

# GREEN AUDIT REPORT

The Council of Education's  
**SHAHAJI LAW COLLEGE**  
**KOLHAPUR**



2022-2023

Prepared by

Archana Analytical Services  
Kolhapur

# Archana Analytical Services

(Consultants for Environment, Health and Safety)  
Udhyog Adhar Reg. No. MH15D0001832

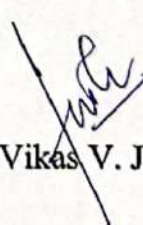
Ref: AAS/SLC/GA 2022-23

Date: 25/08/2022

## TO WHOMEVER IT MAY CONSERN

We, Archana Analytical Services, conducted Green Audit 2022-2023 for Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001. This is declared that Green Audit is conducted as per the norms of Ministry of Environment and Forest, Govt. of India and allied agencies whereas applicable. Green Audit is replication of data given by institution and its actual onsite visit verification.



  
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> *Green Audit: An overview:*

Green auditing is a means of assessing environmental performance (Welford, 2002). It is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements (EPA, 2003). It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air; land and water; legal constraints; the effects on the neighboring community; landscape and ecology; the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green washing' public relations exercise. Rather it is a total strategic approach to the organization's activities (CBI, 1990).

Green Audit is the most efficient ecological tool to solve such environmental problems. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Through this process the regular environmental activities are monitored within and outside of the concerned sites which have direct and indirect impact on surroundings. Green audit can be one of the initiative for such institutes to account their energy, water resource use as well as wastewater, solid waste, E-waste, hazardous waste generation. Green Audit process can play an important role in promotion of environmental awareness and sensitization about resource use. It can create consciousness towards ecological values and ethics. Through green audit one can get direction about how to improve the condition of environment.

Educational Institutes are playing a key role in continues development of human resources worldwide through teaching and research. Educational institutes conduct various activities with aim to percolate the knowledge among the different levels of society. Likewise, educational institutes also try to give issues related environmental conservation and pollution control. Various types of evolutionary methods are used to identify the environment concerning problem. It includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green audit etc.



"Green audit is a tool to highlight general practices accepted and implemented by organization in term of its impact on environment". Green audit also focuses on adverse practices which are cause and responsible for harm to environment. Green audit shows strength and weakness of organization towards protection and conservation of environment. It also marks and highlight the non-accepted practices of natural resources utilization. Green audit shows the path to continuously run healthy practices, new innovative system for optimum utilization of resource and minimization of waste generation. It helps for protection and conservation of environment, natural resources and lead institution sustainable campus in social, economic and environmental views.

### ***Need of Green auditing:***

Green auditing is the process of assessment of practices accepted by institution in view of whether they are eco-friendly and sustainable or not. Traditionally, Indian culture teaches good and efficient users of natural resources. But over the period of time uncontrolled excess use of resources like energy, water, chemicals are become threat to the environment and society also. Now, it is necessary to check whether our accepted practices are consuming more than required resources? Whether we are handling waste carefully? Where we have control over the use of natural resources. Green audit shows all such practices and gives an well direction to optimizes the use of natural resource. In the era of global warming, climate change, pollution and resource depletion it is necessary to verify the accepted practices and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall awareness among the stack holders of institution towards an environmental conservation and green practices to be accepted.



***Objectives of This Green Audit:***

1. Verifying compliance: Verifying compliance with standards or best available techniques.
2. Identifying problems: Detecting any leakage, spills or other such problems with the operations and processes.
3. Formulating environmental policy: Formulating the organization's environmental policy if there is no existing policy.
4. Measuring environmental impact: Measuring the environmental impact of each and every process and operation on the air, water, soil, worker health and safety and society at large.
5. Measuring performance: Measuring the environmental performance of an organization against best practices.
7. Confirming environmental management system effectiveness: Giving an indication of the effectiveness of the system and suggestions for improvement.
8. Providing a database: Providing a database for corrective action and future plans.
9. Developing the organization's environmental strategy: Enabling management to develop its environmental strategy for moving towards a greener corporate and performance culture.
10. Communication: Communicating its environmental performance to its stakeholders though reporting will enhance the image of the company.

***Benefits of Green Audit:***

There are many advantages of green audit if is implemented properly:

- It would help to protect the environment in and around the campus.
- Recognize the cost saving methods through waste minimization and energy conservation.
- Find out the prevailing and forthcoming complications.
- Empower the organization to frame a better environmental performance.
- It portrays good image of institution through its clean and green campus.  
Finally, it will help to build positive impression for the upcoming.



### ***NAAC Criteria VII: Environmental Consciousness:***

Higher Educational Institutes (HEIs) are playing a key role in development of human resources worldwide. Higher education institutes campus run various activities with aim to percolate the knowledge along with practical dimension among the society. Likewise, different technological problems higher education institutes also try to give solution for issues related to environment. Different types of evolutionary methods are used to assess the problem concerning environment. It includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green audit etc

National Assessment and Accreditation Council (NAAC) which is a self-governing organization that declares the institutions as Grade according to the scores assigned at the time of accreditation of the institution. Green Audit has become mandatory procedure for educational institutes under Criterion VII of NAAC. The intention of green audit is to upgrade the environmental condition inside and around the institution. It is performed by considering environmental parameters like water and wastewater accounting, energy conservation, waste management, air, noise monitoring etc. for making the institution eco-friendlier.

Students are the major strength of any academic institution. Practicing green actions in any educational institution will inculcate the good habit of caring natural resources in students. Many environmental activities like plantation and nurturing saplings and trees, Cleanliness drives, Bird watching camps, No vehicle day, Rain water harvesting, etc. will make the students good citizen of the country. Through Green Audit, higher educational institutions can ensure that they contribute towards the reduction of Global warming through Carbon Footprint reduction measures.



## Chapter- II

### METHODOLOGY USED FOR GREEN AUDIT

The college has conducted Green Audit for the academic year 2022--23, on a yearly basis. The audit was done in three phases.

This is the fourth attempt to conduct Green Audit of Shahaji Law College Kolhapur. First target was to collect the base line data concern about the green practices. The present report is based on onsite visits, personal observations and questionnaires survey tools. Primarily, based on data requirement, different type of questionnaires was prepared. Questionnaires were provided to all concern asked them to fill the same. The generated data is subsequently gathered and used for further analysis. From the outcome of the overall study, a final report is prepared. Before the survey all the required secondary data were collected from concern departments.

#### **: Survey by Questionnaire:**

Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires were prepared based on the guidelines, rules, acts and formats prepared by Ministry of Environment and Forest, New Delhi, Central Pollution Control Board and other statutory organizations. Green audit report of Shivaji University, Kolhapur is used as format for the report preparation. Most of the guidelines and formats based on broad aspects and some of the issues or formats were not applicable for educational institutions. In fact, questionnaires were prepared, using these guidelines and formats, combinations, modifications and restructuring them, sets of questionnaires were prepared as solid waste, energy, water, hazardous waste, and e-waste.

