



**ENVIRONMENTAL
PROBLEMS
CAUSES AND SOLUTIONS**

Editors

Dr. S. V. Rankhamb

Dr. V. B. Kulkarni

Environmental Problems: Causes and Solutions

- Editors -

Dr. S. V. Rankhamb

Dr. V. B. Kulkarni

NOTION PRESS

NOTION PRESS

India. Singapore. Malaysia.

Published by Notion Press 2021

Copyright © Dr. S. V. Rankhamb and Dr. V. B. Kulkarni 2021

All Rights Reserved.

ISBN 9781639043583

This book has been published with all reasonable efforts taken to make the material error-free after the consent of the author. No part of this book shall be used, reproduced in any manner whatsoever without written permission from the author, except in the case of brief quotations embodied in critical articles and reviews.

The Author of this book is solely responsible and liable for its content including but not limited to the views, representations, descriptions, statements, information, opinions and references [“Content”]. The Content of this book shall not constitute or be construed or deemed to reflect the opinion or expression of the Publisher or Editor. Neither the Publisher nor Editor endorse or approve the Content of this book or guarantee the reliability, accuracy or completeness of the Content published herein and do not make any representations or warranties of any kind, express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose. The Publisher and Editor shall not be liable whatsoever for any errors, omissions, whether such errors or omissions result from negligence, accident, or any other cause or claims for loss or damages of any kind, including without limitation, indirect or consequential loss or damage arising out of use, inability to use, or about the reliability, accuracy or sufficiency of the information contained in this book.

Contents

1. A REVIEW ON 'SWACHTA-PAKHWADA' UNDER 'NAMAMI GANGE PROJECT': ROLE OF SOCIAL MEDIA IN PUBLIC AWARENESS.
Aabshar Abbasi 1
2. ENVIRONMENT AND PARASITES
Swati Jadhav and Atul Humbe 8
3. ECOLOGICAL DEGRADATION: AN ALARMING SIGNAL TO BIODIVERSITY
Digvijay S. Kumbhar 13
4. ENVIRONMENTAL EDUCATION: A TOOL FOR PUBLIC AWARENESS
Amul Late 20
5. BIODIVERSITY STATUS OF INDIA WITH SPECIAL REFERENCE TO HOTSPOT - A REVIEW
Dr. P. P. Joshi 24
6. COVID-19 IMPACT ON GENERAL LIFE AND ENVIRONMENT
Pawan R Shingare.36
7. ENVIRONMENTAL IMPACT OF PESTICIDES ON WATER AND AGRICULTURE SOIL
Jadhav T. J.41
8. NEED AND IMPORTANCE OF ENVIRONMENTAL EDUCATION
Kulkarni Vanita Baburao 55
9. FRESHWATER MALACOFAUNA OF AURANGABAD AND JALNA DISTRICTS: STATUS, IMPORTANCE AND FUTURE PROSPECTIVE
Pande, G. S. 63

20. EFFECT OF HEAVY METALS ON FRESHWATER BIVALVES: A SERIOUS THREAT Dr. Jitendra Tulshiram Jagtap 190
21. REVIEW ON MAJOR CONTEMPORARY ENVIRONMENTAL MOVEMENTS IN CONTEXT WITH INDIA - Sandip Badgujar, Jitendra Patil, Govind Balde and V.N.Rathod198
22. CHALLENGES IN BIODIVERSITY CONSERVATION N.G. Shinde 220
23. REVIEW ARTICLE: ENVIRONMENTAL POLLUTION IT'S CAUSES, EFFECT AND CONTROL Avinash Sahebrao Agale 228
24. IMPACT OF COVID-19 PANDEMIC ON ENVIRONMENT: ARTICLE Ankita.V. Shirke 242
25. WATER POLLUTION: CAUSES, SIIDE EFFECTS AND TREATMENTS Dr. Jyoti A. Agashe 246
26. ROLE OF ENVIRONMENTAL EDUCATION, INEARTHQUAKE DISASTER MANAGEMENT IN MAHARASHTRA;A DATA BASED STUDY K. S. Raut and S. V. Rankhamb 258
27. ENVIRONMENTAL AND ECOLOGICAL MOVEMENTS IN INDIA Dr. Salve B. S. 266
28. IMPACT OF WATERPOLLUTION ON FISHES Pathan T. S280

