

**Kisan Veer Mahavidyalaya, Wai**

**Department of Environmental Studies**

**Class: BCA- II**

**Academic Year- 2022-23**

**Project Report**

Sr. no.	Roll no.	Seat No.	Students name	Project name
1	2	6682	Vaishanavi Balaso Pisal	Vermicomposting
2	66	6662	Palvi Mehara	
3	4	6672	Neha Satish Kumbhar	
4	3	6673	Pranali Anandrao Kumbhar	
5	10	6658	Anisha Rajendra Bhosale	
6	11	6650	Pratiksha Narayan Kondhalkar	Environmental protection
7	12	6653	Neha Kashinath Sanas	
8	50	6654	Farheen saeed shaikh	
9	9	6634	Suraj Kisan Beloshe	Noise pollution
10	41	6668	Swati tukaram chikane	
11	42	6680	Yasin faruk patel	
12	34	6667	Diksha manik chaudhari	Ecosystem
13	35	6675	Rutuja uttam khamkar	
14	7	6679	Sunny Shantaram Navghane	Preservation of Marine life
15	8	6677	Vaishnavi Suresh Mutake	
16	52	6633	Vaibhav sajadev mandhare	
17	15	6681	Shruti Kiran Pisal	Ocean pollution
18	16	6666	Akanksha Mohan Bhoite	
19	30	6642	Shubham sadanand gaikwad	Garbage Management
20	31	6669	Piyush dattaram chorat	
21	53	6660	Tejas Shankar agunde	
22	6	6686	Shubham Subhash Uंबरkar	Land Resources
23	27	6674	Rahul gautam kamble	
24	28	6670	Sumit dattatray kenjale	



25	17	6657	Tanvi Ramkrishna Shirsat	Effect of Mining
26	47	6637	Pratik promod waghulkar	
27	40	6683	Ankit vijay sakpal	
28	44	6648	Vidya Shivaji dhanawade	Problems related solid waste at wai
29	45	6659	Sakshi chandrashekhar paramane	
30	46	6678	Sakshi ajit nanaware	
31	1	6652	Ankita Shankar Pisal	Climate Change
32	48	6631	Shreyash santosh jadhav	
33	49	6663	Ankita yashwant ranjane	
34	37	6643	Tejas Shivaji gadhave	Water pollution
35	55	6636	Sanket ghanashyam shirke	
36	39	6685	Roshan uddhav shirke	
37	26	6665	Pratik aananda washivale	Forest resources
38	29	6630	Jayraj Rajendra Shinde	
39	38	6651	Ashish virendra kadam	
40	18	6649	Prashant Shahaji Jadhav	Renewable and non-renewable resources
41	19	6640	Tanmay Sanjayu Sanas	
42	20	6664	Samruddha mohan shewale	
43	22	6687	Aniket dattatray vare	Study of soil erosion
44	23	6661	Sujal anil gaikwad	
45	24	6638	Yash sanjay jambure	
46	25	6639	Varunraj prataprao sanas	
47	43	6641	Nikhil santosh nalawade	
48	13	6644	Dhula Sanjay Kachare	Air pollution
49	21	6655	Prathamesh rajendra sanas	
50	60	6688	Varun singh	Organic farming
51	64	6676	Majid hussain para	Global warming
52	65	6671	Abass kumail	Biodiversity
53	54	6684	Abrar Nisar Sayyad	
54	14	6632	Chaitanya ankusha ranjane	
55	32	6645	Aniket Namdev Mahangade	Endangered species animal and
56	33	6646	Sumit Sunil Mahangade	

57	36	6656	Aditya Ratnakant shinde	plant
58	58	6647	Abhishek pramod Pawar	Urbanization and environmental problems
59	57	6628	Amol Shankar mahangade	
60	56	6629	Nikhil dattatray mahangade	
61	5	6689	Shubham subhash wadkar	Energy resources and consumption
62	61	6635	Adarsh ashok jamdade	Pandemic covid -19 and its implication on human life

Total Students: - 64

Total no. of students submitted project work: - 62

Total no. of absent students: - 02



Head of Department  
Environmental studies

**Head**

Department of Environmental Science  
Kisan Veer Mahavidyalaya



Principal

Kisan Veer Mahavidyalaya, Wai

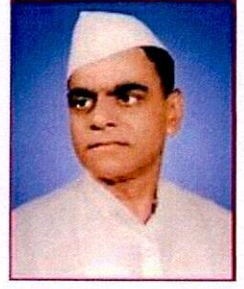
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Wai, Dist. Satara





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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## CERTIFICATE

Date- 01/04/2023

Roll No.-35

This is certify that **Rutuja Uttam Khamkar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Ecosystem ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



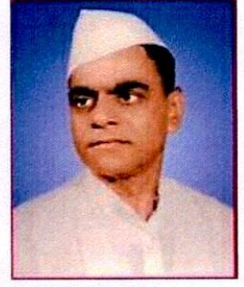
*Akshay*  
Supervisor

*[Signature]*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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## **CERTIFICATE**

Date-01/04/2023

Roll No.-02

This is certify that **Vaishanavi Balaso Pisal** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Vermicomposting ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



**Supervisor**



**Coordinator**  
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**



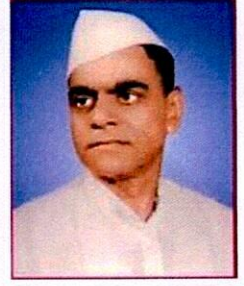


**Principal**

**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

Roll No.-66

This is certify that **Palvi Mehara** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Vermicomposting**” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*Wadhav*

**Supervisor**

*[Signature]*

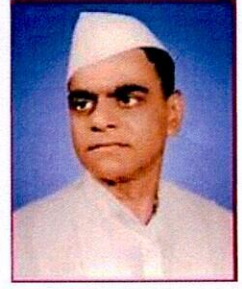
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

*[Signature]*

**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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## **CERTIFICATE**

Date- 01/04/2023

Roll No.-04

This is certify that **Neha Satish Kumbhar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Vermicomposting ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

*M. Jadhav*

Supervisor

*Neha Satish Kumbhar*

Co-Ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

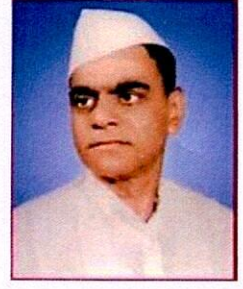


*Sagar*

Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
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## CERTIFICATE

Date- 01/04/2023

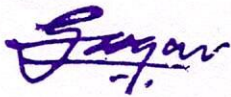
Roll No.-03

This is certify that **Pranali Anandrao kumbhar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Vermicomposting ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



  
Supervisor

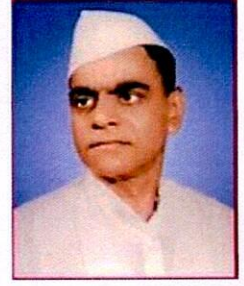
  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
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## **CERTIFICATE**

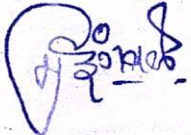
Date- 01/04/2023


Roll No.-10

This is certify that **Anisha Rajendra Bhosale** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Vermicomposting ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



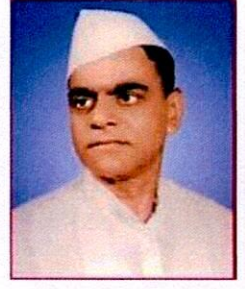
  
Supervisor

  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
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PRINCIPAL  
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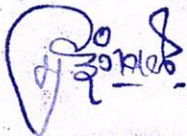
## **CERTIFICATE**

Date- 01/04/2023

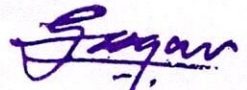
Roll No.-11

This is certify that **Pratriksha Narayan Kondhalkar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Environmenatal Protection ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
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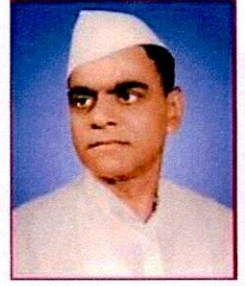
  
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PRINCIPAL  
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Date- 01/04/2023


Roll No.-12

This is certify that **Neha Kashinath Sanas** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Environmenatal Protection ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

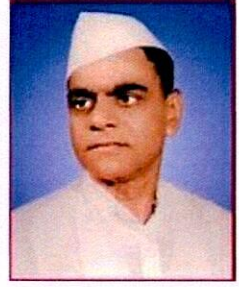
  
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Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
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## **CERTIFICATE**

Date- 01/04/2023

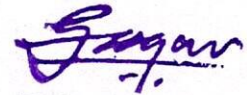
Roll No.-50

This is certify that **Farheen saeed shaikh** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Environmenatal Protection ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

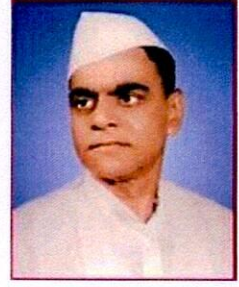
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
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Principal  
PRINCIPAL  
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## **CERTIFICATE**


Date- 01/04/2023


Roll No.-09

This is certify that **Suraj Kisan Beloshe** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Noise Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



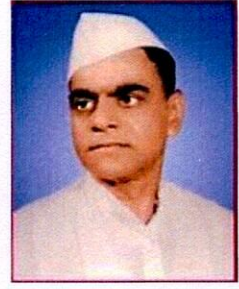
  
Supervisor

  
Coordinator  
Environmental Studies  
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Principal  
PRINCIPAL  
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## **CERTIFICATE**

Date- 01/04/2023


Roll No.-41

This is certify that **Swati Tukaram Chikane** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Noise Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



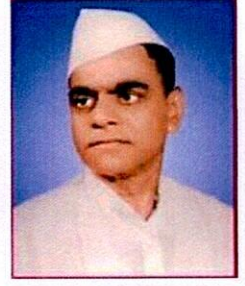
  
Supervisor

  
Co-ordinator  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
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## CERTIFICATE


