

"Education for Knowledge, Science and Culture"
-Shikshanmahashri Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikashan Sanstha's
Vivekanand College, Kolhapur (Autonomous)

Department of Zoology
Academic Year 2020-2021

Project B.Sc.-III

INDEX

Date-10/08/2020

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DEPARTMENT OF ZOOLOGY

Notice

Date: 10/08/2020

All the students of B. Sc. III (Zoology) are informed that as part of your syllabus, all have to complete one project for this academic year 2020-2021 carrying approximately 15 -20 marks weightage in your practical exam. For that you have to decide title of your project as well as complete your project within given period of time.


Dr. K. P. Shinde
Head
Department of Zoology
Vivekanand College,
Kolhapur

②


DEPARTMENT OF ZOOLOGY

Notice

Date: 10/08/2020

All the students of B. Sc. III (Zoology) are informed that for completion of your project for this academic year 2020-2021. Consider this student guide allotment list given below.

Sr. No	Name of Student	Guide Name	Topic Name
1 2	Atharv Swami Suraj Satpute	Dr. T.C. Gaupale	Study of snakes with reference to their habitat and taxonomy.
3 4	Rijwan Shabbir Chaus Rushikesh B. Gurav	Dr. K. P. Shinde	Diversity of ants hills /house in the Kolhapur Maharashtra
5 6	Simran Chawla Hrinakshi Pawar	Ms. Najnin Patel	Recent updates on corona virus and its status Kolhapur district
7 8	Mrunal Krishnat Sawant Komal Kiran Masute	Dr. Sneha Desai	Diabetes and Indian herbs used to cure it.
9 10	Priyanka Muttapa Pujari Shubhangi S. Survanshi	Dr. Sneha Desai	Study on Rankala lake pollutants and it's effect on surrounding biodiversity
11	Tabasum Arif Kazi	Dr. Tejashri Patil	Survey on human genome project
12	Kettaki K. Lokhande	Dr. Tejashri Patil	Nutritional Status of Women in Ahilyanagar Baramati
13 14	Samiya Isak Mulla Sayali Gautam Malavi	Ms. Yogita Pujari	Evaluation and observational study of Poultry farming from Kolhapur region
15 16	Sonali Uttam Biranje Yasin Shaik	Ms. Geetanjali Satale	Study of Birds Biodiversity in Rankala (Kolhapur)
17 18	Akshata Prafull Kamble Dhanashree Shankar Patil	Ms. Geetanjali Satale	Survey on Ornamental Aquarium fishes in Kolhapur city.
19 20	Bhakti Sukumar Mhetri Firdaus Anjum Naikawadi	Ms. Kranti Kamble	Biodiversity of ants in the Vivekanand College Campus, Kolhapur.
21 22	Priyanka Indrajit Katkar. Rohini Vittal Sawant	Ms. Jyoti Sathe	Study of Buffalo farming unit in Kolhapur city.


Dr. K. P. Shinde
Head

Department of Zoology
Vivekanand College,
Kolhapur

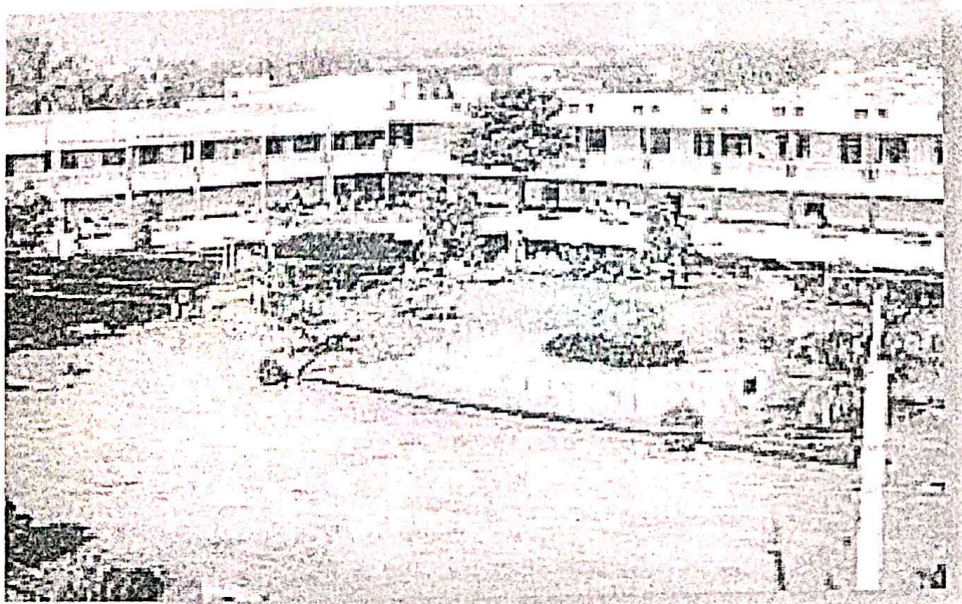
Dissemination of Education for Knowledge, Science and Culture”

