREYA YASHWANT KASAMBE
88.	SHRUTI SANTOSH TAYADE
89.	SHRUTI SUNIL BEHERE
90.	SNEHA BHAIRUSING RATHOD
91.	SNEHAL MURLI JADHAV
92.	SONAM ARJUN JADHAO
93.	SONU KAILAS GHADYALE
94.	SRUSHTI MAHADEV MEHETRE
95.	SURAJ ASHOK HODGIR
96.	SWAPNIL DHANRAJ ZINGURDE
97.	SWATI DEVRAO AMBURE
98.	TEJAS AJABRAO RANMALE
99.	TUSHAR RAVINDRA MANTUTE
100.	VAISHALI DILIP CHAVHAN
101.	VAISHNAVI GAJANAN SALODKAR
102.	YASH ANANDRAO HIWRALE
103.	YASH DEVKANT PAWAR

104.	YOGESH SUNIL RAMAVAT
105.	YOGITA MAHADEV SATPUTE

List of Students BCOM. II Semester III & IV Students who take project on Environmental Studies.

S.NO.	Name of Students
1.	AADESH BALIRAM NANOTE
2.	ABHAY VIJAY CHAVHAN
3.	ALKAF ZAKIR
4.	ANIKET SUNIL DAKARE
5.	ANIS PAPPU PAPPUWALE
6.	AYUSHI GOKUL CHAUDHARI
7.	BIPIN RAJKUMAR PRAJAPATI
8.	ANJALI DNYANESHWAR RANMALE
9.	DAMINI GAJANAN GHATGE
10.	DANISH ANWAR SHEIKH
11.	DNYANESHWAR SUBHASH CHAVHAN
12.	GANESH ANIL PANDE
13.	GAURI TANAJI CHIRDE
14.	GAYATRI VINOD SABLE
15.	HAK SHABIR ABDUL
16.	HARIOM VINOD DHANVE
17.	KALYANI ANIL UTTARWAR
18.	KIRTI PURUSHOTTAM BAJARE
19.	KOMAL SHRIRAM NIMKAR
20.	KRUSHANA CHANDRASHEKAR LANDGE
21.	KUNAL HARIKISAN BHISANKAR
22.	MAHESH DILIP PAWAR
23.	MAYURI DEVIDAS KAMBLE

24.	MAYURI GAJANAN INGALE
25.	MUBASSHIR RAZIK MOHAMMAD
26.	NANDANI KISHOR SALUNKE
27.	NEHA KIRAN SALUNKE
28.	PALLAVI DATTA SARE
29.	PANKAJ GOPAL JADHAV
30.	PAYAL SHAM KHANZODE
31.	PRACHI GANESH JADHAV
32.	PRACHI SUNIL BUTTIKAR
33.	PRASHANT BABARAO CHAVHAN
34.	PRATIKSHA RAJU KANDALKAR
35.	PUJA DAYARAM SAHADEO
36.	RAJ DNYANESHWAR RATHOD
37.	RAKSHA PRABHAKAR MATRE
38.	RAMESHWAR NARAYAN PAWAR
39.	RAVI AMARSING RATHOD
40.	RENUKA SANJAY WALASKAR
41.	REVAM SAHADEV INGOLE
42.	RUTUJA GANESH GAWANDE
43.	SAKSHI VILAS SUKODE
44.	SAKSHI VITTHAL KALE
45.	SAMRUDDHI GAJANAN KATHALE
46.	SANIYA BHIKA GALLAKATU
47.	SHANTANU DNYANESHWAR WANKHADE
48.	SHILPA SUBHASH BHAGAT
49.	SHIVAM DATTA MORE
50.	SHIVAM SUDHAKAR SARKATE
51.	SHYAM GOVIND VANJARI
52.	SOYAL SULEMAN KHAN
53.	SUSHIL PUNDALIK SAWALE

54.	TABBU ABDUL TAWAR
55.	TANVI VIJAY SAWAD
56.	TAUSIK ZARIF KHAN
57.	TUSHAR DIPAK CHAURE
58.	VAIBHAVI JITENDRA DATIR
59.	VAISHNAVI PRAMOD GUGHANE
60.	VAISHNAVI SANDIP WANKHADE
61.	VIKAS VIJAY RATHOD
62.	VISHAL VINOD CHAVHAN
63.	VIVEK MANOJ DAKARE

List of Students B Sc. I Semester I & II Students who take project on Environmental Studies.

S.NO.	Name of Students
1.	AAYESHA SIDDIQUA SAYYAD AYAZ
2.	ABHIJIT JAYSING JADHAO
3.	ACHAL CHANDRAKANT KAMDAR
4.	ADITYA GAJANAN BHOKARE
5.	AJAY VIJAY DAWARE
6.	AKANSHA SANTOSH KATHALE
7.	MALNAS M ALI SALIM
8.	ALMAS MOBIN SHEIKH
9.	ALTAMASH KHAN MUJAHED KHAN
10.	GONDIL MO ANAS MO ASIF
11.	ANUP UMESH RATHOD
12.	ARATI VINOD JADHAO
13.	ARSHIYA ZAREEN ZAKIR HUSAIN
14.	ASHAMIRA ANAM SHEIKH ANIS
15.	ASHLESHA SHYAM WANKHADE
16.	BAZIL ABSAM ABDUL RAFIK

17.	BHAGYASHRI ARUNRAO GAWANDE
18.	BHAGHYASHREE RAVI CHAVHAN
19.	BHUMI RAMESHWAR DANGE
20.	CHANCHAL SANJAY AWAZADE
21.	CHANCHAL SHEKHAR MALANI
22.	DEVANSH ANIL NILE
23.	DIPTI PANDURANG CHAVHAN
24.	DISHA SANJAY BANDGAR
25.	DNYANESHWARI GAJANAN VILAYATKAR
26.	MUNAWWAR FATEMA A MANNAN
27.	GAURI WAMANRAO JARANDE
28.	GAYATRI VINAYAK JAWAKE
29.	GHANSHYAM SANTOSH JADHAV
30.	HARSH SHALIK RATHOD
31.	JAHD JALIL LANGE
32.	JANHVI ANIL CHAUDHARI
33.	KAZI ZAID SYED NASIRUDDIN
34.	KRISHNA NILESH MUNDE
35.	KRUSHNAI VIJAY RAYKE
36.	KUNDAN PRAVIN RATHOD
37.	MADHURI KISAN CHAVHAN
38.	SHEIKH MAHEWISH KHANSA A HAQUE
39.	MANISHA SUDAM INGOLE
40.	MAYUR VINOD JADHAO
41.	MISBA ANJUM ZAREEF KHAN
42.	MISBA PARVEEN SHEIKH SHAFI
43.	MITALI AJAY SHARMA
44.	MUSKAN PARVEEN AHMAD KHAN
45.	NAFIYA SADAF SK BADRODDIN
46.	NANDINI PRADIP TAYDE

47.	NANDINI SANJAY RATHOD
48.	NANDINI VINOD BHOYAR
49.	NISHANT GANESH JADAHO
50.	OM MANOHAR NIKAM
51.	OM RAJESHWAR GADGE
52.	OM VISHNU PAWAR
53.	PALAK PRAMOD KHODAKE
54.	PUNAM GAJANAN PATIL
55.	PRACHI UMESH GORAKH
56.	PRANJALI SHYAM WAKODE
57.	PRATIK PRAKASH CHAVHAN
58.	PRATIMA SUBHASH RATHOD
59.	PRATISH TANAJI JADHAO
60.	PURVESH SACHIN ALONE
61.	RAKHI PANKAJ BHAGANAGARE
62.	RAM DNYANESHWAR DAHAKE
63.	RAM MANOHAR RATHOD
64.	RAVIRAJ SUDHAKAR INGALE
65.	RESHAM SADASHIV KAMBLE
66.	RITESH KISHOR RATHOD
67.	ROHIT DATTARAM RATHOD
68.	ROHIT VISHNU RATHOD
69.	ROSHANI NARAYAN JADHAV
70.	ROSHANI PURUSHOTTAM BAJARE
71.	RUTIK RAMESH CHAVHAN
72.	RUTIKA KISHOR DHANVE
73.	RUTUJA PRAVIN REWANE
74.	SHEIKH AANAM VAJIR
75.	SYED SAAD SYED SAJID
76.	SAGAR DINESH JADHAO

77.	MOHAMMAD SOHAIL AJGAR
78.	SAKSHI RAJESH SAKHARKAR
79.	SAKSHI UMESH BAWANE
80.	SALONI RAJUSING JADHAV
81.	SANIYA MAHEK MOHD AYYUB
82.	SANJIWANI PRALHAD SHELKE
83.	SAURAV MURLIDHAR SHASTRAKAR
84.	SAVALI GOPAL CHAVHAN
85.	SAYED UZAIR ALI SAYED MUJAHID ALI
86.	SHAHID JAMIL LANGE SK
87.	SHEIKH AFNAN SHAHID ABDUL ATIQUEE
88.	SHEIKH SANA RUSHADA MO ANIS
89.	SHEKHAR GAJANAN CHAVHAN
90.	SHILPA DEVIDAS JADHAO
91.	SHIVAM VIJAY PAWAR
92.	SHIVANI ASHWATHAMA CHAVHAN
93.	SHIVANI SOMRAO RATHOD
94.	SHRUTI CHAKRADHAR BOROKAR
95.	SHRUTI GANESH JADHAO
96.	SHUBHAM VIVEK INGOLE
97.	SHAMALI ANIL RATHOD
98.	SIMRAN RAM RATHOD
99.	SNEHA RAJU GIRI
100.	SNEHAL ANIL RATHOD
101.	SNEHAL KAILAS RATHOD
102.	SOHAM BABARAO GAWANDE
103.	SOHAN BALASAHEB DESHMUKH
104.	SOHEL NAVAB KURESHI
105.	SPRUHA SUBHASH INGOLE
106.	SUMERA SHAHEEN HAJI SAYYAD MUSHRIF

107.	SUSMITA ANIL RATHOD
108.	SUYOG SUNIL GAWANDE
109.	MOHD SAAD TAAJ MOHAMMAD
110.	TAHENIYAT NASIR NAURQANGABADE
111.	TANMAY PRAMOD DURGE
112.	TANUJA DIGAMBAR JARANDE
113.	TEJASWINI TULSHIRAM PAWAR
114.	UZAMA PARVEEN MOHD NASIR NAURANGABADE
115.	VAIBHAV VASANTRAO SHELKAR
116.	VAISHNAVI ANAND SARSAR
117.	VAISHNAVI PRAKASH PUSANDE
118.	VED VIVEK SHENDE
119.	VIVEK KESHAV MASKE
120.	VRUNDA BHARAT SONTAKKE
121.	YASH NANDKUMAR GIRI
122.	YASH VIJAY UDAKHE
123.	ZOYA FIRDOUS SHEIKH ISHAQUE

List of Students B Sc. II Semester III & IV Students who take project on Environmental Studies.

S.NO.	Name of Students
1.	AACHAL NAGESH GITE
2.	ADEEBA AANAM SAYYAD LATIF .
3.	ADITI BALKRUSHNA RAYKE
4.	ADITI RAVIBHUSHAN KADAM
5.	ADITYA RAMESH KALBANDE
6.	AJIT MANOHAR RATHOD
7.	AKANKSHA NARESH KARALE
8.	AKASH SUNIL DALWATE

9.	AKSHITA PRAVIN BHELONDE
10.	AMRUTA KISHOR LOKHANDE
11.	ANAND SUKHADEV DUTHADE
12.	ANJALI CHANDRASHEKHAR DOLAS
13.	CHETAN VILAS ADE
14.	DHANANJAY SHANKAR GUGHANE
15.	DHANSHRI NANDKISHOR DHOLE
16.	DIGVIJAY RAMESHWAR GAWANDE
17.	DURGA MAROTI RAJANE
18.	GAURAV GAJANAN KATEKAR
19.	HARSHADA ANIL KAMBLE
20.	HEEBAIRAM SHAIKHANIS .
21.	JAWERIYA SADAF SAYYED AIJAZ .
22.	JAY BHARAT SARODE
23.	KOMAL ATISH KHARATE
24.	KUNAL NIRANJAN PAWAR
25.	LEENA PRUTHVIRAJ RATHOD
26.	MANSI PRALHAD CHAVHAN
27.	MANSI PRALHAD RATHOD
28.	MISBAH FATEMA MUHAMMAD ISMAIL .
29.	MO NOMAN MO YUSUF MEMON
30.	MO SIBTAIN MO SALIM .
31.	MOHAMMAD MUSADDIQUE MOHAMMAD SALIM .
32.	NAGAMA PARVEEN RAMZAN .
33.	NANDINI SANTOSH THAKARE
34.	NEHA NIRANJAN PAWAR
35.	NIRJALA SAHEBRAO BELE
36.	OM SHAM INGOLE
37.	OM TULSHIRAM THAKARE
38.	PRANJALI ASHOK ADE

39.	PRATHMESH SHRIRAM DUDHE
40.	PRATIKSHA DNYANESHWAR BHALERAO
41.	PRIYANKA MANOJ VITHALKAR
42.	RADHIKA GAJANAN SALUNKE
43.	RAM GHANSHYAM TIWARI
44.	RAWISH JABIR SHEIKH
45.	RESHMA PARVEEN SK.RAMZAN MIRAWALE
46.	RITU SURESH CHAVHAN
47.	ROHIT VASANTA RATHOD
48.	ROSHAN NARAYAN WANKHEDE
49.	RUTANSHU GAJANAN BHAGAT
50.	RUTUJA SANJAY NIMKAR
51.	SAKSHI DINESH MAHIPAL
52.	SAKSHI GANESH GAWANDE
53.	SAKSHI JITENDRA DUDHE
54.	SALEHAFIRDOUS HAIDER KHAN
55.	SAMIKSHA NILKANTH PAWAR
56.	SARITA RAJU KHANDARE
57.	SAYYED ARSHAN SAYYED YUNUS.
58.	SHIFA NAAZ SHAIKH NASIR.
59.	SHREYA GAJANAN RODE
60.	SHREYA SHRIKANT KHOLKUTE
61.	SHRUTI YADAORAO NAPTE
62.	SHYAM RAMESH ADE
63.	SOURABH ARUN RATHOD
64.	SUHANA SADAF SHAIKH SABIR.
65.	SUHANA TABASSUM MUJEEB KHAN.
66.	SUMIT MURLIDHAR SHASTRAKAR
67.	SWARAJ SANJAY RATHOD
68.	SWATI BHIKA CHAVHAN

69.	TEJASWINI ARVIND DONGARE
70.	TEJASWINI SUBHASH PAWAR
71.	TUSHAR GOPAL GAWALE
72.	TUSHAR SUKHADEV RATHOD
73.	VAISHNAVI DIGAMBAR THAKARE
74.	VAISHNAVI RAJESH VYAWHARE
75.	VAISHNAVI SAGAR BHAGAT

List of Students M Sc. II Semester III & IV Students who take project on Environmental Studies.

