Organized by

Environment and Social Welfare Society, Khajuraho, MP

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In association with

Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota, West Bengal.

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International Union for Conservation of Nature-CEC, Switzerland

Madhya Pradesh Council of Science & Technology, Bhopal, Madhya Pradesh

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(Zoology, Ichthyology, Biochemistry, Free Radical Biology, Toxicology, Stress Monitoring, Biodiversity & Natural Resources Management)

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XIII- Annual national research conference: 2026

"Climate Change and Biodiversity Conservation"

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मंगुभाई पटेल
MANGUBHAI PATEL

सत्यमेव जयते

लोक भवन
भोपाल-462003
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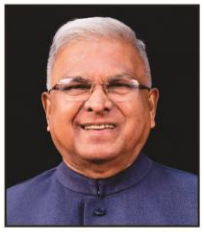

राज्यपाल, मध्यप्रदेश
GOVERNOR OF MADHYA PRADESH

क्रमांक 984/लोकभवन/2025
भोपाल, दिनांक-31 दिसम्बर, 2025

संदेश

हर्ष का विषय है कि एनवॉयरनमेंट एण्ड सोशल वेलफेयर सोसायटी खजुराहो द्वारा **"जलवायु परिवर्तन और जैव विविधता संरक्षण"** विषय पर 13वें वार्षिक राष्ट्रीय शोध सम्मेलन का आयोजन किया जा रहा है। इस अवसर पर **स्मारिका** का प्रकाशन सराहनीय है।

जलवायु परिवर्तन एवं जैव विविधता संरक्षण मानवता के समक्ष सबसे गंभीर चुनौती है। पर्यावरण संतुलन बनाए रखने, प्राकृतिक संसाधनों के संरक्षण तथा सतत विकास के लक्ष्यों को प्राप्त करने में वैज्ञानिक शोध, नवाचार और जन-जागरूकता की अत्यंत महत्वपूर्ण भूमिका है। ज्वलंत समसामयिक पर्यावरणीय मुद्दों पर गंभीर विमर्श के लिए राष्ट्रीय शोध सम्मेलन का आयोजन अनुकरणीय पहल है। देश-विदेश के वैज्ञानिकों, शोधकर्ताओं एवं विद्वानों का चिंतन जलवायु के संकट और समाधान की नीति और रीति निर्धारण में महत्वपूर्ण योगदान देता है।

आशा है, स्मारिका सम्मेलन के विचारों, शोध-निष्कर्षों और अनुभवों से पर्यावरण संरक्षण के प्रति समाज में सकारात्मक चेतना के प्रसार में सफल होगी।

शुभकामनाएं,

मंगुभाई पटेल

(मंगुभाई पटेल)

दूरभाष : 0755-2858828, 2858830, फैक्स : 0755-2858832, ई-मेल : mprajbhavan@mp.gov.in

धृति वैनर्जी
(पीएच.डी., डी.एससी.)
निदेशक
Dhriti Banerjee
Ph.D., D.Sc.
Director

सत्यमेव जयते

भारत सरकार
भारतीय प्राणि सर्वेक्षण
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Government of India
Zoological Survey of India
Ministry of Environment, Forest and Climate Change

Message

It gives me immense pleasure to extend my greetings to the organizers and participants of the **13th Annual National Research Conference on "Climate Change and Biodiversity Conservation"**, being convened by the Environment and Social Welfare Society, Khajuraho.

Climate change remains one of the greatest challenges of our time, exerting profound impacts on ecosystems, species survival, and the delicate balance of biodiversity. In this context, the efforts of scientific institutions, academicians, and research communities to deliberate, share knowledge, and propose solutions are of paramount importance. Conferences such as this provide a vital platform for dialogue, collaboration, and innovation, enabling us to collectively strengthen our strategies for conservation and sustainable development.

India, with its rich and diverse natural heritage, stands at a crucial juncture where the preservation of biodiversity is not only a scientific responsibility but also a moral and cultural imperative. The resilience of our ecosystems, the livelihoods of millions, and the well-being of future generations depend upon the actions we take today. It is heartening to see that this conference brings together leading scientists, young researchers, and practitioners who will contribute their insights and innovations toward this shared mission.

I commend the Environment and Social Welfare Society for its continued commitment since 2014 to fostering awareness and advancing research in this critical domain. The Society's dedication to creating platforms for scientific exchange and public engagement is truly commendable, and it reflects the spirit of collective responsibility that is essential in addressing global environmental challenges.

I am confident that the discussions and outcomes of this conference will inspire new pathways for protecting our natural heritage and ensuring ecological security for future generations. May the Souvenir of this conference stand as a testament to the dedication of all contributors and serve as a beacon of inspiration for continued efforts in biodiversity conservation.

I extend my best wishes for the success of the conference and hope that it will serve as a milestone in guiding scientists, policymakers, and society at large towards a greener and more resilient future.

With warm regards,

Date: 14-01-26
Place : Kolkata

(Dr. Dhriti Banerjee)

प्राणि विज्ञान भवन, 535, एम. ब्लॉक, न्यु अलीपुर, कोलकाता – 700 053, दूरभाष : +91 33 2400 6893, टेलीफैक्स : +91 33 2400 8595
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केन्द्रीय कृषिवानिकी अनुसंधान संस्थान
पहूज बाँध के सामने, झाँसी–ग्वालियर मार्ग, झाँसी 284003 (उ0 प्र0)
Central Agroforestry Research Institute

डा. अ. अरुणाचलम / A. Arunachalam PhD., D.Sc.
निदेशक / Director

MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its **ESW 13th Annual National Research Conference** on **"Climate change and Biodiversity conservation"** to be held during **01 & 02 February, 2026**at Godavari Self-Employment Centre, Nahdora, District Chhatarpur, Madhya Pradesh.

I am sure that this unique opportunity provided by national conference will be fruitfully utilized for ensuring better quality of life for human kind today and for generation to come.

I convey my sincere best wishes to Dr. Ashwani Kumar Dubey the Organising Secretary and entire team of the organising committee of National conference for great success of the conference.

Place: Jhansi, Uttar Pradesh

(A. Arunachalam)

Ph: +91-510-2730214; Mobile: +91-9212441230; Email: director.cafri@icar.gov.in; website: www.cafri.icar.gov.in
Facebook: @icarcafri.jhansi; X (Formerly Twitter): @icarCafri; Instagram: @icar.cafri; Linkedin: @ICAR-CAFRI JHANSI; YouTube: @icar-cafrijhansi2384

प्रो. अर्पण भारद्वाज
कुलगुरु
Prof. Arpan Bhardwaj
Vice Chancellor

सम्राट् विक्रमादित्य विश्वविद्यालय
उज्जैन (म.प्र.) 456010 भारत
SAMRAT VIKRAMADITYA VISHWAVIDYALAYA
Ujjain - 456010 (M.P.) Bharat
E-mail : vcvikramujn@gmail.com
Website : www.vikramuniv.ac.in

Date : 20.01.2026

Message

It gives me immense pleasure to know that the Environment and Social Welfare Society (ESW Society) is organizing its 13th Annual National Research Conference on "Climate Change and Biodiversity Conservation" during 01–02 February, 2026 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

Climate change and biodiversity conservation are among the most pressing challenges faced by humanity today. Platforms like this national research conference play a vital role in bringing together scientists, researchers, academicians, and social thinkers to deliberate, share knowledge, and propose sustainable solutions for environmental protection and social welfare.

I appreciate the consistent efforts of ESW Society in organizing this conference for the past twelve years, which reflects its commitment towards environmental awareness, scientific research, and community development. Such initiatives significantly contribute to nurturing young researchers and strengthening interdisciplinary collaboration.

I extend my best wishes and congratulate to Dr. Ashwani Kumar Dubey, organizing secretary, and to organizing committee members for taking up the task to organize Annual National Conference and hope that the deliberations and outcomes will lead to meaningful contributions toward sustainable development and ecological balance.

(Prof. Arpan Bhardwaj)

राजा शंकर शाह विश्वविद्यालय, छिन्दवाड़ा
Raja Shankar Shah University, Chhindwara

कुलगुरू
Vice-Chancellor
Prof. Indra Prasad Tripathi

//MESSAGE//

I have great pleasure to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 13th Annual National Research Conference on "Climate change & Biodiversity conservation" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

This objective of the conference is to create environmental awareness and importance of biodiversity protecting our nature.

I hope the outcome of the conference will provide valuable guidance to the Researchers and Scientist.

My best wishes.

(Prof I. P. Tripathi)

Mobile. No. -9685507386, 9425884286 पी.जी. कॉलेज परिसर, धरम टेकरी, छिंदवाड़ा (म.प्र.) 480001
Office- (07162) 230255, Email – vc.cuc@mp.gov. in P.G. College Campus, Dhamar Tekri, Chhindwara (M.P.) 480001

Dr. Vinod Kumar Mishra
Mob. No. – 9425359507
E.Mail- hegc.newraniavsag@mp.gov.in

Rani Awantibai Lodhi Vishwavidyalaya Sagar (M.P.)
Infront of Kabir Dham Asharam,Near Kendriya Vidhalaya, Rajghat Road,Sagar
Phone No. 07582299604

Date:21/01/2026

:: MESSAGE ::

It is a matter of great pride that the Environment and Social Welfare Society is scheduled to organize ESW 13th Annual National Reasearch Conference on "Climate change and Biodiversity conservation" to be held during 01 & 02 February, 2026 I really appreciate and attempt has been made by the ESW Society, Khajuraho to bring out the concepts underlying the governance of Climate change and Biodiversity conservation. Concerns have been raised in respect to optimum consumptive and resilience levels of natural systems, acceptance of changed and changing values particularly for acceptable change to natural systems and the fact that change occurs naturally, may not be reversed and is vital for Climate change and Biodiversity conservation.

I hope, this 13th Annual National Research conference will be beneficial for the varied community of rural India, specially youth- This will not only generate wakefulness among the rural society, but also helpful to accrue the awareness in emerging areas. VIZ Agriculture, HealthCare, Nutrition, Ecosystem and sustainable development entrepreneurship, Skill development and employment opportunities, Especially relevant in perspective of rural areas and coherent with the current National scenario.

I wish the conference a grand success.

21/1/26

Dr. Vinod Kumar Mishra
Vice Chancellor
Rani Awantibai Lodhi Vishwavidyalaya
Sagar (M.P.)

To,

Dr. Ashani Kumar Dubey
Organizing Secretary
Environment and Social Welfare Society
Chhatarpur, Madhya Pradesh

MAHARAJA CHHATRASAL BUNDELKHAND UNIVERSITY,CHHATARPUR(M.P)

(M.P. Government State University)

Prof. Rakesh Kushwah
Vice Chancellor

Residence: House No. 3, Sector 1, Peptech Town, Nowgong Road, Distt–Chhatarpur–471001 (M.P.)
Mob.: 94253 39542
Phone (Office): (07682) 244442, 240672
E-mail: Rakeshkushwah15@gmail.com
Website: mcbu.ac.in

Sr. No. 03/2026 Chhatarpur, Date: 27.01.2026

Message

I am delighting to know that Environment and Social Welfare Society, Khajuraho, Madhya Pradesh India is organizing the ESW 13th Annual National Research Conference on "Climate change & Biodiversity conservation" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Nahdora-Khajuraho.

This objective of the national conference is to create climate change awareness and importance of protecting our biodiversity for future generation.

I hope the outcome of the conference will provide valuable guidance to the academicians, researchers and scientists.

My best wishes.