- Shikshan Maharashi Dr. Bapuji Salunkhe.



“Shri Swami Vivekanand Shikshan Sanstha’s”

VIVEKANAND COLLEGE
(AUTONOMOUS), KOLHAPUR



VIVEKANAND COLLEGE (AUTONOMOUS),
KOLHAPUR.

CERTIFICATE

This is to certify that, the project report entitled **Diabetes and Indian Herbs used to cure it.** Submitted by Mrunal Sawat, Komal Masute, and. of BSc.-III degree course in Zoology studies of Vivekanand College (Autonomous), Kolhapur has been completed under my supervision and guidance. This project is the original copy of their research to best of our knowledge.

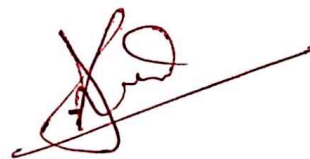
Place - Kolhapur

Date - 17-08-21


Head of Department
Department of Zoology
Vivekanand College,
Kolhapur

Examined

17/8/21


Project guide

DECLARATION

We undersigned hereby Declare that the report entitled **Diabetes and Indian Herbs used to cure it**. Is bonafide work prepared by us as under the guidance of **Dr. Sneha S. Desai**. The empirical finding of the project report is based on the data collected by us. The matter presented is not copied from any other sources.

Place – Kolhapur

Date –

NAMES	ROLL NO.	SIGN
1 Mrunal Sawat	8301	<u>Sawat</u>
2 Komal Masute	8292	<u>KKmasute</u>

ACKNOWLEDGMENT

The following project report describe the concept of description of **Diabetes and Indian Herbs used to cure it** their history, Symptoms and treatment of Diabetes all the discussion made by us in this project is accreted and reliable.

We express our gratitude to our Principal, **Dr. R. R. Kumbhar** for giving us the opportunity to conduct this study. We consider it a matter of privilege that we get the chance to carry out the analysis under the guidance of **Dr. S. S. Desai**, and we know that without her help, this project report would not have been successful.

Lastly, we are thankful to all others who have directly or indirectly helped us in making this project a successful one.

Place: Kolhapur.

Date: 17-08-21

TITLE OF THE PROJECT:

Diabetes and Indian Herbs used to cure it.

- Name of student: 1. Mrunal Sawat
2. Komal Masute
- Name of supervisor: Dr. S. S. Desai.
- Name of college – Vivekanand College (Autonomous),
Kolhapur
- Name of Department – Zoology
- Year -2020-2021

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CHAPTER.NO-1

INTRODUCTIONS

INTRODUCTION OF DAIBETES:

Diabetes Mellitus ("diabetes" for short) is a serious disease that occurs when the body has difficulty properly regulating the amount of dissolved sugar (glucose) in blood stream. It is unrelated to a similarly named disorder "Diabetes Insipidus" which involves kidney-related fluid retention problems.

In order to understand diabetes, it is necessary to first understand the role glucose plays with regard to the body, and what can happen when regulation of glucose fails and blood sugar levels become dangerously low or high.

The tissues and cells that make up the human body are living things, and require food to stay alive. The food cells eat is a type of sugar called glucose. Fixed in place as they are, the body's cells are completely dependent on the blood stream in which they are bathed to bring glucose to them. Without access to adequate glucose, the body's cells have nothing to fuel themselves with and soon die.

Human beings eat food, not glucose. Human foods get converted into glucose as a part of the normal digestion process. Once converted, glucose enters the blood stream, causing the level of dissolved glucose inside the blood to rise. The blood stream then carries the dissolved glucose to the various tissues and cells of the body.