S.NO.	Name of Students
1.	GAURAV SUDHAKAR PAWAR
2.	MAYURI SUBHASH RATHOD
3.	NEHA UMESH RATHOD
4.	PRITI SHANKAR RATHOD
5.	RASHAMI BHALCHANDRA BHANKHEDE
6.	ROSHANI PREMSING CHAVHAN
7.	SNEHA MANOJ CHORE
8.	SAKSHI GAJANAN WANKHADE
9.	VAISHNAVI GANESHRAO THAKARE
10.	VAISHNAVI YADAORAO NAPTE




 Principal
 Bapusaheb Patil Science College, Digras
 & Bapusaheb Patil Science College, Digras

B.B. Arts, N.B. Commerce & B.P. Science College, Digras
Department of Zoology
B.Sc. - I Semester II
2023-2024
Project Assignment

S.N.	Name of Student	Name of Topic	Date of Issue	Signature	Date of Submission	Signature
1	Ku. Arshiyazareen Zakir Husain	Study on edible fishes from the local region	14-03-24	Arshiya	30-3-24	Arshiya
2	Ku. Resham Sadashiv Kamble			Blamble	30-3-24	Blamble
3	Mr. Saad Sajid Syed					
4	Ku. Manisha Sudam Ingole			Manisha	1/4/24	Manisha
5	Ku. Misba Shafi Sheikh		14-03-24	Misba	30-3-24	Misba
6	Ku. Munawwar Mannan Sheikh	Case study on diversity of frogs from surrounding area	14-03-24	Munan	30-3-24	Munan
7	Ku. Punam Gajanan Patil			Punam	30-3-24	Punam
8	Ku. Shivani Ashwathama Chavhan					
9	Ku. Tejaswini Tulshiram Pawar		14-03-24	Tejaswini	30-3-24	Tejaswini
10	Mr. Nishant Ganesh Jadhao		14/03/24	Nishant	30-3-24	Nishant
11	Mr. Ritesh Kishor Rathod	Study on edible fishes from the local region	14/3/24	Rathod	—11—	Rathod
12	Ku. Madhuri Kisan Chavhan		—11—			
13	Ku. Nafiyasadak B. Sheikh		—11—	Nafiyas	30/3/24	Nafiyas
14	Ku. Sanarushada Anis Sheikh		—11—	Sanarushada	—11—	Sanarushada
15	Ku. Saniyamahek Ayyub Mohd			Saniyama	—11—	Saniyama
16	Mr. Ved Vivek Shende	Case study of migratory wetland birds from local reservoir	14/03/24	Ved	1/4/24	Ved
17	Ku. Akansha Santosh Kathale		14/03/24	Akansha	30-3-24	Akansha
18	Ku. Misba Anjum Zareef Khan			Misba	1/4/24	Misba
19	Ku. Mitali Ajay Sharma			Mitali	1/4/24	Mitali
20	Ku. Sneha Raju Giri		14/3/24	Sneha	30-3-24	Sneha
21	Ku. Achal Chandrakant Kamdar	Survey of Migratory Birds in the Grassland				
22	Ku. Gauri Wamanrao Jarande		14-03-24	Gauri	3-04-24	Gauri
23	Ku. Roshani Narayan Jadhav		14-03-24	Roshani	30/3/24	Roshani
24	Mr. Aditya Gajanan Bhokare		14-03-24	Aditya	3-4-24	Aditya
25	Ku. Bhaghyashree Ravi Chavhan		14-3-24	Bhaghyashree	30/3/24	Bhaghyashree
26	Ku. Chanchal Shekhar Malani	Prepare the model on evolution of Man				
27	Ku. Muskan Parveen Ahmad Khan		14-03-24	Muskan	30/3/24	Muskan
28	Ku. Rutika Kishor Dhanve			Rutika	30-3-24	Rutika



Principal

Bapuraoji Butle Arts, Narayanrao Bhat Commerce
& Bapusaheb Patil Science College, Digras

29	Ku. Shruti Chakradhar Borokar		17-03-24	Borokar	20-3-24	Borokar
30	Ku. Vaishnavi Anand Sarsar		17-03-24	Bhoyar	30-3-24	Bhoyar
31	Mr. Sohel Navab Kureshi	Case study of migratory wetland birds from local reservoir				
32	Mr. Yash Devidas Mhatarmare					
33	Ku. Sakshi Umesh Bawane		S. Bawane	S. Bawane	30-3-24	S. Bawane
34	Mr. Anup Umesh Rathod					
35	Mr. Om Manohar Nikam					
36	Ku. Susmita Anil Rathod	Prepare the model on evolution of Man	17/3/24	Rathod	19/03/24	Rathod
37	Mr. Pratish Tanaji Jadhao		17/3/24	Jadhao	19/03/24	Jadhao
38	Mr. Saad Taaj Mohammad					
39	Ku. Bhagyashri Arunrao Gawande		Bhawande	Bhawande	19/03/24	Bhawande
40	Ku. Nandini Pradip Tayde		N.P. Tayde	N.P. Tayde	19-3-24	N. Tayde
41	Ku. Sanjivani Pralhad Shelke	Study on edible fishes from the local region	14-03-2024			
42	Ku. Janhvi Anil Chaudhari		Chaudhari	Chaudhari	30/3/24	Chaudhari
43	Ku. Dipti Pandurang Chavhan		Chavhan	Chavhan	30/3/24	Chavhan
44	Ku. Tanuja Digambar Jarande		Jarande	Jarande	30/3/24	Jarande
45	Ku. Nandini Vinod Bhoyar		N.V. Bhoyar	N.V. Bhoyar	30/3/24	N.V. Bhoyar
46	Ku. Spruha Subhash Ingole	Study on edible fishes from the local region	14/03/24	Ingole	20/03/24	Ingole
47	Mr. Devansh Anil Nile		14/03/24	Nile	30/3/24	Nile
48	Mr. Shubham Vivek Ingole		14/03/24	Ingole	30/3/24	Ingole
49	Mr. Jahid Jalil Lange		14/03/24	Lange	30/3/24	Lange
50	Mr. Vaibhav Vasandrao Shelkar		14/03/24	Shelkar	30/3/24	Shelkar
51	Ku. Pratima Subhash Rathod	Survey of Migratory Birds in the forest	P.S. Rathod	P.S. Rathod	30/3/24	P.S. Rathod
52	Ku. Snehal Kailas Rathod		Snehal Rathod	Snehal Rathod	30-3-24	Snehal Rathod
53	Ku. Palak Pramod Khodake		Palak Rathod	Palak Rathod	30-3-24	Khodake
54	Mr. Sohan Balasaheb Deshmukh					
55	Ku. Ashlesha Shyam Wankhade		Wankhade	Wankhade	30-3-24	Wankhade
56	Ku. Ashlesha sanjay Jadhav	Study on edible fishes from the local region				
57	Mr. Yash Vijay Udakhe					
58	Ku. Saloni Rajusing Jadhav		Jadhav	Jadhav	30-3-24	Jadhav
59	Ku. Savali Gopal Chavhan		Chavhan	Chavhan	30-3-24	Chavhan
60	Ku. Rajnandini Datta Ade					
61	Mr. Anas Asif Gondil	Case study of migratory wetland birds from local	14/3/24			
62	Ku. Shruti Ganesh Jadhao					



[Signature]
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63	Ku. Snehal Anil Rathod	reservoir				
64	Ku. Shivani Somrao Rathod					
65	Ku. Almas Mobin Sheikh					
66	Mr. Rohit Vishnu Rathod	Case study on diversity of frogs from surrounding area	<u>Almas</u>	14/03/24	30/03/24	<u>Almas</u>
67	Mr. Uzair Ali Mujahid Ali Sayed		<u>Uzair</u>	14/03/24		
68	Mr. Sohail Ajar Mohammad		<u>Sohail</u>	14/03/24		
69	Ku. Dnyaneshwari G. Vilayatkar		<u>Dnyaneshwari</u>		30/03/24	<u>Dnyaneshwari</u>
70	Ku. Nandini Sanjay Rathod		<u>Nandini</u>	14/03/24	30/03/24	<u>Nandini</u>
71	Mr. Bazil Absam A. R. Sheikh	Prepare the model on evolution of Man				
72	Ku. Bhumi Rameshwar Dange		<u>Bhumi</u>			
73	Ku. Shamali Anil Rathod					
74	Mr. Ali Salim Malnas		<u>Malnas</u>	14/3/24	1/4/24	<u>Malnas</u>
75	Ku. Pranjali Shyam Wakode		<u>Pranjali</u>			
76	Mr. Vivek Keshav Maske					
77	Mr. Althamash Mujahed Khan					

Dr. N.A. Manwar

Dr. N.A. Manwar
Department of Zoology



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Principal

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परिपत्र

BAPURAOJI BUTLE ARTS, NARAYANRAO BHAT COMMERCE AND BAPUSAHEB

PATIL SCIENCE

COLLEGE

DIGRAS DIST. YAVATMAL



Submitted to

DEPARTMENT OF ZOOLOGY

Submitted by

Name of Student: Miss. Nisha Zard Khan

Miss. Mitali Ajay Sharma

Class: B.Sc. - I (Semester II)

SEM Topic: Migration of Birds

Session: 2023 – 2024

Guided by –Dr. Narendra Manwar

Migration of birds

Introduction

Every year, after the onset of the winter season in most parts of the Northern Hemisphere, a large number of avian species move towards the south for wintering. After spending the winter season at their respective destinations, they return back to their native ground in the spring season (Alerstam, 1990; Berthold, 2001; Newton, 2003; Somveille *et al.*, 2013). This regular two-way seasonal movement is termed as bird migration and over 2000 species of birds are known to participate in this worldwide phenomenon (BNHS, 2020). These birds are known as migratory birds. It has been observed that migratory birds use certain routes due to some natural barriers such as the Mediterranean Sea, Caribbean Sea, and high-altitude Himalayan peaks, and these movements are known as migratory flyways (Stroud *et al.*, 2006). Most migratory birds are aquatic species, and their wintering destinations are comprised of terrestrial water bodies ranging from small ponds to large-sized lakes and wetlands (Figure 1).

Due to various anthropogenic factors like habitat destruction and degradation, pollution and climate change, illegal and unsustainable hunting, infrastructure development, and disease, most migratory birds are facing a number of threats, and their species diversity and populations are declining in most parts of the world (Biber and Salathé, 1991; Baker *et al.*, 2004; Trouwborst, 2012). Their conservation depends on coordinated efforts on a multi-lateral, international scale. To ensure the sustainability of migratory birds, a large number of conservation measures have been adopted at the inter-governmental level, and multi-lateral treaties/cooperation have been enforced, such as Convention on Migratory Species (<https://www.cms.int/en/legal-instrument/cms>), Ramsar Convention (<https://www.ramsar.org>), Convention for the Protection of Migratory Birds, State of the World's Birds, and Neotropical Migratory Bird Conservation Act (<https://www.fws.gov/law/migratory-bird-treaty-act-1918>). Flyways provide a framework that can help forge international collaboration and focus

attention on the strategic needs of migratory birds. Bird migration and migratory species were highlighted by Shri Narendra Modi, Honourable Prime Minister of India, in 'Mann Ki Baat' in Feb. 2020, which motivated and encouraged a number of behavioural biologists and conservationists to take up the subject for further studies and exploration. It prompted us to review the subject, especially in the Indian context and consolidate the information in the form of an article. Present review is based on the survey of literature and studies conducted by authors and other scientists of the Zoological Survey of India on migratory birds and their habitats in India.

What is bird migration?

The term 'migration' is derived from the Latin word 'migrara' which means movement from one place to

another. In birds, many species have evolved to move from one place to another (two-way seasonal journeys) to gain the benefits of favourable conditions in terms of food and shelter. Due to the scarcity of food and unfavourable seasonal conditions such as low temperatures and snowfall (onset of winter season) at home grounds, birds move to other warmer places (known as wintering ground) for better survival conditions, and after spending a few months, once the conditions become favourable for life (due to seasonal changes and the onset of spring season), they return back to home grounds (Kirby *et al.*, 2008). It is interesting to note that all species of birds do not migrate, but most species are subject to seasonal movements of varying extents. This seasonal movement of birds is known as 'bird migration' and it can be categorised into several types mostly based on the season and distance of migration

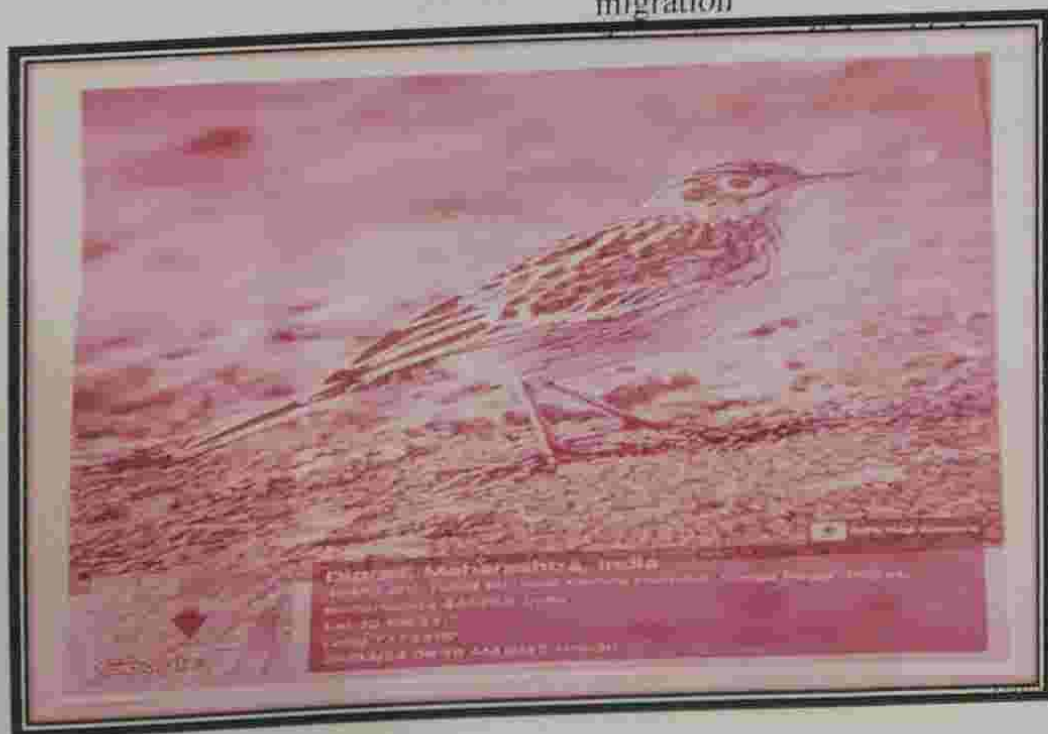


Figure 1. Large congregations of migratory birds at Patna Bird Sanctuary, Uttar Pradesh. (Photo Credit: Anil Kumar)

The birds which live in the northern hemisphere are mostly migratory and cover long distances during migration, which is known as 'latitudinal migration'. It refers to the movement from north to south, and vice versa (Kirby *et al.*, 2008). The birds native to the northern temperate

and subarctic zones where they breed during summer, move towards the south during winter. Species such as Northern Pintail *Anas acuta*, Eurasian Teal *Anas crecca*, Eurasian Wigeon *Mareca penelope*, Bar-tailed Godwit *Limosa lapponica*, Pallid Harrier *Circus macrourus*, Marsh

Sandpiper *Tringa stagnatilis*, Common Greenshank *Tringa nebularia*, Ruddy Turnstone *Arenaria interpres*, Eurasian Whimbrel *Numenius phaeopus*, and Pallas's Gull *Ichthyophaga ichthyophaga*, are known to cover a long distance

(Rasmussen and Anderton, 2005). However, some species migrate over short latitudinal distances, such as Himalaya to peninsular India and vice versa (Figure 2).

Some notable examples are Indian Blue Robin *Larvivora brunnea*, Rusty-tailed Flycatcher *Ficedula ruficauda*, and Blue-throated Blue Flycatcher *Cyornis rubeculoides*. Some species move from the Himalaya to the plains of India, such as Verditer Flycatcher *Eumyias thalassinus*, Blue-capped Rock Thrush *Monticola cinclorhyncha* and Scaly

Thrush *Zosterops dauma* (Rasmussen and Anderton, 2005). Some species cover a very short distance, such as Himalayan Black Bulbul *Hypsipetes leucocephalus*, where some individuals move southwards less than 100 km, while larger populations remain in the breeding areas as residents. The same trend can be seen in Blue Whistling



Thrush *Myophonus caeruleus*. When some of the birds travel a short distance for safety and food without any specific direction, it is called vagrant or irregular migration. Herons may be the example of vagrant or irregular migration, including a few more examples such as Black Stork *Ciconia nigra*, Glossy Ibis *Plegadis falcinellus*, Spotted Eagle *Aquila clanga*, and European Bee-eater *Merops apiaster*.