Date- 01/04/2023

Roll No.-42

This is certify that **Yasin Faruk Patel** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Noise Pollution**” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

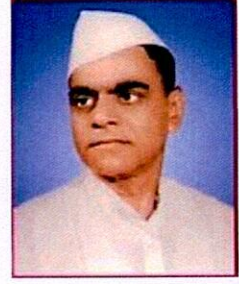
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
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## **CERTIFICATE**

Date- 01/04/2023

Roll No.-34

This is certify that **Diksh manik chaudhari** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Ecosystem ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*Jadhav.*  
Supervisor

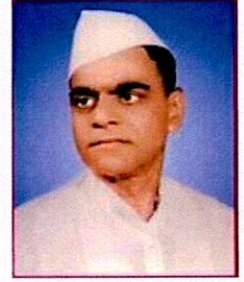
*[Signature]*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara





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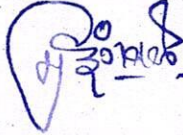
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Date- 01/04/2023

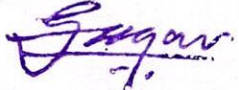
Roll No.-08

This is certify that **Vaishanvi Suresh Mutake** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Preservation of Marine life ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

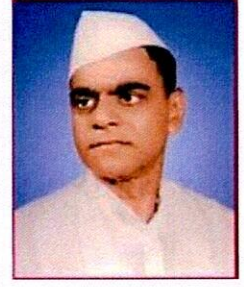
  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
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## **CERTIFICATE**

Date- 01/04/2023

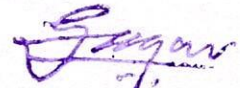
Roll No.-52

This is certify that **Vaibhav Sajadev Mandhare** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Preservation of Marine life ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



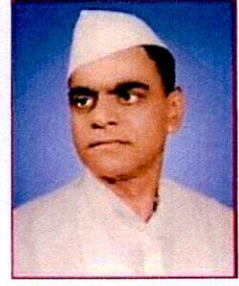
  
Principal  
PRINCIPAL  
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**KISAN VEER MAHAVIDYALAYA, WAI**

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Date- 01/04/2023

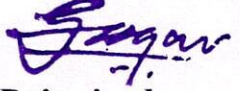
Roll No.-07

This is certify that **Sunny Shantaram Navghane** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Preservation of Marine life ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

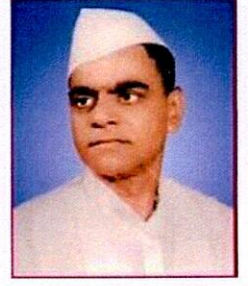
  
Coordinator  
Environmental Studies  
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PRINCIPAL  
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## **CERTIFICATE**

Date- 01/04/2023

Roll No.-16

This is certify that **Akanksha Nohan Bhoite** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Ocean Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

*Heathar*

Supervisor

*[Handwritten Signature]*

**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

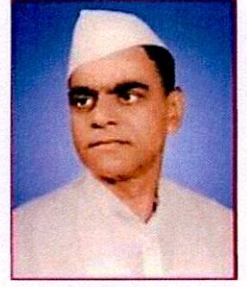


*[Handwritten Signature]*

**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

Roll No.-15

This is certify that **Shruti Kiran Pisal** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Ocean Pollution** ” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*Handwritten signature of Supervisor*

**Supervisor**

*Handwritten signature of Coordinator*

**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

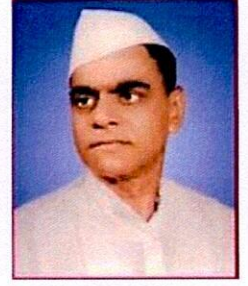
*Handwritten signature of Principal*

**Principal**

**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

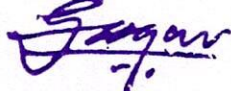
Roll No.-30

This is certify that **Shubham Sadanand Gaikwad** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Garbage Management ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

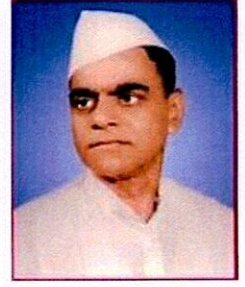
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 01/04/2023

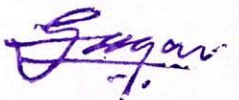
Roll No.-31

This is certify that **Piyush Dattaram Chorat** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Garbage Management ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

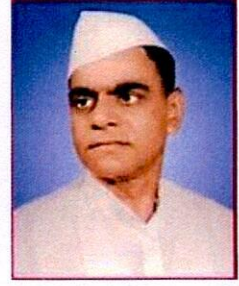
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

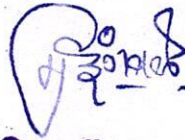
Date- 01/04/2023

Roll No.-53

This is certify that Tejas Shankar agunde of class – B.C.A.-II has successfully completed the project Report on “**Studies on Garbage Management** ” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

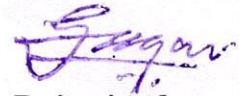


Supervisor



Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



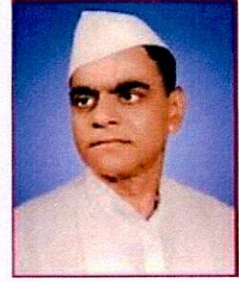


Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara





**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

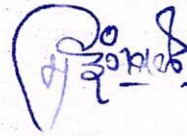
Date- 01/04/2023

Roll No.-06

This is certify that **Shubham Subhash Uंबरकर** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Land Resources**” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



**Supervisor**



**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

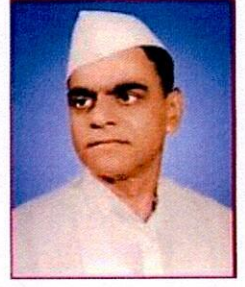




**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 01/04/2023


Roll No.-27

This is certify that **Rahul Gautam Kamble** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Land Resources”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



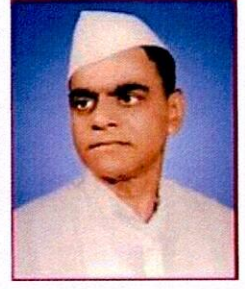
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

Roll No.-28

This is certify that **Sumit Dattatray Kenjale** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Land Resources”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*Hadhav.*

**Supervisor**

*[Signature]*

**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

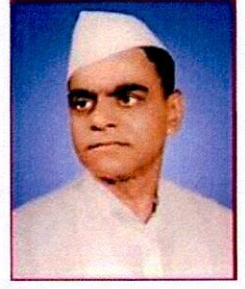
*[Signature]*

**Principal**

**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 01/04/2023

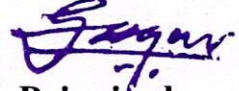
Roll No.-17

This is certify that **Tanvi Ramkrishna Shirsat** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Effect Of Mining ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



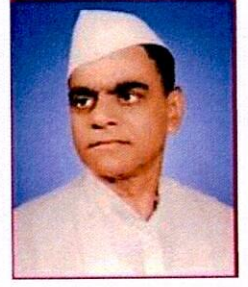
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## CERTIFICATE


Date- 01/04/2023

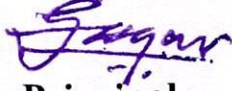
Roll No.-47

This is certify that **Pratik Promod Waghulkar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Effect Of Mining ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur



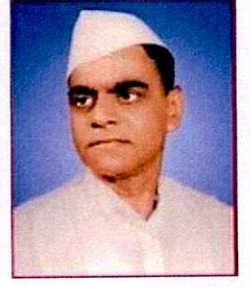
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 1/04/2023

Roll No.-40

This is certify that **Ankit Vijay Sakpal** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Effect Of Mining ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



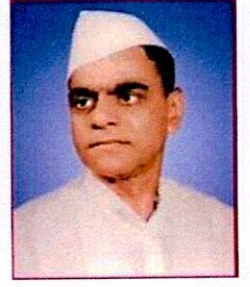
*M. Jadhav.*  
Supervisor

*Ankit Vijay Sakpal*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*Sagar*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

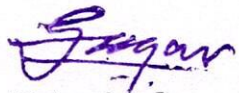
Roll No.-44

This is certify that Vidya Shivaji Dhanawade of class – B.C.A.-II has successfully completed the project Report on “**Studies on Problems related solid waste at wai**” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

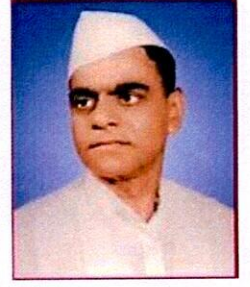
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

Roll No.-45

This is certify that **Sakshi Chandrashekhar Paramane** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Problems related solid waste at wai”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, **Kolhapur**



*Jadhav.*

**Supervisor**

*[Signature]*

**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

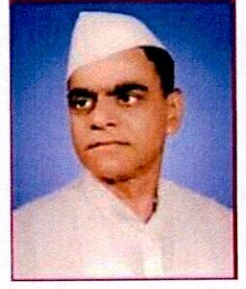
*[Signature]*

**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**





**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## CERTIFICATE

Date- 01/04/2023


Roll No.-46

This is certify that **Sakshi Ajit Nanavare** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Problems related solid waste at wai”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

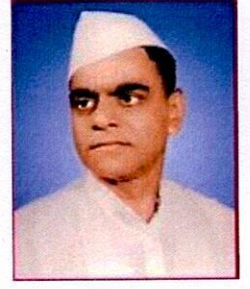
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 01/04/2023

Roll No.-01

This is certify that **Ankita Shankar Pisal** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Climate Change”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



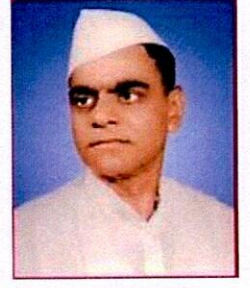
*Abalhav.*  
Supervisor

*[Signature]*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/03/2023

Roll No.-48

This is certify that **Shreyash Santosh Jadhav** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Climate Change”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur



