



# One Day National Webinar On Biodiversity and its Conservation

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# CONTENTS

<b>S. No.</b>	<b>Paper Title</b>	<b>Author</b>	<b>Page No.</b>
1	The Disappearance of Fish Diversity in the Narmada River: Causes and Consequences	Dr. Manisha Kol	1-6
2	A Review on Regulation of Irrigation Management on Wheat Physiology, Grain Yield, and Quality	Dr. Hoshiyar Singh Priyanka Shrivastava Neetu Shubham C. Salve	7-14
3	Mathematical Biology: A Research Perspective	Dr. Kamajeet Singh Bhatia Dr. Manisha Kol	15-18
4	Important Role of Earthworm Biodiversity in Soil Fertility and Crop Improvement	Mrs. Rajni Gupta Dr. Manjusha Pouranik	19-22
5	Water Quality Inspection of Amkhera Pond Jabalpur using WQI	Dr. Sadhana Kesharwani	23-24
6	The Impact of Carbon Footprint and Climate Change on Biodiversity Loss	Dr. Reena Soni	25-27
7	Predicting the Impact of Climate Change on Forest Ecosystems Using Endangered Red Cypress	Dr. Payal Shrivastava	28-29
8	Impact of Bio Wealth on Human Life : A Study	Mrs. Pooja Shukla	30-31
9	The Plant Biodiversity of Madhya Pradesh's Queen of Satpura (Pachmarhi Hills)	Lt. Nitin Geete Dr. Satveer Kaur Alluwaliya	32-34
10	Review on Role of Artificial Diet in Sericulture	Ritu Ramrani Achharya Dr. S. Kesharwani	35-36
11	The Essence of Soil Biodiversity and Practices for increasing soil biodiversity using agricultural practices	Pragya Kurmi Rohit Pandey	37-39
12	The Impact of Environmental Degradation on Conflict	Richa Singh	40-42
13	A Blend of Tradition and Modern Techniques adopted by farmer- Success Story of Mr. Raghav Yadav	Rohit Pandey Rajesh Aarwe Deependra Singh Rajput Shweta Tiwari Bhavna Yadav	43-45
14	Human Activities and Species Evolution	Dr. Anuja Jain	46-46
15	Human Herpes Simplex Virus Infections	Priyanshu Sao Poonam Verma	47-50
16	Miracle Tree Acacia Catechu : Used For Environment Protection And Economic Support.	Dr. Rachna Panday	51-52
17	The Study of over-pollution with Human Impact, Biodiversity Reversal Losses with Extinction Rate and Biodiversity future	Dr. Anand Kumar Gupta	53-53
18	Biodiversity: Concept, Threats and Conservation	Swati Geete	54-61
19	Information Technology Role in Biodiversity Conservation	Surya Bhanu Dubey	62-63
20	Dependence of Business World on Biodiversity	Dr. Sumita Bhatia	64-66

21	Conservation of Biodiversity	Dr. Neeta Mishra	67-68
22	The post-effect on Biodiversity Conservation after COVID-19	Manju Barkhane Ripul Mehrotra	69-70
23	Biodiversity & It's Conservation	Priyanka Verma Anil Kumar Kori	71-72
24	Role of Green Chemistry for Pollution Control and Sustainable Development and Conservation of Biodiversity	D.T. Sakhare	73-79
25	The concept of biodiversity, as well as its Hazards and Protection	Anil Kumar Kori Priyanka Verma	80-88
26	Biotechnological Tools for Biodiversity Conservation	Dr. Malika Pal Miss Kalpana Verma	89-93
27	Impact of Bio Wealth on Human Life : A Study	Mrs. Pooja Shukla	94-95
28	Human Life and Natural Diversity Imbalances : New Initiative of GOI	Dr. Vijay Karmarkar	96-98
29	Green School Practices: Butterfly Conservation Initiatives Small Steps for Bright future	Prashant Thote Gowri. S	99-101
30	भारतीय वस्त्र उद्योग में प्रयुक्त रंगाई-छपाई की पर्यावरण अनुकूलित विधियां एक परिचय	सुश्री मंजू बरखाने	102-104
31	जैव विविधता, कारण प्रकार एवं संरक्षण परियोजनाएँ	डॉ. कीर्ति विश्वकर्मा डॉ. ओ.पी. विश्वकर्मा डॉ. गरिमा चौबे	105-111
32	हिंदी बाल साहित्य और पर्यावरण चेतना	डॉ स्वाति मिश्रा	112-113
33	भारत के आदिवासी जनजाति वर्ग के द्वारा पादप जैव विविधता का संरक्षण का एक अध्ययन	डॉ मनीषा कोल मंजू बरखाने सुंदरवती यहके डॉ प्रतिभा उरमलिया	114-116
34	भारत में जैव विविधता और इसके संरक्षण का एक अध्ययन	डॉ. तुलसी दास बंजारे श्रीमती मेघा श्रीवास्तव	117-120
35	जैव विविधता एक वरदान जैव विविधता एक वरदान, जिससे जिंदा है इंसान	सपना तिवारी	121-123
36	सतत विकास में जैव-विविधता का योगदान	डॉ. वनश्री मेहता	124-127
37	औद्योगीकरण का जैव विविधता पर प्रभाव	श्रीमती नीतू यादव	128-132
38	जैव विविधता और संरक्षण	रेनू सक्सैना	133-135