All the questionnaires comprise of group of modules. Questionnaires were prepared in such a view that it will be easy to extract the general information of the concerned department, which broadly includes name of the department, total number of students and employees, visitors of the department, average working days and office timings etc. Another part of the questionnaires extracts the present consumption of resources like water, energy, or the handling of solid and hazardous waste. Maintaining records of the handling of solid and



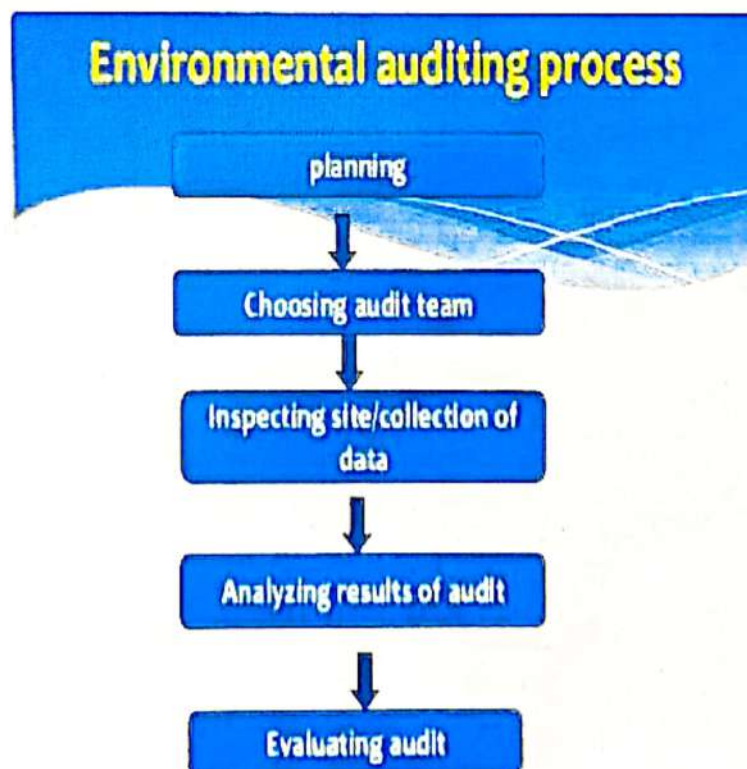
Hazardous waste is much important in green audit. Last part of the questionnaires shows possibilities of loss of resources like water, energy due to improper maintains.

**: On-site visit and observations:**

Shahaji Law College Kolhapur campus has vast built up area comprising of various departments, administrative building, Library, Class rooms. All these amenities have different kind of infrastructure as per their requirement. All these buildings were visited by the surveyors. Presents conditions were checked by specific check list. Personal observations were made during the onsite visit.

**: Data analysis and final report preparation:**

Required primary and secondary data were collected by different ways live questioners, check list etc. Collected data were crossed checked during the personal onsite visit. In case of green audit, the filled questionnaires of the survey from each group, were tabulated in excels spreadsheets. For better understanding of the results and to avoid complications, averages and percentages of the Tables were calculated. Interpretation of the overall outcomes are included in final report.





**CHAPTER: III**  
**OVERVIEW OF GREEN AUDIT**

**: Physical Facility/ Infrastructure:**

Sr. No.	Area of Unit	Area
1.	Total Area of Campus	3.367 acres
2.	Building Built up Area.	5611.50 sq.mtr
3.	Library and Study room etc	1379.30 sq.ft
4.	Class rooms	1105.15 sq.ft
5.	Staff Room	161.26 sq.ft
6.	Waiting Room	133.61 sq.ft
7.	Guest Room	133.61 sq.ft
8.	Exam Office and Record Room	759.40 sq.ft
9.	General Office	536.04 sq.ft
10.	Principle Office	398.15 sq.ft
11.	NAAC Room	281.34 sq.ft
12.	Toilet Block -I Toilet Block -II Toilet Block -III Toilet Block -IV Toilet Block -V Toilet Block -VI (All blocks)	1176.43 sq.ft
13.	Total Roof Area is	5611.00 sq.ft

AAS/SLC/GA 2022-23



### **: Water & Waste-water Management:**

Water which is precious natural national resource available with fixed quantum. The availability of water is decreasing due to increasing population of nation, as per capita availability of utilizable water is going down. Due to ever rising standard of living people, industrialization, urbanization, demand of fresh water is increasing day by day. The unabated discharge of Industrial effluent in the available water bodies is reducing the quality of these ample sources of water continuously.

Water Audit is nothing but an effective measure for minimizing losses, optimizing various uses and thus enabling considerable conservation of water in irrigation sector, domestic, power and industrial as well. A water audit is a technique or method which makes possible to identify ways of conserving water by determining any inefficiencies in the system of water distribution. The measurement of water losses due to different uses in the system or any utility is essential to implement water conservation measures in such an establishment.

#### **Water Audit:**

Water usage can be defined as water used for all activities which are carried out on campus from different water sources. For the purpose of water audit an on-site walk through survey and assessment was conducted to determine the efficiency of water use and to develop recommendation for improving water use efficiency. Overall agenda of conducting a water audit is to identify opportunities to make water use more efficient. Water audit includes tracking, assessing and validating all components of flow from distribution system in to the consumer's properties. On the other hand, water audit of a campus review direction and quantity of water used for domestic, drinking, sanitary and landscaping processes.

Drinking water is provided on assessable place in the campus. Drinking water is currently not being tested for the water parameters according to prescribed BIS standards for drinking water. Toilets were checked for leakages and spillage. These toilets were checked at random and found to be maintained in leakages and spillage free. The NSS conducts water conservation drives inside the campus and also at public places. College incited to reduce



water consumption by raising awareness in students & staff members and having periodic check on leaks. There were no displays of signage or message for Good Practices in the College premises for Water Conservation. It is needed for the continuous highlight of the issue. The college incited to recycle and reuse the wash water of wash basin for gardening purposes as a future plan. Due to COVID-19 pandemic situations, the water consumption and waste-water generation was very negligible but use of water for gardening was maximum during 2022-23.

Sr.No.	Water Used For	Quantity of water required
1	Domestic Purpose including.	5 m <sup>3</sup> /day
2.	Gardening	15.0 m <sup>3</sup> /day

### : Solid waste Audit:

Most of the teaching, non-teaching and student's activities create waste, and it is the way these wastes are handled, stored, collected and disposed of, which can pose risks to the environment and to public health. Pollution from waste is aesthetically displeasing and results in large amounts of litter in our communities which can cause health problems. Solid waste can be divided into three categories: bio-degradable, non-biodegradable and hazardous waste. Bio-degradable wastes include food wastes, wastes from toilets etc. Non-biodegradable wastes include what is usually thrown away in the campus such as plastic, tins and glass bottles etc. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals, acids and petrol. Unscientific management of these wastes such as dumping in pits or burning them may cause harmful discharge of contaminants into soil and water supplies, and produce greenhouse gases contributing to global climate change respectively. Special attention should be given to the handling and management of hazardous waste generated in the college. Bio-degradable waste can be effectively utilized for energy generation purposes through



Anaerobic digestion or can be converted to fertilizer by composting technology. Non-biodegradable waste can be utilized through recycling and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggeststhe best way to combat the problems. As far as solid waste was concerned negligible amount of solid waste was generated in college campus due to COVID-19 Pandemic situations.