*[Signature]*

**Supervisor**

*[Signature]*

**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

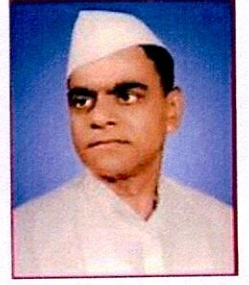
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**Principal**

**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## CERTIFICATE

Date- 28/03/2023


Roll No.-49

This is certify that **Ankita Yashwant Ranjane** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Climate Change”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



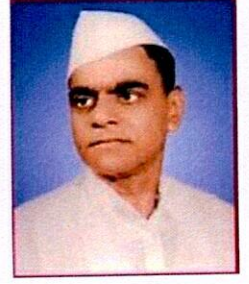
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-37

This is certify that **Tejas Shivaji Gadhav** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Water Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur



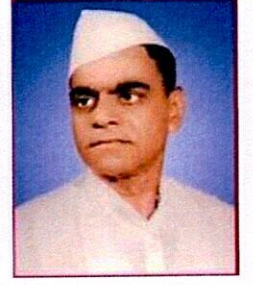
*Akshay*  
Supervisor

*Tejas*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*Sagar*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## CERTIFICATE

Date- 28/03/2023

Roll No.-55

This is certify that **Sanket Ghanashyam Shirke** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Water Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



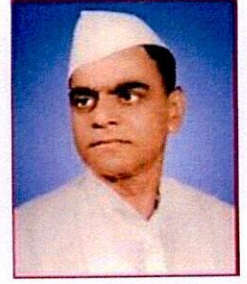
*H. Jadhav*  
Supervisor

*Sanket Shirke*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*Sagar*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-39

This is certify that **Roshan Uddhav Shirke** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Water Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



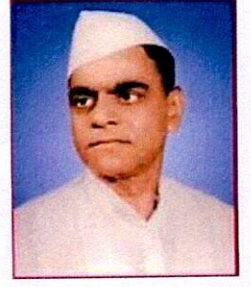
*M. Jadhav*  
Supervisor

*Roshan Uddhav Shirke*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*S. Jadhav*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-26

This is certify that **Pratik Aananda Washivale** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Forest Resources”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*H. Jadhav.*  
Supervisor

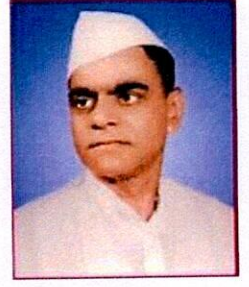
*[Signature]*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara





**JANATA SHIKSHAN SANASTHA'S**  
**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

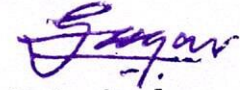
Roll No.-29

This is certify that Jayshri Rajendra Shinde of class –  
B.C.A.-II has successfully completed the project Report on  
“**Studies on Forest Resources**” under the guidance of **Miss**  
**Jadhav H.V.** for the academic year of 2022-2023 introduced  
by the shivaji university, Kolhapur



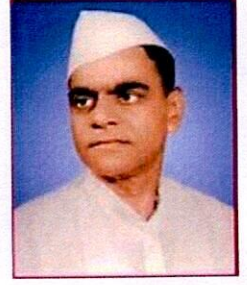
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

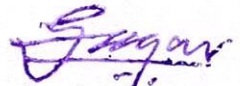
Roll No.-38

This is certify that **Ashish Virendra Kadam** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Forest Resources”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



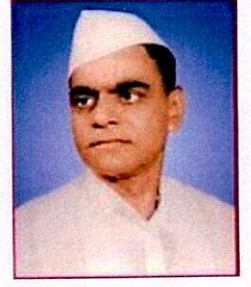
  
Supervisor

  
Coordinator  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

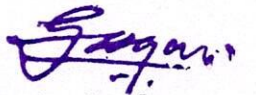
Roll No.-18

This is certify that **Prashant Shahaji Jadhav** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Renewable and Non-Renewable Resources ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, **Kolhapur**



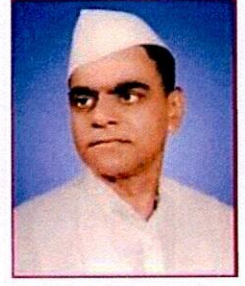
  
**Supervisor**

  
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

  
**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-19

This is certify that **Tanmay Sanjayu Sanas** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Renewable and Non-Renewable Resources ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, **Kolhapur**



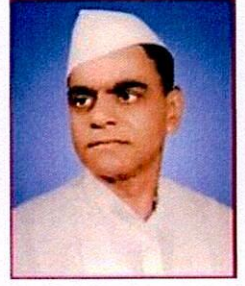
*K. Jadhav*  
**Supervisor**

*[Signature]*  
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

*[Signature]*  
**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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## CERTIFICATE

Date- 28/ 03/ 2023

Roll No.-20

This is certify that **Samruddh Mohan Shewale** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Renewable and Non-Renewable Resources ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, **Kolhapur**



*Ashwini*

**Supervisor**

*[Signature]*

**Co-ordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

*[Signature]*

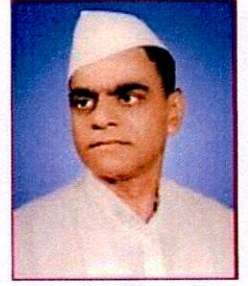
**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



JANATA SHIKSHAN SANASTHA'S

KISAN VEER MAHAVIDYALAYA, WAI

DEPARTMENT OF ENVIRONMENTAL STUDIES



## CERTIFICATE

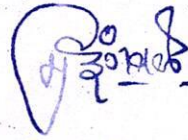
Date- 28/ 03/ 2023

Roll No.-22

This is certify that **Aniket Dattatray Vare** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Study of Soil Erosion”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

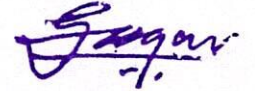


Supervisor



Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

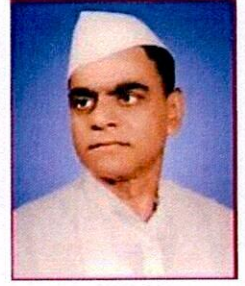




Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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Date- 28/ 03/ 2023

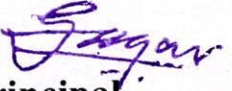
Roll No.-23

This is certify that **Sujal Anil Gaikwad** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Study of Soil Erosion”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

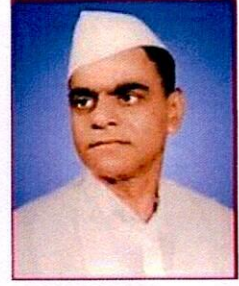
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

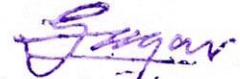
Roll No.-24

This is certify that **Yash Sanjay Jambure** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Study of Soil Erosion”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

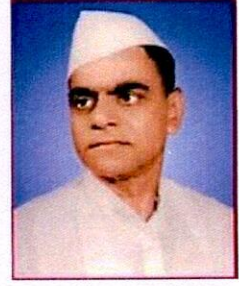


  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara





**JANATA SHIKSHAN SANASTHA'S**  
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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-25

This is certify that **Varunraj Prataprao Sanas** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Study of Soil Erosion”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

**Supervisor**

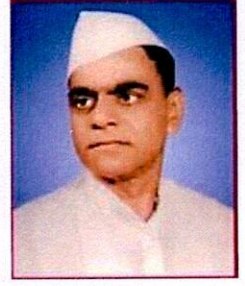
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**



**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

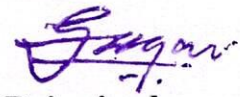
Roll No.-43

This is certify that **Nikhil Santosh Nalawade** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Study of Soil Erosion”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

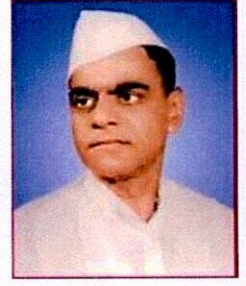
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-13

This is certify that **Dhula Sanjay Kachare** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Air Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur



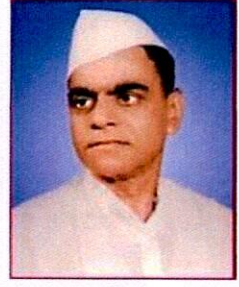
*Hewher.*  
**Supervisor**

*[Signature]*  
**Coordinator**  
**Co-ordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

*[Signature]*  
**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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Date- 28/03/2023

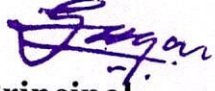
Roll No.-21

This is certify that **Prathamesh Rajendra Sanas** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Air Pollution ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



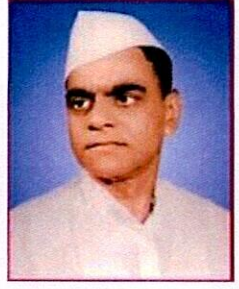
  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## CERTIFICATE

Date- 28/ 03/ 2023

Roll No.-60

This is certify that **Varun Singh** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Organic Farming**” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*Akshay*

Supervisor

*[Signature]*

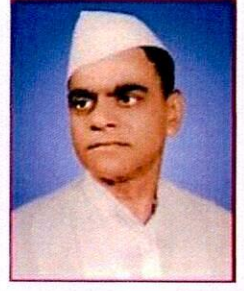
**Coordinator**  
**Environmental Studies**  
**Kisan Veer Mahavidyalaya**  
**Wai, Dist. Satara.**

*[Signature]*

**Principal**  
**PRINCIPAL**  
**KISAN VEER MAHAVIDYALAYA**  
**Wai, Dist. Satara**



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## CERTIFICATE

Date- 28/ 03/ 2023


Roll No.-64

This is certify that **Majid Hussain Para** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Global Warming ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