Prof. Rakesh Kushwah

डॉ. नीरज दुबे
अतिरिक्त संचालक
उच्च शिक्षा

क्षेत्रीय कार्यालय सागर संभाग सागर
कला एवं वाणिज्य महाविद्यालय परिसर
सागर : म0प्र0 मो. 9425656168
ईमेल : **adhesag@mp.gov.in**

दिनांक : 19/01/2026

संदेश

हर्ष का विषय है कि एनवायरमेंट एण्ड सोशल वेलफेयर सोसायटी खजुराहो द्वारा जलवायु परिवर्तन एवं जैव विविधता सरंक्षण विषय पर 13वें वार्षिक राष्ट्रीय शोध संगोष्ठी का आयोजन दिनांक 01 एवं 02 फरवरी 2026 को किया जा रहा है। जिसमें देश के विभिन्न विषय विशेषज्ञों द्वारा मंचासीन होकर अपने विचारों का आदान प्रदान किया जायेगा।

राष्ट्रीय सम्मेलन के आयोजन हेतु सोसायटी परिवार को हार्दिक शुभकामनाएँ।

(डॉ. नीरज दुबे)

प्रति,

डॉ. अश्वनी कुमार दुबे
अध्यक्ष,
एनवायरमेंट एण्ड सोशल वेलफेयर सोसायटी, खजुराहो

डॉ. कुलदीप यादव
प्राचार्य
उच्च शिक्षा विभाग

कार्यालय प्राचार्य,
श्री राजीव गाँधी शासकीय महाविद्यालय बण्डा
जिला सागर (म.प्र.) पिनकोड – 470335
मोबाईल नम्बर – 9300409376
ई–मेल आई.डी. – **hegcbansag@mp.gov.in**

बण्डा, दिनांक : 20/01/2026

MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 13th Annual National Research Conference on "Climate change and Biodiversity conservation" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

I am sure that this unique opportunity provided by national conference will be fruitfully utilized for ensuring better quality of life for human kind today and for generation to come.

Dr. Kuldeep Yadav

To,

Dr. Ashwani kumar Dubey
Chairman
Environment and Social Welfare Society, Khajuraho (MP)

ABOUT ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Environment & Social Welfare Society (ESW Society) *Dedicated to Environment, Education and Sciences & Technology throughout India since Bi-Millennium* is registered organization under the society Act 1973, Government of Madhya Pradesh, India on 31 January 2000 with No SC2707. It was affiliated by Nehru Yuva Kendra Sangathan, Ministry of Youth Affairs and Sports, Government of India. It is accredited by Jan Abhiyan Parishad, Government of Madhya Pradesh, since 2013, NITI Aayog, (National Institution for Transforming India), Govt. of India. ID MP/2014/0076324 and Registered under 12a(1)(ac)(iii) 2022-23 to2026-27 Income Tax Dept. Govt. of India & Registered for undertaking CSR, Ministry of Corporate Affairs, Government of India.

Now it's worldwide known for its impact. ESW Society has been to develop the relationship between Environment and Society envisions the promotion of Education and Sciences among the University, College and School students as well as in the society for Environment Social Welfare.

Object of The ESWSociety:

1. To establish, arrangement and management all around development in the field of Education and expansions of educational institutions.
2. To develop Ideal morality, Character building in the Children according to Indian tradition and Culture.
3. All around development of the Children. Arrange training programme to establish Self Employment Centre.
4. To organize Seminar for Environmental management, Pollution control, and establish Awareness centre for the same.
5. To make awareness for Social welfare. Check against Animal cruelty and to protect against cruelty and Tyrany.
6. Open animal house for improvement of animal health and provid necessary facility for them.
7. To highlight modern Technology, Computer, Games & Sports, Music, Art, Literature, and various languages Hindi, English, Urdu, and other foreign languages in the field of Education.
8. Establish Research Centre

ACKNOWLEDGEMENT

This is an honor for Environment and Social Welfare Society, Khajuraho organizes its ESW 13th Annual National Research Conference on "*Climate change and Biodiversity conservation*" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Nahdora-Khajuraho, Madhya Pradesh, India.

I am Thankful to Dr. Dhriti Banerjee, Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota, West Bengal**,** Dr. P. N. Vasanti, Regional Vice Chair for S & SE Asia, IUCN CEC, Switzerland, Dr. S. P. Gautam, President, Mahakoushal Vigyan Parishad, Unit of Vigyan Bharti, Jabalpur and Dr. Anil Kothari, Director General, Madhya Pradesh Council of Science and Technology, Bhopal and President, Mahakoushal Vigyan Parishad, Jabalpur, Madhya Pradesh for its association.

Appreciation is extended to the Mr. Mangubhai Patel, Honourable Governor, Government of Madhya Pradesh. Dr. Dhriti Banerjee, Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota. Dr. A. Arunachalam, Director, ICAR- Central Agroforestry Research Institute, Jhansi, Uttar Pradesh. Prof. Arpan Bhardwaj, Honourable Vice Chancellor, Samrat Vikramaditya University, Ujjain, Madhya Pradesh. Prof. I. P. Tripathi, Honourable Vice Chancellor, Raja Shankar Shah University, Chhindwara, Madhya Pradesh. Dr. Vinod Mishra, Honourable Vice Chancellor, Rani Awanti Bai Lodhi University, Sagar, Madhya Pradesh. Prof. Rakesh Singh Kushwah, Vice Chancellor, Maharaja Chhatrasal Bundelkhand University, Chhatarpur, Madhya Pradesh. Dr. Neeraj Dubey, Additional Director, Department of Higher Education Sagar, Govt. of Madhya Pradesh. Dr. Kuldeep Yadav, Principal, Shri Rajiv Gandhi Govt. College, Banda, MP. to received message for Souvinir.

It is my privilege and pleasure to express my profund gratitude to our VIP Guest of inaugural & Valedictory session.

I am heartily thankful to honorable Invitee Guest who have very kindly consented and given us an opportunity to share valuable thought which will provide milestone on the way of leading Scientists in the Conference.

I am especially thankful to all delegates who actively participated in this Conference. I am thankful to Electronic and Print Media. I am profoundly thankful to my Board of Director and All members of ESW Society for their invaluable cooperation, and those entire person who are directly or indirectly concerned with this conference.

Dr. Ashwani Kumar Dubey

Environment and Social Welfare Society

Head Office: Vidhyadhar Colony, Khajuraho-471606 India
Regional Office: Godavaripuram, Bajrangnagar, Ward No. 17, Chhatarpur-471001 Madhya Pradesh

Prof. Ashwani Kumar Dubey
Executive Director

Website: www.godavariacademy.com
Email: ashwanikhajuraho@gmail.com

EDITORIAL

The ESW 13th Annual National Research Conference on "*Climate change and Biodiversity conservation*" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Nahdora-Khajuraho, Madhya Pradesh, India organized by Environment and Social Welfare Society (ESW Society), Khajuraho. The theme is "To take some positive steps towards improving our Earth for future generation" which will underpin the need for collaboration and cooperation of individuals from a wide range of professional backgrounds.

Climate change and biodiversity loss are deeply intertwined crises, where warming temperatures and extreme weather destroy habitats, disrupt natural cycles, and push species towards extinction, while the loss of biodiversity reduces nature's ability (like forests and wetlands) to absorb carbon, creating a dangerous feedback loop. Conserving biodiversity, through strategies like protecting carbon-rich ecosystems and creating resilient landscapes, is crucial for both adapting to climate change and slowing its progression

The ESW Conference will strive to offer plenty of networking opportunities, providing you with the opportunity to meet and interact with the leading professionals as well as sponsors and exhibitors. And also to provide a platform to Educational Administrators, College Principals, Deans, Readers, Professors, Assistant Professors, Scientists, Environmentalist, Stakeholders, Researchers, Young scientists and Students to disseminate knowledge related to Strategies for promotion and conservation of environment and native species to protect and restore the nature and possible solution by technological approach.

ESW Society, India and its MoU institutes have joined hands in fulfil the object of ESW Society, raise awareness and valuable solution of Sustainable Development Goal. Take urgent action to combat climate change and its impacts, and will continue to coordinate their endeavours in support of its implementation.

Dr. Ashwani Kumar Dubey

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Under auspicious of: Environment & Social Welfare Society, India

ABOUT ESW XIII ANNUAL NATIONAL RESEARCH CONFERENCE

It gives us immense pleasure to invite and welcome you in the Environment and Social Welfare Society (ESW Society), Khajuraho, Madhya Pradesh, India to participate in ESW 13th Annual National Research Conference on "*Climate change and Biodiversity conservation*" to be held during 01 & 02 February, 2026 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh, India organized by ESW Society, Khajuraho, Madhya Pradesh, India.

Object: To provide a platform to Vice Chancellors, Educational Administrators, Academicians, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Post Graduate Students to disseminate knowledge related to Strategies for promotion and conservation of environment and native species to protect and restore the Nature.

Goal: The principal goal of this conference will be to present some of the latest outstanding breakthroughs in Strategies for promotion and conservation of environment and native species to protect and restore the Nature to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level.

Theme: To take some positive steps towards improving our Strategies for promotion and conservation of environment and native species to protect and restore the Nature for our future generation

THE GENERAL TOPICS COVERED IN THE CONFERENCE WILL BE AS UNDER

1. **Biological Sciences:** Agricultural Science, Anthropology, Artificial Intelengence, Behavioral Sciences, Animal Husbandry, Aquaculture, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Computer Science, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation & Zoology.

2. **Climate change & Environmental Sciences**: Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation..

3. **Biodiversity conservation**: Nutritional and Food Security, Biodiversity conservation, Promotion and conservation of indigenous species, Strategic and advocacy for nature conservation, Scientific approach of native species conservation, Scientific temper to protect and restore the nature, Livelihood.

Brief Report

ESW XII Annual National Research Conference on "Impact of Climate change on Ecosystem, Environment and Agriculture"

Organized by

Environment & Social Welfare Society, Khajuraho, India.

Redg. No. SC2707/2K, M. P. Govt. Firms & Society Act 1973/44.
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Registered for undertaking CSR, Ministry of Corporate Affairs, Government of India.
Website: www.godavariacademy.com & www.ijgsr.com

During 01 & 02 February, 2025

Venue: Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, MP

In association with

Zoological Survey of India, Ministry of Environment, Forest and Climate Change, GoI, Kolkota, West Bengal**.**
International Union for Conservation of Nature- CEC, Switzerland,
MP Council of Science & Technology, Bhopal & Vigyan Parishad, Mahakoushal Prant, Jabalpur.

Dr. A. K. Verma, Honourable Member, Uttar Pradesh Public Service Commission & Prof. I. P. Tripathi Honourable Vice Chancellor, Raja Shankar Shah University, Chhindwara MP inaugurated ESW 12th Annual National Research Conference - 2K25

A PRELUDE: Environment & Social Welfare Society, Khajuraho organized its ESW XII Annual National Research Conference on "Impact of Climate change on Ecosystem, Environment and Agriculture" During 01 & 02 February, 2025 at Godavari Self-Employment Centre, Village Nahdora, in association with *Zoological Survey of India*, Ministry of Environment, Forest and Climate Change, GoI, Kolkota, West Bengal**,** International Union for Conservation of Nature- CEC, Switzerland, MP Council of Science & Technology Bhopal and Vigyan Parishad, Mahakoushal Prant, India with collaboration of ESW MoU Institutes Dr. B. R. Ambedkar Uni. of Social Sciences, MHOW, MP. Pt. S. N. Shukla University, Shahdol, Madhya Pradesh. Vikram University, Ujjain, Madhya Pradesh.
Rani Durgavati University, Jabalpur, Madhya Pradesh. Bundelkhand University, Jhansi, Uttar Pradesh. Awadhesh Pratap Singh University, Rewa, Madhya Pradesh, Nehru Gram Bharati (Deemed to be University), Prayagraj Sikkim Skill University, Sikkim. ICAR-Central Agroforestry Research Institute, Jhansi, UP. Govt. College, Chenani, Jammu, Jammu & Kashmir. Govt. Girdari Lal Dogra Memorial College, Hiranagar, J&K. Laxmi Narain Dubey College Motihari, Bihar. Govt. Kalidas College, Ujjain, Madhya Pradesh. Govt. Nehru College, Ashoknagar, MP. Shri Rajiv Gandhi Govt. College Banda, MP. PM College of Excellence, Govt. Nehru College Burhar. Assisted by Godavari Academy of Science and Technology, Chhatarpur, MP, India.

OBJECT: To provide a platform to Policy makers, Vice Chancellors, Educational Administrators, Principals, Deans, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Students to disseminate knowledge related to environment and native species.

GOAL: The principal goal of this conference will be to present some of the latest outstanding breakthroughs in environment and native species, to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level.

THEME: In the preamble to the 2030 agenda, world leaders affirmed that they are: "Determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations." Therefore, ESW Society organized this conference to take some positive steps towards improving our Environment, Society and Human health for our future generation.