A less frequent opposite movement also occurs in the southern hemisphere. For example, cuckoos breed in India and spend the summer at South-east Africa (Thorup *et al.*, 2020). Some tropical birds are known to migrate during the rainy season to the outer tropics to breed and return to the central tropics after breeding. Many marine avian species also make considerable migrations. The Arctic Tern *Sterna paradisaea* breeds in the northern temperate region and migrates to the Antarctic zone along

the Atlantic, covering a distance of 22,500 km (Duffy *et al.* 2013; Fijn *et al.* 2013). The Bar-headed Goose *Anser indicus* is one of the world's highest-flying birds (Hawkes *et al.*, 2011), and winters in many wetlands of India (Figure 3). Some species of birds are known to possess longitudinal migration, occurring when they migrate from east to west and vice-versa (Figure 4). The Starlings *Sturnus vulgaris*, a resident of East Europe and West Asia has been reported to migrate towards the Atlantic coast. Another notable example is the Hooded Pitta *Pitta sordida*, which is common and widespread in Eastern and Southeast Asia, where it lives in various types of habitats. During the summer months, it migrates to the Himalayan foothills. Some scientists consider the daily movements of birds as 'daily migration'. Based on the time of travel, migratory birds can further be classified as diurnal migrants and nocturnal migrant



national strategies for migratory bird conservation

For the conservation of migratory birds and their habitats, a number of strategies have been adopted and these are framed, networked and enforced at the international level by United Nations.

Convention on Migratory Species It is a treaty of the United Nations that provides a global platform for the conservation and sustainable use of migratory animals, their habitats, and migration routes. It is also known as 'Convention on the Conservation of Migratory Species of Wild Animals' or 'Bonn Convention' (<https://www.cms.int/en/legal/instrument/cms>). It was signed in 1979 in Bonn, West Germany, and became effective in 1983. So far total 133 countries are the parties to this convention. It works with a number of international organizations, NGOs and partners. It is a legal foundation for internationally coordinated conservation measures throughout a migratory range. It is mainly focused on migratory birds as the largest proportion of migratory animals is birds. The convention brings together the countries through which migratory animals pass. The appendices of the convention include mammals, birds, fish, reptiles and one insect. Migratory species threatened with extinction are covered in Appendix I of the convention. The parties of the convention adopt a legal framework to protect these animals through the conservation and restoration of their habitats, mitigating threats to

migration and controlling other factors. Migratory species that are likely to be significantly benefited from international cooperation are listed in Appendix II of the Convention. On the basis of information collected from various sources, in India, a total of 128 species are listed in the appendices of the convention. A total of 7 species are covered in appendix-I and 103 species in appendix-II, while 18 species are covered by both appendices.

World Migratory Bird Day. It is an annual awareness-oriented campaign to publicise the need for the conservation of migratory birds and their habitats. It is a global instrument to support the conservation of migratory birds, to address the threats faced by migratory birds, their ecological importance, and

the need for a joint venture and cooperation at the international level. Every year people around the world actively participate and organize various outreach activities such as bird festivals, awareness events, exhibitions and bird-watching excursions (<https://www.worldmigratorybirdday.org>). World Migratory Bird Day was initiated in 2006 by the Secretariat of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds in collaboration with the Secretariat of the Convention on the Migratory Species. The idea to designate a day for migratory birds was initiated in the United States in 1993, when the US Fish and Wildlife Service, the Smithsonian Migratory Bird Center and the Cornell Laboratory of Ornithology celebrated 'International Migratory Bird Day'. Later on, this event was adopted in the African-Eurasian region, and it was decided to expand the scope into an honouring day that celebrates all migrating birds at the international level. In 2018, the joint campaign adopts the single name of 'World Migratory Bird Day' and major events to celebrate the day will be organized twice a year, on the second Saturday in May and in October.

Management and protection of wetland habitats is a prerequisite to the conservation of migratory birds. Wetlands are among the most diverse and productive ecosystems, known to provide a wide range of ecosystem services. However, they continue to be degraded and converted extensively for other uses. The 'Convention on Wetlands' is one of the oldest intergovernmental environmental agreements. The treaty was negotiated through the 1960s by countries and non-governmental organizations and was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975 (<https://www.ramsar.org>). The major mission of the convention is the 'wise use' of wetlands. It defines the wise use of wetlands as 'the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development'. Wetlands are indispensable for the wide range of benefits that they provide such as freshwater supply, food and building materials, biodiversity, flood control, groundwater recharge, and climate change mitigation. To achieve the targets of the convention, it was decided that each party (to the convention) must designate at least one wetland site within their territory for inclusion in the List of Wetlands of International Importance (known

Conclusion

Studies showed that India is one of the most important destinations for migratory birds in South Asia, owing to the occurrence of wide array of wetlands ranging from coastal wetlands to inland lakes and dames. Strategic locations of some major wetlands such as Pong Dam, Asan Barrage, Harike Barrage and marshy depressions/ waterlogged areas in Gangetic plains are not only host a large number of migratory birds but also act as a stop- over for passage migrants going further southwards. A number of treaties have been enforced by United Nations for the conservation of water birds and India is a major contributor, is working for the conservation of migratory birds and their habitats in India mediated through the country-wide implementation of a number of programmes under the umbrella of Ministry of Environment Forest and Climate Change.

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Affiliated to
Sant Gadge Baba Amravati University, Amravati



Department of Zoology

ASSIGNMENT / PROJECT ASSIGNMENT /
PRACTICAL ASSIGNMENT / SEMINAR

Session - 2023 -2024

Class: Bsc 1st Semester 2nd

Subject: Zoology

Topic: Survey of migratory birds in
Grassland.

-: Submitted By :-

Name: Roshani Jadhav, Bhagyashri Chavhan, Sakshi Rawne

Roll No.: Akangsha Kathale, Sneha giri

Date: _____

:: Guided by ::

1) Prof. Dr. N.A. Manwar

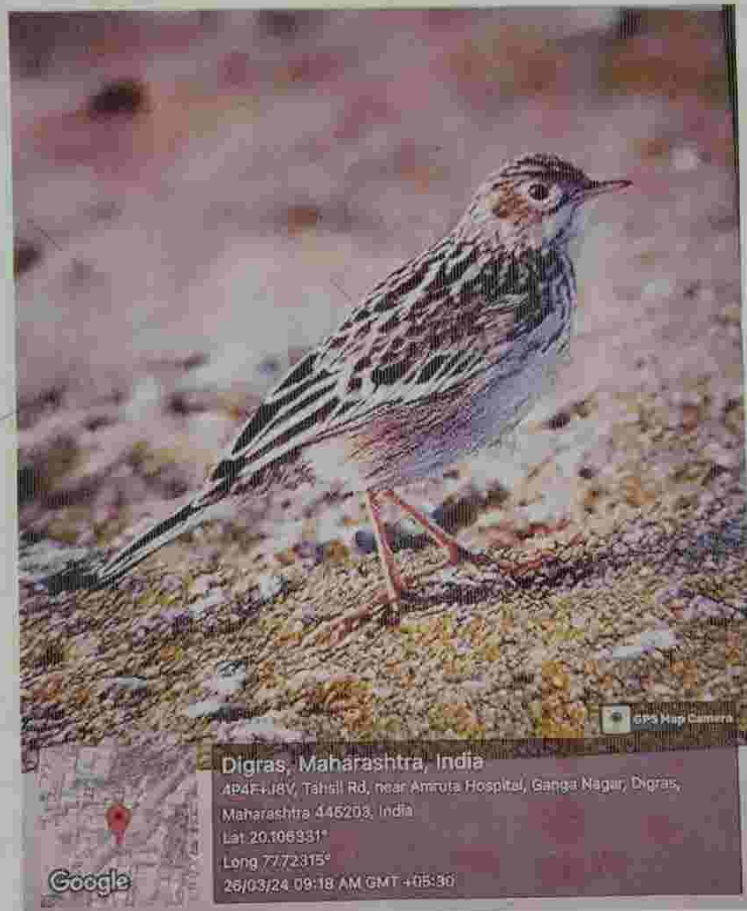
2) Prof. _____



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Study of Migratory birds in grassland



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& Bapusaheb Patil Science College, Digras

Grassland and birds survey

protocols

Introduction :-

The survey protocol provides information on conducting data for the occupancy (presence / not detected) of grassland bird species in a given survey area during the breeding season. It also provides information on using behavioural observation to satisfy evidence of breeding behaviour.

So can be applied. Many birds in Saskatchewan are protected by the federal Species at Risk Act & The Migratory Birds Convention Act and or The Wildlife Regulations. Refer to the Government of Canada - Avoiding harm to migratory birds search migratory birds policy. Grassland breeding birds are a large & diverse group that includes any birds that live or breeds in the grassland of Saskatchewan. However, certain species require methods that are not covered by this survey.

Protocol

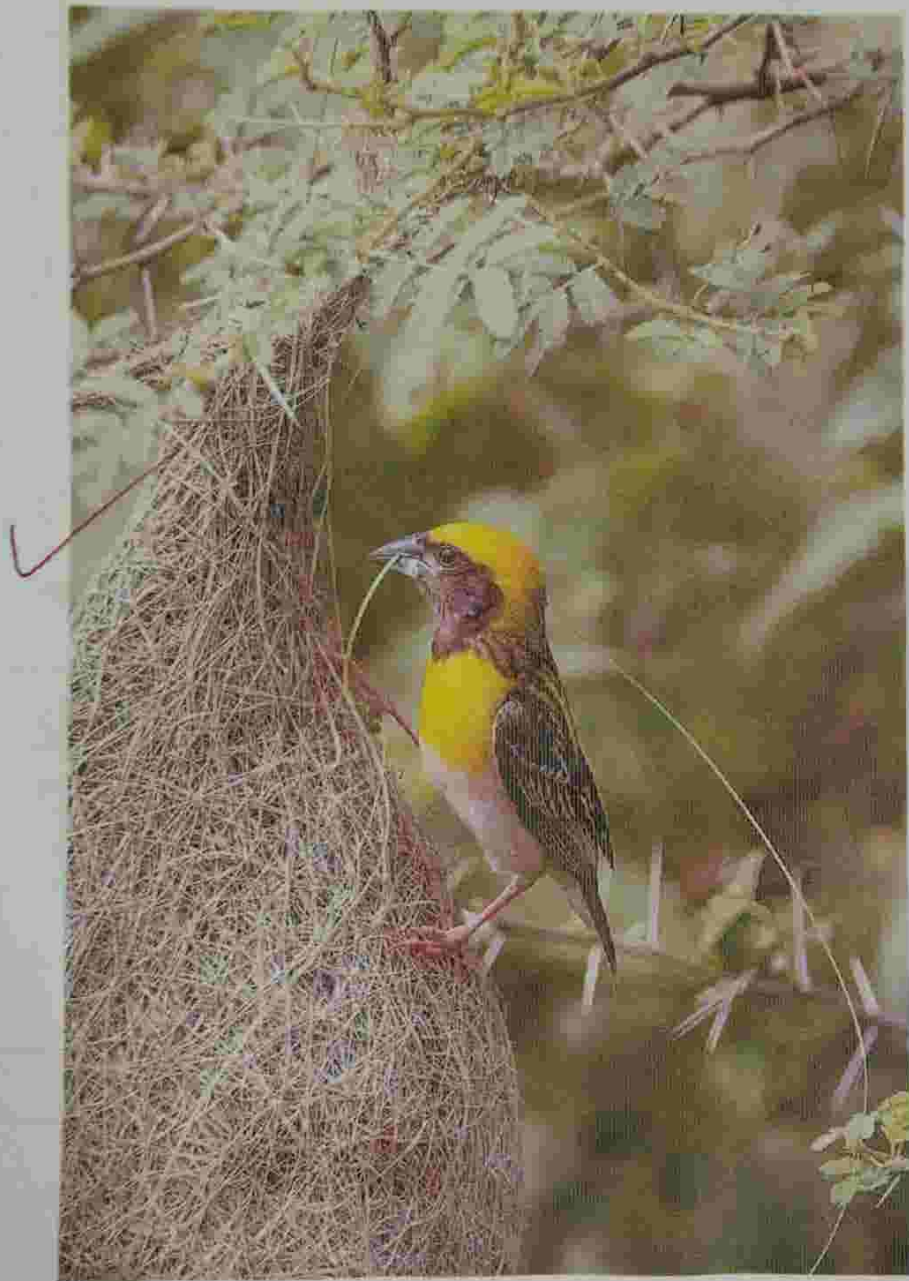


Status and Distribution :-

Historic losses of more grassland habitat likely produced staggered losses of grassland birds. Since monitoring began in 1970 grassland birds have decreased more than any other group with the exception of aerial insectivores. On average, the decline is about 40 per cent (NABBCI 2002).
✓ Habitat loss is continuing and other threats, including pesticides, are affecting grassland birds (NABBCI 2002). The very widely distribution.

Biology :-

grassland are see in influx of avian migrants each Spring come to take Maharashtra is the home to migrating birds travelling via the CAF with both Natural & man-made wetlands, it serves as staging places & wintering grounds. Flyway are utilised by birds to reach breeding, stopover and wintering grounds during their annual cycle.



Birding Maharashtra

Maharashtra (Abbreviation MH) is a state in the Western region of India & it is India's second most populous state & third-largest state by area spread over 307,913 km² (118,809 square miles). It is bordered by the Arabian sea to the West and the Indian states of Karnataka, Telangana, Goa, Gujrat, Chhattisgarh, Madhya Pradesh, and the Union territory of Dadra & Nagar Haveli. It is also the world's second most populous Subnational entity. It has over 112 million inhabitants in Capital, Mumbai, has a population of approximately 18 million. Nagpur of Maharashtra second Capital as well as its winter Capital. It is one of the most industrialised states of Indian Union. The east-west length about 800 km (72°E to 80°9'E) and North to South length about 700 km.



Maharashtra can be divided 5 areas
Coastal Maharashtra is a narrow coastal belt covering about 720 km from north to south and about 50 km wide. The strip is sandwiched between the Arabian Sea in the west & the Sahyadri or Western Ghats range to the east. The area receives up to 3,000 mm of rainfall annually. Its six districts are Thane, Mumbai Suburb, Raigad and Sindhudurg. Dakhin is the rain-shadow belt adjoining the eastern slopes of the Western Ghats. It is the Western uplands of Maharashtra with an average height of 500 km to 600 m above sea level.

Interspersed with river valleys up to the ghat country gets up to the 6,000 mm of yearly rainfall. Marathwada is the hot and dry region of central Maharashtra and is made up of 8 districts of Aurangabad, Jalna, Beed, Osmanabad, Latur, Nanded, Parbhani, Hingoli. The average rainfall upto Vidharbha is the easternmost division of comprising.





The Avifauna of maharashtra the state has very rich avifauna with more than 500 species recorded from the state so far. If the subspecies are taken into account then the list is more than 540. prakashgole classified them as International migrant = 845 ; stragglers or irregular visitors 40 ; species known to be breeding 168 ; species that breed in specific areas only 56 ; species about which very little is known 81 ; species which about knowledge is fairly good (eg. Spatekous, crow) 25. Most of the migrants & straggle are maeline species. that are stom driven to the Coast during the monsoon months. Most of the migrants are winter visitors aquatic birds like ducks, geese, gulls, terns, cranes, flamingos, sandpipers etc. A no. of haviers, cokas, stallas, woobler, Chals, pipils, and wag tails. also arrive here in the cold season few species like rain quail, pled crested, cukoo and Indian pittu

visit us at the beginning of rainy season. Most of our bulbuls, babblers, sunbirds, hornbills and owls are resident birds.

Some birds are rare in the state being sighted only a few times (Ashy minivet) Imperial Eagle, Scaup Duck, pelican sp etc). These are birds that were thought to be extinct.

Such as Forest Spotted Owlet *Athene blewitti*, Terdon's Courser, *cursorius bitaenatus* & pink-headed duck *Rhodanessa caryophyllacea*. Terdon's Courser was rediscovered in the adjoining Andhra Pradesh (1986). In forest spotted Owlet was rediscovered in the Satpuda Forest (1999).