  
Supervisor

  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

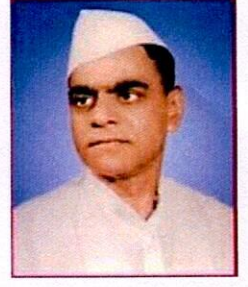
  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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KISAN VEER MAHAVIDYALAYA, WAI

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## CERTIFICATE

Date- 28/ 03/ 2023

Roll No.-65

This is certify that **Abass Kumail** of class – **B.C.A.-II** has successfully completed the project Report on “**Studies on Biodiversity** ” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



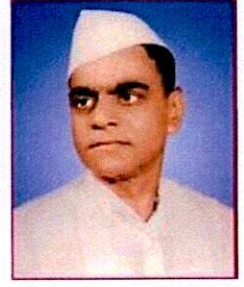
*H. Jadhav*  
Supervisor

*[Signature]*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

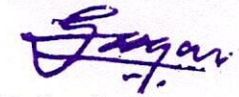
Roll No.-54

This is certify that Abrar Nisar Sayyad of class – B.C.A.-II has successfully completed the project Report on “**Studies on Biodiversity** ” under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



  
Supervisor

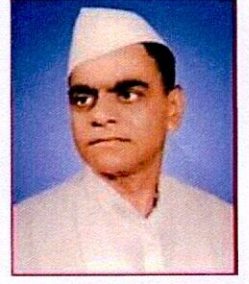
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara





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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-14

This is certify that **Chaitanya Ankusha Ranjane** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Biodiversity”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



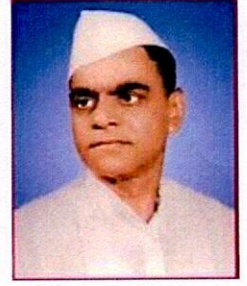
*Akshar.*  
Supervisor

*[Signature]*  
Coordinator  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/03/2023


Roll No.-32

This is certify that **Aniket Namdev Mahangade** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Endangered Species Animal And Plant ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

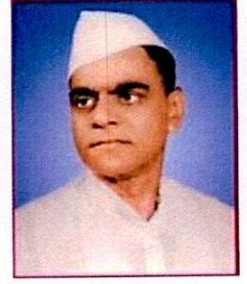
  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

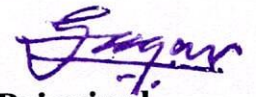
Roll No.-33

This is certify that **Sumit Sunil Mahangade** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Endangered Species Animal And Plant ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
Supervisor

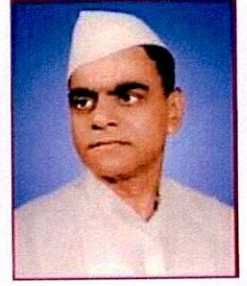
  
Co-ordinator  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-36

This is certify that **Aditya Ratnakant Shinde** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Endangered Species Animal And Plant ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

*Heather.*  
Supervisor

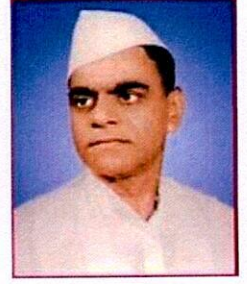
*[Signature]*  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



*[Signature]*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/03/2023

Roll No.-58

This is certify that **Abhishek Pramod Pawar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Urbanization and Environmental Problems”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, **Kolhapur**



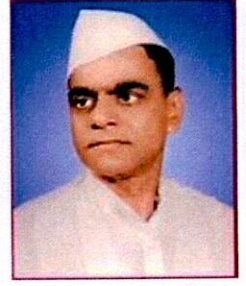
*Abhishek*  
Supervisor

*Prasad*  
Coordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*Sugan*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023


Roll No.-57

This is certify that **Amol Shankar Mahangade** of class –  
**B.C.A.-II** has successfully completed the project Report on  
**“Studies on Urbanization and Environmental Problems”**  
under the guidance of **Miss Jadhav H.V.** for the academic  
year of 2022-2023 introduced by the shivaji university,  
**Kolhapur**

  
Supervisor

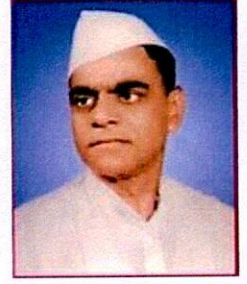
  
Coordinator  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.



  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**



## **CERTIFICATE**

Date- 28/ 03/ 2023

Roll No.-56

This is certify that **Nikhil Dattatray Mahangade** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Urbanization and Environmental Problems”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, **Kolhapur**



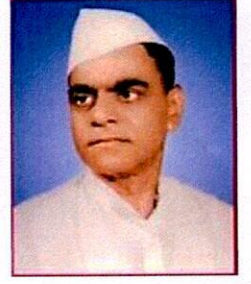
*Nikalhar*  
Supervisor

*Nikalhar*  
Co-ordinator  
Environmental Studies  
Kisan Veer Mahavidyalaya  
Wai, Dist. Satara.

*Sangar*  
Principal  
PRINCIPAL  
KISAN VEER MAHAVIDYALAYA  
Wai, Dist. Satara



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**KISAN VEER MAHAVIDYALAYA, WAI**  
**DEPARTMENT OF ENVIRONMENTAL STUDIES**




## **CERTIFICATE**

Date- 28/ 03/ 2023

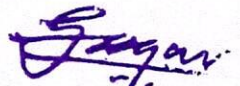
Roll No.-05

This is certify that **Shubham Subhash Wadkar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Energy resources and consumption”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur

  
Supervisor

  
Coordinator  
Environmental Studies  
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Wai, Dist. Satara.

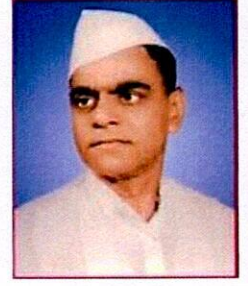


  
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## **CERTIFICATE**

Date- 28/ 03/ 2024

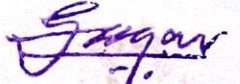
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This is certify that **Adarsh Ashok Jamdade** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Pandemic Covid – 19 and its Implication on Human life ”** under the guidance of **Miss Jadhav H.V.** for the academic year of **2022-2023** introduced by the shivaji university, Kolhapur

  
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(BCA-II)



## Ecosystem

Submitted by:-

Sr.no	Name	Roll no
1	Chaudhari Diksha Manik	34
2	Khamkar Rutuja Uttam	35

Under The guidance of

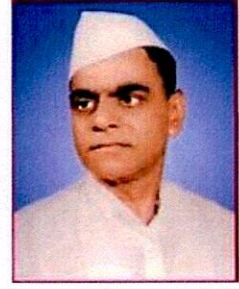
**MISS H.V. JADHAV.**

Year of submission

**2022-2023**



**JANATA SHIKSHAN SANASTHA'S**  
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## **CERTIFICATE**

Date- 01/04/2023

Roll No.-35

This is certify that **Rutuja Uttam Khamkar** of class – **B.C.A.-II** has successfully completed the project Report on **“Studies on Ecosystem ”** under the guidance of **Miss Jadhav H.V.** for the academic year of 2022-2023 introduced by the shivaji university, Kolhapur



*H. Jadhav*

**Supervisor**

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**Principal**

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# Declaration of the student

*It is hear by declared that work reported in the project. Enticed 'Ecosystem ' is complete and written by us and not been copied from any other source.*

Place:wai

Date: 14/3/2023.

Sr.no	Name	Student sign
1	Chaudhari Diksha Manik	D.M. Chaudhari
2	Khamkar Rutuja Uttam	R.U.Khamkar

## Acknowledgment

*I wish to express our deep sense of gratitude towards prof. miss H.V.jadhav lectures in Environmental Studies for providing us guidance and Co-operation to complete this project time. It is our proud privilege to express sense of gratitude service thanks to principle Dr. G. Fagare and shivaji University kolhapur for providing mean opportunity to work on this project. Last not the least. I would like to express our heartiest gratitude for 25encouragement, affection and love showed by family friends.*

Roll no	Name	Sign
34	Chaudhari Diksha Manik	D.m. chaudhari
35	Khamkar Rutuja Uttam	R.U. Khamkar.

<b>1</b>	<b><i>Introduction</i></b>
<b>2</b>	<b><i>Ecosystem</i></b>
<b>3</b>	<b><i>Types of Ecosystem</i></b>
<b>4</b>	<b><i>Process of ecosystem</i></b>
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<b>6</b>	<b>Function of ecosystem</b>
<b>7</b>	<b><i>Example of ecosystem</i></b>
<b>8</b>	<b>Deciduous forest ecosystem</b>
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<b>10</b>	<b><i>Coral reef ecosystem</i></b>
<b>11</b>	<b><i>Hot spring ecosystem</i></b>
<b>12</b>	<b><i>Micro ecosystem</i></b>