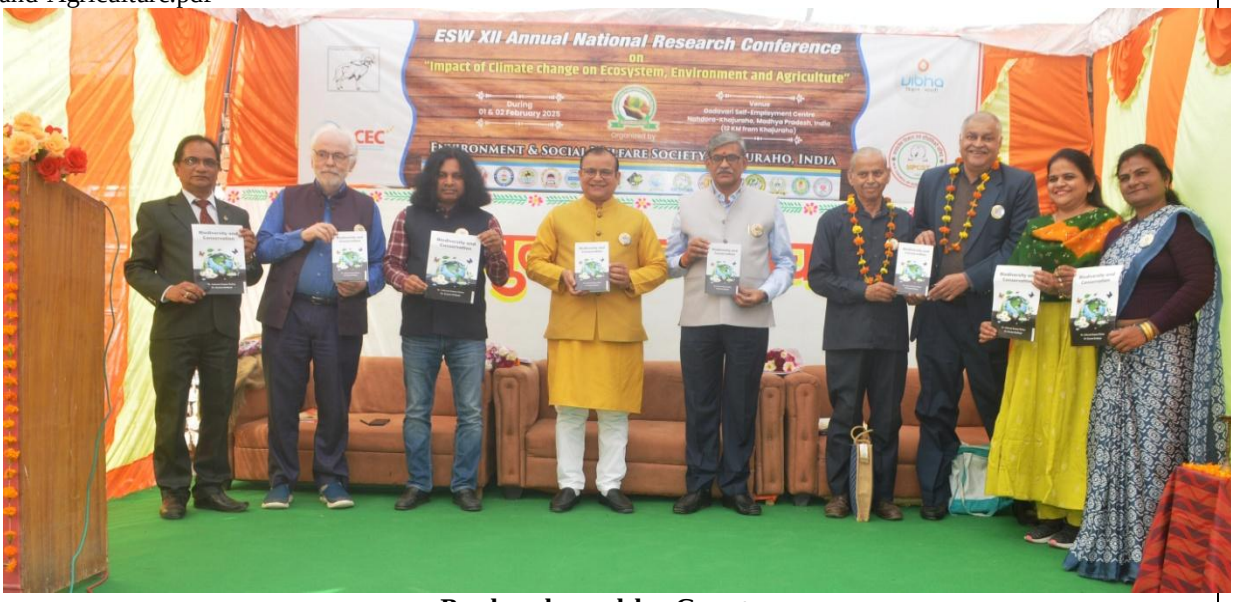
Inaugural of TULSI KALA MANCH: Stage of Tulsi Kala Manch inaugurated by VIP Guest for the conservation & promotion Local Village culture at National & International level.

INAUGURAL FUNCTION: Dr. A. K. Verma, Honourable Member, Uttar Pradesh Public Service Commission and Prof. I. P. Tripathi Honourable Vice Chancellor, Raja Shankar Shah University, Chhindwara inaugurated ESW 12th Annual National Research Conference - 2K25 by candle lighting in front of Goddess Saraswati in the gracious presence of Dr. Kanhaiya Tripathi, Chair Professor Dr. Ambedkar Chair on Human Rights and Environmental Values, Central University of Punjab & Former Special Duty Officer, The President Office, Republic of India, Government of India, Dr. Ulrich Berk, President German Association of Homa Therapy, Germany. Dr. A. K. Pandey, Ex Principal Scientist, ICAR_NBFGR, Lucknow. Prof K. K. Sharma, Former Vice Chancellor, MDS University, Azmer. Mrs. Vandana Dubey MD, Godavari Academy of Science & Technology, Chhatarpur, Dr. Ashwani Kumar Dubey, Founder President, Environment & Social Welfare Society, Khajuraho, Fellow/Member of ESW Society Khajuraho and distinguished guests, participations from various states of India and hundreds+ participants including social media were participated in the conference.

Miss. Muskan Ahirwar, Khushi Ahirwar and Jyoti Adivasi presented Saraswati Vandana and Dr. Kushum Kashyap, Dr. Amit Pal, Priyanka Singh and Vandana Dubey welcomed ESW Society by tag of ESW badges.

Souvenir released with Message of Honourable Mangubhai Patel, Honourable Governor of Madhya Pradesh**.** Prof Raghvendra P. Tiwari, Honourable Vice Chancellor, Central University of Panjab. Dr. Dhriti Banerjee, Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota. Dr. A. Arunachalam, Director, ICAR- Central Agroforestry Research Institute, Jhansi. Dr. Uttam

Kumar Sarkar Director, ICAR- NBFGR, Lucknow. Prof. Mukesh Pandey, Honourable Vice Chancellor, Bundelkhand University Jhansi, Uttar Pradesh. Prof. Rajkumar Acharya, Honourable Vice Chancellor, Awadhesh Pratap Singh University. Rewa**.** Prof Arpan Bharadwaj, Honourable Vice Chancellor, Vikram University, Ujjain, MP. Prof I P Tripathi Honourable Vice Chancellor, Raja Shankar Shah University Chhindwara. Dr. Pragya Khanna, Principal, Govt. Girdari Lal Dogra Memorial College, Hiranagar, Jammu & Kashmir. Prof. B. D. Ahirwar, Principal, Shri Rajiv Gandhi Govt. College, Banda, MP. Mr. Manoj Thakur, Principal, Govt. Nehru Degree Collage, Ashoknagar, MP. Sixty two research abstracts received and published related with Biological Sciences, Environmental Sciences, Earth and Atmospheric Science, Sustainable development and Agricultural sciences. from various States of India viz. Uttarakhand, Uttar Pradesh, Madhya Pradesh, Gujarat, Bihar, Rajasthan, Maharashtra, Jammu & Kashmir and New Delhi as well as from Germany. **Its available online** https://godavariacademy.com/godavarinew/wp-content/uploads/2025/02/Souviner-XII-ANRC-2025-Impact-of-Climate-change-on-Ecosystem-Environment-and-Agriculture.pdf



Book released by Guest:

Biodiversity and Conservation Authors Dr. Ashwani Kumar Dubey and Dr. Kusum Kashyap Published by Manglam Publications, Delhi, India. 2024. pp 001-352. ISBN: 978-81-19681-88-4**.**

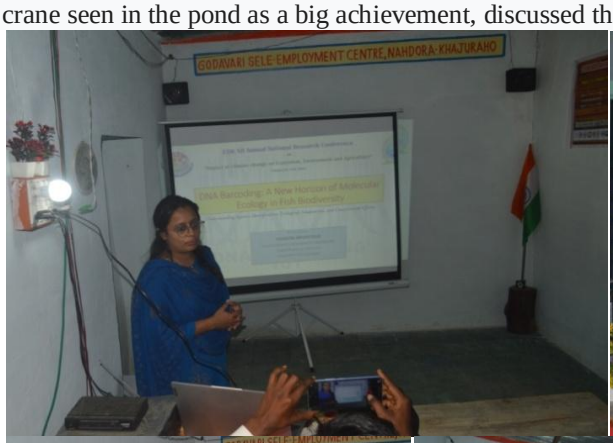
ESW Society, Khajuraho and Central University of Panjab Signed MoU and exchange file between executive of institutes by Mrs. Vandana Dubey & Dr. Kanhaiya Tripathi.

Chief Guest: Dr. A. K. Verma, Honourable Member, Uttar Pradesh Public Service Commission, UP highlighted on village development.

President: Prof. I. P. Tripathi Honourable Vice Chancellor, Raja Shankar Shah University, Chhindwara MP focused nature conservation on in his presidential address.

Guest of Honour: Dr. Kanhaiya Tripathi, Chair Professor Dr. Ambedkar Chair on Human Rights and Environmental Values, Central University of Punjab discussed on Clean environment.
Special Guest: Dr. Ulrich Berk, President German Association of Homa Therapy, Germany focused on Homa.
Special Guest: Dr. A. K. Pandey, Ex Principal Scientist, ICAR-NBFGR, Lucknow highlighted on income practice by fisheries & Prof K. K. Sharma, Former Vice Chancellor, MDS University, Azmer said how to escape by snake.
Executive Director: Dr. Ashwani Kumar Dubey, Founder President, Environment & Social Welfare Society, Khajuraho, Madhya Pradesh highlighted the Annual activities of the society, said that all the members associated with this organization are working dedicatedly for environmental protection for future generation on our Earth.
The general topics discussed in the conference as follows in Five Scientific Session and One Poster session.
1. **Biological Sciences:** Biological Sciences, Agricultural Science, Anthropology and Behavioral Sciences, Animal Husbandry, Aquaculture, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation, Zoology.
2. **Environmental Sciences & Climate change**: Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation.
3. **Earth and Atmospheric Sciences:** Mineralogy.
4. **Sustainable Development**: Nutritional and Food Security, Biodiversity conservation, Promotion and conservation of indigenous species, Strategic and advocacy for nature conservation, Scientific approach of native species conservation, Scientific temper to protect and restore the nature, Livelihood
5. **Agriculture:** All aspects of agriculture, horticulture and floriculture.

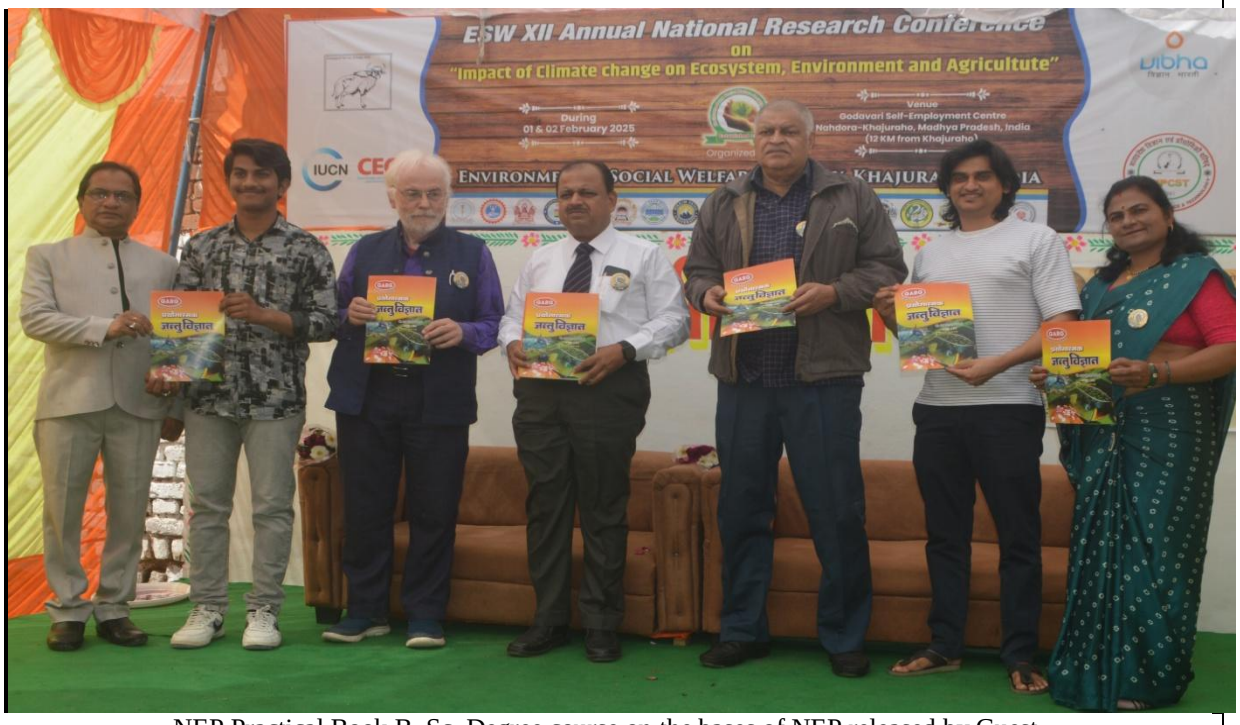
TECHNICAL SESSION: After the inauguration, the technical session started where Research papers and posters presented by Invited guest, Scientist, Research scholars & Academicians. After the technical session, all the scientists from outside visited the village and looked deeply at the ancient temple and pond. Describing the crane seen in the pond as a big achievement, discussed the conservation and promotion of the pond.