Sr. No.	Sources of waste	Total Quantity
01	Waste from Sports Complex and From tree dropping and lawns.	3 Kg/ Day
02	Plastic waste	0 Kg/ Day
03	Solid waste from Librally and Office	1 Kg/ Day

### 3.5. Electronic Waste (E- waste):

E-waste generated through computer hardware parts is collected and kept in a scrap room with well-maintained record. Total number of electronic appliances available in all the departments and offices of the college are as follows:

Sr. No.	Particulars	Nos
1	Computers	31
2	Laptops	02
03	Printers	05
04	Projectors	09
05	Xerox Machines	04
06		
07		
08		
09		
10		

The e-waste from computer lab is being stored properly.



AAS/SLC/GA 2022-23

### **3.7: Tree Census in College campus:**

#### **3.4 Details of tree census in College campus:**

Plants have been an integral part of our lives. Not only food and fodder but also medicine, housing, clothing and many more relies on plants. They are the primary absorbers of the carbon dioxide (CO<sub>2</sub>) burden occurring globally. Any city, village or town is not different, all depend on plants for these activities. As per earlier reports carbon dioxide levels have increased to 40% from preindustrial levels to more than 390 parts per million CO<sub>2</sub>.

#### **Campus as Oxygen Park**

College campus has a green area with plantation done in the maximum part of the college. College is spread over an area of 3.367 acres. College has 1 water tank, and 1 well which are the source of water for whole campus beautification. Campus has opted drip irrigation to conserve water, many trees are also provided with *Matka* (earthen pot) irrigation system. College has also maintained landscaping and lawns wherever possible like, library, principal's residence, administration block, indoor gymnasium, Leisure Park etc.



College every year plants number of plants like coconut, ashoka, neem, mango and many others in the campus. Besides trees college has good number of shrubs, under-shrubs, and herbs. Following are list of plant trees in the campus:

**Table 1. List of important tree plants in campus Area**

Sr. No.	Name of Plant	Family	Count
1.	<i>Cocos nucifera</i>	Arecaceae	09
2.	<i>Saraca asoca</i>	Legume	15
3.	<i>Terminalia elliptica</i>	Combretaceae	01
4.	<i>Gliricidia sepium</i>	Mexican lilac	14
5.	<i>Prunus amygdalus</i>	Rosaceae	08
6.	<i>Areca Palm</i>	Arecaea	12
7.	<i>Ficus racemosa</i>	Moraceae	01
8.			
9.			
10.			
11.			
12.			
13.			
14.			



### 3.8: Electricity Audit:

#### Electricity and Energy Audit:

Major energy sources including solar electricity and MSEB are utilized inside the college premises. The massive requirement of the energy is at the Office, Library, Classrooms, and Practical Labs for lighting and practical instruments. The electricity was supplied to the campus by Maharashtra State Electricity State Board Corporation. However, College also generates a good amount of electricity on site using Solar panels. In college campus, it has been installed with 20 k Wp. Hence, in the year of 2022-23, the above departmental MSEB bills are highly reduced due to the effect of solar panels.

The Collage conducted an Energy Audit as a part of the Green *Environment*. The prime aim of the audit is to find a way of energy conservation. We would like to mention that the college also actively used solar energy as a conventional energy source. For the better indication, it is documented that the boards and posters are placed near to the source of solar electricity and nowhere to be seen during the walk through. The power switches are switched off by Peon and Lab attendant in non-lecture hours regularly and it is also confirmed during the site walk through visit. College has organized a different awareness program about saving electricity for Teaching, Non-Teaching and Students. The college initiated to install CFL and LED bulbs in the campus and this initiative could be strengthened with the help of an action plan. The college targets to reduce electricity out of total electricity consumed in college as per the documents. This may be supported by maintaining proper relevant records and benchmarking the present consumption.

#### Illumination and Ventilation:

College buildings are more spacious and class rooms as well as all other rooms are well ventilated. Natural illumination and ventilation is too good. There is no need for artificial ventilation and illumination.



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### **3.9. Sanitation Drive:**

For the academic year 2022-23, continuous sanitization of college campus was done as per the UGC guidelines, to protect the campus from COVID-19 infection. College conducts regular sanitation drive, which motivated student and staff about the cleanliness practices and give them expose for the voluntary work.

#### **House-keeping/pest control**

College has adopted a good practice of housekeeping and pest control. Contract is given to third party for house-keeping and pest control and monitored regularly.

### **3.10: Training and Awareness Programmed:**

The college organized various programs of Environmental awareness regarding environmental consciousness to aware the students about importance of environment and sustainable development. Following programs were organized by various departments to aware the students.

1. Due to COVID-19 pandemic situations, college has been aware the students were to attend all the programs in online modes.
2. Online celebration of national science day (28<sup>th</sup> Feb), world wetland day (2<sup>nd</sup> Feb), biodiversity day etc. are organized by the college to make aware students about the importance of plants in human life.
3. Staff Trekking
4. No Vehicle Day
5. Regular Sanitization of College Campus
6. Quizzes on Environment Day & AIDS awareness Day.
7. Tree Plantation





## CHAPTER IV

### CONCLUSION AND MANAGEMENT PLAN

Archana Analytical Services, Kolhapur with the help of NACC cell Shahaji Law College Kolhapur has conducted a Green Audit for the academic year 2022-23. Green auditing is the process of identifying and determining whether institution practices are eco- friendly and sustainable. The main objective of college to carry out green audit is to check green practices followed by college and to conduct a well formulated audit to understand where we stand on a scale of environmental soundness.

#### CONCLUSION:

From the green audit conducted by college following are some of the conclusions which can be taken for improvement of the college campus to become environmental friendly college campus.

1. College has developed excellent sanitization system during COVID-19 pandemic.
2. Good housekeeping is maintained throughout the premises.
3. The large scale commercial Vermicomposting unit was properly maintained.

#### RECOMMENDATIONS:

Following are some of the key recommendation for improving campus environment.

1. There should be establishment of Nature conservation clubs in order to aware the students regarding the importance of environment.
2. There should be organization of maximum guest lectures on Ecosystem conservation.
3. Department of IQAC should undertake the survey regarding Animal and plant biodiversity.



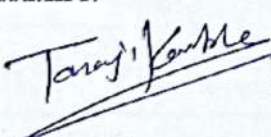

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(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/DW/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Drinking Water
	Nature of sample	Liquid
Sample Collected By	Archana Analytical Services, Kolhapur.	