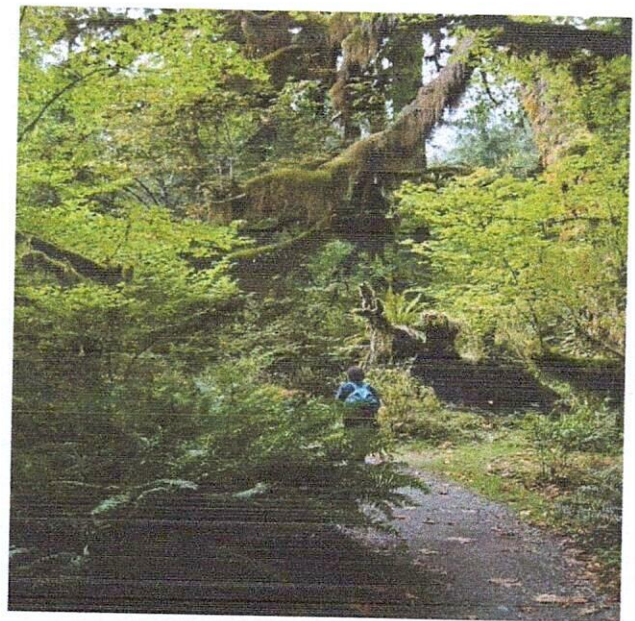
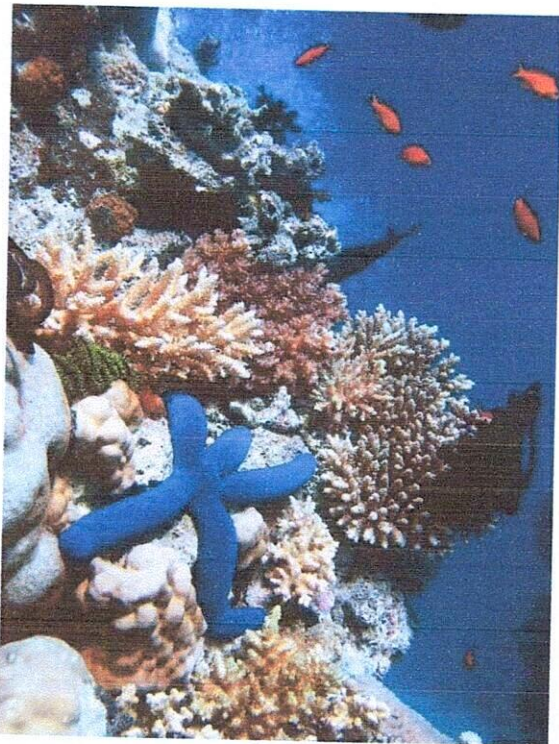
## INTRODUCTION

- Together, organism and their physical environment make up an Ecosystem .
- There are different types of ecosystem, including marine, aquatic and terrestrial ones.
- Terrestrial ecosystems are group into biomes, which are large classification .
- *Energy and mattress are conserved in ecosystem. Typically, light becomes heat and matter is recycled allowing energy to flow through the system.*
- *In the face of disturbance or disruptive events, ecosystem with a higher biodiversity tend to be more stable.*

*An Amazon rainforest in South America and a tied pool on the California coast have something in common, isn't it? Even though their sizes are by order of magnitude different both are example of ecosystem: a group of organism living together in combination with the environment around them. Communities and ecosystem are closely related concepts, but a community does not include the physical environment, while an ecosystem does.*

# ECOSYSTEM

An **ecosystem** (or **ecological system**) consists of all the **organisms** and the **physical environment** with which they interact.<sup>[2]:458</sup> These **biotic** and **abiotic components** are linked together through nutrient cycles and energy flows. Energy enters the system through **photosynthesis** and is incorporated into plant tissue. By feeding on plants and on one another, animals play an important role in the movement of **matter** and **energy** through the system. They also influence the quantity of plant and **microbial biomass** present. By breaking down dead **organic matter**, **decomposers** release **carbon** back to the atmosphere and facilitate **nutrient cycling** by converting nutrients stored in dead biomass back to a form that can be readily used by plants and microbes.





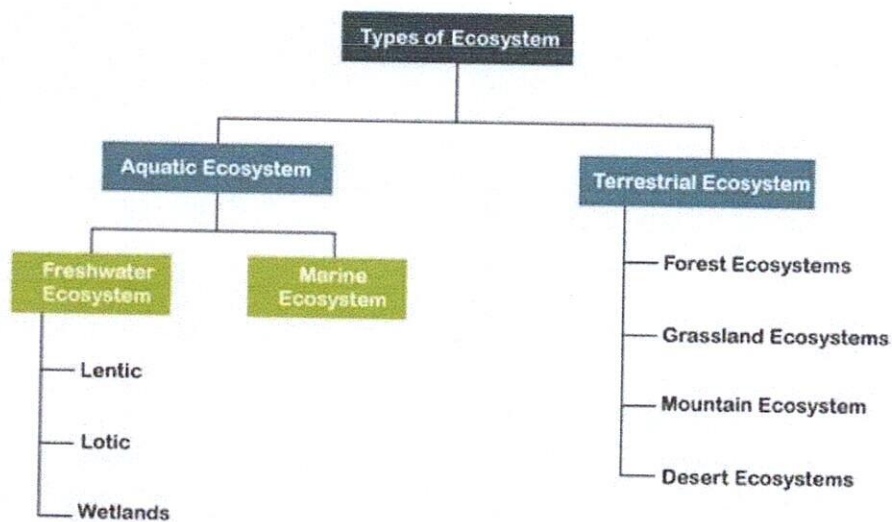
Ecosystems are controlled by external and internal factors. External factors such as climate, parent material which forms the soil and topography, control the overall structure of an ecosystem but are not themselves influenced by the ecosystem. Internal factors are controlled, for example, by decomposition, root competition, shading, disturbance, succession, and the types of species present. While the resource inputs are generally controlled by external processes, the availability of these resources within the ecosystem is controlled by internal factors. Therefore, internal factors not only control ecosystem processes but are also controlled by them.

Ecosystems are dynamic entities—they are subject to periodic disturbances and are always in the process of recovering from some past disturbance. The tendency of an ecosystem to remain close to its equilibrium state, despite that disturbance, is termed its resistance. The capacity of a system to absorb disturbance and reorganize while undergoing change so as to retain essentially the same function, structure, identity, and feedbacks is termed its ecological resilience. Ecosystems can be studied through a variety of approaches—theoretical studies, studies monitoring specific ecosystems over long periods of time, those that look at differences between ecosystems to elucidate how they work and direct manipulative experimentation. Biomes are general classes or categories of ecosystems. However, there is no clear distinction between biomes and ecosystems. Ecosystem classifications are specific kinds of ecological classifications that consider all four elements of the definition of ecosystems: a biotic component, an abiotic complex, the interactions between and within them, and the physical space they occupy.

Ecosystems provide a variety of goods and services upon which people depend. Ecosystem goods include the "tangible, material products" of ecosystem processes such as water, food, fuel, construction material, and medicinal plants. Ecosystem services, on the other hand, are generally "improvements in the condition or location of things of value". These include things like the maintenance of hydrological cycles, cleaning air and water, the maintenance of oxygen in the atmosphere, crop pollination and even things like beauty, inspiration and opportunities for research. Many ecosystems become degraded through human impacts, such as soil loss, air and water pollution, habitat fragmentation, water diversion, fire suppression, and introduced species and invasive species. These threats can lead to abrupt transformation of the ecosystem or to gradual disruption of biotic processes and degradation of abiotic conditions of the ecosystem. Once the original ecosystem has lost its defining features, it is considered "collapsed". Ecosystem restoration can contribute to achieving the Sustainable Development Goals.

# Types of Ecosystem

An ecosystem is a term that is commonly used in biology and environmental studies. In general, it is defined as a system or community that includes all living organisms and their non-living components in nature. All of these components work together, either directly or indirectly, to maintain ecological balance. As a result, it is essential to understand the various types of ecosystems and what they contain.



## 1. Aquatic Ecosystem:

This Ecosystem consists of water as the main habitat.

### **Aquatic Ecosystem classification -**

These are not biomes but categorized on basis of salinity, nutrients, and temperature. There are two main types of aquatic ecosystems.

#### *Freshwater ecosystem:*

- lotic (moving like the river) ecosystem includes freshwater streams, springs etc.

- **lentic (stagnant like a pond) ecosystem** includes pools etc. In this ecosystem, salinity is less than 5 ppt.
- **Wetlands ecosystems are intermediate ecosystems** between terrestrial & water habitats (floodplains, littoral, etc). It is a land area that is saturated with water, either permanently or seasonally.
- They vary considerably in physical, chemical, and biological characteristics.

## 2. Marine Ecosystem:

- Oceans cover almost 3/4 of the surface of the Earth. Both the ocean and the coastal ecosystems are included in this ecosystem. Salinity in this habitat is more than 35 ppt (90 percent Sodium chloride).
- Estuaries are part of it (Coastal bays, river mouths, and tidal marshes forms estuaries).
- In estuaries, saltwater from the ocean and freshwater from rivers mix together due to the action of the tides. When compared to the nearby river or sea, estuaries are much more productive. Mangroves and coral reefs are also part of it.

## 3. Terrestrial Ecosystem:

- An estimated 148 million km<sup>2</sup> (29%) of the earth's surface is taken up by terrestrial ecosystems. They cover a wide range of habitats, including icy polar regions, scorching tropical deserts, and lush temperate and tropical rainforests.
- Ecosystems are divided into terrestrial (land ecosystem) and non-terrestrial(non-land ecosystem) categories by their geographical location. The three non-terrestrial habitats are aquatic, marine, and wetlands, whereas the five main terrestrial ecosystems are desert, forest, grassland, taiga, and tundra

### **a. Forest Ecosystem:**

- A forest ecosystem is a functional unit or a system which comprises of soil, trees, insects, animals, birds, and man as its interacting units. A forest is a large and complex ecosystem and hence has greater species diversity.
- Also, it is much more stable and resistant to the detrimental changes as compared to the small ecosystems such as wetlands and grasslands.
- A forest ecosystem, similar to any other ecosystem, also comprises of abiotic and biotic components. Abiotic components refer to inorganic materials like air, water, and soil. Biotic components include producers, consumers, and decomposers.
- These components interact with each other in an ecosystem and thus, this interaction among them makes it self-sustainable.

### **B: Grassland Ecosystem**

- About 10 to 25 percent of the Earth's surface is made up of the grassland ecosystem. It can be found in areas with annual precipitation of 15 to 75 cm, which is more than a pure desert but not enough to support a forest. Typical grasslands are vegetation types that are typically found in climates with high temperatures.
- In various parts of the world, these are known by many names, including steppes in Europe and Asia, pampas in South America, Veldt in South Africa, and Downs in Australia.
- They are primarily located in the high Himalayas of India. Steppes and savanna make up the majority of the remaining grasslands in India. Sand and salty soils are extensively covered by steppe formations.