CULTURAL PROGRAMME: Indian song based dance were presented in the cultural programs. Chief guest was Mr. Chandrabhan Singh Gautam, District President Bharatiya Janata Partee. Guest of Honour Mr. Shashank Agnihotri, Jila Panchayat Chhatarpur Bharatiya Janata Party office in-charge Arvind Tripathi and Ashish Swasthya Awasthi were present in the cultural programs.

VALEDICTORY & AWARD CEREMONY: 02 February, **2025.** In the valedictory session, Chief guest Dr. Vitthal T Mohite, Professor of Zoology, Thakur College of Science and Commerce, Mumbai, Chaired by Dr. A K Pandey, Former Principal Scientist, ICAR-NBFGR Lucknow, Guest of Honour Dr. Ulrich Burke, German Homeotherapy Association, Germany, Special Guest Sandra Johns, environmentalist, United Kingdom and Executive Director of ESW Society Dr. Ashwani Kumar Dubey, were the Guest of the Valedictory and Award ceremony of the conference and other eminent scientists were present on this auspicious occasion.



NEP Practical Book B. Sc. Degree course on the bases of NEP released by Guest

AWARD CEREMONY:

National Amazing Godavari Memorial Award (NAGMA) "Excellence in Education and Science" Prof. I. P. Tripathi Honourable Vice Chancellor, Raja Shankar Shah University, Chhindwara MP

Best Academician Award Dr. A. K. Verma, Honourable Member, UPPSC, Uttar Pradesh

Best Scientist Award: Prof. S N Pandey University of Lucknow, Sanjay Mishra S R Institute of Management Technology Lucknow, Dr Praveen Ojha Associate Professor of Zoology, KRG College Mathura, Dr Vitthal T Mohite Associate Prof. Zoology Thakur College of Science and Commerce Kandivali Maharashtra, Dr. Abheed Pandey Associate Prof. College of Fisheries Bihar, Prof. Sanjay Kumar Srivastava Proprietor Megha Fish Seed Hatchery Maharajganj, Dr. Pradeep Kumar Assistant Prof. Govt. College Kushinagar.

ESW Fellowship Award: Dr. Priyanka Singh, Bundelkhand University, Jhansi, UP

ESW Excellence Award Dr. A. K. Pandey, Former Principal Scientist, ICAR-NBFGR Lucknow

ESW Recognition Award: Dr. Amarendra Kumar Pandey Assistant Professor Zoology DAV PG College Gorakhpur, Dr. Bhuvan Bhaskar Mishra Assistant Professor Zoology Department BN Mandal University Bihar and Dr. Ajaz A. Wani, Associate Professor of Zoology, Govt. Degree College Bhaderwah, J&K.

Social Innovative ESW National Award Dr. Kavita Mathpal, Subject Expert of Sociology, Lucknow.

Lifetime Achievements Award: Prof P C Trivedi Former VC J N Vyas University Jodhpur, Dr O P Chaturvedi Ex Direct ICAR-CIAFR Jhansi, Dr Uttam Kumar Sarkar Director ICAR NBFGR Lucknow, Prof Vandana Bose BHU Varanasi, Prof. Jairam Singh Former Fellow Indian Institute of Advanced Study Rashtrapati Niwas Shimla, Prof. CPM Tripathi DDU Gorakhpur University UP, Prof Madhu Tripathi University of Lucknow, Prof Ravi S. Pandey Allahabad University Prayagraj, Prof. D. A. Patil Dr. P.R. Ghorji Science College Maharashtra, Dr Kedar Nath Mohite Principal Scientist ICAR CIFE Mumbai, Dr. Akshay Panigrahi Scientist ICAR-CIBWA Chennai, Prof. V N Jha L N Mithila University Bihar, Prof. Yashodhara Sharma Principal MBD Govt. Girls PG College Agra, Prof. Sunil Srivastava DDU Gorakhpur University, Dr. Yogesh Chandra Director S.L. Education Institute Moradabad, Dr. S.P. Tripathi Principal Mahatma Gandhi PG College Gorakhpur, Dr S G Siyadin Ziadi Former Scientist ICAR Directorate Cold Water Fisheries Research Bhimtal Uttarakhand

Best Paper Presentation Award in 1st Technical Session Dr. Shahina Kalim Jhansi UP, 2nd Dr.Shadab Siddiqui Sehore MP, 3rd Sanjay Kumar Srivastava Maharajgang UP, 4th Vandita Srivastava University of Lucknow, 5th Raj Kumar Ahirwar, MCBU Chhatarpur. Poster presentation Rajeev Singh Kaurav Barkatullah University Bhopal.

Vote of thanks: Vote of thanks by In Inaugural session Mrs. Vandana Dubey & In Valedictory session Dr. Amit Pal to our all respected guest and participants..

Dr. Ashwani Kumar Dubey conducted the program.

Beneficiary: Five hundred + Listeners/ RS/ Students/ Academician/ Social workers were benefited by this event.

RECOMMENDATIONS:

- To effectively promote rural development, a multifaceted approach is recommended, focusing on enhancing livelihoods, infrastructure, and social inclusion. This includes strengthening agricultural practices, diversifying income sources, improving access to markets and services, and empowering local communities

Group Photo

News Gallery:

International, National and Local news paper and electronic channel covered this event promptly.

Kolkatahindinews.com https://kolkatahindinews.com/inauguration-of-national-research-seminar-on-impact-of-climate-change-on-ecosystem-environment-and-agriculture/ **Bundelichugli;** https://www.youtube.com/live/egrKVDmNF0g

Ajmernama.com: https://ajmernama.com/national/426777/?fbclid=IwY2xjawIv8blleHRuA2FlbQIxMQABHZGO-QOSRxCIEyDZPnGrev_qKfw30fnF9r47D7Cu0fb7gBKNPuhHdTNo9w_aem_V6TIpesZJAJqSX0mp2fIWA

Satta Sudhar: https://www.youtube.com/watch?v=Mpq0PgCcHn0 **Dainik Madhur Darpan**: https://dainikmadhurdarpan.in/?p=2103

Teesri Aankh https://www.youtube.com/watch?v=4H9d1px7fv4

छतरपुर,शुक्रवार,31 जनवरी 2025 पृष्ठ-02 मूल्य-1.00 रुपए web- www.amarstambh.com

एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी की दो दिवसीय 12वीं राष्ट्रीय संगोष्ठी शोध संगोष्ठी नहदौरा में।

पारिस्थितिक तंत्र, पर्यावरण एवं कृषि पर जलवायु परिवर्तन के प्रभाव पर देश विदेश के वैज्ञानिक करेंगे मंथन

मोहम्मद इमरान छतरपुर।

प्रोफेसर शोधकर्ता वैज्ञानिक पर्यावरणविद् विषय विशेषज्ञ समाजसेवी जनप्रतिनिधि पत्रकार उद्योगपति एवं प्रशासनिक अधिकारी होंगे शामिल

छतरपुर,सोमवार,03 फरवरी 2025 पृष्ठ-02 मूल्य-1.00 रुपए web- www.amarstambh.com

पारिस्थितिक तंत्र पर्यावरण एवं कृषि पर जलवायु परिवर्तन का प्रभाव विषय पर राष्ट्रीय शोध संगोष्ठी हुआ उद्घाटन।

मुख्य अतिथि प्रोफेसर ए के वर्मा सम्माननीय सदस्य उत्तर प्रदेश लोक सेवा आयोग अध्यक्ष प्रोफेसर आई पी त्रिपाठी माननीय कुलपति राजा शंकर शाह विश्वविद्यालय छिंदवाड़ा रहे।

मोहम्मद इमरान छतरपुर।

चंद्रभान सिंह गौतम जिला अध्यक्ष भाजपा श्री शशांक अग्निहोत्री जिला पंचायत छतरपुर रहे सारस्वतिक कार्यक्रम के मुख्य अतिथि

गोदावरी रवरीजगार केंद्र में नवनिर्मित तुलसी कला केंद्र का हुआ उद्घाटन

शोध संक्षेपिका तथा वार्षिकायवर्सिटी कंजरवेशन लेखक डॉ अभनी कुमार दुबे तथा डॉ कुसुम कश्यप की पुस्तक का हुआ विमोचन

नेशनल अमेजिंग गोदावरी मेमोरियल अवार्ड प्रोफेसर आई पी त्रिपाठी कुलपति तथा बेस्ट अकेडमिशियन अवार्ड प्रोफेसर ए के वर्मा माननीय सदस्य उत्तर प्रदेश लोक सेवा आयोग को दिया गया।

संध्याकालीन सारस्वतिक कार्यक्रमों में हुई रंगारंग प्रस्तुतियां

गोदावरी स्वरोजगार केंद्र द्वारा ग्राम नहदौरा मे दो दिवसीय राष्ट्रीय शोध संगोष्ठी का हुआ शुभारंभ

मोहम्मद इमरान
पत्रकार छतरपुर।

मानवीय मूल्य एवं पर्यावरण संरक्षण से ही विकास संभव - डॉक्टर कन्हैया त्रिपाठी पूर्व विशेष कर्तव्यनिष्ठ अधिकारी रिपब्लिक भारत.

राजनगर। एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा डॉ कन्हैया त्रिपाठी को गोदावरी अकैडमी का सर्वोच्च अवार्ड नेशनल अमेजिंग गोदावरी मेमोरियल अवार्ड डॉ बी डी अहिरवार को बेस्ट एकेडमिक अवार्ड डॉ वीरेंद्र नाथ को लाइफटाइम अचीवमेंट अवार्ड से सम्मानित किया गया । एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी खजुराहो द्वारा आयोजित 11वीं राष्ट्रीय शोध संगोष्ठी का आयोजन आज दिनांक 28 जनवरी को गोदावरी स्वरोजगार केंद्र द्वारा ग्राम नहदौरा तहसील राजनगर जिला छतरपुर में आयोजित किया गया। पूर्व वैज्ञानिक जी सी एस आई आर - एन बी आर आई लखनऊ उत्तर प्रदेश विशिष्ट अतिथि डॉ बी डी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर डॉक्टर सुरेश बौद्ध भोपाल एवं कार्यक्रम के अध्यक्ष डॉ कन्हैया त्रिपाठी पूर्व विशेष कर्तव्य निष्ठ अधिकारी रिपब्लिक भारत भारत सरकार एवं चेयर प्रोफेसर डॉ आंबेडकर चेयर ओन ह्युमन राइट्स एंड एनवायरमेंटल वैल्यूज केंद्रीय विश्वविद्यालय पंजाब उपस्थित रहे। अतिथियों द्वारा मां सरस्वती की प्रतिमा के समक्ष दीप प्रज्वलन कर कार्यक्रम का शुभारंभ हुआ। सरस्वती वंदना ग्राम की छात्रा मुस्कान अहिरवार खुशी अहिरवार ज्योति आदिवासी ने प्रस्तुत किया। ई एस डब्ल्यू समिति के बैच लगाकर के स्वागत वंदना दुबे संचित लाहोटी अमित पाल ने किया राष्ट्रीय शोध संगोष्ठी की सोविनिर का विमोचन अतिथियों द्वारा किया गया जिसमें सैकड़ो शोध सारांश उत्तराखंड उत्तर प्रदेश मध्य प्रदेश गुजरात बिहार राजस्थान महाराष्ट्र जम्मू कश्मीर कर्नाटक नई दिल्ली तेलंगना छत्तीसगढ़ एवं हांगकांग से प्राप्त हुए को प्रकाशित किया गया। आईसीबीसीपी लखनऊ के द्वारा न्यूज लेटर रिलीज किया गया वहीं डॉ अश्वनी कुमार दुबे अतिथि विद्वान शासकीय महाविद्यालय पिपरई जिला अशोकनगर के द्वारा नई शिक्षा नीति पर आधारित ऑर्गेनिक फार्मिंग विषय पर प्रयोग पुस्तिका का विमोचन किया गया। डॉ बी डी अहिरवार ने अपने उद्बोधन में कहा कि हमारे भौगोलिक क्षेत्र में और वृक्षारोपण करने की आवश्यकता है एवं मानव जाति को वृक्ष काटने से रोकने की प्रवृत्ति बनाना होगी। डॉ वीरेंद्र नाथ ने म्यूजियम के लिए हर संभव मदद करने का भरोसा दिलाया। कार्यक्रम के अध्यक्ष डॉ कन्हैया त्रिपाठी ने कहा की मानवीय मूल्यों को बचाना बहुत आवश्यक है इस विषय पर कार्य करने की आवश्यकता है डॉ दुबे द्वारा ग्राम पंचायत में स्वरोजगार केंद्र की स्थापना से गांव के हर व्यक्ति को उन्नति का मार्ग प्रशस्त होगा उन्होंने कहा कि गांव में स्वच्छता बहुत जरूरी है जो मानव जीवन को स्वस्थ रखने में सहायक सिद्ध होगी। एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा डॉ बी डी अहिरवार को बेस्ट एकेडमिक अवार्ड डॉ वीरेंद्र नाथ को लाइफटाइम अचीवमेंट अवार्ड तथा डॉ कन्हैया त्रिपाठी को गोदावरी अकैडमी का सर्वोच्च अवार्ड नेशनल अमेजिंग गोदावरी मेमोरियल अवार्ड से सम्मानित किया गया । आभार प्रदर्शन डॉ अमित पाल बुंदेलखंड विश्वविद्यालय झांसी ने किया। इस अवसर पर ग्राम के सरपंच हरिश्चंद्र पटेल डॉ अरुण आर्य डॉ चित्रा आर्य डॉ कुसुम कश्यप सहायक प्राध्यापक राजा भोज कॉलेज भोपाल शोभाराम आठ्या गोदावरी अकैडमी की डायरेक्टर वंदना दुबे देश के विभिन्न प्रांतो से आए शोधार्थी प्राध्यापक एवं वैज्ञानिक सहित गांव के गणमान्य नागरिक एवं पत्रकार उपस्थित रहे।