## Drinking Water Analysis Report

Sr. No.	Parameter	Reading	Limit	Units	Standard Method
1	pH	7.5	6.5-8.5	--	IS: 3025
2	Colour	<5	5	Hazen	IS: 3025
3	Odour	Agreeable	--	--	IS: 3025
4	Chloride	27.5	250	mg/lit	IS: 3025
5	Sulphate	16.1	200	mg/lit	IS: 3025
6	Total Hardness as CaCO <sub>3</sub>	46.8	300	mg/lit	IS: 3025
7	Total Dissolved solids	92.6	500	mg/lit	IS: 3025
8	Turbidity	<1	5	mg/lit	IS: 3025
9	E-coli	ND	Absent	mg/lit	IS: 1622
Water is suitable for drinking purpose.					
ANALYZED BY- 		AUTHORIZED SIGNATORY 			

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	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Main Gate
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	

## Air Sample Analysis Report

### RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Main Gate			
03	Time of Sampling	Hrs	11.am		
04	PM2.5	$\mu\text{g}/\text{M}^3$	29.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	60.5	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.7	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	9.2	25	GC-FID



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	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Third Floor Corridor
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	
Air Sample Analysis Report		

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Third Floor Corridor			
03	Time of Sampling	Hrs	11.15am		
04	PM2.5	$\mu\text{g}/\text{M}^3$	29.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	32.7	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.6	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	4.1	25	GC-FID



*Tony K. Karthik*  
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	End Date of Analysis	16/08/2022
	Sample Details	Second Floor Corridor
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	
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01	Date of Sampling	11/08/2022			
02	Test Location	Second Floor Corridor			
03	Time of Sampling	Hrs	11.30am		
04	PM2.5	$\mu\text{g}/\text{M}^3$	28.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	34.8	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.7	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	3.4	25	GC-FID



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	Sample Details	First Floor Corridor
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	

## Air Sample Analysis Report

### RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	First Floor Corridor			
03	Time of Sampling	Hrs	11.45am		
04	PM2.5	$\mu\text{g}/\text{M}^3$	28.5	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	32.7	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.6	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	3.5	25	GC-FID



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Contact: 9762629792; 8411815132



# Archana Analytical Services

(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Administrative Office
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	

Air Sample Analysis Report

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Administrative Office			
03	Time of Sampling	Hrs	12.pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	33.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	42.8	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.7	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	3.8	25	GC-FID



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# Archana Analytical Services

(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Gymkhana
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	
Air Sample Analysis Report		

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Gymkhana			
03	Time of Sampling	Hrs	12.15pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	30.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	39.8	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.6	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	3.2	25	GC-FID



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(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Moot Court Hall
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	

## Air Sample Analysis Report

### RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Moot Court Hall			
03	Time of Sampling	Hrs	12.30pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	27.5	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	34.5	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.5	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	4.8	25	GC-FID



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(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Library
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	
<b>Air Sample Analysis Report</b>		

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Library			
03	Time of Sampling	Hrs	12.45pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	26.8	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	32.7	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.5	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	3.2	25	GC-FID



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(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Principal Office
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	
Air Sample Analysis Report		

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Principal Office			
03	Time of Sampling	Hrs	1.pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	22.7	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	27.8	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.4	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	2.8	25	GC-FID



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# Archana Analytical Services

(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/Lux/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Illumination
	Nature of sample	Lux Level
Sample Collected By	Archana Analytical Services, Kolhapur.	
<b>Illumination Observations Analysis Report</b>		

## Result

Illumination Observations				
Name of Institution	Shahaji Law College Kolhapur[SLC]		Date: 11/08/2022	
	Location	Existing Illumination In LUX	Require Lux as per MFR and IS:6665	Remark
Shahaji Law College Kolhapur[SLC]	Main Gate	960+	100	Adequate
	Administrative Office	440	100	Adequate
	Principal Office	410	100	Adequate
	Library	850	100	Adequate
	First Floor Corridor	460	100	Adequate
	Second Floor Corridor	480	100	Adequate
	Third Floor Corridor	420	100	Adequate
	Moot Court Hall	410	100	Adequate
	Staff Room	430	100	Adequate
	Gymkhana	640	100	Adequate



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# Archana Analytical Services

(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

Report No: AAS/SLC/Noise/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Ventilation
	Nature of sample	Ventilation
Sample Collected By	Archana Analytical Services, Kolhapur.	
<b>Ventilation Observations Analysis Report</b>		

## Result

Ventilation Observations					
Name of Institution	Shahaji Law College Kolhapur[SLC]		Date: 11/08/2022		
	Location	Measured Air Velocity Mt/Sec	Measured Air Velocity Mt/Min	Required as per FA in Mt/Min	Remark
Shahaji Law College Kolhapur[SLC]	Main Gate	0.7	42	30	Adequate
	Administrative Office	0.6	36	30	Adequate
	Principal Office	0.7	42	30	Adequate
	Library	0.7	42	30	Adequate
	First Floor Corridor	0.7	42	30	Adequate
	Second Floor Corridor	0.7	42	30	Adequate
	Third Floor Corridor	0.7	42	30	Adequate
	Moot Court Hall	0.6	36	30	Adequate
	Staff Room	0.7	42	30	Adequate
	Gymkhana	0.7	42	30	Adequate



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# Archana Analytical Services

(Consultants for Environment, Health and Safety)

Udhyog Adhar Reg. No. MH15D0001832

<b>Client Name and Address:</b> Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	<b>Date of Sampling</b>	11/08/2022
	<b>Start Date of Analysis</b>	11/08/2022
	<b>End Date of Analysis</b>	16/08/2022
	<b>Sample Details</b>	Noise
	<b>Nature of sample</b>	Noise
<b>Sample Collected By</b>	Archana Analytical Services, Kolhapur.	
<b>Ventilation Observations Analysis Report</b>		

## Result

Noise level Observations			
Name of Institution	Shahaji Law College Kolhapur[SLC]		Date: 11/08/2022
Shahaji Law College Kolhapur[SLC]	location	Measured Noise level (Category Silent Zone)	Limit as per (under rule 3(1) and 4(1) of Noise pollution (Control and Regulation), Rules 1999 (Day Time) MPCB
	Main Gate	48	50
	Administrative Office	46	50
	Principal Office	47	50
	Library	46	50
	First Floor Corridor	43	50
	Second Floor Corridor	45	50
	Third Floor Corridor	46	50
	Moot Court Hall	44	50
	Staff Room	42	50
	Gymkhana	47	50



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# Archana Analytical Services

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Report No: AAS/SLC/AIR/July2021	Date of Report	16/08/2022
Client Name and Address: Shahaji Law College Kolhapur (Council of Education), 1090, E Ward, Shahupuri, Kolhapur, Dist-Kolhapur, Maharashtra, 416001	Date of Sampling	11/08/2022
	Start Date of Analysis	11/08/2022
	End Date of Analysis	16/08/2022
	Sample Details	Staff Room
	Nature of sample	Air Sample
Sample Collected By	Archana Analytical Services, Kolhapur.	