*In western Rajasthan, India, where the climate is semi-arid with a dry season lasting 10 to 11 months and an average annual rainfall of less than 20 cm, steppe formations are reported to exist. They take up a lot of space on saline and sandy soil. The soil is always exposed, occasionally rocky, but typically sandy with stationary or moving sand dunes. Only during the brief wet season forage available. The grass layer is thin and primarily made up of annual grass species.*

### **C. Desert Ecosystem:**

- When we hear the word “desert,” the first thing that comes to mind is a largely barren, abandoned, and dry land covered in sand. A desert can be both hot and cold. The desert is one of the world’s driest land areas, receiving very little precipitation each year. It is a land with very little rainfall throughout the year (less than 50 cm per year). The desert ecosystem is the world’s driest ecosystem, which explains why it has less vegetation and less diversity of life. It is a component of the terrestrial ecosystem.
- In this Ecosystem, the plants and animals can be survived in harsh conditions. A desert ecosystem is essentially devoid of any rainfall or precipitation. In short, a desert ecosystem is a community of living and non-living organisms that coexist and interact in an environment that appears to be abandoned. A desert ecosystem is the result of the interaction of the environment’s biotic and abiotic components.

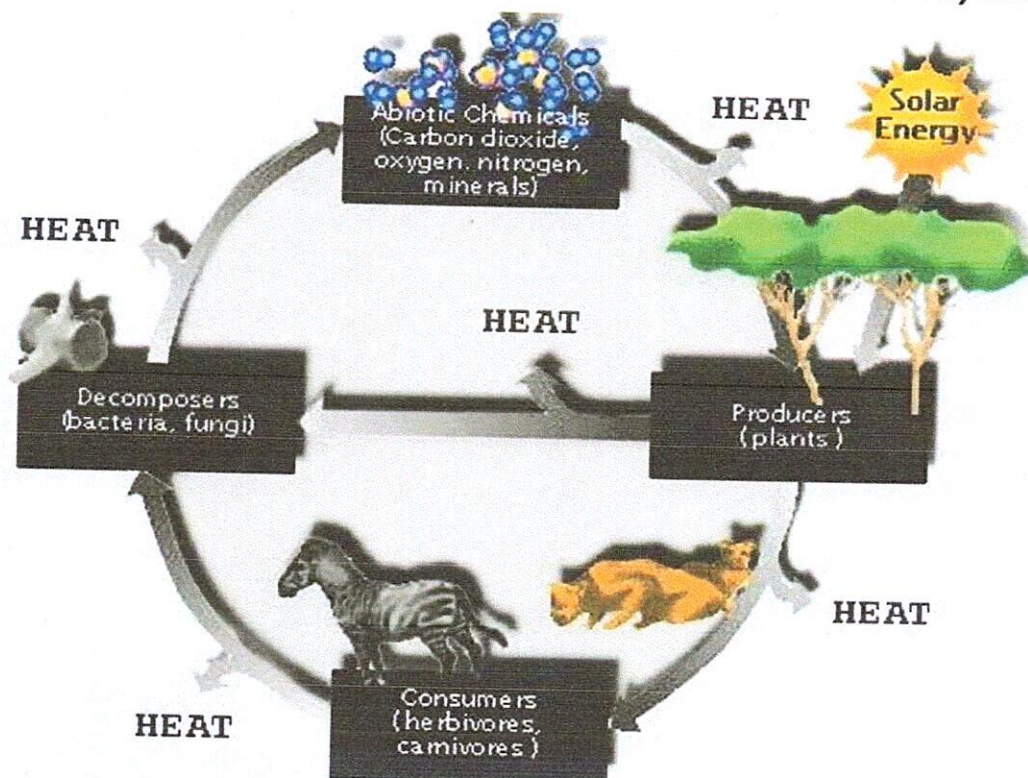
### **D. Mountain Ecosystem:**

- Mountain ecosystem, is a community of living organisms found in mountainous areas. Mountain lands support a diverse range of habitats for a wide variety of plants and animals. Higher altitudes have harsher environmental conditions, and the present account is supported by treeless alpine vegetation. Montane forests are common on lower slopes. At lower elevations, mountain lands transition into other types of

- landforms and vegetation, such as tropical or temperate forests, savannah, scrubland, desert, or tundra.
- The Himalaya-Tibet region has the largest and highest area of mountain lands; the longest nearly continuous mountain range in the Americas runs from Alaska in the north to Chile in the south. Other mountainous regions of note include those in Europe (Alps, Pyrenees), Asia (Caucasus, Urals), New Guinea, New Zealand, and East Africa.

## Processes of Ecosystems

*This figure with the plants, zebra, lion, and so forth, illustrates the two main ideas about how ecosystems*



*function: ecosystems have energy flows and ecosystems cycle materials. These two processes are linked, but they are not quite the same Figure 1. Energy flows and material*

Energy enters the biological system as light energy, or photons, is transformed into chemical energy in organic molecules by cellular processes including photosynthesis and respiration, and ultimately is converted to heat energy. This energy is dissipated, meaning it is lost to the system as heat; once it is lost it cannot be recycled. Without the continued input of solar energy, biological systems would quickly shut down. Thus the Earth is an **open system** with respect to energy.

Elements such as carbon, nitrogen, or phosphorus enter living organisms in a variety of ways. Plants obtain elements from the surrounding atmosphere, water, or soils. Animals may also obtain elements directly from the physical environment, but usually they obtain these mainly as a consequence of consuming other organisms. These materials are transformed biochemically within the bodies of organisms, but sooner or later, due to excretion or decomposition, they are returned to an inorganic state (that is, inorganic material such as carbon, nitrogen, and phosphorus, instead of those elements being bound up in organic matter). Often bacteria complete this process, through the process called decomposition or mineralization (*see next lecture on microbes*).

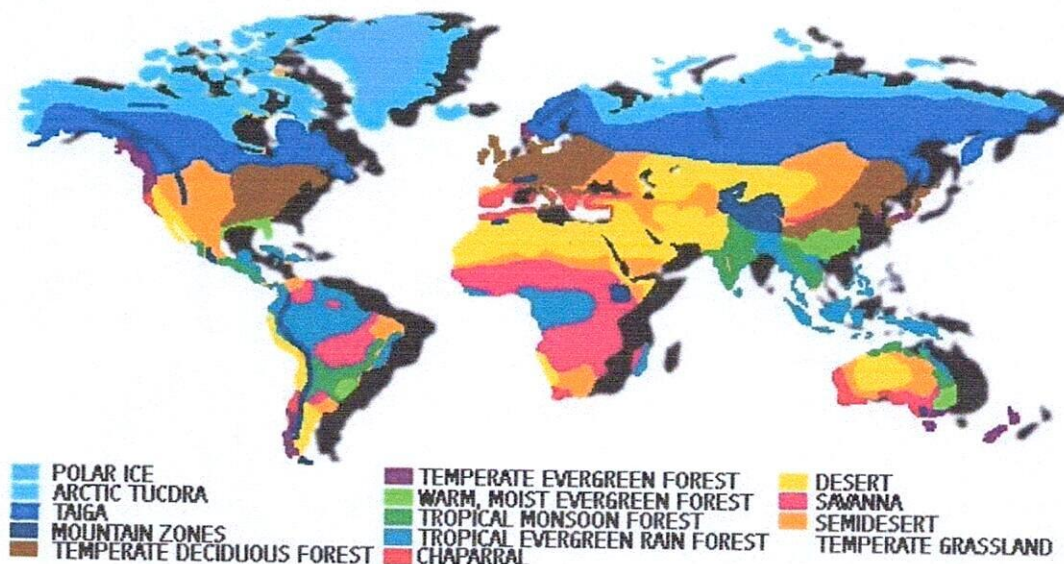
During decomposition these materials are not destroyed or lost, so the Earth is a **closed system** with respect to elements (with the exception of a meteorite entering the system now and then...). The elements are cycled endlessly between their biotic and abiotic states within ecosystems. Those elements whose supply tends to limit biological activity are called **nutrients**.

## The Geography of Ecosystems

There are many different ecosystems: rain forests and tundra, coral reefs and ponds, grasslands and deserts. Climate differences from place to place largely determine the types of ecosystems we see. How terrestrial ecosystems appear to us is influenced mainly by the dominant vegetation.

The word "biome" is used to describe a major vegetation type such as tropical rain forest, grassland, tundra, etc., extending over a large geographic area (Figure 3). It is never used for aquatic systems, such as ponds or coral reefs. It always refers to a vegetation category that is dominant over a very large geographic scale, and thus is somewhat broader geographically than an ecosystem.