The Commonest bird in the state is the Ubiquitous Jungle Crow *corvus macrohachos*, which is found in remotest forest patches in Gadchiroli district to the heart of the Mumbai City. Other common and abundant birds are the House Crow, House Sparrow, Blue rock pigeon, Common Myna, common black peafowl.

peafowl *pavo cristatus* is a more fortunate bird because of the protection it has received in some places, thanks to religious sentiments.

Birding Areas the main birding habitats in the state can be broadly classified into Forest, Scrub & grass country, Fresh water bodies, Seashore, cultivated Counties and Urban areas. About 22% of the total State area is under Forest though true forest cover is hardly half of this area. Tropical Deciduous Forest is the dominant vegetation type in the state it is found in the western ghats support Evergreen and SemiEvergreen type. Eg. Bhimashankar, Matheran, Mahabaleshwar, Chandoli etc. Tropical thorn forest is the dominant type throughout the plateau area. Great Indian Bustard Sanctuary is located within this belt.

Home of the popular birding spots for unique birds. Cultivated Country has its own unique bird fauna which is mostly

granivores and Insectivores. In spite of being most Urbanized State it has in Maharashtra supports high bird diversity.



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Digras, Dist.-Yavatmal

Year: 2023-2024

Class: B.Sc.: II

Subject: Environmental Studies (Study tour report)

S.N.	Name of student	Signature with date
1.	Ku. Aachal Nagesh Gite	A.N.Gite 30.03.2024.
2.	Ku. Adeebaanam Latif Sayyad	Adeebay 28-3-24
3.	Ku. Aditi Balkrushna Rayke	Aditya 30/03/24
4.	Ku. Aditi Ravibhushan Kadam	Aditi 28-03-24
5.	Ku. Akansha Naresh Karale	Ankale 30-03-24
6.	Ku. Akshita Pravin Bhelonde	
7.	Ku. Amruta Kishor Lokhande	Alokhande 2-04-24
8.	Ku. Anjali Chandrashekhar Dolas	Adolas 30-3-2024
9.	Ku. Dhanshri Nandkishor Dhole	Dhole 30-3-2024
10.	Ku. Durga Maroti Rajane	Drajane 30-3-24
11.	Ku. Harshada Anil Kamble	H.Kamble 30-3-24
12.	Ku. Heeba Iramanis Shaikh	H.I.Shaikh 28/3/24
13.	Ku. Jaweriyasadaf Aijaz Sayyed	Jaisayyad 28/3/24
14.	Ku. Leena Pruthviraj Rathod	
15.	Ku. Mansi Pralhad Chavhan	Chavhan 31/3/24
16.	Ku. Mansi Pralhad Rathod	
17.	Ku. Misbahfatema Ismail Mohammad	Misbah 30/3/24
18.	Ku. Nagma Ramzan Mirawale	Nagma 3/04/24
19.	Ku. Nandini Santosh Thakare	N.Thakare 30/03/24
20.	Ku. Neha Niranjan Pawar	N.Pawar 28/03/24
21.	Ku. Nirjala Sahebrao Bele	N.Bele 30/03/24
22.	Ku. Pranjali Ashok Ade	P.Ade 30/03/24
23.	Ku. Pratiksha Dnyaneshwar Bhalerao	P.Bhalerao 28-3-24
24.	Ku. Priyanka Manoj Vithalkar	P.M.Vithalkar 30/03/24
25.	Ku. Radhika Gajanan Salunke	R.Salunke 1-4-24
26.	Ku. Rawish Jabir Sheikh	R.Shikh 28-3-24



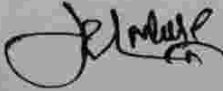
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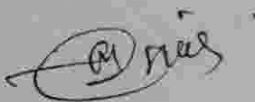
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(Signature)

27.	Ku. Reshma Skramjan Mirawale	<u>Reshma</u> 1/4/24
28.	Ku. Ritu Suresh Chavhan	<u>Reshma</u> 28-3-24
29.	Ku. Rutuja Sanjay Nimkar	<u>Rutuja</u>
30.	Ku. Sakshi Dinesh Mahipal	<u>Mahipal</u>
31.	Ku. Sakshi Ganesh Gawande	
32.	Ku. Sakshi Jitendra Dudhe	<u>Dudhe</u>
33.	Ku. Salehafirdous Haider Khan	<u>Saleh</u> 28-3-24
34.	Ku. Sanjivani Subhash Pawar	<u>Pawar</u> 30/03/24
35.	Ku. Sarita Raju Khandare	
36.	Ku. Shifanaaz Nasir Shaikh	<u>Shifanaaz</u>
37.	Ku. Shreya Gajanan Rode	<u>Rode</u> 30/03/24
38.	Ku. Shreya Shrikant Kholkute	<u>Kholkute</u> 28-3-24
39.	Ku. Shruti Yadaorao Napte	30/3/24 <u>Napte</u>
40.	Ku. Suhana Sabir Shaikh	30/03/24 <u>Suhana</u>
41.	Ku. Suhanatabassum Mujeeb Khan	<u>Suhana</u> 29-3-24
42.	Ku. Swati Bhika Chavhan	<u>Swati</u> 30/3/24
43.	Ku. Tejaswini Arvind Dongare	<u>Tejaswini</u> 30.3.24
44.	Ku. Tejaswini Subhash Pawar	<u>Pawar</u> 30.3.24
45.	Ku. Vaishnavi Digambar Thakare	<u>Thakare</u> 30.3.24
46.	Ku. Vaishnavi Rajesh Vyawahare	<u>Vyawahare</u> 30.3.24
47.	Ku. Vaishnavi Sagar Bhagat	<u>Bhagat</u> 2/4/24
48.	Mr. Aditya Ramesh Kalbande	<u>Aditya</u>
49.	Mr. Ajit Manohar Rathod	<u>Ajit</u>
50.	Mr. Akash Sunil Dalwate	<u>Akash</u>
51.	Mr. Anand Sukhadev Duthade	<u>Anand</u> 30.3.24
52.	Mr. Arshan Yunus Sayyed	<u>Arshan</u> 30.3.24
53.	Mr. Chetan Vilas Ade	28-3-24 <u>Ade</u>
54.	Mr. Dhananjay Shankar Gughane	
55.	Mr. Digvijay Rameshwer Gawande	
56.	Mr. Gaurav Gajanan Katekar	<u>Gaurav</u>




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57.	Mr. Jay Bharat Sarode	
58.	Mr. Kunal Niranjan Pawar	Approved 31/3/23
59.	Mr. Musaddique Salim Mamdawale	<i>[Signature]</i>
60.	Mr. Noman Md Yusuf Memon	<i>[Signature]</i>
61.	Mr. Om Sham Ingole	<i>[Signature]</i>
62.	Mr. Om Tulshiram Thakare	
63.	Mr. Prathamesh Shriram Dudhe	
64.	Mr. Ram Ghanshyam Tiwari	<i>[Signature]</i>
65.	Mr. Rohit Vasanta Rathod	
66.	Mr. Roshan Narayan Wankhede	<i>[Signature]</i>
67.	Mr. Rutanshu Gajanan Bhagat	<i>[Signature]</i>
68.	Mr. Shyam Ramesh Ade	
69.	Mr. Sibtain Salim Mohammad	<i>[Signature]</i>
70.	Mr. Sourabh Arun Rathod	<i>[Signature]</i>
71.	Mr. Sumit Murlidhar Shastrakar	<i>[Signature]</i>
72.	Mr. Swaraj Sanjay Rathod	
73.	Mr. Tushar Gopal Gawale	28-03-24 <i>[Signature]</i>
74.	Mr. Tushar Sukhdev Rathod	30-03-24 <i>[Signature]</i>
75.	Ku. Aachal Nagesh Gite	
76.	Ku. Adeebaaanam Latif Sayyad	
77.		
78.		
79.		



[Signature]

Principal
B.B.Arts, N.B.Commerce &
B.P Science College, DIGRAS

[Signature]

Dr. N.A. Manwar

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

BAPURAOJI BUTLE ARTS, NARAYANRAO BHAT COMMERCE AND
BAPUSAHEB PATIL SCIENCE COLLEGE DIGRAS DIST. YAVATMAL



PROJECT ASSIGNMENT

Submitted to

DEPARTMENT OF ZOOLOGY

Submitted by

Name students:

1. Mr. Shubham Vivek Ingole.
2. Mr. Vaibhav Vasantryao Shelkar.
3. Mr. Zahid Jalil Lange.
4. Mr. Devansh Anil Nile.
5. Ku. Spruha Subhash Ingole.

Class: B.Sc. – I (Sem- II)

SEM Topic: STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

SESSION : 2023 – 2024

Teacher In-charge

Dr. Narendra Manwar

Head, Department Of zoology

Dr. Nita Labhsetwar

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

➤ INTRODUCTION

The Yavatmal district, nestled in the heart of Maharashtra, India, boasts a rich tapestry of aquatic ecosystems, including rivers, lakes, and reservoirs, which harbor diverse species of fish. These aquatic resources not only sustain local livelihoods but also play a pivotal role in providing a significant protein source and contributing to the culinary heritage of the region.

The study on edible fishes from the Yavatmal region endeavors to explore and document the wealth of piscine diversity present in its water bodies. This endeavor is driven by the recognition of the crucial nexus between food security, nutrition, culture, and environmental sustainability, all of which are deeply intertwined with the utilization and management of local fisheries resources.

1. Fishes form one of the most important group of vertebrates for man.
2. Fishes have formed an important item of human diet from the man
3. Appeared on earth.
4. Fishes form a rich source of food and provide a means to tide over the nutritional difficulties of man.

Fresh water edible fishes.

- The fish should be tasteful.
- It should be having high nutritive value.
- Species that can be culture together without competing with each other.
- It is able to highly preferable for maximum utilization of water.

➤ HABIT AND HABITAT

- **Rohu (*Labeo rohita*):**

Habit: Rohu is a bottom-dwelling fish species that typically feeds on detritus, algae, and small invertebrates. It is known for its omnivorous diet, consuming both plant and animal matter.

Habitat: Rohu prefers freshwater habitats such as rivers, lakes, and reservoirs with moderate to fast-flowing water. It thrives in habitats with

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

abundant vegetation and submerged structures where it can find shelter and food.

- **Catla (*Catla catla*):**

Habit: Catla is a surface-feeding fish species known for its herbivorous diet, primarily feeding on phytoplankton and aquatic plants. It often congregates in large shoals near the water's surface.

Habitat: Catla prefers large freshwater habitats with ample vegetation and phytoplankton. It is commonly found in rivers, lakes, and reservoirs with relatively clear and oxygen-rich water.

- **Murrel (*Channa species*):**

Habit: Murrel, also known as snakehead fish, are carnivorous predators with a diverse diet, including fish, crustaceans, and insects. They are known for their aggressive hunting behavior and ability to breathe air.

Habitat: Murrel species inhabit various freshwater habitats, including rivers, streams, ponds, and marshes. They are often found near submerged vegetation, root systems, and other structures where they can ambush prey.

- **Tilapia (*Oreochromis species*):**

Habit: Tilapia is a versatile fish species with an omnivorous diet, feeding on algae, detritus, and small invertebrates. It exhibits territorial behavior and can adapt to a wide range of environmental conditions.

Habitat: Tilapia species inhabit diverse freshwater habitats, including rivers, lakes, ponds, and reservoirs. They are often found in warm, shallow waters with abundant vegetation and organic matter.

- **Mahseer (*Tor species*):**

Habit: Mahseer is a prized sport fish known for its powerful swimming abilities and voracious appetite. It is primarily a piscivorous species, feeding on smaller fish, insects, and crustaceans.

Habitat: Mahseer species inhabit fast-flowing rivers and streams with rocky substrates and clear water. They prefer habitats with riffles, rapids, and deep pools where they can find prey and shelter.

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

➤ EXTERNAL FEATURE

- **Body Shape and Size:**

Fish exhibit a wide range of body shapes, including fusiform (torpedo-shaped), elongated, compressed, or laterally flattened.

Size varies greatly among fish species, ranging from a few centimeters to several meters in length, depending on the species.

- **Fins:**

Fins are prominent external features that aid in locomotion, stability, and maneuverability.

Common types of fins include dorsal fins (on the back), anal fins (near the anus), pectoral fins (on the sides), pelvic fins (near the abdomen), and caudal fins (tail fins).

- **Scales:**

Most fish species are covered in scales, which provide protection and reduce friction while swimming.

Scales vary in size, shape, and arrangement depending on the species. They may be cycloid, ctenoid, ganoid, or placoid in structure.

- **Coloration and Patterns:**

Fish exhibit a wide array of colors and patterns, which often serve adaptive functions such as camouflage, warning signals, or species recognition.

Coloration may vary based on habitat, age, sex, breeding status, and environmental factors.

- **Mouth and Teeth:**

The shape and position of the mouth vary among fish species and are often adapted to their feeding habits and diet.

Some species have specialized teeth for grasping, tearing, crushing, or grinding food items.

- **Eyes:**

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Fish have well-developed eyes adapted for underwater vision, which may vary in size and shape among species.

Eye position and structure may indicate the fish's feeding behavior, habitat preferences, and activity patterns.

- **Gills:**

Gills are respiratory organs responsible for extracting oxygen from water and eliminating carbon dioxide.

They are located on the sides of the fish's head and are protected by a bony or cartilaginous gill cover (operculum).

- **Fins and Fin Rays:**

Each fin typically consists of fin rays supported by bony or cartilaginous structures.

The number of fin rays and their arrangement can be diagnostic for species identification.

➤ REPRODUCTION

Sexual Dimorphism:

Many fish species exhibit sexual dimorphism, with males and females differing in external appearance, size, or coloration.

In some species, males may develop specialized reproductive structures such as enlarged fins or bright colors during the breeding season to attract mates.

Reproductive Behaviors:

Fish display a wide range of reproductive behaviors, including courtship rituals, territorial displays, and nest building.

Courtship behaviors may involve elaborate displays, movements, or vocalizations to attract mates and establish breeding territories.

Breeding Seasons:

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Fish species typically have specific breeding seasons dictated by environmental cues such as water temperature, photoperiod (day length), and food availability.

Breeding seasons may vary among species and are often synchronized with favorable conditions for larval survival and growth.

Spawning:

Spawning is the process of releasing eggs (by females) and milt or sperm (by males) into the water for external fertilization.

Fish species exhibit various spawning strategies including broadcast spawning (release of gametes into the water), nest spawning (deposition of eggs in nests or substrate), and mouthbrooding (incubation of eggs in the mouth).

Egg Development:

Fertilized eggs undergo development, progressing through stages such as cleavage, gastrulation, and organogenesis.

Egg development is influenced by water temperature, oxygen levels, and predation pressure, with optimal conditions varying among species.

Larval Development:

After hatching, fish larvae undergo a period of development during which they may exhibit distinct larval characteristics and behaviors.

Larval development is critical for survival and dispersal, with larvae often exhibiting adaptations for feeding, swimming, and avoiding predators.

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Catla catla

The species has the fastest rate of growth among the Indian major carps.

► In good nursery ponds, hatchlings of catla stocked at the rate of 10,00000 to 12,50000 per hectare, grow to a length of 20-25 mm in 15 days.

► Catla attains maturity when about 2 years old.

► In 5 kg female, a total number of 40,00000 ova were found which gives the fecundity to be 80 eggs/g body weights.



Nutretive value of catla catla

S.N.	NUTRITIONAL COMPONENT'S	VALUE for 100 gm FISH
1.	Energy (cals)	111
2.	Moisture (gm)	74
3.	Protein (gm)	19
4.	Fat (gm)	02
5.	Mineral (gm)	01
6.	Fibre (gm)	-
7.	Carbohydrates (gm)	03
8.	Calcium (mg)	530
9.	Phosphorous (mg)	235
10.	Iron (mg)	01

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Labeo rohita

► Rohu also grows very fast but is relatively little slower than Catla. They become mature in 1 year.