10. RESTORATION AND CONSERVATION OF SAMTA NAGAR LAKE, AUSA OF LATUR DISTRICT (M.S.) INDIA
Pathan Amjatkhan Vajidkhan 76
11. ENVIRONMENTAL IMPACT OF VARIATIONS IN THE OOCYTES DEVELOPMENT OF FRESHWATER BIVAVLVE, LAMMELIDENS MARGINALIS DURING DIFFERENT SEASONS FROM KURLA DAM, MAHAD TALUKA (RAIGAD M.S.)
Bhosale P.A. 95
12. IMPACT OF ENVIRONMENTAL CHANGE ON INSECT POPULATION
R. B. Desai and R.C.Shinde 103
13. ENVIRONMENTAL POLLUTION CAUSES, IT'S IMPACT AND CONTROL
Sachin S. Sagar 114
14. THE COVID-19 AND ITS INTERFERENCE WITH ENVIRONMENT- A BRIEF REVIEW-Sandip Badgujar, Jitendra Patil, V.D.Shinde and Govind Balde 126
15. COVID-19, LOCKDOWN AND CHANGING ENVIRONMENT
Keshav Gangurde 144
16. THE IMPACT OF CLIMATE CHANGE ON BIODIVERSITY
R. S. Bhalerao153
17. ENVIRONMENTAL STUDY TO ENHANCE CHILDREN'S ENVIRONMENTAL AWARENESS BY PAINTING AND PHOTOGRAPHY
Rajesh B. Desai and Dhanraj R. Desai 161
18. BIOMEDICAL WASTE MANAGEMENT IN INDIA
Mukundraj B. Patil 175
19. ENVIRONMENTAL POLLUTION CAUSES, ITS IMPACT AND CONTROL
S. S.Chavan and Rafi Ahmed ... 182

Dr. S. V. Rankhamb # Dr. V. B. Kulkarni

ENVIRONMENTAL POLLUTION CAUSES, ITS IMPACT AND CONTROL

S. S.Chavan¹ and Rafi Ahmed²

Department of Botany S.G.R.G. Shinde Mahavidyalaya,
Paranda Dist. Osmanabad (M.S.) India.

Email: sschavan.09@gmail.com

Department of Botany, Maharashtra College of Arts,
Science & Commerce. Mumbai (M.S.)India

Email: rafiahmed12@rediffmail.com

Introduction: Environment means anything that surrounds us. It can be living (biotic) or non-living (abiotic) things. It includes physical chemical and other natural forces. Living things live in their environment. They constantly interact with it and adapt themselves to conditions in their environment. In the environment there are different interactions between animals, plants, soil water and other living and non-living things. Pollution is the introduction of contaminants into the environment that cause harm or discomfort to humans or other living organisms, or that damage the environment, which can come in the form of chemical substances, or energy such as noise, heat or light. Pollutants can be naturally occurring substances or energies, but are considered contaminants when in excess of natural levels. Environment Pollution is the addition of contaminants into the natural environment that causes detrimental effects to nature, natural resources and mankind.

Any unnatural and negative changes in all the dimensions like chemical, physical and biological characteristics of any component of the ecosystem i.e. air, water or soil which can cause harmful effects on various forms of life and property is called environmental pollution. A substance which causes pollution is called Pollutant. The pollutants can be solid, liquid or gaseous substances. These can be degradable which rapidly break down by natural processes or non-degradable which remain in the environment in an unchanged form for many decades. The common examples of non-degradable pollutants are aluminum pieces, iron, phenolic compounds, plastic materials, heavy metals, many chemicals, nuclear waste etc. These either do not degrade or degrade very slowly or partially and thereby pollute the environment. Such pollutants are harmful even in low concentrations. These pollutants not only accumulate but are often biologically magnified because they move in biochemical cycles and along food chains. In general, pollutants are the substances made by us, used by us and even thrown by us as waste products which pollute the environment directly or indirectly in one way or other. Numerous studies have exposed that environmental particulate exposure has been linked to increased risk of morbidity and mortality from many diseases, organ disturbances, cancers, and other chronic diseases [1, 2]. Therefore it is time to take action and control the pollution. Otherwise, the waste products from consumption, heating, agriculture, mining, manufacturing, transportation, and other human activities will degrade the environment. [2]