Though glucose may be available in the blood, nearby cells are not able to access that glucose without the aid of a chemical hormone called insulin. Insulin acts as a key to open the cells, allowing them to receive and utilize available glucose. Cells absorb glucose from the blood in the presence of insulin, and blood sugar levels drop as sugar leaves the blood and enters the cells. Insulin can be thought of as a bridge for glucose between the blood stream and cells. It is important to understand when levels of insulin increase, levels of sugar in the blood decrease (because the sugar goes into the cells to be used for energy).

The body is designed to regulate and buffer the amount of glucose dissolved in the blood to maintain a steady supply to meet cell needs. The pancreas, one of body's many organs, produces stores and releases insulin into the blood stream to bring glucose levels back down.

The concentration of glucose available in the blood stream at any given moment is dependent on the amount and type of foods that people eat. Refined carbohydrates, candy and sweets are easy to break down into glucose. Correspondingly, blood glucose levels rise rapidly after such foods have been eaten. In contrast, blood sugars rises gradually and slowly after eating more complex, unrefined carbohydrates (oatmeal, apples, baked potatoes, etc.) which require more digestive steps take place before glucose can be yielded. Faced with rapidly rising blood glucose concentrations, the body must react quickly by releasing large amounts of insulin all at once or risk a dangerous condition called Hyperglycemia (high blood sugar) which will be described below. The influx of insulin enables cells to utilize glucose, and glucose concentrations drop. While glucose levels can rise and fall rapidly, insulin levels change much more slowly. When a large amount of simple sugar is eaten the bloodstream quickly becomes flooded with glucose. Insulin is released by the pancreas in response to the increased sugar. The glucose rapidly enters the cells but the high levels of insulin remain in the bloodstream for a period of time. This can result in an overabundance of insulin in the blood, which can trigger feelings of hunger and even Hypoglycemia (low blood sugar), another serious condition. When blood glucose concentrations rise more gradually, there is less need for dramatic compensation. Insulin can be released in a more controlled and safer manner which requires the body experience less strain. This more gradual process will leave feeling "full" or content for a longer period of time. For these reasons, it is best for overall health to limit the amount and frequency of sweets and refined sugars in diet. Instead eat more complex sugars such as raw fruit, whole wheat bread and pasta, and beans. The difference between simple and complex sugars (carbohydrates) is exemplified by the difference between white (simple) and whole wheat (more complex) bread.

Insulin is the critical key to the cell's ability to use glucose. Problems with insulin production or with how insulin is recognized by the cells can easily cause the body's carefully balanced glucose metabolism system to get out of control. When either of these problems occurs, Diabetes develops, blood sugar levels surge and crash and the body risks becoming damaged.

A PROJECT REPORT ON :
“ BIODIVERSITY OF WESTERN GHATS ”
Submitted To,
DEPARTMENT OF ZOOLOGY :
VIVEKANAD COLLEGE, KOLHAPUR



**IN THE PARTIAL FULFILLMENT OF BACHELOR OF SCIENCE IN
ZOOLOGY**

IN THE YEAR: 2020-2021

NAME :- RIJWAN SHABBIR CHAUS. ROLL NO. : 8284

NAME :- RUSHIKESH BALKRISHNA GURAV. ROLL NO. : 8286

CLASS B.Sc. III

THE GUIDANCE OF

Dr. G. K. SONTAKKE SIR

Head

Department of Zoology

Vivekanand College, Kolhapur (Autonomous).

DECLARATION

We the undersigned students, declare that the project entitled to "BIODIVERSITY OF WESTERN GHATS" is submitted by us under the guidance of Dr. G.K.SONTAKKE, Head Of Department , Zoology Department, Vivekanand College, Kolhapur (Autonomous).

It is our original work. The empirical findings in this project are based on the data collected by us and it's authenticable to the best of our knowledge. The presented matter is not copied from any other source.

Name - Rushikesh Balkrishna Guron.
Roll No. - [8286]

ACKNOWLEDGEMENT

We would like to express our profound gratitude and deep regards to our project supervisor Dr.G.K.Sontakke, assistant professor for his guidance throughout the project work. We also like to express our special thanks of gratitude to Dr T.C.Gaupale, Assistance Professor of Zoology Department for providing us the opportunity to conduct the project.

We are also thankful to Miss N.A.Patel, Miss G.B. Satale, Miss. K.L..Kamble, Miss. Y.S. Pujari, Miss. T.C. Patil, Miss. JyotiSathe and non-teaching staff of Department of Zoology.Vivekanand College, Kolhapur for their cooperation and throughout our project work. We would also like to thank our parents and friends who helped us in financing the project within the limited time frame.