**Air Sample Analysis Report**

## RESULTS

Sr. No.	Description	Unit	Results	Factories act 1948 Schedule-II (Section 41F)	Reference Method
01	Date of Sampling	11/08/2022			
02	Test Location	Staff Room			
03	Time of Sampling	Hrs	3.15pm		
04	PM2.5	$\mu\text{g}/\text{M}^3$	22.4	100(CPCB Standards)	IS 5182 Part 2:2001
05	PM10	$\mu\text{g}/\text{M}^3$	26.7	100(CPCB Standards)	IS 5182 Part 2:2001
06	Formaldehyde	ppm	0.7	2	GC-FID
07	Volatile Organic compounds (As Benzene)	ppm	2.8	25	GC-FID



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Est'd 2009

Shri Balasaheb Mane Shikshan Prasarak Mandal's  
**ASHOKRAO MANE GROUP OF INSTITUTIONS**

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**Approved by :** AICTE, New Delhi No. F.No. MS ( New Int ) 2009 / 08, Higher & Technical Education Department, Govt. of Maharashtra, Directorate of Technical Education, Mumbai. **Affiliated to :** Dr. Babasaheb Ambedkar Technological University, Lonere - Raigad. (B.Tech. & M.Tech. Programs), Shivaji University, Kolhapur. (MBA Program)

Accredited by NAAC with 'A' Grade CGPA 3.08

**Founder President**  
**Late Shri. Ashokrao Mane**

**Director**  
**Dr. H. T. Jadhav, M.E., Ph.D**

**President**  
**Hon. Shri. Vijaysinh A. Mane**

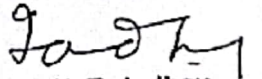
Ref. No. :

Date :

## *Certificate of Environmental Audit*

This is to certified that Shahaji Law College Shahupuri, Kolhapur, has successfully undergone 'Environmental Audit 'on 17 April 2023 to assess the Eco-friendly initiatives planning carried out in the campus to maintain a sustainable environment to the stakeholders was found satisfactory.

Place- Vathar Tarf Vadgaon

  
**Dr. H. T. Jadhav**  
**Director AMGOI, Vathar**  
**Certified Energy Auditor (BEE)**  
**Reg. No. - EA - 3023**

  
**Coordinator**  
**IQAC**  
**Shahaji Law College,**  
**Kolhapur.**



  
**Principal**  
**Shahaji Law College, Kolhapur.**





Estd 2008

Shri Babasaheb Mane Shikshan Prasarak Mandal's  
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**Approved by :** AICTE, New Delhi No. F-No. MS ( New Int ) 2009 / 08, Higher & Technical Education Department, Govt. of Maharashtra, Directorate of Technical Education, Mumbai **Affiliated to :** Dr. Babasaheb Ambedkar Technological University, Lonere - Raigad (B Tech. & M Tech. Programs), Shivaji University, Kolhapur. (MBA Program)

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**Founder President**  
**Late Shri. Ashokrao Mane**

**Director**  
**Dr. H. T. Jadhav, M.E., Ph.D**

**President**  
**Hon. Shri. Vijaysinh A. Mane**

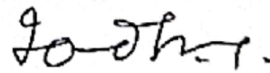
Ref No. :

Date :

## *Certificate of Energy Audit*

This is to certified that **Shahaji Law College Shahupuri, Kolhapur**, has successfully undergone **Energy Audit** on **17 April 2023** and assessed the electrical energy conservation, energy saving measures and sustainability in compliance with the applicable regulation, policies and standards in the campus were found to be excellent.

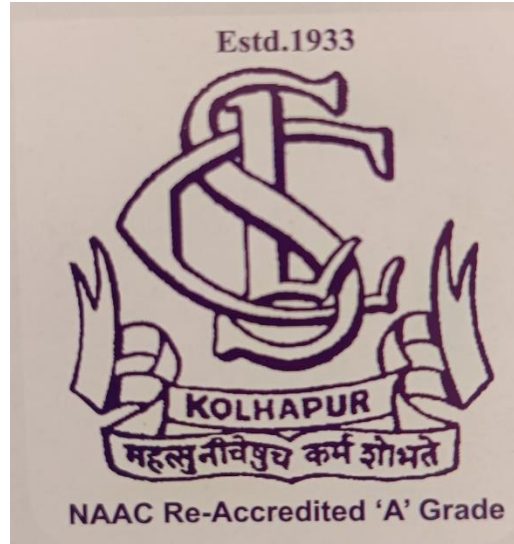
Place- Vathar Tarf Vadgaon

  
**Dr. H. T. Jadhav**  
**Director AMGOI, Vathar**  
**Certified Energy Auditor (BEE)**  
**Reg. No. - EA - 3023**

  
**Coordinator**  
**IQAC**  
**Shahaji Law College,**  
**Kolhapur.**



  
**Principal**  
**Shahaji Law College, Kolhapur.**



Council of Education's

**Shahaji Law College, Kolhapur**

In Association With

Forest Division – Sawantwadi

***Environmental Study Tour 2023***

***At Parpoli Report***

Parpoli - The Butterfly Village

On 20 Oct to 22 Oct 2023

## **ACKNOWLEDGEMENT**

To take Environmental study tour is a part of Environmental Law. Study tour is quite valuable and important aspect to provide practical knowledge to the student of law regarding Environmental Law.

We were able to prepare this Environmental study tour report with co-operation of various people. Our sincere thanks to our entire classmates of IV NLC, II LLB & Pre Law I for created such a memorable and knowledgeable tour .It was very useful experience which we got during this study tour with our classmates.

First of all ,We are very much thankful to our Principal Dr.Praveen Patil Sir for suggesting such a wonderful idea of Environmental study Tour.Our Assistant Professors Dr.M.C.Sheikh Sir , Dr. S.R.Rasam, Prof. Kalyani Pawar & Prof. Sadiya who have given us an opportunity and they help us very much in preparing the report by their guidance.

**Thanking You**

# CONTENT LIST

<b>Sr. No</b>	<b>Title</b>	<b>Page No</b>
1	Introduction	4-5
2	Importance	6-7
3	About Village	8
4	Object of the Trail	9
5	Legal Approach	10-19
6	Research Related	20-28
7	Schedule Reporting of Tour	29-31
8	Conclusion & Suggestions	32-33
9	Some Tour's Photographs	34-35

# INTRODUCTION

To experience the serene beauty of our only true home i.e nature and to create sensitization and awareness regarding the biodiversity & Environment ; Shahaji Law College , Kolhapur had organised the ‘Environmental Study Tour 2023’ from 20 October to 22 October 2023. The tour began at the Parpoli village situated at the foothills of Sahyadri mountain ranges which is famous for its more than 180 species of butterflies. ‘Butterfly Festival 2023’ was organised by the Sawantwadi Forest Department in Parpoli village of butterflies with the objective of imparting knowledge & awareness among the students about forest , biodiversity & its conservation.

The unique microclimate & floral diversity of this small village attracts many butterfly species, especially in the months of October and November ;which includes many endemic species like Malabar banded peacock ,Malabar raven ,etc. Hence this Butterfly Festival was organised to give exposure to nature lovers about science of butterflies, impart knowledge about habitats, life cycle & adaptations of butterflies through educational efforts.

The tour ended with 10 km trek in Parpoli-Amboli Ghat , giving the participants a thrilling experience in the jungles of western ghats all while

gaining valuable information about biodiversity & its protection. The course of tour also involved a visit to nearby tourist places to experience the natural beauty and a cultural program to experience our tradition.

Overall the our proved to be first visit to the butterfly village Parpoli and also gave further impetus for development of this festival from the point of view of ecotourism promotion in the near future. Also for the effective enactment of the laws and legal provisions.