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ई एस डब्ल्यू सोसाइटी खजुराहो की 12वीं राष्ट्रीय शोध संगोष्ठी का हुआ समापन, देश विदेश के वैज्ञानिकों को अवार्ड से सम्मानित किया गया।

डॉ अश्वनी कुमार दुबे द्वारा लिखित नई शिक्षा नीति पर आधारित बीएससी तृतीय वर्ष की प्रयोगात्मक पुस्तक का हुआ विमोचन

गोदावरी स्वरोजगार केंद्र में नवनिर्मित तुलसी कला केंद्र का हुआ उद्घाटन

चंद्रभान सिंह गौतम जिला अध्यक्ष भाजपा श्री शशांक अग्निहोत्री जिला पंचायत छतरपुर रहे सांस्कृतिक कार्यक्रम के मुख्य अतिथि

छतरपुर, मंगलवार 04 फरवरी 2025 — दैनिक छतरपुर भ्रमण

ई एस डब्ल्यू सोसाइटी खजुराहो की 12वीं राष्ट्रीय शोध संगोष्ठी का हुआ समापन

-दो दिन से गोदावरी स्वरोजगार केंद्र नाइंदौरा में चल रही थी कॉन्फ्रेंस
-डॉ अश्वनी कुमार दुबे द्वारा लिखित नई शिक्षा नीति पर आधारित बीएससी तृतीय वर्ष की प्रयोगात्मक पुस्तक का हुआ विमोचन
-समापन सत्र पर देश विदेश के वैज्ञानिकों को अवार्ड से सम्मानित किया गया

राष्ट्रीय अनुसंधान सम्मेलन, खजुराहो मध्य प्रदेश में प्रधानमंत्री कॉलेज ऑफ एक्सीलेंस,सीहोर को मिला सम्मान

स्वराज वाणी / हिमालय गोहिया (सीहोर)

राष्ट्रीय अनुसंधान सम्मेलन,खजुराहो मध्य प्रदेश में प्राचार्य डॉ. रोहिताश्व कुमार शर्मा की सहमति पर डॉ. शादाब सिद्दीकी ने इंपैक्ट ऑफ़ क्लाइमेट चेंज ऑन फिश बायोडायवर्सिटी- चैलेंजिस एंड कंजर्वेशन स्ट्रेटजी शीर्षक पर शोधकार्य प्रस्तुत किया जिसके लिए उन्हें बेस्ट ओरल प्रेजेंटेशन का अवार्ड मिला। महाविद्यालय के समस्त परिवार ने उक्त अवार्ड के लिए शुभकामनाएं दीं।

नई शिक्षा नीति पर आधारित प्रयोगात्मक पुस्तक का हुआ विमोचन

ईएसडब्ल्यू सोसाइटी खजुराहो की 12वीं राष्ट्रीय शोध संगोष्ठी का हुआ समापन

खजुराहो। द्वि सहस्त्राब्दी वर्ष से संचालित मध्य प्रदेश शासन द्वारा पंजीकृत मध्यप्रदेश जन अभियान परिषद तथा नीति आयोग से संबद्ध एवं आयकर विभाग भारत सरकार एक्ट 12ए में पंजीकृत एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा आयोजित 12वीं राष्ट्रीय शोध संगोष्ठी पारिस्थितिक तंत्र पर्यावरण तथा कृषि पर जलवायु परिवर्तन का प्रभाव विषय पर गोदावरी स्वरोजगार केंद्र नहदौरा तहसील राजनगर जिला छतरपुर में संपन्न हुई। समापन सत्र में मुख्य अतिथि डॉ विट्ठल टी मोहिते प्रोफेसर प्राणी शास्त्र ठाकुर कॉलेज ऑफ साइंस एंड कॉमर्स मुंबई अध्यक्षता डॉ ए के पांडेय पूर्व प्रिंसिपल साइंटिस्ट इंडियन काउंसिल आफ एग्रीकल्चर रिसर्च नेशनल ब्यूरो आफ फिश जेनेटिक रिसोर्सेस लखनऊ विशिष्ट अतिथि डॉ उलरिच बर्क जर्मन होमोपैथी एसोसिएशन जर्मनी तथा सैंड्रा जॉन्स पर्यावरणविद् यूनाइटेड किंगडम उपस्थित रहे।

कार्यक्रम की शुरुआत ई एस डब्ल्यू सोसाइटी के बैज, पुष्पहार एवं पुष्पगुच्छ द्वारा श्रीमती वंदना दुबे प्रबंध निदेशक गोदावरी अकैडमी डॉ मानस जोशी तथा शोभाराम आटठ्या के द्वारा किया गया। कॉन्फ्रेंस का संक्षिप्त प्रतिवेदन डॉ प्रवीण ओझा द्वारा प्रस्तुत किया गया। डॉ अश्वनी कुमार दुबे द्वारा लिखित नई शिक्षा नीति पर आधारित बीएससी तृतीय वर्ष के प्रयोग पुस्तक का विमोचन अतिथियों के द्वारा मंच से किया गया। इस अवसर पर समिति के लिए किए गए उत्कृष्ट कार्यों के लिए विभिन्न राज्यों से आए अकैडमिशियन तथा वैज्ञानिकों को सम्मानित किया गया। डॉ ए के पांडेय को ई एस डब्ल्यू एक्सीलेंस अवार्ड तथा प्रियंका सिंह बुंदेलखंड यूनिवर्सिटी झांसी को फैलोशिप डॉ कन्हैया त्रिपाठी केंद्रीय विश्वविद्यालय पंजाब गोदावरी अकैडमी इंपैक्ट अवार्ड से सम्मानित किया गया। इसके अलावा विभिन्न विभूतियों को लाइफटाइम अचीवमेंट अवार्ड, बेस्ट साइंटिस्ट अवार्ड, रिकॉग्निशन अवार्ड, पांच टेक्निकल सेशन में बेस्ट पेपर प्रेजेंटेशन अवार्ड और यंग साइंटिस्ट अवार्ड प्रदान किए गए। स्कूली छात्राओं को सांस्कृतिक कार्यक्रम में भाग लेने पर उनको ईएसडब्ल्यू गोल्ड मेडल से सम्मानित किया गया। दो दिन तक चली इस संगोष्ठी में सैकड़ो वैज्ञानिक अकैडमीशियन पर्यावरणविद् समाजसेवी पत्रकार जनप्रतिनिधि प्रशासनिक अधिकारी एवं नहदौरा ग्राम पंचायत के वरिष्ठ गणमान्य नागरिक एवं छात्राएं उपस्थित रही। ईएसडब्ल्यू सोसाइटी के राष्ट्रीय अध्यक्ष डॉ अश्वनी कुमार दुबे ने संगोष्ठी में सहयोग करने वाले सभी सहयोगियों को स्मृति चिन्ह भेंटकर सम्मानित किया।

ई एस डब्ल्यू सोशायटी खजुराहो के दो दिवसीय राष्ट्रीय शोध संगोष्ठी का हुआ समापन

मोहम्मद इमरान
पत्रकार छतरपुर।

राष्ट्रीय शोध संगोष्ठी में शासकीय महाविद्यालय बंडा जिला सागर एवं ई एस डब्ल्यू सोशायटी खजुराहो के बीच हुआ एकेडमिक एवं शोध करार.

मोहम्मद इमरान पत्रकार छतरपुर

राजनगर। एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी खजुराहो द्वारा आयोजित 11वीं राष्ट्रीय शोध संगोष्ठी का आयोजन गोदावरी स्वरोजगार केंद्र द्वारा ग्राम नहदौरा तहसील राजनगर जिला छतरपुर में आयोजित किया गया जिसमें पूर्व वैज्ञानिक जी सी एस आई आर - एन बी आर आई लखनऊ उत्तर प्रदेश विशिष्ट अतिथि डॉ बी डी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर डॉक्टर सुरेश बौद्ध भोपाल एवं कार्यक्रम के अध्यक्ष डॉ कन्हैया त्रिपाठी पूर्व विशेष कर्तव्य निष्ठ अधिकारी रिपब्लिक भारत भारत सरकार एवं चेयर प्रोफेसर डॉ आंबेडकर चेयर ओन ह्युमन राइट्स एंड एनवायरमेंटल वैल्यूज केंद्रीय विश्वविद्यालय पंजाब ने अपने अपने विचार व्यक्त किए। शासकीय महाविद्यालय बंडा जिला सागर एवं ई एस डब्ल्यू सोशायटी खजुराहो के बीच हुआ एकेडमिक एवं शोध पर एम ओ यू हस्ताक्षर किए गए एवं फाइल का आदान-प्रदान किया गया इस एमओयू में दोनों संस्थाओं के बीच में अकादमिक शोध एवं शैक्षणिक गतिविधियों को लेकर के आपसी सहयोग प्रदान करने की बात कही गई। इस अवसर पर ग्राम के सरपंच हरिश्चंद्र पटेल डॉ अरुण आर्य एम एस विश्वविद्यालय बड़ोदरा डॉ चित्रा आर्य डॉ कुसुम कश्यप सहायक प्राध्यापक राजा भोज कॉलेज भोपाल शोभाराम आठ्या गोदावरी अकैडमी की डायरेक्टर वंदना दुबे देश के विभिन्न प्रांतो से आए शोधार्थी प्राध्यापक एवं वैज्ञानिक सहित गांव के गणमान्य नागरिक एवं पत्रकार उपस्थित रहे?।

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2 — 30 जनवरी

दो दिवसीय ग्यारहवीं राष्ट्रीय शोध संगोष्ठी का आयोजन किया गया

मानवीय मूल्य एवं पर्यावरण संरक्षण से ही विकास संभव

नहदौरा में दो दिवसीय राष्ट्रीय शोध संगोष्ठी का हुआ शुभारंभ

खजुराहो। एनवॉयरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा आयोजित 11वीं राष्ट्रीय शोध संगोष्ठी का आयोजन राजनगर जनपद के ग्राम नहदौरा में किया जा रहा है। रविवार को इस दो दिवसीय संगोष्ठी का शुभारंभ हुआ। शुभारंभ सत्र के मुख्य अतिथि डॉ वीरेंद्र नाथ पूर्व वैज्ञानिक जीसीएसआईआर-एनबीआरआई लखनऊ उप्र एवं पूर्व विशेष कर्तव्यनिष्ठ अधिकारी रिपब्लिक भारत रहे। जबकि विशिष्ट अतिथि के रूप में डॉ बीडी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर, डॉ. सुरेश बौद्ध भोपाल मौजूद रहे। अध्यक्षता डॉ. कन्हैया त्रिपाठी पूर्व विशेष कर्तव्यनिष्ठ अधिकारी रिपब्लिक भारत भारत सरकार एवं चेयर प्रोफेसर डॉ आंबेडकर चेयर ओन ह्युमन राइट्स एंड एनवायरमेंटल वैल्यूज केंद्रीय विश्वविद्यालय पंजाब ने की।