## Role of Green Chemistry for Pollution Control and Sustainable Development and Conservation of Biodiversity

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**Abstract** :- Biodiversity is critical for human well-being and activities because it offers a broad variety of ecosystem services; hence its preservation is urgently needed. At the moment, biodiversity is rapidly declining. After climate change, biodiversity loss is the second most significant global risk. The chemical industry plays a critical role in the development of environmentally friendly solutions such as biobased goods and solutions that need the use of biomass. Chemical industry represents a highly successful sector of manufacturing and a vital part of the economy in many industrialized and developing countries. The range of chemical industry is vast which makes an invaluable contribution to the quality of our lives. However, the manufacture of chemical products also leads to enormous quantities of environmentally harmful waste and the health of the environment is declining rapidly. Despite the great success and importance of chemistry to our society its public image has deteriorated. A major reason is that the industry is perceived as being polluting and causing significant environmental damage. "Green" chemistry is an effort of terminating or reducing the use and generation of hazardous chemicals in the design, manufacture and applications of chemical products. Green chemistry efficiently utilizes renewable raw materials, eliminates waste and avoids the use of toxic and/or hazardous reagents in the manufacture and applications of chemical products thereby it plays an important role for pollution control and sustainable development & conservation of environment and Biodiversity.

**Keywords** :- Green Chemistry, Chemical Industry, Sustainable Development And Conservation of Biodiversity.

**1. Introduction** :- Society has been very much benefitted from Chemical products synthesized. Chemical industry represents a highly successful sector of manufacturing and a vital part of the economy in many industrialized and developing countries. The range of chemical industry is vast which makes an invaluable contribution to the quality of our lives. However, the manufacture of chemical products also leads to enormous quantities of environmentally harmful waste and the health of the environment is declining rapidly [1].

Atmospheric air is polluted by exhaust gases from chemical industries which seriously affect Biodiversity. Lower life forms are more affected e.g. Lichens, Bryophytes, Fungi. On land, Plants are more prone than animals. It is also observed that due to air pollution some species declines but some expand to full fill space of declined species. Contamination of soil by anything is called Soil Pollution. It occurs when pollutants in the soil reduce soil quality and make it inhabitable to organisms such as insects. In recent decades, the use of inorganic fertilizers has increased dramatically. Chemical runoff from pesticides and fertilizers can degrade soil quality. Industrial development has been associated with both physical degradation and chemical contamination of soils. The industry is also responsible for dumping industrial chemicals and heavy metals (such as mercury) onto soil and thus polluting it. Soil pollution can lead to the lack of biodiversity in an ecosystem. The life of bird, insect, mammal and reptile species who live in the soil can get affected by pollution. The soil is an important habitat. When it rains, surface run-off carries contaminated soil into water sources causing water pollution. The contaminated water is thus unfit for both animal and human consumption. It will also affect aquatic life since the organisms that live in these water bodies will find their habitats inhabitable [2].

From all the described species of biodiversity, 6% belongs to fresh water. Effluent from Chemical Industry drastically affects the aquatic life and thus affecting the biodiversity.

The pesticides are used to kill fungal or animal pests. As they are sprayed across the entire agricultural field affects lives of many species. Also, most of the pesticides after their use remains in the environment get transferred through food chain and causes many serious problems related to reproduction rates .

Major problems in chemical production are handling of waste, the search for environmentally tolerable