► The hatchings of Rohu when stocked at the rate of 10,00000 to 12,50000/ha grow to a length of 25-30 mm in 15 days, and the survival rate is 50%.

► In Rohu the average ret of egg is 1258/gbw.

► The weight of Rohu is (33-45cms) 900 g in one year, 2-3 kg in second year and 5-6 kg in third year.



Nutritive Value of Labeo rohita

ROHU - Nutritive Value Of Common Foods	Value Per 100 gm. Foods
Energy (Kcals)	97
Moisture(gm)	77
Protein(gm)	17
Fat(gm)	1
Mineral(gm)	1
Fibre(gm)	-
Carbohydrates(gm)	4
Calcium(mg)	650
Phosphorous(mg)	175
Iron(mg)	

Cirrhinus mrigala

- ▶ This species is widely cultured in India along with other carps.
- It grows fast and fry when stocked at 10 lack to 12.5 lack/ha grow to 25-30 mm in length in 15 days.
- ▶ Both the sexes mature when they are two years old.
- ▶ For induced breeding, they are mature in one year.



STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Wallago attu

► Wallago attu is a species of catfish in the family Siluridae. It is locally known as Padhin and commonly called Wallago.

It can reach maximum 2.4 m (8 feet) total length.

► This south Asian fish is found from India, Bangladesh, Pakistan, Vietnam, Indonesia etc.

It is not good for culture because they consuming more time.

It is mature in minimum 2 years for breeding.



Taxonomical Classification

Kingdom	: Animalia
Phylum	: Chordata
Subphylum	: Vertebrata
Class	: Actinopterygii
Order	: Siluriformes
Family	: Siluridae
Genus	: <i>Wallago</i>
Species	: <i>attu</i>
Binomial Name	: <i>Wallago attu</i> (Bloch and Schneider, 1801)

List of fresh water fishes of Maharashtra

Family 1: notopteridae

- 1) Notopterus notopterus
- 2) Notopterus chitala

Order 2: Anguilliformes

Family 2: anguillidae (freshwater eels)

- 3 Anguilla bengalensis bengalensis

Order 3: Cypriniformes (Carps and minnows)

Family 3: cyprinidae

SUB - FAMILY: CYPRININAE (Barbs)

- 4 Catla catla
- 5 Cirrhinus cirrhosus
6. Cirrhinus fulungee
7. Cirrhinus macrops
8. Cirrhinus mrigala mrigala
9. Cirrhinus reba
10. Ctenopharyngodon idellus
11. Cyprinus carpio
12. Gonoproktopterus kolus
13. Gonoproktopterus lithopidos
14. Gonoproktopterus thomassi
15. Labeo ariza
16. Labeo bata

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

17. *Labeo boga*
18. *Labeo boggut*
19. *Labeo calbasu*
20. *Labeo fimbriatus*
21. *Labeo gonius*
22. *Labeo kawrus*
23. *Labeo pangusia*
24. *Labeo porcellus*
25. *Labeo potail*
26. *Labeo rohita*
27. *Labeo sindensis*
28. *Neolissochilus wynaadensis*
29. *Oreochromis mossambicus*
30. *Osteobrama cotio cunma*
31. *Osteobrama cotio peninsularis*
32. *Osteobrama dayi*
33. *Osteobrama neilli*
34. *Osteobrama vigorsii*
35. *Osteochilus (Osteochilichthys) godavariensis*
36. *Osteochilus (Osteochilichthys) nashii*
37. *Osteochilus (Osteochilichthys) thomassi*
38. *Puntius amphibius*
39. *Puntius chola*
40. *Puntius carnaticus*

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

41. *Puntius deccanensis*
42. *Puntius dorsalis*
43. *Puntius fraseri*
44. *Puntius jerdoni*
45. *Puntius sahyadriensis*
46. *Puntius sarana sarana*
47. *Puntius sarana subnasutus*
48. *Puntius sophore*
49. *Puntius ticto*
50. *Rohtee ogilbii*
51. *Schismatorhynchus (Nukta) nukta*
52. *Thynnichthys sandkhol*
53. *Tor khudree*
54. *Tor mussulah*
55. *Tor tor*

SUB-FAMILY: CULTRINAE

56. *Chela cachius*
57. *Chela laubuca*
58. *Salmostoma acinaces*
59. *Salmostoma balooke*
60. *Salmostoma boopis*
61. *Salmostoma clupeoides*
62. *Salmostoma horai*

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION

Table1: Seasonal representation of upstream fishes in Arunavati dam.

Sr. No.	Species Name	Rainy season	Summer season
1	<i>Channa sp.</i>	+	—
2	<i>Cirrhinus mrigala</i>	+	—
3	<i>Cyprinus carpio</i>	+	—
4	<i>Etroplus suratensis</i>	+	—
5	<i>Fistularia sp.</i>	+	—
6	<i>Hypophthal sp.</i>	+	—
7	<i>Labeorohita sp.</i>	+	—
8	<i>L. bata</i>	+	—
9	<i>L. pangusta</i>	+	—
10	<i>L. fimbriatus</i>	+	—
11	<i>L. kontitus</i>	+	—
12	<i>L. boggnt</i>	+	—
13	<i>Notoptenus chitala</i>	+	—
14	<i>Anguill bengalensis</i>	—	+
14	<i>Mastocembulus armata</i>	—	+

+ Sign indicate the availability status of fishes

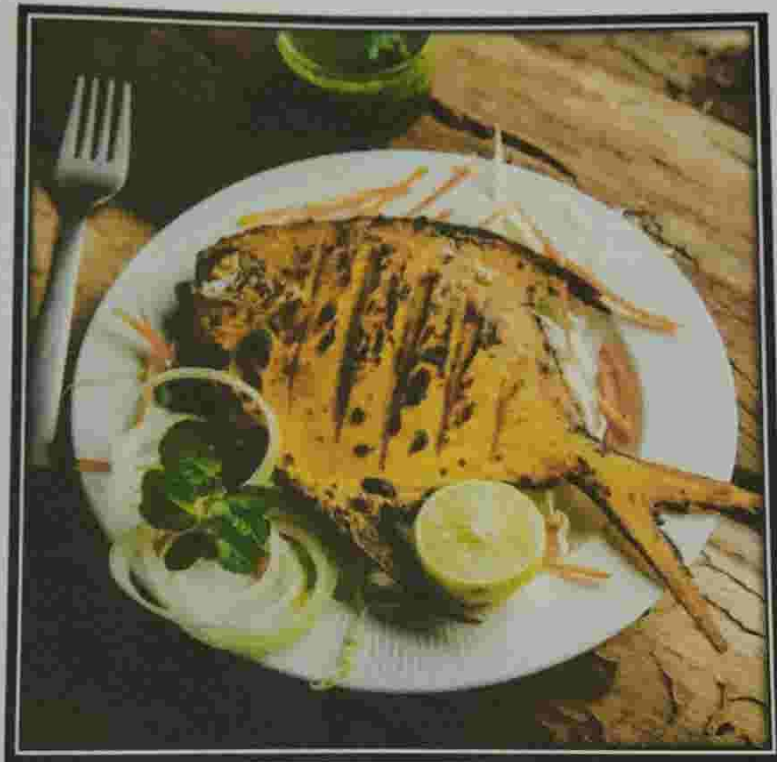
Sr. No.	Species Name	Rainy season	Summer season
1	<i>Catla catla</i>	+	—
2	<i>Mystus seenghala</i>	+	—
3	<i>Notopterus notopterus</i>	+	—
4	<i>Pangasius pangasius</i>	+	—
5	<i>Tilapia mossombica</i>	+	—
6	<i>Wallago attu</i>	+	—
7	<i>Amphipnous cuchia</i>	—	+
8	<i>Clarias batrachus</i>		
9	<i>Tinca tinca</i>		

Sr. No	Characteristics	Values
1.	Dissolved oxygen	10.2 mg/lit
2.	pH	8.2 ± 0.2 s.u.
3.	Temperature	25± 20C
4.	Alkalinity	85 ppm
5.	Total Hardness	64.8 ppm
6.	ParmanentHardness	43.2 ppm
7.	Temporary Hardness	21.6 ppm
8	Salinity	0.01 ppm

STUDY ON EDIBLE FISHES FROM THE LOCAL REGION



STUDY ON EDIBLE FISHES FROM THE LOCAL REGION



FISH DISH

**BAPURAOJI BUTLE ARTS, NARAYANRAO BHAT COMMERCE AND
BAPUSAHEB PATIL SCIENCE COLLEGE
DIGRAS DIST YAVATMAL**



Skill Enhancement Module Activity (SEM) Report

Submitted to
DEPARTMENT OF ZOOLOGY

Submitted By

Name of Students: 1. Munawwar Fatema Abdul Mannan

2. Tejaswini Tulshiram Pawar

3. Nishant Ganesh Jadhao

Class: B. Sc. – I (Sem. II)

SEM Topic : Diversity of Frog From Local Area

Session: 2023-2024

Teacher In-charge

Dr. N. A. Manwar

Dr. Ku. S. K. Parate

Head,

Department of Zoology

Dr. Ku. N. S. Labhsetwar

Introduction :-

There are over 5,000 species of known frogs, and scientists continue to discover new species. Frog species come in a variety of sizes and colors. They can be found in a variety of habitats on every continent except Antarctica. Frogs are amphibians, which are cold-blooded vertebrates, meaning they have backbones, that don't have scales. Amphibians live both on land and in water. Other amphibians include salamander, newt, and

General Classification

Frog: any member of a diverse group of short-bodied, tailless amphibians.

Kingdom: | Animalia

Phylum: | Chordata

Class: | Amphibia

Order: | Anura

There are over 5,000 species of known frogs, and scientists continue to discover new species. Frog species come in a variety of sizes and colors. They can be found in a variety of habitats on every continent except Antarctica. Frogs are amphibians, which are cold-blooded vertebrates, meaning they have backbones, that don't have scales. Amphibians live both on land and in water. Other amphibians include salamander, newt, and caecilian.

What's the difference between frogs and toads? There isn't a difference, the word "frog" includes both frogs and toads. While toads are frogs, toads tend to reference a frog that has particularly dry and warty skin. Toads also tend to have shorter legs and are more heavy-set. Frogs are more likely to live in or near water than toads.

Size and Weight:

Frogs vary widely in size and weight depending on species. For example, the West African goliath frog can grow to 15 inches and weigh as much as 7

pounds. Meanwhile, the Cuban tree frog grows to only half an inch and weighs approximately 2 ounces.

Appearance:

Frogs and toads have almost non-existent necks. However, most species have large, protruding eyes so they can see in most directions without needing to turn their head. Most species are also great at hopping in any direction. They have powerful muscles in their back legs, allowing them to hop great distances. Some frogs can jump over 20 times their own body length, which is similar to a human jumping 30 meters. In comparison, Olympian Mike Powell holds the long jump record of 8.95 meters.

Diet:

Most species eat insects, spiders, worms, and slugs. However, some of the larger species are able to eat larger prey like mice, birds, and small reptiles. Their skin absorbs water so they don't need to drink water. Frogs help keep a large part of the world's insect population under control.

Habitat

Frogs thrive in a large number of environments from tropical forests to frozen tundras to deserts. Their skin requires freshwater, so most frogs live in aquatic and swampy habitats. There are a number of exceptions, including the waxy tree frog, which can be found in the arid region of Gran Chaco of South America. Waxy tree frogs produce a waxy substance that they rub all over their skin to prevent evaporation.

Geography:

Frogs can be found on every continent except Antarctica

Review Of Literature International Study of Spiders

SR NO	Name of Observer	Species	Year	International
1	Frost Darrel R	Duttaphrynus Melanostictus	1998	✓
2	Cannatella David C	Polypedates Maculatus	1997	✓
3	Badger D Netherto J	Euphlyctis Cyanophylatis	1995	✓
4	Kuzmin Sergius L	Polypedates Leucomistax	1999	✓

Material &Methods

Sampling method

- ✦ Transect method of sampling is done for finding the different species of Frog .
- ✦ Transect sampling is a distance sampling method for estimating the abundance of wild animal population.

Photography

- ✦ Device used to take photographs of Frog - mobile phone (realme X2 and other)

Identification

- ✦ By uploading photographs of Frog on Google and then identifying the species.

Method

- ✚ There are two methods of sampling, one is quadrant method and another is transect method.
- ✚ Transect method is used for finding different species of spider web

Photography



EUPHLYCTIS , CYANOPHYLCTIS



COMMON TREE FROG



DUTTAPHRYNUS MELANOSTICTUS



POLYPEDATES LEUCOMYSTAX



POLYPEDATES MACULATS

Morphology

Duttaphrynus melanostictus is commonly called Asian common toad, Asian black-spined toad, Asian toad, black-spectacled toad, common Sunda toad, and Javanese toad. It is probably a complex of more than one true toad species that is widely distributed in South and Southeast Asia.[1]

Duttaphrynus melanostictus

Conservation status

Euphlyctis cyanophlyctis is a common microglossid frog found in South Asia.[1] It is known under numerous common names, including Indian skipper frog or skittering frog.[2] They are often seen at the edge of bodies of water with their eyes above the water. They noisily move away from the shore when disturbed, giving them their common name. They are rarely seen outside water.

Polypedates leucomystax is a species in the shrub frog family Rhacophoridae. It is known under numerous common names, including common tree frog, four-lined tree frog, golden tree frog[2] or striped tree frog. Many past authors have united it with the common Indian tree frog in *P. maculatus* (or *Rhacophorus maculatus*, as was common in older times), but today they are generally considered distinct species. In its native range, it is also called "white-lipped tree frog", but this name is otherwise applied to a species of true tree frogs (family Hylidae).

Polypedates maculatus, the Indian tree frog,[1] or Chunam tree frog, is a common species of tree frog found in South Asia. It was described by John Edward Gray in 1830.[2]

Polypedates maculatus

Observation & Results

Common name	Scientific name	Numbers of species	Common	Rare
Asian common toad	Duttaphrynus	2		✓
The Indian Frog	Polytelodon	2		✓
Indian Skipper Frog	Euphlyctis	2		✓
Common tree Frog	Polytelodon Lucomystax	4	✓	

Conclusion and Discussion

Four different species of Frog are collected from different areas. These

Four species of Frog are,

- ❖ Asian common toad Duttaphrynus
- ❖ The Indian Frog Polytelodon
- ❖ Indian Skipper Frog Euphlyctis
- ❖ Common tree Frog Polytelodon Lucomystax

They live in a different variety of habitat most of species are found in house and some of them are found from forest and farms. some species of

Acknowledgement :-

Thanking to the principal and subject teacher of zoology Narendra Manwar sir for giving such an interesting and amazing project to us and for giving their valuable guidance.

Reference :-

- ❖ Frost Darrel R Duttaphrynus Melanostictus 1998
- ❖ Cannatella David C Polypedates Maculatus 1997
- ❖ Badger D Netherto J Euphlyctis Cyanophylatis 1995
- ❖ Kuzmin Sergius L Polypedates Leucomistax 1999

Digras Vibhagiya Shikshan Prasarak Mandal's
**Bapuraoji Butle Arts, Narayanrao Bhat Commerce
& Bapusaheb Patil Science College, Digras**
Dist.Yavatmal

Affiliated to
Sant Gadge Baba Amravati University, Amravati



Department of Zoology

**ASSIGNMENT / PROJECT ASSIGNMENT /
PRACTICAL ASSIGNMENT / SEMINAR**

Session - 2023 -2024

Class: B.Sc II Semester IV

Subject: Zoology

Topic: Study tour Report
Sohol Wildlife Sanctuary "Kareanja"

-: Submitted By :-

Name: Ku. Vaishnavi Rajesh Vyawahare

Roll No. : _____

Date: 30-03-2024

:: Guided by ::

1) Prof. Dr. N.A. Monware

2) Prof. _____



[Signature]
Principal

Bapuraoji Butle Arts, Narayanrao Bhat Commerce
& Bapusaheb Patil Science College, Digras

Sohol Wildlife Sanctuary "Karanja"

As a part of B.Sc IV, Semester - IV Study tour has been organized to "Sohol Wildlife Sanctuary" Maintained and managed by Forest Department Government of Maharashtra.