# IMPORTANCE / OBJECTIVE

The main objective of this tour was to impart knowledge & importance to the students about forest, nature and wildlife along with imparting education about it. The tour was organised with the following objectives –

- To create sensitization & awareness from legal perspective about environment & forest conservation.
- To educate ourselves with the help of local guides about the biodiversity found in western ghats.
- To promote ecotourism that focuses on travel to pristine natural environments to experience the beauty of wildlife & to build environmental awareness among tourists.
- To learn about the cultures & traditions of fellow travellers & the village of visit to broaden our understanding of human relations with surrounding environment.
- To promote the butterfly festival from the point of view of generating employment & financial opportunities for local people.
- To find ways to minimize the impact of tourism on the natural habitat & environment.
- To conduct programs for promoting awareness among the locals in connection with the movements for forestation, plantation & overall biodiversity protection.

- To make fellow travellers & the locals aware of the various activities damaging the environment & wildlife habitat.
- To study, analyse & disseminate policies, programs & legislations affecting the environment,health, sanitation, & safety of wildlife.
- To encourage conservation from the legal approach by making the public aware of the laws in this regard i.e provision of legal aid.



# **ABOUT VILLAGE**

## **PARPOLI – VILLAGE OF BUTTERFLIES**

- Locality Name - Parpoli
- Taluka Name - Sawantwadi
- District - Sindhudurg
- State - Maharashtra
- Region – Konkan

Parpoli is a village in Sawantwadi Taluka in Sindhudurg District of Maharashtra State, India. It belongs to Kokan region. It is located 42 km towards East from District head quarters & 20 km from Sawantwadi.

Parpoli village is situated at the base of Amboli ghat and is known as the scenic butterfly village. The village is home to more than 180 species of butterflies. Parpoli is blessed with a unique micro environment and variety of flowers and numerous species of butterflies, which are very rare and only found in the western ghats, are found in large numbers mainly in the months of October and November.

The waterfalls cascading from the high diffs and the unique atmosphere made Amboli worldwide. Likewise, the variety of butterflies will put Parpoli on the world map. Hence, Parpoli has been declared as the butterfly village. This is an important step for tourism growth.

# OBJECT OF THE TRAIL

Following are some of the object of the trail –

- Discover plants , birds, butterflies, reptiles , amphibians and spider species.
- Experience the enchating beauty of the forest and calm environment.
- Explore the species of butterflies and capture the rarest species.
- Spend some peaceful time amidst nature and have a therapeutic walk.
- Study atmosphere and nature of Parpoli village.
- Explore the biodiversity in forest of Parpoli village.

# LEGAL APPROACH

## ◆Introduction –

Environmental laws are an important part of any governance body. It comprise a set of laws and regulations concerning air quality , water quality , and other aspects of the environment. The environmental laws in India are a direct reflection of what was envisaged in the Constitution. The need for protection and conservation of the environment and sustainable use of natural resources is reflected in the Constitutional framework of India and also in the international commitments of India. To understand the present day legal provisions for environmental protection and conservation of natural resources, it is important to look into the past Indian history of protecting the environment.

## ◆Historical Background –

### 1)Ancient Period –

Environmental awareness can be said to have existed even in the pre-vedic Indian valley Civilization which flourished in northern India about 5,000 years ago. This is evident from archaeological evidence gathered from Harappa and Mohenjo – Daro which were the prominent cities of the civilization. Protection and cleaning up of the environment were the

essence of the vedic culture. Arthashastra various punishments were prescribed for cutting trees , damaging forests , and for killing animals and environmental ethics of nature conservation were not only applicable to the common man but the rulers and kings were also bound by them.

## 2)Pre – Independence Period –

During this period , tort laws, criminal law, laws regarding water, forest laws , special laws, etc were there to deal with the subject of protection of the environment. We can say that there was not much development in the Indian Environmental Law during this period.

## 3)Post – Independence Period –

The detailed and developed framework for environmental protection came after the UN conference on Human Environment in Stockholm in 1972.

This led to the formation of the National Council for Environmental Policy and Planning in 1972 within the science and technology department. This was set up to establish a regulatory body for the overview of the environmental related issues and concerns. This council was later converted to the Ministry of Environment and Forests.

The government of India has made numerous acts to protect the environment and biodiversity. The important and impactful environmental laws and acts are explained below –

## **A ) Wildlife Protection Act, 1972**

The Wildlife (Protection) Act, 1972 is an Act of the parliament of India enacted for protection of plants and animal species. Before 1972, India had only five designated national parks. Among other reforms, the Act establishes scheduled protected plant & hunting certain animal species or harvesting these species were largely outlawed. The Act provides for the protection of wild animals, birds & plants; and for matters connected therewith or ancillary or incidental thereto. It extends to the whole of India.

### **•Objective-**

The main objectives of the Act are as follows:

1) Prohibition on Hunting of specified wild animals, birds and plants.

2) Setting up and management of national parks and wildlife sanctuaries.

3) Control of Trade and commerce in wildlife and wildlife products.

### **•Wildlife Protection Act, 1972 (with Amendment Acts of 2003 and 2006) -**

The act provides for the protection of wild animals, bird and plants and matters connected with them, with a view to ensure the ecological and environmental security of India. Extends to the whole of India, except the state of Jammu and Kashmir which has its own wildlife Act. It provides for protection of hunting rights of the scheduled Tribes in Andaman and Nicobar Islands. Has provisions

for the convention on International Trade in Endangered species of wild fauna & flora.

- Legislative Approach-

The Act consists of 60 sections and VI Schedules divided into 8 chapters. The Wildlife Protection Act, 1972 empowers the central and state governments to declare any area a wildlife sanctuary, national park or closed area. There is a blanket ban on carrying out any industrial activity inside these protected areas. It provides for authorities to administer and implement the Act; regulate the hunting of wild animals; protect specified plants, sancturies, national parks and closed areas, restrict trade or commerce in wild animal or animal articles; and miscellaneous matters.

The Act underwent many amendments. An amendment to the Act in 1982, introduced provisions permitting the capture and transportation of wild animal for the scientific management of animal population.

An amendment in the year of 1991 resulted in the Insertion of the special chapters dealing with the protection of specified plants and the regulation of 2005. The near-total prohibition on hunting was made more effective by the amendment Act of 1991.

Widespread changes have been made by the Wildlife (Protection) Amendment Act,2002 & a new chapter has been incorporated as chapter VI – A to deal with the forfeiture of property derived from illegal hunting & trade.

•Judicial interpretation of wildlife conservation Laws:

1)Protection of Endangered Species -

The judiciary has consistently emphasized the protection of endangered species. Landmark cases such as M.C.Mehta V. Kamal Nath (1997), Wildlife society of Orissa v. Ministry of environment and Forests (2013), Animal welfare Board of India V. A. K.Jain (2003), and Centre for Environmental Law v. Union of India (2002)

2)Habitat conservation-

In the case of T.N Rodavarman Thirumulpad vs. union of India (2006), the supreme court declared all forests areas, irrespective of there classification, as deemed forests, strengthening protection measures for wildlife habitats.