Name - Rushi beeh Ballekrishna Gurav.
Roll No. => [8286]

(12)

VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)

DEPARTMENT OF ZOOLOGY

CERTIFICATE


THIS IS TO CERTIFY THAT Mr.RIJWAN SHABBIR CHAUS ROLL NO.[8284] AND RUSHIKESH BALKRISHNA GURAV ROLL NO.[8286] HAVE SATISFACTORY COMPLETED THE PROJECT ENTITLED "BIODIVERSITY OF WESTERN GHATS" AS PER THE SHIVAJI UNIVERSITY,KOLHAPUR SYLLABUS FOR B.Sc. PART III COURSE IN ZOOLOGY, AND THIS IS THEIR BONAFIDE WORK IN THE ACADEMIC YEAR 2020-2021.


TO THE BEST OF MY KNOWLEDGE AND BELIEF THE MATTER PRESENTED IN THIS PROJECT IS ORIGINAL AND IS BASED ON THEIR OWN WORK . SUCH KIND OF WORK HAS BEEN SUBMITTED ANYWHERE.

DATE :- 16/08/2024 .

PLACE :- Kolhapur


Teacher in-charge

Examined

Examiner
16/8/24


Head of the Department
Department of Zoology
Vivekanand College,
Kolhapur

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INTRODUCTION

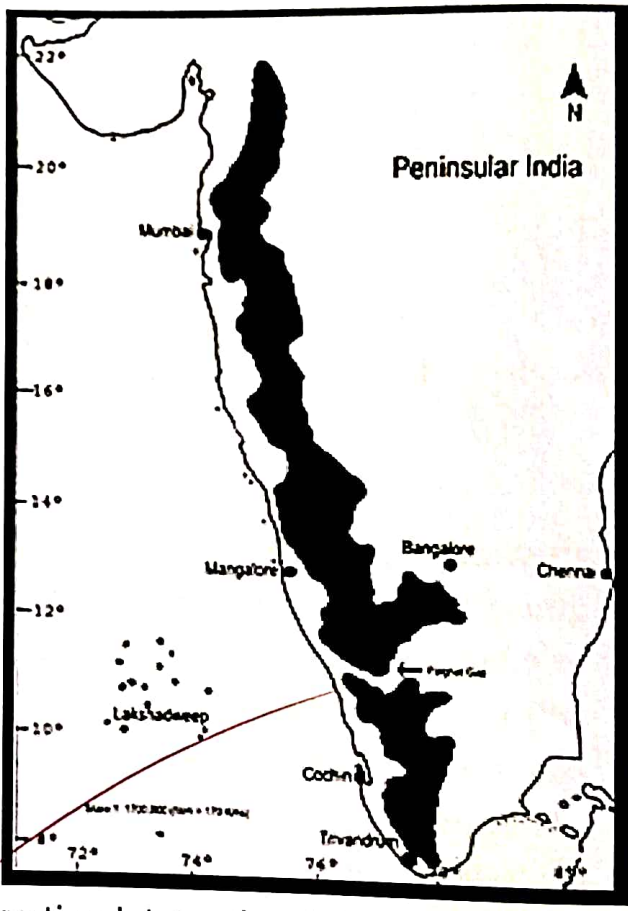
The Western Ghats (WG), also known by the name 'Sahyadri', constitute a 1600km long, about 45-65 million years old, mountain chain along the west coast of India, originating from south of the Tapti River (near the border of Gujarat and Maharashtra), and extending upto Kanyakumari, at the southernmost tip of the Indian peninsula (between 20o N lat. to 8oN lat). Covering an area of 1, 60, 000 sq. km, the Ghats traverses the six states of Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala. The northern hills with an average elevation of 1, 220m are generally lower and gentler than the



southern hills, the taller parts of the hill ranges. The southern part of the WG harbours the Nilgiri Hills (the word Nilgiri meaning "Blue Mountains") which is the meeting point of the Western Ghats with the Eastern Ghats.

Receiving a high precipitation within a short span of three to four months annually, the WG performs important hydrological and watershed functions and forms one of the three watersheds of India, feeding the perennial rivers of peninsular India and draining almost 40% of the Indian sub-continent.