✓ All students gathered in campus at 8:00 am. Principal sir addressed students before the beginning of study tour at collage and after that we all students of 2nd year and our teaching staff had started our Journey towards a sanctuary at 9:00 am. The study tour was organized by Department of Zoology and botany so we after travelling a journey of 15 min arrived to fishery project and study tour was started and we move away to wildlife sanctuary.



A wildlife sanctuary is an area where animals, habitats and their surroundings are protected from any sort of disturbance. The capturing, killing and poaching of animals is strictly prohibited in these region. The main objective of establishing a wildlife sanctuary is to educate human as to know them and make them learn how to treat the animals. The animals are taken care of and allowed to live peacefully in their natural habitat.

The study tour was under the guidance of prof. Dr Narendra Manwar sir. It was a memorable experience for all of us. As we entered the sanctuary the beautiful greenery of the place made us speechless and mesmerized. The big trees, the dense foliage different invertebrates and vertebrates the silence of that place, the real beauty of nature thrilled us.



We all visited a part of Bahol-wildlife sanctuaries water reservoir through tracking downroads from the sanctuary resting spot. They provide their boat too but only in Oct to June months. Then we track by the gate of Bahol - wildlife sanctuary clicked a lot of photos with classmates. Friends in group with teacher staffs.

Many Sanctuaries are involved in ecotourism. They offer accommodation, tour guides, nature walks etc. and Bahol wildlife sanctuary comes under ecotourism. Birds are environmental indicators and slight change in environmental conditions can impact their behavior pattern. Population reproduction and migration. Ecologically birds are very important creatures because they help in pollination and pest control. Several roles in seed dispersal.



The Kananga Bahol wildlife sanctuary is notified by Govt of Maharashtra vide notification dated 07 Dec 2000. During the annual assessment of Kananga Bahol wildlife sanctuary a total of 161 bird species from 55 different families and 17 different orders were recorded.

"Peregrine birds" comprises a maximum of 41% of birds with 62 species while charadriiformes shores 12% with 18 bird species.

In India, Muscipidae is the largest family of birds with 370 species but in the present investigation Abotidae (13 species) showed dominance over Muscipidae (10 species) followed by Accipitridae (08 species). The reason behind the maximum number of species occurrence could be the forest type as it contains grassland, water body and mixed tree forest. On the northern side of Mahapashtha the largest protected area i.e. Melghat Tiger Reserve (MTR) has 276 bird species. When comparing the two areas, the Kanha sohal wildlife sanctuary has a higher density of avifauna than the MTR.

The main objective of study tour is to understand importance of wildlife sanctuary, and protection of Endangered species many species of plants and animals are on the verge of extinction such creation are conserved. in wildlife sanctuary. The visit to sanctuary was not only a new experience for us but also very enriching.





I would like to thank collage and department of Botany and zoology for such a good opportunities and hope to have some more curriculum activities like this in future.

[Signature]



Principal
Digrao College, Bhatkuli, Dist. Yavatma (M.S.)

[Signature]

DIGRAS VIBHAGIYA SHIKSHAN PRASARAK MANDAL'S



Bapuraoji Butle Arts, Narayanrao Bhat Commerce
& Bapusaheb Patil Science College, Digras
Dist. Yavatmal

PROJECT BOOK

Session 2023 -2024

Student's Name : Dnyaneshwar G. Vilayalkar, Nandini
Punam Gajanan Patil Rathod

Class : B.S.C. I Sem - II Roll No.:

subject zoology

Project Subject : Study on diversity of frogs from
surrounding area

Diversity of Frog

Date

Page No. 1

Introduction

There are over 5,000 species of known frogs, and Scientists Continue to discover new species. Frog species come in a variety of size and colour. They can be found in a variety of habitats on every continent except Antarctica. Frogs are amphibians which are cold-blooded vertebrates meaning they have backbones, that don't have scales. Amphibians live both on land and in water. Other amphibians include salamander, ^{and} newt ^{and} ^{caecilian}.

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Appearance: Frogs and toads have almost non-existent necks. However, most species have large protruding eyes so they can see in most direction without needing to turn their head. Most species are also great at hopping in any direction. They have powerful muscles in their back legs allowing them to hop great distances.

Some frogs can jump over 20 times their own body length, which is similar to a which jumping 30 mds in comparison, olympian Mike powell holds the

long jump record of 8.95 meters. frogs come in a variety of colours but they have two main color schemes. Both color schemes are used for different survival techniques. the mottled green and brown colors are used for camouflage so predators have a more difficult time spotting them. Meanwhile the bright colors, like those of the poison frogs, say signal or warning sign to predators that their skin is toxic. Some South American frogs are so poisonous that you can die from them. other frogs like the smooth sided tree frog have glands behind the eyes that produce powerful toxins that kill anything that tries to eat them.

As their skin, frogs and toads have a moist and permeable skin layer covered with mucous glands. They are able to breathe through their skin in addition to their lungs. the thin layer of mucus keeps their skin moist and protects them from scratches.

Diet: Most species eat insects, spiders, worms and slugs. However some of the larger species are able to eat large prey like mice, birds, and small reptiles. Their skin absorbs water so they don't need to drink water.



GPS Map Camera

Digras, Maharashtra, India

4PF5+7MR, Digras, Maharashtra 445203, India

Lat 20.123298°

Long 77.709715°

27/03/24 09:34 PM GMT +05:30

Google

Scientific classification

Domain	- Eukaryota
Kingdom	- Animalia
Phylum	- Chordata
Class	- Amphibia
Order	- Anura

Habitat

Frogs thrive in a large number of environments ranging from tropical forest to the frozen tundras to deserts. Their skin requires moisture. So most frogs live in aquatic and swampy habitats. There are a number of exceptions including the very tree frog which can be found in the arid region of Great Thaco of South America. Very few frogs produce a waxy substance that they rub all over their skin to prevent evaporation.

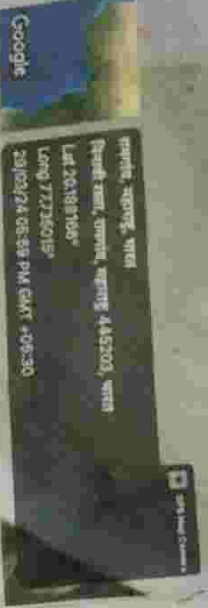
Geography :-

Frogs can be found on every continent except Antarctica.

Social Structure

Frogs are social creatures and live in groups called mating colonies or knots. Similar to fish young frogs will swim together in schools. Each species of frog has a unique call which is used to attract a mate or to warn enemies.

During the mating season the male frogs croak loudly in a group. Some frogs call can be heard up to a distance.



Habitat :-

Frogs thrive in a large number of environment from tropical forests to frozen tundras to deserts. Their skin requires freshwater so most frogs

Breeding :-

Male frogs make calls to attract the females during the mating season. The female will choose a male whose call she releases her eggs in a mating hug called Amplexus. Almost all frog species fertilize the eggs outside the female's body. Amplexus can last hours, days or in some species like the Andean toad, months. The mother will lay for two the more than 50,000 mother egg. Depending on the species.

In many species, the male will guard the eggs. He may transport them on his back in a pouch on his belly, or in his mouth to a safe location until they hatch into tadpoles. Although the father is more likely to perform this task, the mother also perform this task. The mother also perform this task in some species. In some cases, both parents will take turns in a pouch on his belly, or in his mouth to a safe location until they hatch into tadpoles. Safe location until they hatch into tadpoles. Although the father is more likely to perform this task, the mother also perform this task in some species. In some cases, both parent will take turn babysitting the

Certain species have different breeding rituals. For example, the ~~man~~ marsupial frog keeps her eggs in a pouch like a kangaroo. Meanwhile, the Surinam toad of South America keeps her young embedded in the skin of her back. The gastric brooding frog of Australia swallows her fertilized eggs until she releases them when they hatch.

After about two to three weeks, depending on the species, the eggs hatch into tadpoles. Tadpoles, also known as pollywogs, have gills and a tail like a fish but a round head. Over the course of a few months, depending on the species, the eggs hatch into tadpoles. Tadpoles, also known as pollywogs, have gills and a tail like a fish but a round head. Over the course of a few months, the tadpoles will gradually grow legs, absorb their tails, lose their gills and turn into frogs that start breathing air and hopping. This process is called metamorphosis. In a few months, some species take longer. For example, the mountain yellow-legged frog takes at least two seasons to morph due to the cold temperatures and short summer season where it lives.

Lifespan:

The life spans of frogs in the wild are widely unknown, but likely range from one day to 30 years. In captivity, frogs have been known to live more than 20 years.

Threats:

The largest threat a frog species is habitat loss related to human activity and human expansion. For migrating frogs, the increased number of roads and infrastructure through their habitats have increased the number of road kill. Humans have introduced nonnative of ~~poor~~ species like trout and ~~even~~ other frogs to certain habitats that eat many of the native frogs. Population pollutants from human activity often contaminate the rivers and ponds of frogs, killing local frog and tadpole populations. Another major threat to frog populations is the spread of a fungus called chytrid. The disease led to the catastrophic decline or extinction of at least 200 species of frogs and other amphibians. The fungus lives in water, so frogs are easily infected. The fungus covers their thin skin so the frog can't breathe or get water. Not only does the fungus affect the frog, but it also affects larvae and tadpoles, growing them from eating.

Conservation status :-

Many species of frogs, nearly 900 species are listed as "Endangered" by IUCN's Red List, over 500 species of frogs are listed as "critically Endangered." The world is currently facing an amphibian extinction crisis. According to IUCN, 41% of the world's amphibians are threatened with extinction.

Conservation Efforts

There are a number of Conservation groups and government agencies working to protect amphibian species. National Wildlife Federation and Save the Frogs are among the various organizations working toward frog conservation.

In response to the spread of the chytrid fungus, the Panama Amphibian Rescue and Conservation project are working to save frogs through biosecurity, consultation and education, providing disease testing to over 80 zoos nationwide according to a San Diego Zoo Wildlife Alliance. 80 amphibian species in central and south America have been reduced and are being maintained in safe survival assurance colonies until a time when it is safe to return them to their habitat. Twelve of the most at risk species have now reproduced in managed care, including the horned marsupial frog, crowned tree frog, and limo's horned frog.

In the United States, the mountain yellow-legged frog (*Rana muscosa*) of Southern California is critically endangered largely as result of habitat loss, drought, population pollution, introduced predators, and chytridiomycosis. The San Diego Zoo Wildlife Alliance is working to restore the ecosystem balance in its habitat of the San Jacinto Mountains through managed breeding and reintroduction efforts for the mountain yellow-legged frog.

Since 2010 the zoo has successfully reintroduced zoo-bred mountain yellow-legged frog tadpoles into the wilderness. Radio transmitters have revealed a healthy 95% survival rate the first month and they are now breeding in the wilderness.

बापूरावजी बुटले कला, नारायणराव भट वाणिज्य
आणि बापूसाहेब पाटील विज्ञान महाविद्यालय
दिग्रस, ता. दिग्रस, जि. चवतमाळ

Grade A'3.16



प्रकल्प वही (पर्यावरण अभ्यास)
शैक्षणिक सत्र २०२३ - २०२४

विद्यार्थ्याचे नांव :- कु. क्षुती सुनिल बेहरे

वर्ग :- B. A II

प्रकल्पाचा विषय :- सोहोळ कारेन - काळवीट

अभ्यासकारण अभ्यासविषयक राखीवसीय भेटीच्या
प्रकल्प.

प्रा.डॉ. कु.पी.डी.भट
मार्गदर्शक



डॉ. अरविंद लाडोळे
प्राचार्य

Principal

Bapuraoji Butle Arts, N.B. Commerce & B.P. Science College,
Digras, Dist. Yavatmal, M.S.

बापूरावजी बुटले कला, नारायणराव भट वाणिज्य आणि
बापूसाहेब पाटील विज्ञान महाविद्यालय
दिग्रस, ता. दिग्रस, जि. यवतमाळ
शैक्षणिक सत्र 2023-2024

प्रमाणपत्र

प्रमाणित करण्यात येते की,

कुं./श्री मृती सुनिन बेहरे

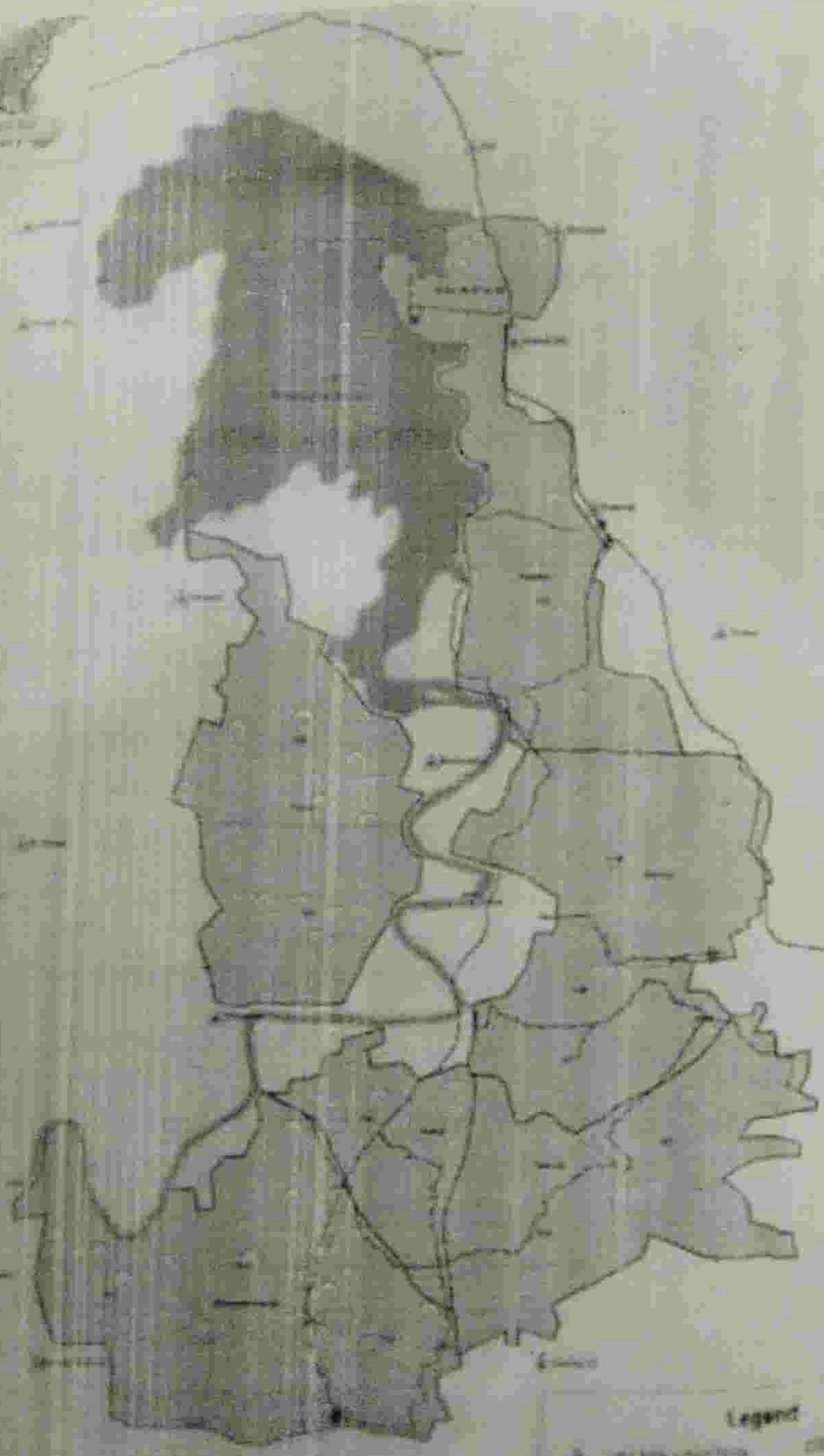
हा/ही बापूरावजी बुटले कला, नारायणराव भट वाणिज्य व बापूसाहेब पाटील
विज्ञान महाविद्यालयाचा विध्यार्थी/विध्यार्थिनी असून शैक्षणिक सत्र 2023-2024
साठी त्याने/तिने