अतिथियों ने मां सरस्वती की प्रतिमा के समक्ष दीप प्रज्वलन कर कार्यक्रम का शुभारंभ हुआ। ग्राम की छात्रा मुस्कान अहिरवार खुशी अहिरवार ज्योति आदिवासी ने सरस्वती वंदना प्रस्तुत की। तदपुरांत ईएसडब्ल्यू समिति के बैज लगाकर अतिथियों का स्वागत वंदना दुबे, संचित लाहोटी और अमित पाल ने किया। राष्ट्रीय शोध संगोष्ठी की सोविनिर का विमोचन अतिथियों द्वारा किया गया। इसके अलावा आईसीबीसीपी लखनऊ के द्वारा न्यूज लेटर रिलीज किया गया, डॉ. अश्वनी कुमार दुबे अतिथि विद्वान शासकीय महाविद्यालय पिपरई जिला अशोकनगर के द्वारा नई शिक्षा नीति पर आधारित ऑर्गेनिक फार्मिंग विषय पर प्रयोग पुस्तिका का विमोचन किया गया।

मुख्य अतिथि डॉ. वीरेंद्र नाथ ने म्यूजियम के लिए हर संभव मदद करने का भरोसा दिलाया। डॉ. बीडी अहिरवार ने अपने उद्बोधन में कहा कि हमारे भौगोलिक क्षेत्र में और वृक्षारोपण करने की आवश्यकता है।

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Keynote

INSECTS: IMPACT OF CLIMATE CHANGE

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Insects forming a massive bulk of biodiversity are innumerable little creatures and far more important for the functioning of ecosystems than the large animals that tend to attract most of our attention. As per reports available insects may have fallen by 50% or more since 1970. This is of serious concern, as these are vitally important being useful in pollination, decomposition of organic material, soil enrichment and aeration, being consumed as food, controlling other insect pests as biological control agents (predators and parasites), research as experimental material, bio-indicators, warfare as biological weapons etc.

Toady hundreds of insects face the threat of eventual extinction around the world, according to the International Union for the Conservation of Nature (IUCN). This could be assigned to the habitat destruction, indiscriminate use of insecticides and now climate change is also affecting the insect population. Climate parameters such as increased temperatures, rising atmospheric CO_2 levels, and changing precipitation patterns have significant impacts on agricultural production and on agricultural insect pests.

The general consequences of climate change and global warming on insect dynamics would include:

- expansion of geographic range
- increased survival rates of overwintering populations
- increased risk of introduction of invasive insect species
- increased incidence of insect-transmitted plant diseases due to range expansion
- rapid reproduction of insect vectors
- reduced effectiveness of biological control agents such as natural enemies, etc.

Elevated concentrations of atmospheric CO_2 can affect the distribution, abundance, performance of herbivorous insects and in turn such increases can affect consumption rates, growth rates, fecundity, population densities of insect pests etc. Many researchers have shown that increased temperature tends to accelerate insect consumption, development and movement which can affect population dynamics by influencing fecundity, survival, generation time, population size, geographic range. Species that cannot adapt and evolve to increased temperature conditions generally have a difficult time maintaining their populations, while other species can thrive and reproduce rapidly.

The changing climate is expected to change precipitation patterns – such as rainfall. According to reports available, changes in the amount, intensity, and frequency of precipitation are very important indicators of climate change. As observed in most events, the frequency of precipitation has decreased while the intensity of precipitation has increased. This type of rainfall pattern has favoured the occurrence of droughts and floods. Insect species that overwinter in the soil are directly affected by overlapping rainfall. In short,

heavy rainfall can lead to flooding and prolonged stagnation of water. This event threatens insect survival and at least affects their diapause. In addition, insect eggs and larvae can be washed away by heavy rains and flooding. Small-bodied pests can be washed away during heavy rainfall.

Recent studies have suggested that insect biomass, abundance, and diversity have declined by 20%–75% over the last few decades in many taxonomic groups and ecosystems. These reported declines are alarming, because insects are vital for numerous ecosystem processes. The continued loss of insect biodiversity and biomass may thus have ecological and economic consequences and therefore, it is high time we show our concern towards these little creatures who too are impacted upon by climate change.

Keywords: biodiversity, ecosystem, pest, insect, IUCN

Inviteed Lecture

ON SOME ICHTHYOFAUNA FROM DINDIGUL DISTRICT OF TAMIL NADU

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Fish provides a staple diet and protein supplement of people, thus making it an important resource element in the economy of many nations. Many freshwater fish species are of immense aquaculture importance. More than 60.3% of the primary freshwater fishes of India are endemic to the country, with the highest endemicity found in Western Ghats biogeographic zone. Kodaikanal, a popular summer resort, located at an altitude of 2,133 meters above MSL in the Western Ghats, is popularly called as "Princess of Hills Stations" is in the Dindigul District. Dindigul district forms parts of Cauvery, Vaigai, and Pampar basins, in addition there are streams, ponds and pools too. The systematic enumeration of fish fauna comprised 64 species of fishes representing 8 orders, 36 genera under 16 families and from this district. The reported fish species include of food fishes, ornamental fishes, cultivable fishes and sports fishes. A comprehensive list on the fish fauna of the Dindigul district of Tamil Nadu has been presented here based on the fish collections identified from the extensive surveys conducted by Southern Regional Centre, Zoological Survey of India, Chennai and compiled from available earlier reports. Highest species diversity was observed in the order Cypriniformes (41 species) (4 families) (21 genera) and family Cyprinidae represents the most dominant family with a representation of 32 species followed by the order Siluriformes with 9 species, 4 families, 6 genera. The third dominant order Cichliformes represents 1 family, 3 genera, 4 species followed by Anabantiformes 2 families, 1 genus, 1 species; Cyprinodontiformes 1family, 2 genera, 2 species. Remaining orders viz. Ovalentaria, Gobiiformes and Synbranchiformes were represented by 1 family, 1 genus, 1 species each accordingly. As per the IUCN conservation status the fishes from the Dindukal district were categorised as 51 species are Least concern (LC), 5 species are Vulnerable (VU) and 3 species is a Data Deficient (DD) species,1 species not evaluated (NE) and 4 species coming under endangered (EN). While considering the Threat to humans 52 species are harmless; 8 are potential pests and 3 species are Traumatogenic and 1 Venomous in nature. The present study was aimed to focus onto analyse fish fauna of this district in detail as no attempt was made earlier.

Keywords: Freshwater Fish; Diversity; Endemics, Conservation, Dindigul district.

IMPACT OF CLIMATE CHANGE ON FISH GENETIC RESOURCES: STRATEGIES FOR CONSERVATION AND SUSTAINABLE MANAGEMENT

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Climate change presents significant challenges to fish genetic resources, affecting their distribution and biology due to rising temperatures, shifting rainfall patterns, and an increase in extreme weather events. The tropical regions of Africa and Asia are particularly vulnerable to these impacts. India's aquatic resources host a rich diversity of approximately 3,218 fish species, contributing nearly 9% of global fish diversity. Given its major influence on fisheries and aquaculture, studying climate change is essential to develop effective mitigation strategies across the country's aquatic systems. Assessment of climato-hydrological impacts on the breeding phenology was done for Small Indigenous Fishes (SIFs) from various ecosystems. Vulnerability assessment of fish species in inland water bodies, including diverse wetlands, was conducted, focusing on climate, water quality, reproduction, and population biology. Evaluated the reproductive requirements of fish and examined how periodic inland heat waves affect ecosystems to better understand these impacts at the ecosystem level. Additionally, geospatial mapping of climate-resilient deep pool habitats within riverine ecosystems and the quantification of carbon sequestration potential in blue carbon ecosystems are crucial for enhancing efforts to combat climate change. Developing effective mitigation and adaptation strategies is necessary to conserve fish genetic resources and sustain the livelihoods of local communities. Addressing these challenges involves identifying optimal climatic conditions for natural recruitment, creating climate-resilient adaptation strategies, modeling the distribution and abundance of fish under anticipated climatic changes, and engaging the community to prepare stakeholders for extreme events. It is imperative to quantify climate-induced risks at regional, national, and global levels to identify specific long-term trends, which can facilitate the evolution of adaptation and climate resilience measures.

Keywords: Climate change; breeding phenology; adaptation; mitigation; Small Indigenous Fishes

IMPACT OF CLIMATE CHANGE ON ENDEMIC TREE SPECIES OF GENUS *GARCINIA* AT ANDAMAN & NICOBAR ISLANDS

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Garcinia L. is a well-recognised genus of family Clusiaceae for it has commendable economic importance as a source of edible fruits. The genus is represented by 250 species in the world (Rogers & Sweeney, 2007; Sweeney, 2008; Sharma *et al*., 2013; Nimanthika & Kaththriarchi, 2010), and in India by 43 species (Anderson, 1874; Maheshwari, 1964; Singh, 1993; Srivastava, 1994). It has 17 members in the Andaman and Nicobar Islands including 7 endemics such as *G. andamanica* King, *G. cadelliana* King, *G. calycina* Kurz, *G. dhanikhariensis* S. K. Srivastava, *G. kingii* Pierre ex Vesque, *G. kurzii* Pierre, and *G. microstigma* Kurz (Hazara *et al*., 1999; Sinha, 1999; Pandey & Diwakar, 2008; Murugan *et al*., 2016; Purohit & Vivek, 2022; Purohit *et al*., 2022 & 2023). Out of 7 endemics, *G. andamanica* and *G. dhanikhariensis* is highly restricted in Andaman group of Islands. It have potential of using as a fruit crop and ornamental tree.

Present study is on focus of *ex-situ* conservation of genus *Garcinia* i.e. *G. andamanica* & *G. dhanikhariensis* through seeds germination or seedlings collections from their natural habitats and conservation at Dhanikhari garden. *G. andamanica* has been naturally occur at evergreen forest near fresh water bodies and damp areas of little, North & South Andaman Islands. *G. dhanikhariensis* has been restricted in inland forest at Dhanikhari area in South Andaman and few individuals in cultivation at Chouldhari area in South Andaman Islands. Present paper deals with study of seed germination, growth behavior and effect of climate change on two endemic tree species i.e. *G. andamanica* King and *Garcinia dhanikhariensis* S.K. Srivst. (Clusiaceae) at Dhanikhari Botanical Garden cum Arboretum, Port Blair.

Keywords: Endemic, Garcinia, Growth data, Climate change, conservation.

LAND-USE CHANGE AND HABITAT FRAGMENTATION IMPACTS ON FOREST BIODIVERSITY IN THE ACHANAKMAR–AMARKANTAK BIOSPHERE RESERVE, CENTRAL INDIA

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The Achanakmar–Amarkantak Biosphere Reserve (AABR), extending across Madhya Pradesh and Chhattisgarh, represents a critical forest biodiversity hotspot dominated by moist deciduous sal (*Shorea robusta*) ecosystems. This study examines the effects of land-use change and habitat fragmentation on forest biodiversity in AABR between 2000 and 2025. Multi-temporal Landsat and Sentinel satellite data were employed to quantify land-use/land-cover dynamics and landscape fragmentation, while systematic field surveys across core, buffer, and transition zones assessed floral and faunal diversity using Shannon diversity index, species evenness, and population density estimates of selected indicator taxa.

The analysis revealed a 12–15% decline in dense forest cover and an almost 20% increase in fragmented forest patches. Intensified edge effects corresponded with an 18% reduction in floral diversity and an estimated 25% decline in faunal abundance, including major herbivores and large carnivores. Invasive species proliferation and rising temperatures further compounded habitat degradation and sal regeneration failure. These findings highlight the urgent need for integrated, climate-responsive landscape management and habitat connectivity restoration to conserve the ecological integrity of AABR.

Keywords: Land-use/land-cover change, Habitat fragmentation, Forest biodiversity, Remote sensing, GIS, Sal forests, Achanakmar–Amarkantak, Biosphere Reserve.