The hills of Western Ghats are embedded in a landscape that has much drier climatic conditions areas have steadily grown drier. The Western Ghats ecosystem is the only undisturbed evergreen forest ecosystem, at least in part. Therefore, many of the original Gondwana relicts, the autochthonous fauna of Peninsular India, the transmigrants from the Palearctic and the Indo-Chinese and Malayan species and some Himalayan relicts that reached



The Western Ghats, an area of rich biological wealth and also exhibiting high degree of endemism, comprises the major portion of the Western Ghats - Sri Lanka Hotspot, one of the 34 global biodiversity hotspots for conservation identified by the Conservation International. The area is also one of the world's eight "Hottest biodiversity hotspots". Of the Global 200 priority ecoregions designated by the World Wide Fund for Nature (WWF), the south Western Ghats Moist Forests and the rivers and streams of Western Ghats fall under the Critically Endangered Category. World Conservation Monitoring Centre (WCMC) has identified the Western Ghats region as one of the important areas of freshwater biodiversity.

Shri. Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR
(Autonomous)

A Project Report On:

**“Study of Buffalo Farming Units in Kolhapur
City”**

Submitted by

Miss. Priyanka Indrajit Katkar. [Seat No. 8288]

Miss. Rohini Vitthal Sawant [Seat No. 8300]

Under valuable Guidance Of

Miss. J. S. Sathe

DEPARTMENT OF ZOOLOGY

In The Partial Fulfillment of the Bachelor of Science in Zoology.

Year 2020-2021



DEPARTMENT OF ZOOLOGY

CERTIFICATE

This is to certify that, Miss. Priyanka Indrajit Katkar. (Seat No. 8288) and Miss. Rohini Vitthal Sawant. (Seat No. 8300) have satisfactorily completed the Project entitled "Study of Buffalo Farming Unit in Kolhapur City" as per the Vivekanand College Kolhapur (Autonomous) syllabus for B. Sc. III course in Zoology, and this is their bonafide work in the academic year 2020-2021.

To the best of my knowledge and belief the matter presented in this project is based on their own work. Such kind of work has not been submitted anywhere.

PLACE: KOLHAPUR

DATE: 17/08/2021

for Hali
Project Guide

Examined
[Signature]
Examiner

[Signature]
H.o.D. Zoology
Head
Department of Zoology
Vivekanand College.
Kolhapur



DEPARTMENT OF ZOOLOGY

CERTIFICATE

This is to certify that, Miss. Priyanka Indrajit Katkar. (Seat No. 8288) and Miss. Rohini Vitthal Sawant. (Seat No. 8300) have satisfactorily completed the Project entitled "Study of Buffalo Farming Unit in Kolhapur City" as per the Vivekanand College Kolhapur (Autonomous) syllabus for B. Sc. III course in Zoology, and this is their bonafide work in the academic year 2020-2021.

To the best of my knowledge and belief the matter presented in this project is based on their own work. Such kind of work has not been submitted anywhere.

PLACE: KOLHAPUR

DATE: 17/08/2021

for Hali
Project Guide

Examined
[Signature]
Examiner

[Signature]
H.O.D. Zoology
Head
Department of Zoology
Vivekanand College.
Kolhapur

ACKNOWLEDGEMENT

It gives us immense pleasure to express our sincere thanks for constant help and suggestions for our project report entitled- **“Study of Buffalo Farming Unit in Kolhapur City”** We express our deep respect and gratitude to our guide **Asst. Prof. J. S. Sathe** for a valuable guidance and inspiration. Her valuable guidance helped us to reach our destination.

We also express sincere thanks to **Dr. R. R. Kumbhar (Principal, Vivekanand college, Kolhapur (Autonomous))** and **Dr. G. K. Sontakke (Head of Department of Zoology)** and all concerned teaching and non-teaching staff members specially including **Asst. Prof. T. C. Gaupale** of Zoology department for providing a valuable guidance and all required facilities for carrying out this project work.

We would also like to thank our parents and friends who helped us in finalizing the project within the limited time period. Without the help and suggestions, the completion of project would be a difficult task.

DECLARATION

We the undersigned students, hereby declare that the project entitled “**Study of Buffalo Farming Unit in Kolhapur City**” is submitted by us under the guidance of **Asst. Prof J. S. Sathe and Dr. G. K. Sontakke (HoD, Dept of Zoology)**. It is our original work. The empirical findings in this project are based on data collected by us and it is authentic to the best of our knowledge. The presented matter is not copied from any other source.