The materials that cause pollution are of two types:

Persistent pollutants: Those pollutants which remain consistent in the environment for a long period of time without any change in its original form are called persistent pollutants. For eg. pesticides, nuclear wastes, and plastics etc.

Non-persistent pollutants: These pollutants are the opposite of persistent pollutant and break down in the simple form. If this process of breaking down is done by living organisms, then such pollutants are referred to as biodegradable pollutants

Types of pollution:

Air pollution: Mixture of solid particles and gases in the air. Air Pollution is the release of pollutants such as gases, particles, biological molecules, etc. into the air that is harmful to human health and the environment.

Causes:

1. Most air pollution comes from energy use and production.
2. The Burning of Fossil Fuels.
3. Industrial Emission.
4. Indoor Air Pollution.
5. Wildfires.
6. Microbial Decaying Process.
7. Transportation.
8. Open Burning of Garbage Waste.
9. Construction and Demolition.

Control measures:

1. Strict policies should be made by government regarding air pollution.
2. Modification of industrial process and selection of suitable fuels and its utilization.
3. Collection of pollutants and convert it into less toxic forms by different methods.
4. A very effective way of controlling air pollution is by diluting the air pollutants.

Water pollution: Addition of certain substances such as organic, inorganic, biological and radiological to the water, which degrades the water quality and makes it unhealthy for use. Water pollution is not only confined to surface water but also spread to groundwater, sea and ocean. Humans and all living species in the world are facing worst results of polluted water. [10]

Causes:

1. Sewage or waste water from households, factories, or agricultural land gets discharged into rivers or lakes.
2. Dumping
3. Oil pollution
4. Acid rain
5. Industrial waste

Control measures:

1. Usage of water should be minimized by changing the techniques involved.
2. Recycling and treatment of water should be used to the maximum extent possible.
3. The quantity of discharge of wastewater can be minimized.
4. Excessive use of pesticides and fertilizers should be avoided.
5. Organic farming and efficient use of animal residues as fertilizers.

Soil pollution: Addition of unwanted substances to the soil which negatively affects physical, chemical and biological properties of soil and reduces its productivity is called soil pollution. The factors which disturb the biological balance of the soil and deteriorate the quality, texture and mineral content are called soil pollutants. Use of fertilizers, pesticides, insecticides, dumping of solid waste, deforestation and pollution due to

urbanization and other anthropogenic substances causes soil pollution. Soil eco-toxicology provides a theoretical basis for ecological risk assessment of contaminated soils and soil pollution control. [9]

Causes:

1. Industrial and Mining Activities: Large numbers of Industries coming up since the dawn of industrial era without proper waste management systems are the biggest contributor to soil pollution.
2. Modern Agricultural Practices: To increase the yield from limited land area, in order to meet the increasing demand of food for ever increasing population, synthetic chemical pesticides and fertilizers are being used rampantly in last few decades leading to toxicity of the soil.
3. Lack of proper Waste Disposal: Modern lifestyle, urban as well as rural, produces huge amount of waste and lack of waste management procedures adds to the problem of soil pollution.
4. Radioactive Pollutants: Radioactive substances resulting from explosions of nuclear testing laboratories, radioactive fallout and industries giving rise to nuclear dust and radioactive wastes penetrate the soil and accumulate giving rise to soil pollution.
5. Accidental Oil Spills: Oil leaks can happen during storage and transport of chemicals. This can be seen at most of the fuel stations.
6. Acid Rain: Acid rain is caused when pollutants present in the air mixes up with the rain and fall back on the ground.