TACKLING CLIMATE CHANGE THROUGH NATURAL FARMING

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Emissions from Agriculture sector are a major source of Green House Gases which contribute to rise in temperature through Climate Change. These emissions are mostly as a result of the indiscriminate use of chemical fertilizers and plant protection chemicals in the fields. The use of chemical fertilizers like Urea, DAP and MOP release huge quantities of Green House Gases like Methane, Carbon dioxide, Nitrous oxide. The emissions can be reduced though Natural Farming. Natural Farming is a chemical-free farming system rooted in Indian tradition enriched with modern understanding of ecology, resource recycling and on-farm resource optimization. It is considered as agro-ecology based diversified farming system which integrates crops, trees and livestock with functional biodiversity (NITI Aayog). It is largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations; maintaining soil aeration and exclusion of all synthetic chemical inputs. Natural farming is a cost- effective farming practice with scope for increasing employment and rural development. It does not rely on external inputs. It stresses upon use of Local seeds, .On-farm produced microbial formulation for seed treatment (such as Jeevamrita, Beejamrita) and insect pest and disease control (through Agniastra, Brahmastra, Neemastra), cover crops and mulching with green and dry organic matter for nutrient recycling and for creating a suitable micro-climate for maximum beneficial microbial activity in soil andintegration of livestock, especially of native breed for cow dung and cow urine as essential inputs for several practices and Water and moisture conservation. The replacement of chemical fertilizers with microbial preparations does not result in any GHG emission ultimately combating climate change.

Keywords: Agriculture, Green House Gases, Climate Change, Methane, Carbon dioxide, Nitrous oxide.

BIOLOGICAL SCIENCES

Agricultural Science, Anthropology, Artificial Intelligence, Biological Sciences, Behavioral Sciences, Animal Husbandry, Aquaculture, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Computer Science, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Social Science, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation and Zoology.

TOXIC POTENTIAL OF LAMBDA CYHALOTHRIN AND PIPERONYL BUTOXIDE (PBO) IN PROTEIN BIOCHEMISTRY IN THE SERUM OF ALBINO RATS

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We are living in the chemical era because in agriculture we use more and more amount of insecticide, pesticide, herbicides and chemicals. These chemicals are enters in the food chain and affect the physiology of fauna. Out of these chemicals, pyrethorids are on top. Considering all these facts present investigation has been designed to find out comparative toxicity of two synthetic pyrethoird that is Lambda cyhalothrin and piperonyl butoxide on the protein biochemistry of albino rats. Lambda cyhalothrin and piperonyl butoxide (synthetic pyrethorid) were administered orally at a sub-lethal dose (LD_{50}/10 and LD_{50}/10x21) to albino rats for 1, 7, 14 and 21 days. Control rats received similar quantities of ground nut oil. Body weights were recorded daily and the rats were sacrificed after 24 hours after the terminal exposure. Treatment with λ- cyhalothrin and piperonyl butoxide for acute and sub-acute sets in male rats resulted in significant decrease in total protein, albumin and bilirubin, whereas in male rats globulin decreased significantly in λ- cyhalothrin treated set. The study reveals that λ-cyhalothrin and PBO affect cell metabolism and active transport across cell membrane, cellular defense mechanism. Both λ-cyhalothrin and PBO reveal adverse effects on protein level leading to physiological impairment. So, we use more and more amount of herbicides instead of synthetic chemicals for conserve faunal physiology.

Keynote: Agriculture, Insecticide, Pesticide, Herbicides, Albino rats

CHEMISTRY OF ERTAPENEM: A BROAD-SPECTRUM CARBAPENEM ANTIBIOTIC

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Ertapenem is a powerful β- lactam antibiotic of the carbapenem class with a broad spectrum of activity. Its brand name is Invanz. It is used to treat a variety of serious bacterial infections. It works by killing bacteria, specifically by binding to penicillin-binding proteins (PBPs) and interfering with the formation of the bacterial cell wall. It works against Gram-positive and Gram-negative aerobic and anaerobic bacteria. Its molecular formula is $C_{22}H_{25}N_3O_7S$ and molecular weight 475.5g/mol. The core structure of ertapenem molecule contains a 1-azabicyclohept-2-ene system (a fused beta-lactam and five-membered ring structure). Presence of a *meta*-substituted benzoic acid moiety attached via a pyrrolidinyl-thio group contributes to its long half-life. It is used for the treatment of infections of the abdomen and lungs.

Keynote: Ertapenem, Antibiotic, Bacteria, Abdomin, Lungs.

INDIAN DESERT: PRESENT SCENARIO AND MAPPING OF ENDANGERED AND REGIONALLY THREATENED PLANT SPECIES

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The Indian desert, also known as Thar desert, is a large area of arid and semi arid zones situated at the north western portion of India. It extends from Gujarat and Rajasthan, reaching upto some parts of Haryana, encompassing an area of about 2,00,000 sq. km. This region experiences harsh climatic conditions like high temperature, strong wind, low water availability, saline habitats. The rainfall in the Indian desert varies significantly with area, below 150 mm per year in core desert area like Jaisalmer. Barmer and Bikaner, while the other semi arid regions receive rainfall between 350 and 750 mm per year. Temperature in the Indian desert varies from 45°C to 49°C in summer and the lowest temperature can vary from 10°C to 0°C in winter. In spite of tough weather conditions, the Indian desert represents a unique and fragile ecosystem that supports a diverse range of specialized plant species adapted to extreme climatic conditions. 682 plant species have been reported from the Indian desert among which 22 are endemic to this region. However, increasing anthropogenic pressures such as overgrazing, habitat degradation, agricultural expansion, mining activities and climate change have led to a rapid decline in native flora, pushing several species towards threatened and endangered status. This study aims to collect, document and analyze the reason behind population decline with distribution, and ecological significance of selected endangered and threatened plant species of the Indian desert.

This research primarily focuses on key species such as *Capparis cartilaginea*, *Calligonum polygonoides, Calligonum comosum, Cenchrus prieurii* var. *scabra, Commiphora wightii*, *Euphorbia jodhpurensis*, *Euphorbia prostrata, Eragrostis tremula* var. *gajanandii, Helichrysum cutchicum, Ipomoea kotschyana. Moringa concanensis*, *Leucas lavandifolia, Mazus surculosus, Pavonia arabica* var. *massuriensis, Tephrosia falciformis*, *Tribulus cistoides, Tribulus rajasthanensis*, *Vachellia jacquemontii* and *Ziziphus truncata.* The present surveys highlight severe population decline, poor natural regeneration and fragmented habitats as major conservation concerns for these species. The study emphasizes the urgent need for in-situ and ex-situ conservation strategies, including the establishment of protected areas, community and conservation reserves and large-scale propagation programs. Protecting these endangered and threatened plant species is essential not only for biodiversity conservation but also for maintaining ecological balance and promoting sustainable development in the Indian desert region.

Keywords: Indian desert, Present Scenario, Threatened, Rajasthan, Gujarat.

LIVING WITH A TUBE: PSYCHOSOCIAL BURDENS OF TRACHEOSTOMY ON PATIENTS AND FAMILIES A SYSTEMATIC LITERATURE REVIEW

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Living with a tracheostomy presents a range of emotional, social, and mental health challenges for both patients and their caregivers. This systematic literature review synthesizes recent studies (2015-2025) to explore the psychosocial burdens of tracheostomy care. It identifies key areas of distress, including emotional struggles such as anxiety and depression, social isolation due to communication barriers, and the physical and psychological strain experienced by caregivers. Financial toxicity and caregiver burnout were also significant issues highlighted across studies. The review emphasizes the need for integrated care approaches that address both the physical and psychosocial needs of patients and caregivers. It calls for comprehensive support systems, including psychological services, caregiver education, and social support networks, to alleviate the burden of tracheostomy care. Findings suggest that healthcare professionals should focus on both medical management and psychosocial well-being to improve the overall quality of life for individuals living with tracheostomies and their families.

Keywords: Tracheostomy, Psychosocial burden, Caregiver burden, Quality of life, Depression, Anxiety, Social isolation, Communication barriers, Caregiver burnout, Mental health, Emotional distress, Integrated care, Caregiver education.

WHY BYSTANDERS HESITATE: BARRIERS TO INTERVENTION IN VIOLENCE AGAINST WOMEN IN THE INDIAN CONTEXT

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Research on bystander intervention in situations of violence against women has largely emerged from Western contexts, with limited empirical documentation from countries such as India. As a result, there is insufficient understanding of how bystanders in the Indian context perceive violence, experience emotional and cognitive responses, and make decisions about whether or not to intervene. This paper attempts to explore barriers to bystander intervention among young adults in India. The study was conducted through six focus group discussions with college students in Delhi. The discussions examined participants' experiences of violence against women, emotional and cognitive responses to witnessing such incidents, and the factors shaping intervention decisions. Findings reveal multiple, intersecting factors that limit bystander action. Participants' narratives highlighted how these barriers often operate simultaneously, reinforcing hesitation and inaction across different contexts. By documenting bystander perspectives from an under-researched setting, this paper contributes foundational insights to the limited literature on bystander intervention in India. Importantly, the findings also hold practical relevance for prevention efforts, offering empirically grounded insights that can inform the design of contextually appropriate bystander-focused training manuals, programs, and interventions aimed at strengthening preventive responses to violence against women.

Keywords: Bystander intervention; violence against women; needs assessment; young adults; prevention, strategies, India

ASSESSMENT OF NEUROBEHAVIORAL ALTERATIONS AND DEVELOPMENTAL TOXICITY OF TBBPA-DHEE USING A ZEBRAFISH MODEL

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Environmental toxicants are increasingly implicated in the onset and progression of neurodegenerative and neurodevelopmental disorders. Among brominated flame retardants, tetrabromobisphenol A (TBBPA) is one of the most widely used compounds, commonly incorporated into electrical equipment, furniture, textiles, and plastic materials. Several structural derivatives of TBBPA exist, among which tetrabromobisphenol A-bis (2-hydroxyethyl) ether (TBBPA-DHEE) has emerged as a compound of growing concern due to its higher toxicity and potential health risks. The present study aimed to investigate the dose-dependent neurotoxic and developmental effects of TBBPA-DHEE using adult and larval zebrafish (*Danio rerio*) as an experimental model. Adult zebrafish were exposed to graded concentrations of TBBPA-DHEE, followed by biometric and longitudinal behavioural assessments. Behavioural analyses included evaluation of locomotor activity, anxiety-like behaviour, and social interaction across multiple exposure days. Exposure to higher concentrations of TBBPA-DHEE resulted in significant impairments in locomotion, increased anxiety-like behaviour characterized by prolonged latency to explore the lower regions of a novel tank, and marked disruptions in social interaction. These alterations exhibited a clear dose-dependent pattern, suggesting compromised motor and neural function, possibly through neurotransmitter-related pathways. To assess developmental toxicity, embryos obtained from exposed adults will be evaluated for developmental abnormalities. Collectively, these findings demonstrate that TBBPA-DHEE induces significant dose-dependent neurobehavioral and developmental toxicity in zebrafish, underscoring potential risks to neurocognitive health and raising concerns regarding its implications for human exposure.

Keywords: TBBPA-DHEE, Developmental deformities, Neurobehavioral impairment, Environmental toxicants.

FIRST RECORD OF CONVOLVULUS HAWK-MOTH, *AGRIUS CONVOLVULI* (LINNAEUS, 1758) (LEPIDOPTERA: SPHINGIDAE) FROM BIJNOR DISTRICT AND SECOND FROM UTTAR PRADESH STATE, WITH ITS DISTRIBUTION, LIFE-CYCLE, LARVAL HOST PLANTS AND CONTROL MEASURES.

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The present article deals with the first record of *Agrius convolvuli* (Linnaeus, 1758), the Convolvulus Hawk-moth, belonging to family Sphingidae under order Lepidoptera, from Bijnor district (Uttar Pradesh) and the second record from Uttar Pradesh state itself. Earlier it has been recorded from Aligarh district (U.P.) only. Besides its new records, the paper provides distribution in India and elsewhere, life-cycle, larval host plants and control measures. It is mainly a severe pest of *convolvulus, Calystegia*, *Ipomoea* and other plants under family Convolvulaceae.
Keywords: Records, *Agrius convolvuli*, Bijnor and Uttar Pradesh.