In the case of Narmada Bachao Aandolan vs. Union of India (2000), the supreme court ordered the construction of a dam on the Narmada River to be halted, citing concerns about the impact on wildlife habitat.

3)Penalties-

(Section 51 of the wildlife protection Act)

If the offences committed in connection with the animal described in schedule -1 or part II of schedule II where the offence was related to hunting in the sanctuary or a national park or exchange in the territory of a sanctuary or a national park, such an offence shall be punishable by imprisonment not less than 3 yrs but up to 7yrs and a fine not exceeding 10,000 by rupees.

## **B) Indian Forest Act , 1927 -**

The Indian Forest Act was first enacted in 1865. The Indian Forest Act was amended in 1878 and once again it was amended in 1927. The Indian Forest Act, 1927 did not focus on the conservation of forests, rather the laws of the British Colonial Government focused on control of extraction of timber from the forests. Indian Forest Act, 1927 has 6 chapters and 40 sections.

- **Legislative Approach –**

- Reasons for implementation of new Forest laws –
  - i) The British wanted forest in order to meet the demands of the massively expanding railways.
  - ii) Expansion of Railways was very important for the movement of Imperial troops and to carry out trade.
  - iii) Wood was needed to lay down railways sleepers, and it also served as fuel for running locomotives.
  - iv) There was a problem of timber supply for the Royal British Navy. They needed wood to build their ships in order to protect their massive empire.
  - v) The British were worried about the use of forests in India by the local people.
  - vi) All these reasons led to the implementation of forest by the colonial British Government.

Indian Forest Act divided forest into 3 categories –

- 1) Reserved Forests



2) Protected Forests

3) Village Forests

- Executive Mechanism -

Forest officers are public servants employed by the government for the administration and governance of the forests across the territory of India. All the states in India have formulated their own legislations for governing forests in their territory, with the Indian Forest Act, 1927 as the base.

The three primary acts which bestow power upon the forest officers are :

i) Indian Forest Act , 1927 and the rules made thereunder.

ii) The Wildlife (Protection) Act , 1972 and the rules made thereunder.

iii) The Forest Conservation Act , 1980 and the rules made thereunder.

Apart from these legislations, the forest officers are bound to implement the laws made by the legislatures of the respective states.

Hierarchy of officers under the Indian Forest Act, 1927 –

1) Administrative Officers –

Principal Chief Conservator of forests

|

Additional Principal Chief Conservator of forests

|

Chief Conservator of forests

|

Conservator of forests

2)Controlling Officers -

Deputy Conservator of forests

|

Assistant Conservator of forests

3)Implementing staff –

Forest Range Officer

|

Forester

4)Protection staff –

Forest Guard

|

Forest Watcher

Chapter XI from Section 72 to Section 75 states powers,duties & responsibilities of forest officers under Indian Forest Act , 1927.

◆Statistics NCRB(National Crime Records Bureau) –

The number of total crimes reported in India in 2023 was reported in 445 , 9 per 1,00,000 people. The most common crimes in India is theft , followed by robbery and assault.The states with the highest crime rates in India are Uttar Pradesh , Kerala, Maharashtra and Bihar.

Recently state of India's Environment report 2023 was launched by Centre for Science and Environment (CSE) and Down to Earth Magazine (DTC) covering an extensive gamut of subject assessments , ranging from climate change, agriculture and industry to water , plastics, forests and biodiversity.

- What are top 'five' environmental crimes?

Environmental crime is an illegal act which directly harms the environment. These illegal activities involve the environment, wildlife, biodiversity and natural resources. Following are some of the environmental crimes-

1) Wildlife Crime –

Illegal wildlife in endangered species in contravention to the convention on International Trade in Endangered Species of Fauna and Flora (CITES).

2) Pollution Crimes –

Dumping and Illicit trade in hazardous waste in contravention of the 1989 Basel convention on the control of transboundary movement of hazardous wastes and other wastes and their disposal.

3) Illegal fishing –

Illegal, unreported and unregulated fishing in contravention to controls imposed by various regional fisheries management organisation.

4) Illegal mining –

Smuggling of ozone – depleting substances (ODS) in contravention to the 1987 Montreal Protocol and substances that deplete the ozone layer.

5) Illegal logging –

Illegal logging is the harvesting of timber in contravention of the laws and regulations of the country of harvest. It is a global problem with significant negative economic, environmental and social impact.

- Impact of Environmental crimes –

Environmental crime is characterised by its impact on the natural environment. This impact manifests itself in –

- 1) Increasing level of pollution
- 2) A degradation of wildlife
- 3) A reduction in biodiversity
- 4) The disturbance of ecological balance.

## RESEARCH RELATED

### *1)Signature Spider-*



The Signature Spider (*Argiope Anasuja*) is also known as the Writing Spider and the Garden Spider. It is commonly found in India often in one's garden or backyard. Recently someone visiting my house mentioned that I had a signature spider at my front door. I went to look and was so interested by the zigzag pattern on its web which gives it the name "Signature Spider" that I checked the internet to learn more.

This spider is found all over the world. There are around 75 known different species, and although different in colouration each species shares the same distinctive striping on its body. The Signature Spider builds its web close to the ground in order to catch low flying insects such as bees and wasps that travel from

flower to flower and is able to eat insects twice its size. This spider's web is almost invisible except for zigzag stripes on the web. These zigzag stripes are known as the "stabilimentum".

## 2) *Common Bush Brown-*



### Butterfly Biodata:

Genus: *Mycalesis* Hübner, 1818

Species: *perseus* Fabricius, 1775

Subspecies: *cepheus* Butler, 1867

Wingspan of Adult Butterfly: 35-45mm

Caterpillar Local Host Plants: *Ischaemum ciliare* (Poaceae, common names: Smut Grass), *Axonopus compressus* (Poaceae, common names: Wide-leaved Carpet Grass, Cow Grass).

### Physical Description of Adult Butterfly:

On the upperside, the wings are dark greyish brown with a large but obscure ocellus in space 2 of the forewing. The male has a small, dark brown sex

brand in space 1b of the forewing, and another one at vein 7 of the hindwing overlaid with a pale yellow hair tuff. On the underside, both wings are pale brown in ground colour (with the male in darker brown than the female) and have a clear-whitish post-discal band. There is a series of ringed ocelli in the submarginal area on both wings. In the forewing, the submarginal ocelli usually include only one ocellus in each of spaces 2 and 5, and two smaller ocelli in between. In the hindwing, there is a thin, dark indentation line stretching down to (but not beyond) vein 1b. Furthermore, the submarginal series of ocelli has an arched appearance with the ocellus in space 2 moved inwards and out of alignment with those in spaces 1b and 3.

### *3) Common Leopard-*



The common leopard is a medium-sized butterfly with a wingspan of 50–55 mm with a tawny colour and marked with black spots. The underside of the

butterfly is more glossy than the upper and both the male and female are similar looking. A more prominent purple gloss on the underside is found in the dry-season form of this butterfly.