Place : KOLHAPUR

Date : 17/08/2021

Miss.Priyanka Indrajit Katkar



Miss. Rohini Vitthal Sawant.

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1	Introduction
2	Materials and methods
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INTRODUCTION

Buffaloes are becoming world's most interesting domestic animals and extensive efforts have been made throughout the world to improve and exploit the production and reproduction. India's Buffaloes are better converters of poor quality fibrous feeds into milk and meat, with better degradation of both crude protein and protein free dry matter than in cattle

In South Asia, India a country of the world largest buffalo population accounted 53% of the world total in 1992 and increased her buffalo population by 880 thousand for the last 20 years with an annual average increase rate 1.1%. In India buffaloes make up about 35% of milk animals (other than goats) but produce almost 70 % of the milk. In 1995-96 India was estimated to have about 194 million cattle and 82 million buffaloes. Over the last decade buffalo farming has widely expanded in American countries, central and Northern Europe, Italy.

There are 10 types of buffaloes found in India. They are as follows

1. Murrah
2. Nili Ravi
3. Bhandaa
4. Jaffarabdi
5. Surti
6. Mehsana
7. Nagpuri

8. Godavari
9. Toda
10. Pandharpuri

- **MURRAH**

It is the most important breed of buffaloes whose home is Rohtak, Hisar and Jind of Haryana and Nabha and Patiala districts of Punjab.

Synonyms: Delhi, Kundi, Kali

The color is usually jet black with white markings on tail and face and extremities sometimes found.

The tightly curved horn is an important character of this breed. The body size is massive, neck and head are comparatively long. The buffaloes, cows of this breed are one of the most efficient milk and butter fat producers in India. Butter fat content is 7% Average lactation yield is varying from 1500-2500 kg the average milk yield is 6.8 kg/day. While a few individual animals yield much as 19.1 kg/day. Age at first calving is 45-50 months and inter calving period is 450-500 days.

- **NILI RAVI**

This breed is found in Sutlej valley in Ferozpur district of Punjab and in the Sahiwal district of Pakistan (breed around Ravi River). Usually the color is black with white marking on forehead, face, muzzle, legs and tail.

(15)

A PROJECT REPORT ON
**"Study on Rankala Lake pollution and it's effect on surrounding
biodiversity"**

Submitted to
Department of Zoology
Vivekananda College, Kolhapur (Autonomous)



कोल्हापूर

**IN THE PARTIAL FULFILLMENT OF BACHELOR OF SCIENCE IN
ZOOLOGY**

IN THE YEAR: 2020-2021

Project by

Priyanka Muttappa Pujari

Roll No.8298

Shubhangi Sardar Survanshi

Roll No.8303

Under the guidance of

Dr. Sneha S. Desai
Assistant Professor,
Department of Zoology,
Vivekanand College, Kolhapur (Autonomous)
2020 - 2021.

DECLARATION

We the undersigned hereby declare that the project report written and submitted by us under the guidance of Dr. Sneha Desai is the original work. The empirical finding and conclusions in this report are based on the information collected by us during the project work. We have not copied any matter from any source.

We understand that any such copying is liable to be punished, in any way the university authorities deem to be feet.

Date: 17/08/2021

Place: Kolhapur.

Priyanka Muttappa Pujari Roll No.8298

Shubhangi Sardar Survanshi Roll No.8303

ACKNOWLEDGEMENT

We express our gratitude to our Principal, **Dr. R. R. Kumbhar** for giving us the opportunity to conduct this study. We consider it a matter of privilege that we get the chance to carry out the analysis under the guidance of **Dr. S. S. Desai**, and we know that without her help, this project report would not have been successful.

Lastly, we are thankful to all others who have directly or indirectly helped us in making this project a successful one.

Date: 17/08/2021

Place: Kolhapur.

Priyanka Muttappa Pujari Roll No.8298

Shubhangi Sardar Survanshi Roll No.8303

CERTIFICATE

This is to certify that the following students of B.Sc. III has satisfactorily completed their project work "Study Of RANKALA LAKE POLLUTION, AND ITS EFFECT ON SURROUNDING BIODIVERSITY". Towards the partiful fillmentent of the Bachelor of Science degree award as laid down by the Shivaji University, Kolhapur during the year 2020-2021.