**Figure 3:** The distribution of biomes.

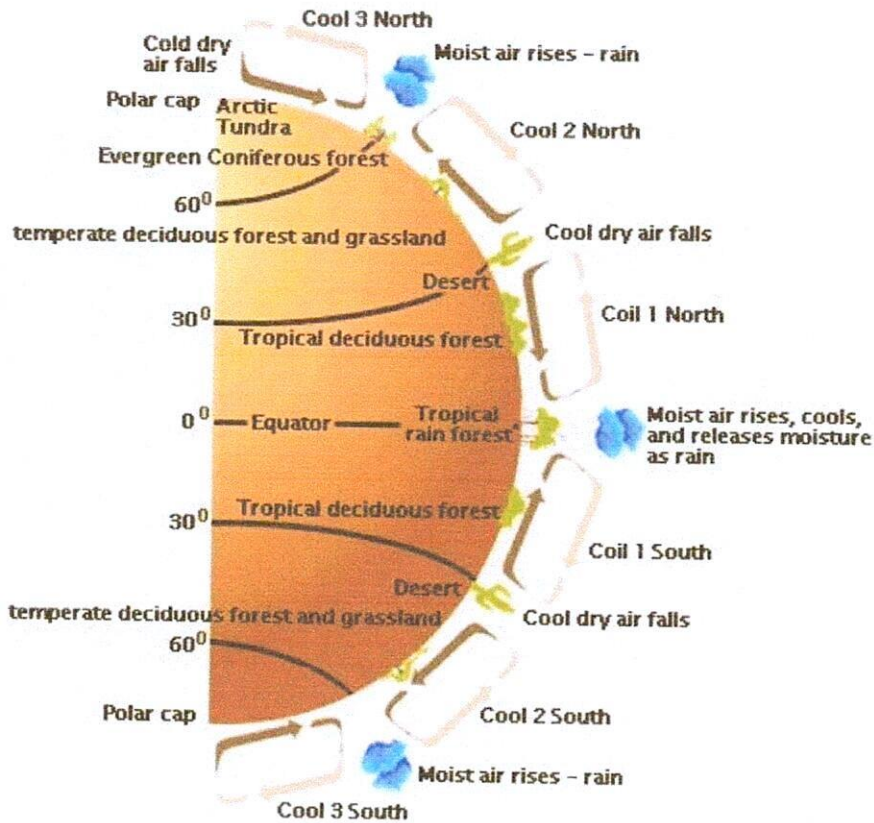


We can draw upon previous lectures to remember that temperature and rainfall patterns for a region are distinctive. Every place on Earth gets the same total number of hours of sunlight each year, but not the same amount of heat. The sun's rays strike low latitudes directly but high latitudes obliquely. This uneven distribution of heat sets up not just temperature differences, but global wind and ocean currents that in turn have a great deal to do with where rainfall occurs. Add in the cooling effects of elevation and the effects of land masses on temperature and rainfall, and we get a complicated global pattern of climate.

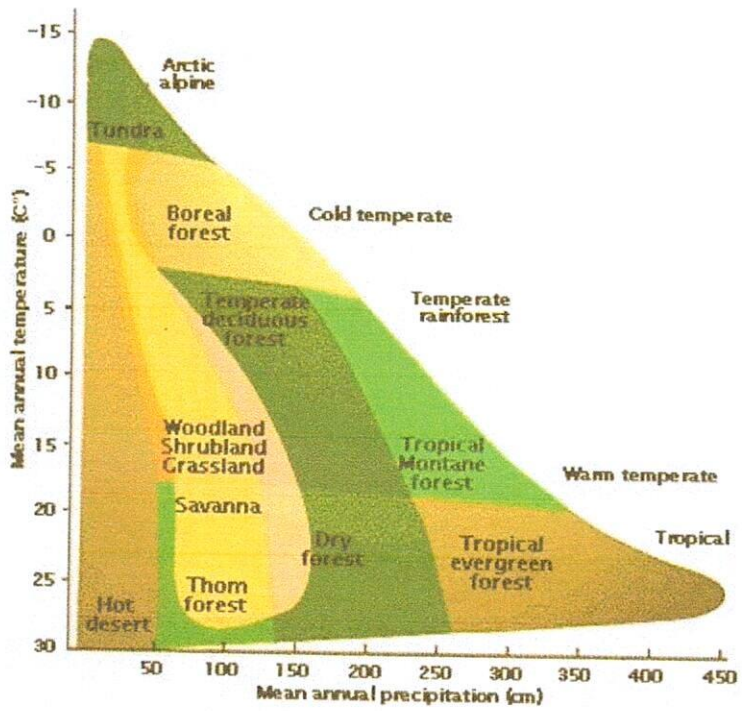
A schematic view of the earth shows that, complicated though climate may be, many aspects are predictable (Figure 4). High solar energy striking near the equator ensures nearly constant high temperatures and high rates of evaporation and plant transpiration. Warm air rises, cools, and sheds its moisture, creating just the conditions for a tropical rain forest. Contrast the stable temperature but varying rainfall of a site in Panama with the relatively constant precipitation but seasonally changing temperature of a site in New York State. Every location has a rainfall-temperature graph that is typical of a broader region.



**Figure 4.** Climate patterns affect biome distributions.



We can draw upon plant physiology to know that certain plants are distinctive of certain climates, creating the vegetation appearance that we call biomes. Note how well the distribution of biomes plots on the distribution of climates (Figure 5). Note also that some climates are impossible, at least on our planet. High precipitation is not possible at low temperatures -- there is not enough solar energy to power the water cycle, and most water is frozen and thus biologically unavailable throughout the year. The high tundra is as much a desert as is the Sahara.



# ***Function of ecosystem***

The functional attributes of the ecosystem keep the components running together. Ecosystem functions are natural processes or exchange of energy that take place in various plant and animal communities of different biomes of the world.

For instance, green leaves prepare food and roots absorb nutrients from the soil, herbivores feed on the leaves and the roots and in turn serve as food for the carnivores.

Decomposers execute the functions of breaking down complex organic materials into simple inorganic products, which are used by the producers.

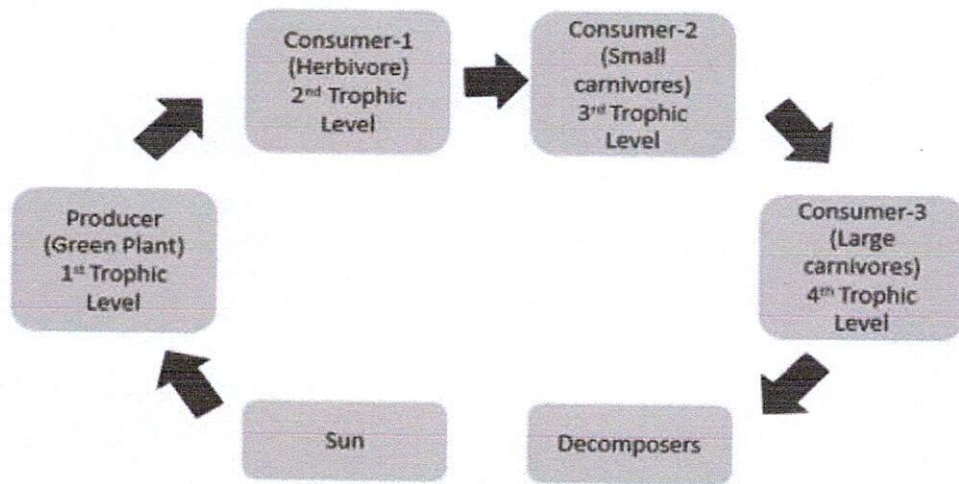
Fundamentally, ecosystem functions are exchange of energy and nutrients in the food chain. These exchanges sustain plant and animal life on the planet as well as the decomposition of organic matter and the production of biomass.

All these functions of the ecosystem take place through delicately balanced and controlled processes.

## **Food Chain**

The order of living organisms in a community in which one organism consumes other and is itself consumed by another organism to transfer energy is called a food chain. Food chain is also defined as "a chain of organisms, existing in any natural community, through which energy is transferred".

Every living being irrespective of their size and habitat, from the tiniest algae to giant blue whales, need food to survive. Food chain is structured differently for different species in different ecosystems. Each food chain is the vital pathway for energy and nutrients to follow through the ecosystem.



Food chains were first introduced by the African-Arab scientist and philosopher Al-Jahiz in the 9<sup>th</sup> century and later popularized in a book published in 1927 by Charles Elton.



dead organic material and wastes. Fungi and bacteria are the key decomposers in many ecosystems; they use the chemical energy in dead matter and wastes to fuel their

metabolic processes. Other decomposers are detritivores—detritus eaters or debris eaters.

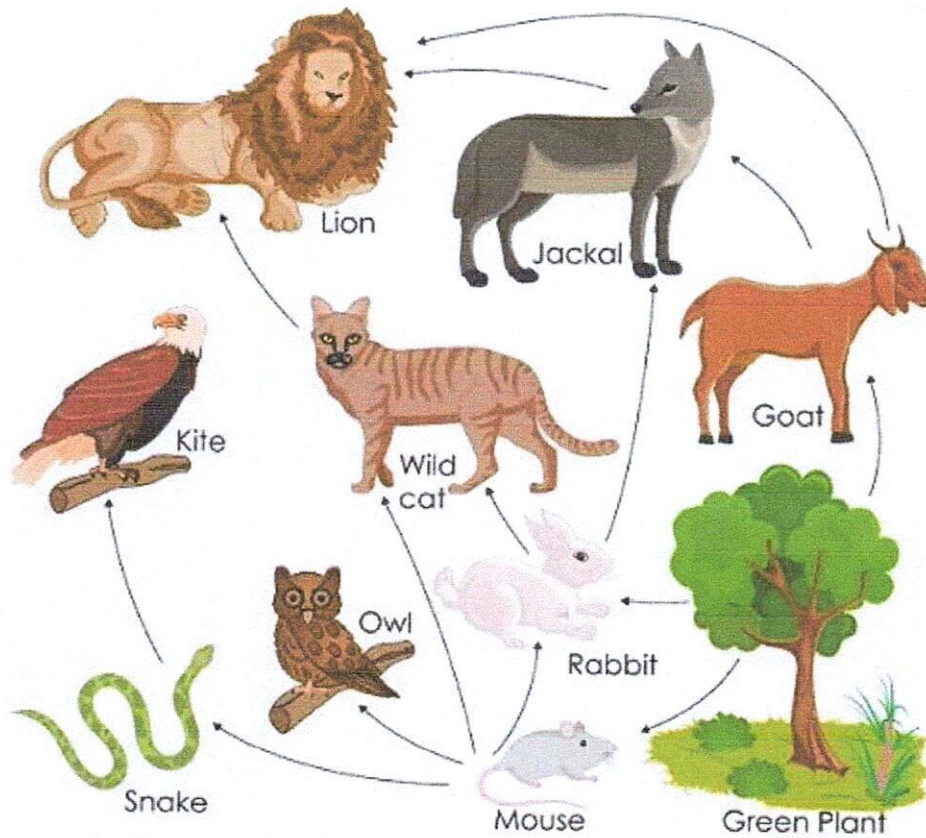
Understanding the food chain helps us know the feeding interrelationship and interaction between an organism and the ecosystem. It also enables us to know the mechanism of energy flow in an ecosystem.