Male and female. Upperside bright yellowish-ochreous. Forewing with two black short slender sinuous bars across middle of the cell, a similar darker pair at its end, followed beyond by a short broad sinuous streak from the costa to the lower radial, and is then succeeded below the cell by an inwardly-oblique series of four irregular-shaped spots, and beyond by a medial-discal transverse row of similarly disposed narrow spots, an outer-discal row of round spots, then an inner submarginal sinuous line, confluent with an outer straight line, and a marginal row of triangular spots. Hindwing with a slightly-defined slender black lunule within the cell, two before its end, and two also above it; a transverse inner-discal irregular series of slender lunules which are slightly pale bordered externally; a medial-discal row of four larger black oval spots, two submarginal sinuous slightly confluent lines, and marginal triangular spots.

Underside paler, and with all the markings, as on upperside much less defined; the interspaces of cell-bars and outer markings suffused with violet-grey, and the inner-discal series outwardly bordered with greyish lunules. In some specimens, presumably dry-



season, all the markings on the upper and underside are less prominent.

Body and palpi above yellowish-ochreous; beneath and also femora beneath greyish-white; tibia and tarsi pale ochreous; antennae ochreous-brown.

#### 4) *Common Jezebel-*



The wingspan of both males and females ranges from 6.5 to 8.5 cm.

Male-

Upperside is white. The forewings have the veins broadly black, this colour broadened triangularly at the termination of the veins, costal margin narrowly black; a broad black postdiscal transverse band from costa to dorsum sloped obliquely outwards from costa to vein 4, thence parallel to termen. Hindwing with the veins similar but for three-fourths of their length much more narrowly black; a postdiscal transverse black band as on

the forewing but much narrower, curved and extended only between veins 2 and 6; beyond this the veins are more broadly black and this colour as on the forewing broadens out triangularly at the termination of the veins; the interspaces beyond the postdiscal black band pink, due to the vermilion colouration of the underside showing through.

On the underside, the forewings are similar but the black edging to the veins much broader, the upper two interspaces beyond the postdiscal transverse band tinged with yellow. Hindwing: ground colour bright yellow, the veins and transverse postdiscal band as on the upperside but much more broadly black, the latter extended from the costa to vein 2; the interspaces between the veins beyond the postdiscal fascia with a series of broadly lanceolate (lance-shaped) or cone-shaped vermilion-red spots, each spot very narrowly edged with white; the basal portion of interspace 6 white, in contrast to the bright yellow of the ground colour. Antenna black; head, thorax and abdomen white, the apical joint of the palpi black; the head and thorax with a mixture of black hairs that give these parts a grey-blue appearance.

#### Female-

Upper and undersides similar to those in the male, but the black edging to the veins and the postdiscal

transverse bands on both forewings and hindwings are much broader.

### 5) *Ant's nest-*



The industrious ants, work unitedly till their goal is achieved. Excellent craftsmanship and mastery over the art of weaving nests, the ants are an of example of labour and hard work. They chose some of the sturdy and strong leaves and join their narrow ends and weave them together. They bend the edges of the leaves in whatever shape they require and create a great hollow. They strengthen the leaves further with additional twigs and branches and create enough space to accommodate thousands and thousands of ants. The nest is built within a span of 24 hours and ensure that it is water proof and weather proof.

### 6) *Ixora-*



Ixora is a class of blossoming plants in the Rubiaceae family. It is the main sort in the tribe Ixoreae. It comprises of tropical evergreen trees and bushes and holds around 545 species. In spite of the fact that local to the tropical and subtropical territories all through the world, its focal point of assorted qualities is in Tropical Asia. It is host plant of monkey puzzle butterfly species

### 7) *Bamboo-*

Bamboos are a diverse group of mostly evergreen perennial flowering plants making up the subfamily Bambusoideae of the grass family Poaceae. Giant bamboos are the largest members of the grass family, in the case of *Dendrocalamus sinicus* individual culms reaching a length of 46 meters, up to 36 centimeters in thickness and a weight of up to 450 kilograms.



### 8) *Teak-*



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

# SCHEDULE REPORTING OF TOUR

DAY	DETAILS
Day 1 20 <sup>TH</sup> OCTOBER 2023	<ul style="list-style-type: none"><li>▶Early in the morning all students gathered in the premise of Shahaji Law College at 8 Am.</li><li>▶ In morning at 8.30 am we started our journey.</li><li>▶Nearly at 2 pm we reached the Parpoli village and we were given delicious food.</li><li>▶In afternoon at 3 pm the workshop started. Workshop was informative and students actively participated in the workshop.</li><li>▶At 6 pm cultural programme started. This evening programme showcased the rich heritage of the region , offering an enjoyable experience.</li><li>▶After such a enjoyable cultural programme at 8.30 pm we were served</li></ul>

	<p>with nutritious local food. Thus, first of tour concluded with warm and hospitable surrounding of homrestays at Parpoli village .</p>
<p style="text-align: center;">Day 2 21<sup>st</sup> OCTOBER 2023</p>	<ul style="list-style-type: none"> <li>▶ Breakfast (7 to 8 am)- The day started with wholesome breakfast made up of only rice called ‘ghavan’.</li> <li>▶ Parpoli butterfly trail (8 to 1 am) – This butterfly trail provided an opportunity for students to explore and appreciate the natural beauty of Parpoli village .</li> <li>▶ Lunch (1 to 2 pm) – A well timed lunch break allowed students to refuel for further activities. Many local food item were introduced to student through this tour.</li> <li>▶ Visit to nearby tourist places (3 to 8 pm) – After lunch we went to many scenic places. We visited</li> </ul>

	<p>temples , waterfalls. We also visited aquarium in Kesari.</p> <p>►Dinner (7 to 9 pm) – The day ended with another delightful dinner in the homestays, fostering a sense of community among students.</p>
<p style="text-align: center;">Day 3 22<sup>nd</sup> OCTOBER 2023</p>	<p>►Trek in Parpoli – Amboli ghat (6.30 am to 12pm) – The tour’s adventurous climax featured a trek through Parpoli – Amboli ghat offering a memorable and picturesque experience to us. We thrilled by having such marvellous experience.</p> <p>► We also visited to Ramtrith located in Ajara.</p>



# CONCLUSION & SUGGESTIONS

Conclusion –

The study tour is intended to make us familiar with the environment and to explore the butterfly biodiversity of Parpoli village. The Parpoli village, which is placed in the foothills of Amboli ghat is known as butterfly village as it is home to more than 180 species of butterflies.

The first edition of Butterfly festival was organised between 20-23<sup>rd</sup> October 2023 to give an exposure to nature lovers about science of Butterflies.

The Homestay was a tourist place which is accessible by surface transportation that connects it to the mainland. It was a unique blend of architecture, street art, That we haven't seen anywhere else in the region.

Overall the trip was awesome. We experienced the real adventure in three days. It taught us discipline ;punctuality and made us more adaptive.

We have learned about adventure like trekking, and adventure camp has given life lessons and also given to explore environment and floral diversity and connecting with local culture.

We the students of Pre Law I,IV NLC,LLB-II, would like to thank all the respected teachers and principal sir who accompanied us for giving the golden opportunity of participating in the Environmental study

tour 20223.This experience will always remain a significant part of our college memories .

# Some Tour's Photographs-