Control measures

1. Afforestation, reforestation and use of organic farming.

2. Solid waste management and reduction of waste from the construction area.
3. Stop the use of plastic bags and use bags of degradable materials like paper and cloth.
4. Biomedical waste should be collected and incinerated in incinerators.
5. Proper management of industrial and agriculture waste.

Impacts:

1. Reduction of local air quality affecting human health and vegetation growth, and causing damage to materials.
2. Acid deposition leads to degradation of the terrestrial environment.
3. Formation of secondary particles in atmosphere which impacts human health
4. Soil pollution can have a number of harmful effects on ecosystems and human, plants and animal health. The harmful effects of soil pollution may come from direct contact with polluted soil or from contact with other resources, such as water or food which has been grown on or come in direct contact with the polluted soil.[8]
5. The Earth's atmosphere contains a delicate balance of naturally occurring gases that trap some of the sun's heat near the Earth's surface. This "greenhouse effect" keeps the Earth's temperature stable.

Conclusion:

Awareness regarding environmental pollution is very important today. It is the responsibility of every living person to protect the environment, and with the population ever increasing, pollution

problems are only going to get worse unless we do something about it. Protecting the environment is a long and daunting task, requiring continuous planning, governmental policies, and public and industrial participation. By decreasing waste, implementing recycling policies, banning dangerous agricultural chemicals, and developing safe renewable energy we can significantly reduce the amount of pollution going into the environment annually and increase our quality of living. Everyone is entitled to clean air to breathe, water to drink, and public lands to enjoy. The problems are diverse and some are only being recognized but it is important to keep a close control over pollutants so that we can maintain the environment in an acceptable condition for future generations.

Acknowledgement: The authors were thankful to Principal and Department of Botany, S.G.R.G. Shinde Mahavidyalaya, Paranda Dist.Osmanabad and Maharashtra college of Arts, Science and Commerce, for their constant encouragement and support during the work.

References:

1. **M. Kargarfard, P. Poursafa, S. Rezanejad, and F.Mousavinasab,(2011)**Effects of exercise in polluted air on the aerobic power, serum lactate level and cell blood count of active individuals,” *International Journal of Preventive Medicine*, vol. 2, no. 3, pp. 145–150.
2. **P. F. Coogan, L. F. White, M. Jerrett et al. (2012)** “Air pollution and incidence of hypertension and diabetes mellitus in black women living in los angeles,” *Circulation*, vol. 125, no. 6, pp. 767–772.

3. **Roya Kelishadi: (2012)**Environmental Pollution: Health Effects and Operational Implications for Pollutants Removal.Journal of Environmental and Public Health.
4. Environmental pollution :Introduction, Causes & Types.www.gradeup.co
5. Impacts of pollution:<http://www.heathrowairwatch.org.uk/airquality>
6. <https://ecavo.com/pollution-causes-effects>.
7. <http://www.epa.gov/globalwarming/>.
8. <https://www.everythingconnects.org/soil-pollution.html>
9. **Liu, Feng; Teng, Hong-Hui; Ren, Bai-Xiang; Shi, Shu-Yun.**(2014).Research advances in eco-toxicological diagnosis of soil pollutionScience.gov (United States).
10. **Shahid Ahmed and Saba Ismail,(2018)**. 'Water Pollution and its Sources, Effects & Management: A Case Study of Delhi', International Journal of Current Advanced Research, 07(2), pp. 10436-10442.

Environmental Problems : Causes and Solutions



Dr. Santosh Vasant Rao Rankhamb is Working as Assistant Professor and Head, Department of Zoology, Late Ramesh Warpudkar ACS College Sonpeth, Dist. Parbhani Maharashtra, India Since 2011. He has published 14 research paper in reputed National and international journals and edited one book.



Dr. Vanita Baburao Kulkarni is working as Associate Professor and Head, Department of Hindi, Late Ramesh Warpudkar ACS College Sonpeth, Dist. Parbhani. She has 25 Years of teaching experience. She has published 55 research paper in National and international journals and authored one book. She is recognized research guide of SRTM University, Nanded. She is awarded with several awards.

NOTION PRESS
PUBLICATIONS

Price Rs 350.00
ISBN 978-1-63904-358-3



9 781639 043583