- Priyanka Muttappa Pujari Roll No.8298
- Shubhangi Sardar Survanshi Roll No.8303

Dr. S. S. Desai
(Project Guide)

Dr. G. K. Sonttake
(Head, Dept. of Zoology)
Head
Department of Zoology
Vivekanand College,
Kolhapur

Examined

11/10/21
Examiner

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□□ Abstract □□

Rankala Lake is situated in the heart of Kolhapur city of Maharashtra. The lake was earlier used for providing drinking water to Kolhapur city but now confined to irrigational and recreational use. Presently, the lake serves as a popular picnic spot for the tourists and local residents. Four nallas are contributing sewage to Rankala Lake thus heavily polluting the lake. Lake is turning green since 2011 because of the presence of these blue green algae. The project is aimed to evaluate various pollution aspects like water hyacinth, pesticide and heavy metals contamination in lake water, sewage flow into lake and other activities like the submersion of Ganesh idols, cattle washing which are the main pollution causes of Rankala Lake water, and steps required for lake conservation. Water quality analysis of the Rankala Lake by researchers suggested that though the pollution is in moderate condition, continuous supply of sewage is augmenting the severity of water pollution.

Rankala has a rich biodiversity of various birds like grey hornbill, Pheasant-tailed Jacana, Painted Stork, Red Naped Ibis, Garganey, Cormorant, sandpiper, Dusky Moorhen, Spoonbills, Bronze-winged Jacana, Chinese Egret, Common Coot, Purple Heron, Spot-billed Duck, River Tern, Purple Swamphen, White Wagtail, Little Ringed Plover, etc. and also of fishes and various types of algae.

□□Introduction□□



Fig. 1. Rankala Lake

Rankala Lake located in Kolhapur city of Maharashtra is a manmade lake constructed during the reign of Chhatrapati Shahu Maharaja. Rankala Lake is situated on the west side of the very famous Mahalaxmi temple having an elevation of 550 m above sea level. The catchment area and total water spread area of the lake is 700 and 107 ha respectively whereas the maximum depth is 15m. Command area under irrigation is 80 ha of land in and around the city. The average annual rainfall in the lake catchments area is 1000 mm. It is having a fan type catchment. The lake was earlier used for providing drinking water to Kolhapur city but now confined to irrigational and recreational use. Rajghat and Marathghat are the two ghats for the lake. On the Rajghat there is a Rankala tower and a wall is constructed around the Rankala Lake. There are two major streams as a source of water to the lake which flows from the southern side. From three out-lets the water drains to irrigate 80 hectares of land of Mirabag, Dhunyachi Chavi, Phulewadi. As Rankala Lake is located in the center of the city, there are many sewage terminals pouring sewage in the Rankala lake water and thus heavily polluting the lake.

□□ Aim and objectives □□

- To recognize main sources of pollution and effect of pollution on biodiversity and suggest appropriate measures to conserve biodiversity.

□□ Study area □□

The Rankala Lake is spread in an area of about 6682 ha in the Southern part of Maharashtra and in the Western Ghats at 550 m above mean sea level between 16° 42" N Latitude to 74° 14" E Longitude. It is located in an area where there is a gradual change in landforms from hilly west to the bare open east. Kolhapur is located in the Panchganga river basin which is formed by the tributaries that are Kasari, Kumbi, Tulsi, Dhamani and Bhogavati. The minimum and maximum temperatures of the Kolhapur city are 15⁰C and 40⁰ C respectively with the average temperature being 27⁰C. Three fourth of annual rainfall occurs between June to September and average annual rainfall is 1025 mm. The wind direction in the city is from western side about 5 km/hr. The relative humidity in the atmosphere is about 55 %. The geology of Kolhapur consists of the Deccan traps with inter-trapped beds. In the form of horizontal sheets and beds volcanic lava flows are spread out. The rock type is primarily of igneous basalt types. The soil type consists of black soil and red soil. Rankala Lake supports aquatic flora and fauna.

A lot of aquatic life and fish culture is recorded in Rankala Lake and thus 24 different types of fishes are recorded in the lake. It is an important bird area. Many bird and wildlife species get attracted by it. Nearly 5000 birds of 74 species for example grebes, spoonbills, cormorants, shop bird, ibises, cooches, jacanas, geese , ducks and other migratory birds from Central Asia, Siberia and Europe gathered in and around the lake and from which 20 species are the aquatic ones showed by the "Asian Waterfowl" 1994-96 census. Other fauna like 11 species of snakes and 2 species of lizards have been recorded in the lake area. In the marshes 7 species of insects are found in the "Partala" region and around the lake water.