कारंज सोहोळ काळपीट अभ्यासय

या विषयातील प्रकल्प तयार केला आहे



KUPDB
प्रा.डॉ.कु पी.डी.भट
मार्गदर्शक प्राध्यापक



Legend

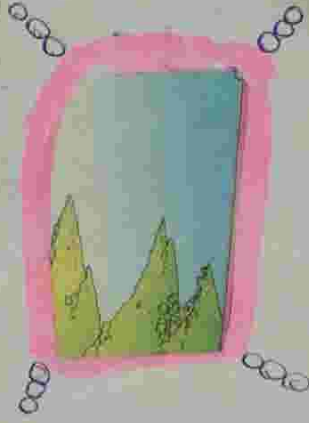
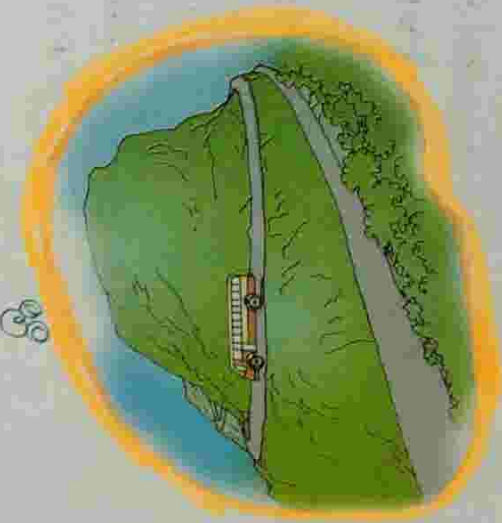
- | | | | |
|---|---------------------|---|------------|
| • | Settlement location | • | Water body |
| — | Water body | — | Water body |
| — | Roadway | — | Roadway |
| — | Road | — | Road |
| — | Water body | — | Water body |

અનુક્રમણિકા

अ.क्र.	प्रकरण	पा.नं.
१)	प्रस्तावना	
२)	पूर्वतयारी	
३)	काटेपूनी अभियान	
४)	वरिष्ठे	
A)	i) महाराष्ट्र राज्य वृक्ष - ओवा ii) शनिभेंडी iii) वेचकुसळ	
B)	i) महाराष्ट्राचे राज्यफुल - ताम्हण ii) फुलपाखरे iii) विषळा कडा	
५)	iv) फुलपाखरांचे जीवनचक्र	
६)	v) गायला प्रदेश	
7)	vi) निशाचर प्राणी	
	vii) विषळा / बिबट	
8)	viii) समारोप (निष्कर्ष)	

DIGRAS
Pin Code-445203
Dist. Yavatmal
(M.S)

वा.यु.कला, ना.भ. वाणिज्य व वा.पा.विज्ञान महाविद्यालय, दिग्रस. । विद्यार्थी सेवा केंद्र ।



-४- प्रस्तावना :-

ऐद्वारिक वर्ष २०२३-२४ यावधी मी वी.वी. आर्ट्स, N.B. Com. एचिप. डल कॉलेज दिवस येथे B.A च्या द्वितीय वर्षाचा शिकत आहे. मला पर्यावरण अव्यास हा विषय अभ्यासक्रमाला असून आम्हाची सोहळ-कारंजा येथे एकदिवसीय दुर बनेण्याचे आयोजन करण्यात आले होते.

कारंजा-सोहळ अभ्यासक्रम हे प्राथमिक निव्व्यातीन शुभारे १४ चौ. किमी. क्षेत्रावरील खेडेसो अभ्यास आहे. कारंजा सोहळ हे काळविदांसाठीचे अभ्यासक्रम म्हणून ओळखले जाते. काळविदांना राहण्यायोग्य जागा तयार करण्यासाठी आणि त्यातून काळविदांची संख्या वाढविण्यासाठी व ल विवाहाने प्रयत्न सुरू केले. येथे काळवीट-नीमगाय, शनदुकर विघ्न येते.

कारंजा सोहळ हे पाश्चिम विव्व्यातीन वाणीम निव्व्यात असून कारंजा पासून मातारो बोट व २७-४५० अंतरावर आहे. कारंजा सोहळ हे अभ्यासक्रम १४.३१.५५० परिसरात पसरलेला आहे. कारंजा सोहळ अभ्यासक्रम हे मुख्यतः काळविदांसाठी प्रसिद्ध आहे. तसेच २००० साली या अभ्यासक्रमाचा अभ्यास आहे. कारंजा सोहळ कोणे



— ० — पूर्वतयारी ० —

अवधारणांना मोट देताना पूर्वतयारी :-

१) अवधारणांची स्थिती आणि चाच्या परिसरातील प्रणिजीवन .

२) प्रेरणाशुल्क आणि वेळापत्रक

३) पर्यटकासाठी इयत्ता आहे किंवा पर्यटक गाडी , इतर गतिविषयांसाठी काय आवश्यक आहे .

४) जलकृत्व आणि खाद्यान्ना पाण्याच्या स्तोत्राची माहिती .

५) सुरक्षा पालन करणाऱ्यांनी आवश्यक असलेले उपकरणे आणि कार्यक्रम

६) प्राणी आणि पक्षीजन्य स्थानांची माहिती , सुरक्षित अनुभवसाठी सुनिश्चित जाग्ये ठरवणे .

७) सोबत पेन , वही , कॅमेरा , दुखा , वाईलड तसेच प्रथमोपचार पेटी घेणे आवश्यक .

अवधारणामा मोट देण्याच्या आवाजाच्या अनुभवासाठी आपल्याला आदेश आणि भावस्थे तयारी करायची तेव्हा सर्व नियम आणि विनिमयांचे पालन करावे .



-० कटिपूजा अभ्यासः :-

महाराष्ट्र शासन अभिसूचना क्रमांक WLP/

102872/F5 दिनांक 8/02/1988 अनुषंगी

73.69 चौकी क्षेत्र हे कटिपूजा वन्यजीव अभयारण्याचे

क्षेत्र म्हणून घोषित झाले आहे. यागळ्या राजीव वन

38.85 चौकीमी. आहे. कांरंजा सोहोळ अभयारण्य हे

कटिपूजा अभयारण्यास एक भाग आहे. हे अभयार

ण्य वनपर्यटनासाठी प्रसिद्ध असून निसर्ग शिक्षण

प्रदान करण्यासाठी तेथे अनेक सोईसुविधा निर्माण

केल्या गेल्या आहे. वनपर्यटन बोरणाप्रमाणे

अभयारण्य निसर्गरम्यतेचे द्वायेजम मोठ्या प्रमाणात

केले आहे. निसर्गशिक्षण प्रदान करण्यासाठी कांरंज

सोहोळ अभयारण्याच्या प्रवेशद्वाराजवळ ऑन्सार्टीक

नथनरम्य ठेवले आहे. निसर्ग शिक्षण मनोरा, निसर्गति निवा

वराण्याची व्यवस्था, बालोद्यान इत्यादींचे निर्माण

केलेले आहे. मॉडल निसर्गपरिचर्य केंद्र ज्यागळ्या

पशुपक्ष्यांचे आवाज सुमूत केलेले उपकरणे, डिजिटल

रिफ्लेक्स प्रकाशमान हाणारे वन्य प्राण्यांचे अनेक

चित्र, नयनरम्य वन्य प्राण्यांच्या पुतळ्यांचे प्रदर्शन

निसर्ग पाऊलवाट छात्रांची निर्मिती केल्या गेली.

तसेच विद्यार्थ्यांची सहल नुसती शैक्षणिक

सहल न होता. मनोरंजनात्मक कशी होईल?

याचा विशेष प्रयत्न वन्यजीव विभागाने केला

आहे. परिसरात पशुपक्षी आणी

किटक, पशुपक्षी आणी

महाराष्ट्र शासन
पर्यावरण व वन विभाग
पुणे

दिनांक 8/02/1988
अनुषंगी 73.69

चौकी क्षेत्र हे कटिपूजा
वन्यजीव अभयारण्याचे

क्षेत्र म्हणून घोषित झाले आहे.

- १: वर्णने :-

① महाशय्द्र राज्यवृक्ष - आंबा
आंबा हा मह्यम आकाराचा डेरेदार, पर्णसमूहाने
सोपित व सवदार फळे देणारा वृक्ष आहे.

हा वृक्ष पूर्ण देवान विपुल प्रमाणाने आढळतो. याच्या
अनेक जाती आहेत. याच्या फळाच्या अनेक जाती
जगाप्रसिद्ध आहेत.

② लॅनमॅडेली :- लॅनमॅडेली हा हुळी वारी असेही म्हणते
आले. लॅनमॅडेलीचे झुडूप आसुन, तिळा
पाकडे फाट असतात. उळा कटीबघात ही लॅनमॅडेली
सर्वत्र आढळते. विशेषतः कोल्हापूर, जिळ्यामध्ये सर्वत्र,
कोकण, वाटमाथा इथे ती आढळते. ताप, सदी, ओकळ,
मूतबडा यावर पारंपरिक पद्धतीने अथुवेदिक सत्वमंडले
जाले.

③ लॅनमॅडेली :- *Alseodaphne* *sessiliflora*
ही एक जंगली वनस्पति वनस्पती आहे.
जी जंगल वनस्पतीत जंगली ओळखली जाते. हिची
जंगल वनस्पती काली ठिकाणी वाजी मूळून लागवड केली
जाते. ही एक खरसाही वनस्पती आहे. ज्यामध्ये
टोळीचे दांडे असतात. ही वनस्पती उष्णकटिबंधीय
आणि उपोष्णकटिबंधीय प्रदेशांमध्ये आढळते. हवेलीमध्ये
मूळून वनस्पतीमध्ये लक्षणीचे प्रमाण वाढवतात पदधि
शीतकरण. लक्षणीवर्षक आणि एक चुलामी आहेत
वृक्षाला ह्याची यावा. लक्षणीवर्षक वापरले जाते.



वा. दु. कला, ना. म. वाणिज्य, विज्ञान, विद्यार्थी सेवा केंद्र । विद्यार्थी सेवा केंद्र ।

वा. दु. कला, ना. म. वाणिज्य, विज्ञान, विद्यार्थी सेवा केंद्र । विद्यार्थी सेवा केंद्र ।

वा. दु. कला, ना. म. वाणिज्य, विज्ञान, विद्यार्थी सेवा केंद्र । विद्यार्थी सेवा केंद्र ।

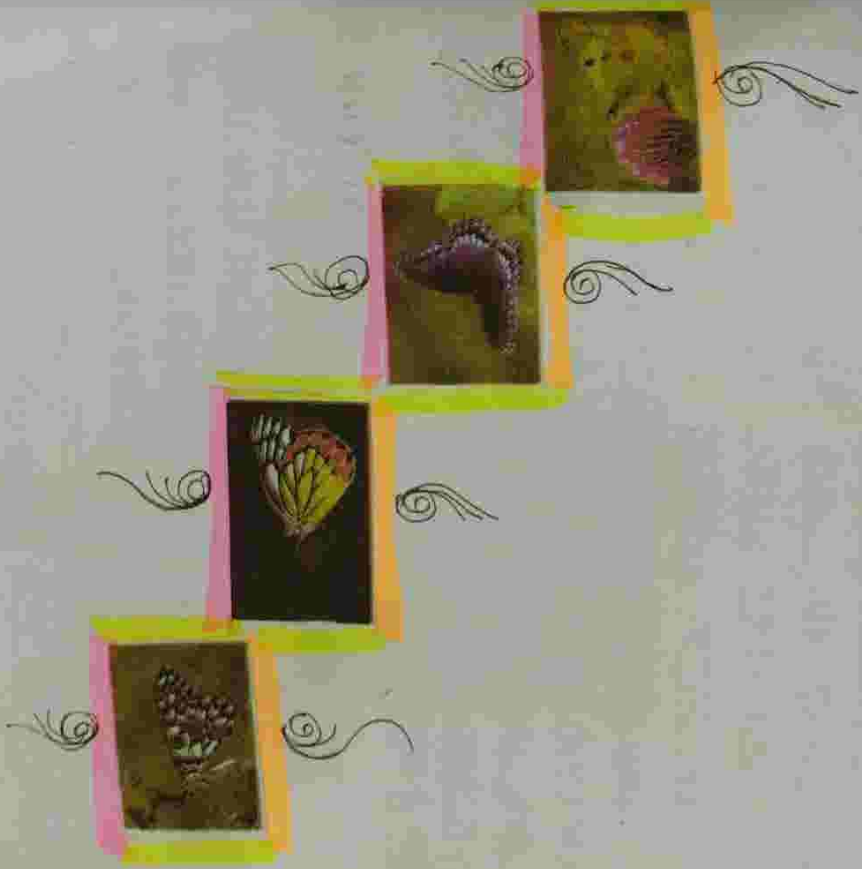


आंबा





ताम्रहर्षा



महाराष्ट्राचे राज्य-फुल = ताम्रहर्षा

१) ताम्रहर्षा १-

हा फुल देवारा वृक्ष आहे. या वनरातीना फुल्ले द्याकाराणो वनेच्या सुभावास म्हणजेच महाराष्ट्र दिन काळात येत असल्याने याचे फुल महाराष्ट्राचे राज्यफुल आहे. महाराष्ट्र फुल मानसर जोड्या रंगांमुळे आकर्षक होते.

मूळचे उपखंडातील अरानारे हे फुल आपल्या नावपद्धतीमुळे आता युरोप - अमेरिकेतही पोहोचले आहे. वैज्ञानिक नाव :- Lagerström speciosa

* फुलपाखरे - *

फुलपाखर हे एक आकर्षक रंगाचा पंख असलेला एक किटक आहे. फिरफावा बोकरोट, आणि खाती हे अवशव अन्नात फुलपाखरांना या जोडीने पंख आणि मिश्र असतात. फुलपाखरे गिशांनी वासा होतात पर पायाने चव ओळखतात. फुलपाखरांच्या अनेक जाती आहे. पैकी एक म्हणजे विषक्या कडवा :- विषक्या कडवा या जातीच्या फुलपाखरांनी मादी रक्तीच्या पानांवर अंडी घालते. अड्यामधून रसा ते आठ दिवसांनी अडी बाहेर पडते. या अंडीनाच सुरुषट म्हणतात. फुलपाखरांना सुरुषट अड्याकून बाहेर पडणेची शक्ती वखवणेला असतो. मोनाफे जातीची फुलपाखरे लोभ प्रवासासाठी मिश्र आहे.