## **Food Web**

The word 'web' means network. Food web can be defined as 'a network of interconnected food chains so as to form a number of feeding relationships amongst different organism of a biotic community.

A food chain cannot stand isolated in an ecosystem. The same food resource may be a part of more than one chain. This is possible when the resource is at the lower tropic level.

A food web comprises all the food chains in a single ecosystem. It is essential to know that each living thing in an ecosystem is a part of multiple food chains.



A single food chain is the single possible path that energy and nutrients may make while passing through the ecosystem. All the interconnected and overlapping food chains in an ecosystem make up a food web.

Food webs are significant tools in understanding that plants are the foundation of all ecosystem and food chains, sustaining life by providing nourishment and oxygen needed for survival and reproduction. The food web provides stability to the ecosystem.

The tertiary consumers are eaten by quaternary consumers. For example, a hawk that eats owls. Each food chain ends with a top predator and animal with no natural enemies (such as an alligator, hawk, or polar bear).

## Examples of Ecosystem

Examples of ecosystems described here are the following:

- Deciduous forest ecosystem
- Savannah ecosystem
- Coral reef ecosystem
- Hot spring ecosystem
- Micro-ecosystems

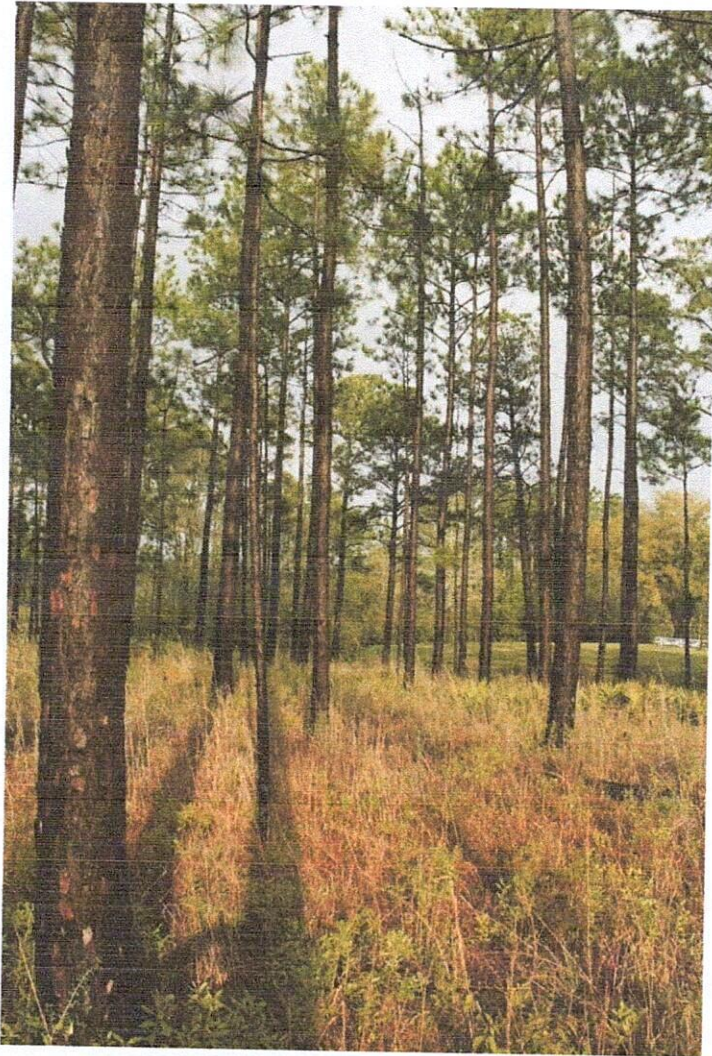
## Deciduous forest ecosystem



A [deciduous forest](#) is dominated by trees that shed leaves seasonally and then regrow their leaves at the start of the new growing season. They shed leaves as an adaptive mechanism against the cold season in temperate regions or to the dry seasons of the subtropical and tropical regions. The dominant trees in mid-latitude are oaks, beeches, birches, chestnuts, aspens, elms, maples, and basswoods. In the Southern Hemisphere, the dominant tree is the genus *Nothofagus* (southern beeches). The animals commonly found are snakes, frogs, salamanders, turtles, snails, slugs, insects, spiders, birds (warblers, owls, woodpeckers, hawks, etc.), and mammals (such as mice, moles, chipmunks, etc).

# Savannah ecosystem

Savannahs are a mix of woodland and grassland ecosystems. The widely spaced, scattered canopy trees allow light to penetrate and reach the ground. Because of that, shrub and herbaceous layers dominated by grasses are able to grow abundantly as well. Thus, the animals commonly found here are the grazers, such as sheep, cattle, and goats. This type of ecosystem often serves as a transition zone between forest and desert or grassland.





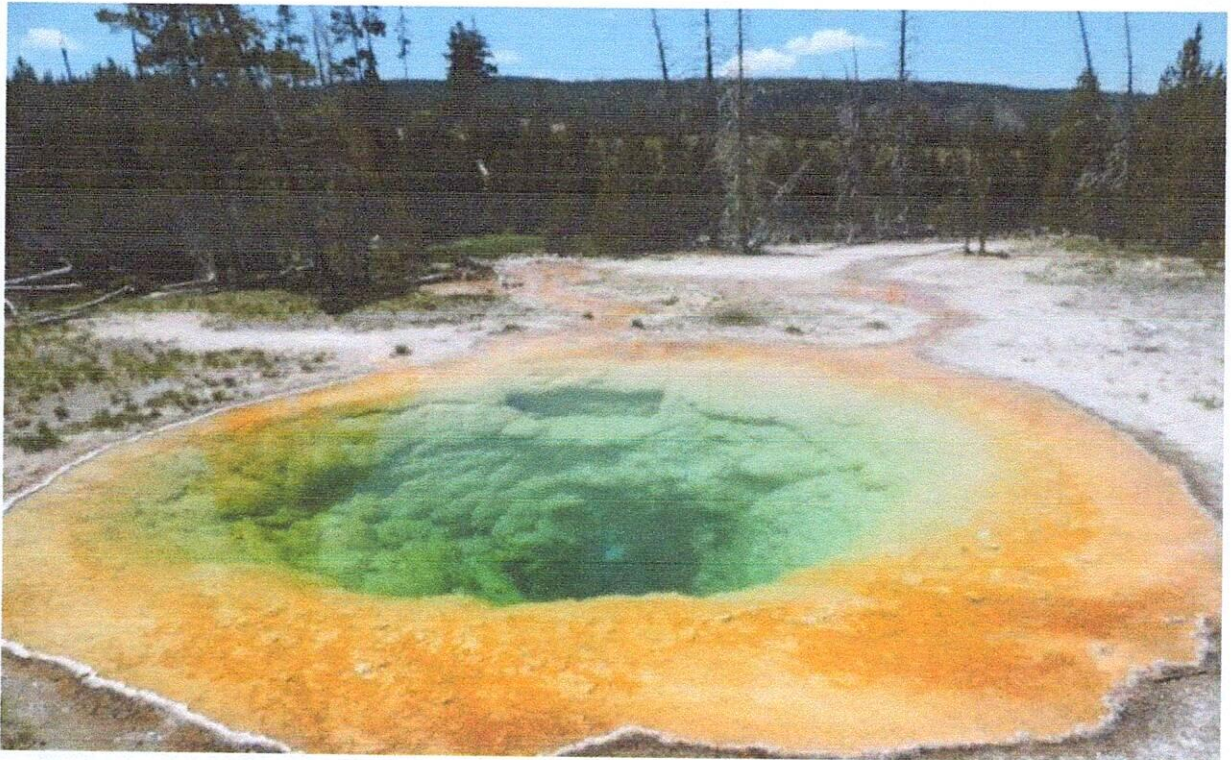
# Coral reef

The coral reef is an ecosystem created by reef-building corals. The reefs are actually colonies of coral polyps, such as stony corals that live together in clusters. They are one of the most diverse ecosystems on



earth. As such, they are referred to as the *rainforests of the sea*. Most of them are found at shallow depths in tropical waters. Some of the species that inhabit the reefs are mollusks, worms, crustaceans, echinoderms, sponges, tunicates, and fish.

**Hot spring ecosystem**



A hot spring is a spring with water temperatures that are higher relative to its surroundings. The water that is coming out of the spring is heated geothermally, i.e. via the heat from the earth's mantle. Because of the high temperature, it is one of the ecosystems that contain very few types of organisms. Thermophiles are organisms that can thrive at temperatures ranging from 45 to 80°C (113 and 176 °F). Some of these organisms are thermophilic amoeba (such as *Naegleria fowleri* and *Acanthamoeba*), thermophilic bacteria (e.g. *Legionella*), and various archaea.

# Micro-ecosystems

A tree with a creeping fern (epiphyte)

Ecosystems confined to small or tiny spaces and yet defined by specific environmental factors are called micro-ecosystems. Let's take a look at a tree ecosystem. A tree creates a small ecosystem where various kinds of organisms live. For example, a tree may harbor lichens and other epiphytes (arboreal plant), invertebrates (such as insects), amphibians, and other animals. The epiphytes, themselves, provide a habitat for other organisms, such as fungi, bacteria, and myxomycetes.



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2. ^ "Ecological restoration practice is based on an appropriate local indigenous reference ecosystem". [www.seraustralasia.com](http://www.seraustralasia.com). Retrieved 2018-08-20.
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This *ecology*-related article is a *stub*. You can help Wikipedia by *expanding it*.

*Hyadhar*

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*Hyadhar*

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