मा. गु. कला, मा. विद्यापीठ सेवा केंद्र. विद्यापीठ, विरार. महाराष्ट्र





मोनार्च फुलपाखर



कोशातील फुलपाखर



कोशातून फुलपाखर बाहेर येताना



फुलपाखराचे जीवनचक्र

—० फुलपाखराचे जीवनचक्र ०—

फुलपाखराचे जीवनचक्र प्रक्रिया म्हणजे त्याच्या जीवनाची अर्थावर्तिन प्रक्रिया आणि उत्पन्न झालेले प्रकारांची वर्णने करणे. फुलपाखरांचे जीवनचक्र चार टप्प्यांत होतं. अंडी, अर्वा, कोडा, पतंगा आणि फुलपाखर. अंडे/अंडी - विशिष्ट जातीची फुलपाखरे ही काही विशिष्ट जातीची प्रकारच्या खांडावर अंडी बाळतात. प्रत्येक जातीच्या फुलपाखरांचे होस्ट प्लान्ट ठरलेले असते. फुलपाखराची मादी ही मिलनानंतर लगेचच तिला हवे असलेले खांड शोधते व त्यावर अंडी घालते. अर्वा उगळ्या किंवा सुबवंट दोन ते तीन दिवसांत अंड्यातून बाहेर पडतात. होपीन उबवलेली सुबवंट स्वतःची अंडी खातो आणि नंतर वाढण्यास पुन्हा गिकवण्यासाठी पाने खातो. सुबवंट पुढकळवला पाहो आणि बुद्धमकतो आणि सुमारे तीन ते चार आठवड्यांनंतर तो र्युपेट होऊ लागतो. ताकदा सुबवंट उगवणे आणि वाढणे पूर्ण झाल्यावर, पान संप्रेरकांची कमतरता असते, ज्यामुळे सुबवंट स्वतः शोषणी राक रेशीम कोकून किंवा चमकदार क्रिस्टली बनवतो. आणि राक अण्व फुलपाखरासहच गुप्ततः स्वपोतरित होऊ लागतो. अशाप्रकारे फुलपाखर सगळे बेव्यायी अवस्थांमधून जाऊन फुलपाखरे तयार होतात.



-० गवनाळ प्रदेश ०-

गवनाळ प्रदेशात लूणभक्षक व त्यावर जागारे मांसभक्षक असलेली प्राणी प्रचुरपणे पाठी राहतात. प्राण्यांचे रंठा व त्यांच्या अंगावरील परत किंवा पट्टेकें त्यांमुळे ते गवतात वाटकन दिसून येत नाहीत या रंठासादृश्याचा फायदा संरक्षण पत्तावन व आक्रमण यासाठी होतो. लूण भक्षकांना छळकट पाशामुळे वेगाने पळून जाऊन जातुपासून वचाव करता येतो. पृथ्वीवर उष्ण व समशीतोष्ण कटिबंधात खंडांच्या अंतर्भागात मुख्यतः गवताने आच्छादित व विस्तृत, स्पाट, मैदानी व पठारी गवताळ प्रदेश आढळतात. पृथ्वीवरील जमिनीचा अनुमात्रे ३५% भाग गवताळ प्रदेश आहे.

गवताळ प्रदेशात पाऊस इतक्या वेगळा पडतो, की त्याची खोळ जमीनीच्या खालच्या थरापर्यंत पोहोचत नाही. ती वस्त्रा थरातच राहते. ही गोष्ट झाडांपेक्षा गवताच्या वाढीला अधिक पोषक असते. अधूनमधून हिमगाऱ्या व फुलानी बहरलेल्या डोंरेदार वृक्षांमुळे हा प्रदेश खुलून दिसतो. नैऋत्य मासून पावसाच्या आगमनाच्या बरोबर गवताला फुट येते, आणि इतल्या तीन शुष्क काळात गवत वाकून जाते, त्यामुळे गवताळ प्रदेशाचे स्वरूप कंठामी असते. महाराष्ट्रातील वाढीला अभयारण्य, राजानगरी तसेच कारंजा पाठवाथ्यास





Leopard - विषळ्या / बिषट



० निशाचर प्राणी ०

निशाचर प्राणी हे दिवसा सोपणारे किंवा विश्रांती होणारे व रात्री जागणारे असतात. निरर्ग परिचय केंद्रातील या साक्षामध्ये आपल्याला निशाचर कीटक, पक्षी, आणी प्राणी यांची ओळख करून देणारे आहेत. निशाचर सजीव हे रात्री शिकार करून आपले जीवन व्यतीत करतात.

विषळ्या / बिषट :-

विषळ्या हा चपळ, टाकटा शहणारा आणी निशाचर प्राणी आहे. कोणत्याही भागात स्वरूपण वावरणारा दलाख संधीहीन शिकारी आहे. आपल्या शक्तिमान जबड्यामुळे आणी शक्य कवटीमुळे आपल्यापेक्षा असले वजनाच्या प्राण्याची शिकार स्वरूपण करू शकता. प्राण्याने हरीण, खीमगाय, राजकुकर आणी माकडांची शिकार करणे वर विषळ्याची लक्षणी १५५ सेंमी. व साशिवय बेपटीची लक्षणी ८० सेंमी असते. वजन मुळे ७५ किलोग्राम असू शकते. मादीचा आकार नरपेक्षा लहान व वजन नरपेक्षा कमी असते.





बापूरावजी बुटले कला, नारायणराव भट वाणिज्य
आणि बापूसाहेब पाटील विज्ञान महाविद्यालय
दिग्रस, ता. दिग्रस, जि. यवतमाळ

Grade A'3.16



प्रकल्प वही (पर्यावरण अभ्यास)
शैक्षणिक सत्र २०२३ - २०२४

विद्यार्थ्याचे नांव :- कु. पुनम किशोर रोठोड
वर्ग :- B.A. II
प्रकल्पाचा विषय :- कांरजा सोहळा
अध्ययन सेट

प्रा.डॉ. कु.पी.डी.भट
मार्गदर्शक

Seen



डॉ. अरविंद लाडोळे
प्राचार्य

Principal

Bapuraoji Butle Arts, N.B. Commerce & Bapusaheb Patil Science College, Digras

अनुक्रमणिका

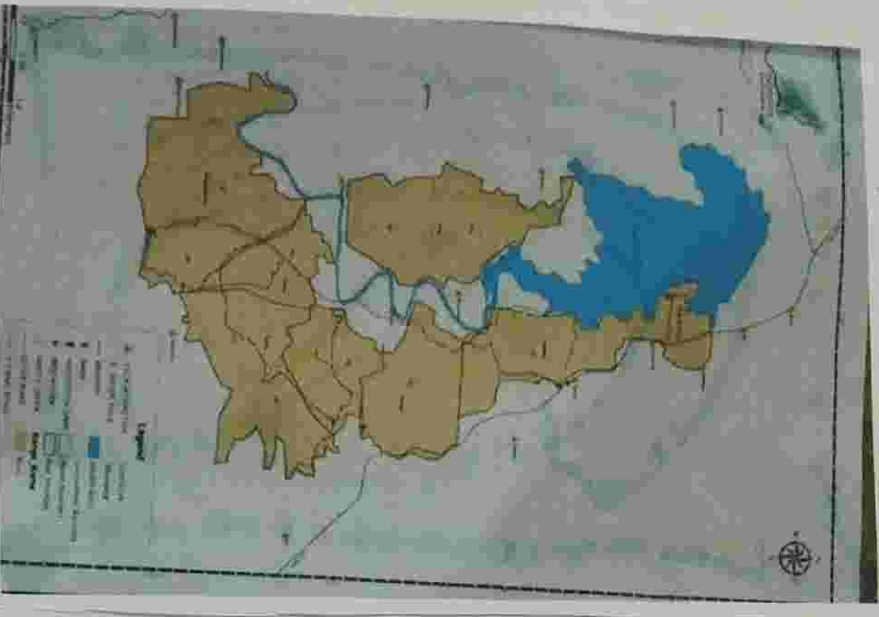
अ.क्र.	प्रकरण	पा.नं.
	बिबट्या	५ ते ५
	सिंह	६ ते ७
	अस्वल	८ ते ९
	गोर	१० ते ११

पर्यावरण हा विषय B.A. II Year
आसा. या वर्षापासून लागू झाला आहे.
त्यासुद्धे आमच्या कॉलेज तर्फे एक सक्षम
आयोजित करण्यात आली होती. तो सक्षम
14/02/2024 रोजी कापंजा येथे काळवीट
अभयारण्यात येथे नेण्यात आली होती.
या सडलीचे मार्गदर्शन करण्यासाठी डॉ.
मट्ट मॅडम आणी डॉ. मगत सर. यांनी
आयोजित केले होते..

Exs

काट्यपूर्ण अभयारण्य महाराष्ट्र शासन
अधिसूचना क्र. WLP/ 2028+2/F5
दि. 8/2/1988 अन्वय 43-69 चौंस किमी
मीटर क्षेत्र हे काट्यपूर्ण वन्य जीव अभयारण्याचे
क्षेत्र म्हणून घोषित झाले आहे.
यामध्ये राखीव वन 38.85 चौ. मै. कि.
मीटर आहे....





कारंजा रोहड अक्षयारण्य हे कोटपुर्न
 अक्षयारण्याचाच एक गावा आहे हे अक्षयारण्य
 वनपर्यटनासाठी प्रविष्ट असून निसर्गविषयक
 प्रवाह करण्यासाठी तेथे आहिक स्पेड सुविधा
 निर्माण केव्हा अक्षयारण्या निसर्ग राहणीये
 आयोजन झाल्या. प्रचलित केले जाणे.
 निसर्गविषयक प्रवाह करण्यासाठी कारंजा
 रोहडा अक्षयारण्याच्या प्रवेशद्वारापासून
 भूकंपाटीत नगरपालिका नगरा पश्चात. निविदाक
 झालेला. निसर्गान निर्माण असल्याची व्याख्या
 ज्ञानाच्यात. न्यायिक निर्माण केलेले आहे.
 फक्त, निसर्ग परिवर्तन केंद्र आसमळी पशुपाक्ष्यां
 चे आवाज सुधीत केलेले उपकरणे डिजिटल
 रज्ज्वल प्रतवक्षमाण निसर्ग नगरा पश्चात
 पाण्याचे अनेक निसर्ग नगरा पश्चात
 पाण्याच्या पुनरुत्थानाचे प्रयत्न निसर्ग
 पाण्यात झालेली निर्मिती केव्हा
 ज्ञाना अज्ञाना



तसेच विद्यार्थ्यांची सहज लुप्त होती
शैक्षणिक सहज न होता मनोरंजन, तमल
कडी होईल यांचा विशेष प्रयत्न वन्य-
जीव व विज्ञानात केला आहे.

परिसरात असणारे कितळ पशुपक्षी
आणि अनेक वनस्पती पाहण्याची
संधी पर्यटक विद्यार्थ्यांना आणि पर्यटन
मिळते. वनस्पती, व वनजीव विज्ञान
तर्फे प्रश्नमंजुषेचे सुद्धा आयोजन
केले जाते. त्या ठिकाणी विद्यार्थ्या-
पाठ्यांच्या व्यक्ती व्यवस्थेबरोबरच सुद्ध
व स्वच्छ परिसर सुद्धा पाहण्यास
मिळाला आहे. अशाप्रकाराने युवा युवा
विद्यार्थ्यांमध्ये निरोगी प्रेम नैसर्गिक
बोवस व निरोगाचे सर्वेक्षण सर्वेक्षण
करण्याचे भावना निर्माण करणाऱ्याचा
प्रयत्न याद्वारे केला गेला
आहे.





हिम बिबट्या

१. हिम बिबट्या

आरक्षीय वर्गीकरण

वर्षा :	पृष्ठवंशी	उपकुळ :	पॅन्थरिने
जात :	स्मरुतल	जातकुळी :	Uncia
वर्ग :	भार्यासक्त		
कुळ :	फोमिडे	जीव :	Uncia

हिम बिबट्याचे / वर्णन

हिम बिबट्याच्या अंगावरील केस हे पांढरे आणि राखाडी रंगाचे आहेत. डोक्यावर आणि मानेवर काळ्या रंगाचे डाग असलेले राखाटपणा मिळतात.

त्याच्या आरीखरीय केस हे उडू आणि उने १२ सेमी लांब असतात. हिम बिबट्याचे आरीय हे पॅन्थरस या जातीच्या जंगल सांजरी पेक्षा पड्डात आहे. त्यांचे वजन २२ किलो ते ३५ किलो, पर्यंत असते. त्यांचे वसुधन जात २०६ मिमी असून त्या पॅन्थर जातीच्या पुढाची पातळ असते. त्यांचे पसरत पुढे अपावट्यासमोरी

मधून काढतात

माहितीसाठी :
Dist. Yavatmal (M.S.)

Dist. Yavatmal (M.S.)

माहितीसाठी :
Dist. Yavatmal (M.S.)

माहितीसाठी :
Dist. Yavatmal (M.S.)

२. सिंह.....

आरसीय वरीकरण

वर्ग :-	पृष्ठवर्गी	जान कुळी	पेशेरा
जात :-	संयुक्त		
वर्ग :-	सांख्यिक	जीव	पेशेरा
कुळ :-	सांख्यिक		पेशेरा

सिंह :-

सिंहान्या आरसीयनीय केसाचा

रंग पिवळसर, लाल तेज गोळा पांढऱा

असतो. प्रकाशामध्ये हा रंग चांदीसारखा चमकतो.

पूर्ण वाळ झाल्यावर सिंहचे वजन १६० ते

१७० किलोग्रॅम असते. तर सिंहानी वंची ३०५

ते १ फुटांपर्यंत असते. सादी सिंहाने वजन १००

ते १५० किलोग्रॅम असते. तर सिंहान्या मानेचा

रंग हा पदमांबुसार व पांढऱ्यासार बदलत

असतो.

अभिवाप

सोपानाच्या गिर जंगलामध्ये

सिंह रांगडीगोशाली अभयारण्य उद्घुष्ट

३५५२-२ रोजी कि. मी. क्षेत्र छानित केले.

असत.



सिंह



3. अरवान

आरसीय वसिकरण

वडा नं.	प्रकळणीय	कुळ
जान	अरवान	जानकुळी
वडा	आरवाक	जिव
		A. luyens

वेळिछे / वरिण :

अरवान हा निआचप

अरवान मागी आहे. ह्याच्या पाठीवरचा रंग

नांगुरा आहे. व पोताळुव रंगा कसा आहे.

जेव्हा हाडप नणिकरी रंगाचे व मोठी लड असते.

आरवाच्या मागेचे पांचे डोळे मोठे आणि

नाक ठेकणार असते पाय लहान. पुंजे हारदार

लखांचे असतात. नांगड्या पांढा आडावर

चडल्यात पटर्न असतो.

अडिवास :

आरवाची मांजरे हे पूर्वी

हिमाचलातील गोपाळ अरुणाचलप्रदेश नसेच

उत्तर म्यानमार आणि ब्रह्मचल चीन भाषातील

स्मशानांमधील वसात आढळतात.



अरवान



बा. अ. कल.



महाराष्ट्र साहित्य अकादमी, विभाग : विद्यार्थी सेवा केंद्र ।

५. मोर

आरसीय वर्गीकरण

जीवसृष्टी :	प्राणी	वर्गी	पुष्पकृतज्ञा
वंश :	कणाद्यापि	कुळ	पुष्पकृतज्ञा
जात :	पक्षी	जीव	क्रिस्टस

वैशिष्ट्ये :

मोर मोर चमकदार रंगाचा असतो. मुख्यतः निळ्या पंखासारख्या रंगट्या. निळ्या रंगट्यांच्या पंखांच्या खिळार असतो. पांढऱ्याक वरच्या शेपटीच्या भाग पंखांमि लवंगेल्या पांढऱ्या रंगट्यामि ओळखता जातो. रंगीलपेची डोळे असतात. मोर हा मोठ्या आकाराचा पक्षी आहे. चालत नसताना मोर १००-११५ सेंमी (३९-५५ इंच) आढी पुढी वाढ करिल्यामि तिसऱ्याच्या शेपटी १९५-२२५ सेंमी (८१-८९ इंच) इतकी असते. मोराचा वजन ५-६ किग्रे. पर्यंत असते. मोर उडणेच मादी सुमारे ९९ सेंमी (३९ इंच) लांबीच्या असतात.

आवासस्थाने :

मोर हा भारतामध्ये उपलब्धत पर्यंत उपलब्धत मोर ओढ हा मीनपेच्या कोरड्या रकत भागात देखील आढळता आरसीय

हा पक्षी ५५०

मोर



मोर हा भारतामध्ये उपलब्धत पर्यंत उपलब्धत मोर ओढ हा मीनपेच्या कोरड्या रकत भागात देखील आढळता आरसीय हा पक्षी ५५०