ASSESSING THE WATER QUALITY OF BARUA SAGAR LAKE, JHANSI DISTRICT, UTTAR PRADESH, INDIA

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Barua Sagar Lake (also Barua Tal), a culturally and economically important reservoir in the Jhansi district of Uttar Pradesh, supports local irrigation, fisheries, and domestic uses. Increasing anthropogenic pressures, land-use change, and seasonal runoff may compromise the lake's water quality. This study provides a seasonal assessment of physicochemical and microbiological water-quality parameters at six sampling locations around Barua Sagar Lake across four seasons (pre-monsoon, monsoon, post-monsoon, winter). Parameters measured include temperature, pH, electrical conductivity (EC), total dissolved solids (TDS), turbidity, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), nitrate, phosphate, chloride, and total coliforms. The results were computed for a weighted Water Quality Index (WQI) and applied univariate and multivariate analysis to determine seasonal patterns and dominant pollution sources. Illustrative results indicate monsoon-season spikes in turbidity and nutrients, reduction in DO during monsoon and post-monsoon, and WQI classifying monsoon water as "poor" while other seasons are "moderate–good." The paper discusses restoration measures, catchment treatment, sewage diversion, constructed wetlands, community stewardship—and provide a monitoring protocol for stakeholders.
Keywords: Barua Sagar Lake, water quality, seasonal variation, water quality index (WQI), eutrophication, Jhansi.

LIGHT WAVELENGTH-DEPENDENT NEUROBEHAVIOURAL ALTERATIONS IN ZEBRAFISH BRAIN: IMPLICATIONS FOR NEURODEGENERATIVE DISORDERS

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Light is a fundamental environmental signal that regulates behaviour and brain function through wavelength-specific photoreceptive mechanisms. In aquatic vertebrates, particularly zebrafish (*Danio rerio*), increasing evidence indicates that spectral composition of light plays a critical role in modulating neural activity, stress responses, and behavioural organization. The present work synthesizes existing experimental findings to evaluate how short- and long-wavelength light differentially influence zebrafish neurobehaviour. A comprehensive review of behavioural, neuroanatomical, and biochemical studies reveals a consistent pattern of wavelength-dependent effects. Short-wavelength light, particularly in the blue–violet range, has been shown to enhance locomotor activity, exploratory behaviour, and alertness, while simultaneously increasing anxiety- like responses such as freezing and thigmotaxis. These behavioural alterations are closely associated with heightened neural excitation in visually and neuroendocrinally relevant brain regions, including the optic tectum, hypothalamus, and pineal complex. Several studies further demonstrate that blue light effectively entrains circadian and activity rhythms and alters monoaminergic signaling, indicating its strong influence on neural and physiological regulation. In contrast, long-wavelength illumination, especially red light, is consistently associated with reduced swimming activity, lower behavioural arousal, and attenuated stress responses. Prolonged exposure to longer wavelengths produces calmer behavioural phenotypes, suggesting reduced neural excitation and potential benefits for minimizing stress in laboratory and aquaculture settings. Importantly, many of these findings have been obtained using simple experimental methodologies, including controlled LED-based light exposure, basic behavioural assays, gross brain dissection, routine histological staining, and standard biochemical analyses, underscoring the practicality of zebrafish as a low-cost vertebrate model. Overall, the reviewed literature supports two central conclusions: (i) short-wavelength light acts as a potent driver of neural excitation and stress-related behaviour in zebrafish, and (ii) long-wavelength light functions as a behavioural calming modulator. These insights highlight the importance of spectral light management and provide a strong foundation for future studies.

Keywords: Light wavelength, Zebrafish , Neurobehavioural modulation, Stress, memory, learning.

A SURVEY OF DAMAGE BY PORCUPINE (RODENTIA) IN THE SAFFRON FIELDS OF KASHMIR AGRO AT HABBAKHATOON'S VILLAGE CHANDHARA PAMPORE KASHMIR HIMALAYAS

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Kashmir is a paradise on earth not only because of its scenery and climate but due to different agricultural productions like saffron, apple, cherry, pears, plum, peach, grapes, apricots, walnuts, almonds, chestnuts etc. As we know horticulture sector is the backbone of rural economy in Kashmir. But from last few years there is an increase in porcupine population. The most common is the Crested Porcupine, Hystrix indica, which is distributed from Kashmir to Cape Comorin and Sri Lanka.It is a widely rodent in the subcontinent inhabiting temperate grasslands, fields,plateu areas, sandy deserts (Gurunga & Singh,1996) and caves (Alkon 199; Harries *et al*; 2008, Biswas & Shrotriya, 2011).

A plemenary survey was done last year for assessment on damage by agricultural pests especially Porcupine (Hystrix indica) in Chandhara-Pampore saffron fields as a massive financial losses was reported in saffron and other crops. Porcupine, called *Tronz* locally, are small animals with spikes which they use to defend themselves when attacked. They are having life span of 15 to 25 years, covered in multiple layers of modified hairs called spines or quills and are shy- natured, nocturnal with diverse in food habits. Farmers are now resorting to wire fencing around the trees to avoid damage by these thorny rodents and give protection to their prized saffron and also to their nearby almond trees

Local farmers conveyed it to the wildlife department for some advisory so that growers could have be saved from these losses. Experts recommended that it is important to monitor these rodents because they can physically damage the saffron corms or even girdle it if left unattended for too long, besides, also cautioned that the number of porcupines have exponentially grown in the last few yea in the Chandhara-Pampore fields.

Due to a growing trend of deforestation in Kashmir, these animals are losing their habitats. So they have no option but to come down to inhabited areas for food. Experts say porcupines prefer to eat the nutritious inner corm sac or brain. To get to inner part, they remove the bark all the way down to the inner layer of the corm, where they get the starch.It has been a generalist forager, exploiting a wide variety of cultivated wild plants and consuming both hypogeal and epigeal plant tissues.

Keywords: Rodentia, Saffron, Kashmir, Apple, Cherry, Pears, Plum, Peach, Grapes, Apricots, Walnuts, Almonds, Chestnuts.

RESEARCH ON THE IMPACT OF THAI CATFISH (*CLARIAS GARIEPINUS*) ON HUMAN HEALTH AND THE ENVIRONMENT

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The African catfish, also known as the Thai Mangur fish (*Clarias gariepinus*), was first brought to India in the 1990 and has since spread to numerous significant rivers, marshes, and other bodies of water around the nation. Thai Mangur is an air-breathing fish. Apart from the gills that enable them to breathe in the water, they also have an additional accessory respiratory organ to take in atmospheric oxygen. The African catfish is banned because of its predatory nature. The ecological and public health are both under risk from the fish. Since 2020, the National Green Tribunal has prohibited the production of a particular variety of the Mangur Fish (*Clarias gariepinus*). The reason was the predatory behavior of the catfish Thai Mangur that could destroy the ecological and biological balance of aquatic water bodies. Besides, the species is also considered harmful to human health.

Keywords: Aquaculture, *Clarias gariepinus*, Human health, Environment

ISOLATION AND IDENTIFICATION OF PATHOGENIC FUNGI FROM FRESH WATER FISH *MASTACEMBELUS ARMATUS*

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Microbiological investigations were conducted on *Mastacembelus armatus* (Lacepède, 1800) samples from a local fish market in Bundelkhand region to isolate fungal pathogens associated with diseased tissues. Fish exhibiting open wounds and ulcerative lesions on the caudal region and gills were selected. Infected tissues were aseptically excised, homogenized, and serially diluted up to 10^{-3}. Dilutions were streaked onto Potato Dextrose Agar (PDA) and incubated at 28°C for fungal isolation. Purified cultures were obtained via repeated subculturing, and morphological identification was performed using lactophenol cotton blue staining.Fungal species isolated included *Aspergillus flavus*, *A. niger*, *A. ruber*, *Penicillium decumbens*, *Cladosporium* sp., *Rhizopus stolonifer*, and *Trichoderma viride*, with *Aspergillus* species predominating (~50% of isolates). Identification was based on cultural and microscopic characteristics using standard taxonomic keys. The study indicates fungal infections in *M. armatus* are linked to environmental conditions, including contamination, eutrophication, and anthropogenic pressures in the Pahuj River. Regular water quality monitoring and effective management are recommended to protect aquatic biodiversity and ecosystem health.

Keywords: Fish Potato, Dextrose Agar (PDA). Fungi, *Aspergillus*, Pahuj River.

ARTIFICIAL INTELLIGENCE-BASED MULTI-OMIC IN BIOTIC AND ABIOTIC RESISTANCE.

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Recent advances in biotechnology have catalyzed the rapid emergence of high-throughput omics. This has enabled access to multi-layer information from the genome, epigenome, transcriptome, proteome, metabolome, and collectively as "panomics". Panomics represents an integrative framework that unifies multiple layers of 'omics' information— generated across diverse individuals and natural genetic variation. Panomics has highlighted in the promoter region of stress tolerance–related genes in plants. By placing artificial intelligence (AI) at the core of analytical pipelines, panomics transforms high-dimensional raw data into biologically meaningful and experimentally testable hypotheses. Recently integration of image-based phenotyping and advanced computational modeling have enhanced the transformative potential and panomics presents substantial analytical, computational, and interpretative challenges, especially in the integration, standardization, and biological contextualization of heterogeneous datasets. The convergence of panomics and AI has profoundly expanded our understanding of genome plasticity, highlighting the functional importance of dispensable and variable genes. These genes are increasingly recognized for their critical roles in agronomic performance, disease resistance, abiotic stress tolerance, and adaptive phenotypic plasticity. Besides this in recent years AI has demonstrated considerable potential for modeling nonlinear relationships and integrating complementary multimodal information to study biotic and abiotic stress resistance. Collectively, these developments underscore a paradigm shift toward AI-enabled panomics-driven gene discovery. Great progress has been made with AI-based multi-omics analysis and its application in plant stress tolerance will be presented.

Keywords: Panomics, Biotic and Abiotic, Stress tolerance

Reference:

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A REPORT ON SOME PLANKTONIC CLADOCERAS (CRUSTACEA: BRANCHIOPODA) OCCURRING IN SOME FRESHWATER BODIES IN ADJACENT AREAS OF HYDERABAD, TELANGANA STATE, INDIA.

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Zooplankton communities are typically diverse and occur in almost all type of aquatic habitat. They play a key role in the aquatic food web by providing crucial source of food to a number of aquatic animals especially for fishes and are highly sensitive to environmental changes. Their growth and distribution are depending on various biotic and abiotic factors. The anthropogenic activities which leads to the reduction of water quality play a significant impact natural resource. The freshwater zooplankton mainly comprise of Protozoa, Rotifera, Cladocera, Copepoda and Ostracoda. Cladocera's which forms an important part of zooplankton group, acts an important role in aquatic food webs and are also used as environmental tools for toxicological studies and in bioassay studies. In the present study efforts have been made to ascertain the abundance of Cladocera in the 12 water bodies near to Hyderabad city, Telengana state, India. The present study reports a total of 24 Cladocera species belonging to 2 orders, 14 different genera under 5families from these water bodies. The family Chydoridae represents the most dominant family and the abundance of Cladocerans, particularly the members of Chydoridae indicates the eutrophic conditions of a water body, resulting from organic pollution. The results of this study indicated that potentiality of zooplankton as bioindicator is very high and also is an attempt to list out the Cladocerans from these water bodies.

Keywords: Zooplankton, Ecosystem, Anthropogenic, Habitat, Cladocera, Bioassay, Pollution.

THE IMPACT OF HUMAN ACTIVITY AND HABITAT LOSS ON THE SURVIVAL OF BUTTERFLIES IN SHYAM NAGAR AND CSAU CAMPUS, KANPUR

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Butterflies are well-established bio-indicators of environmental quality and ecosystem stability. Increasing human activities, rapid urbanization, and continuous habitat degradation have posed serious threats to butterfly populations in urban and semi-urban regions of Kanpur. The present study evaluates the impact of anthropogenic pressures on butterfly diversity and survival in two contrasting habitats, namely Shyam Nagar, a highly urbanized residential locality, and the campus of Chandra Shekhar Azad University of Agriculture and Technology (CSAU), Kanpur, which represents a comparatively greener and semi-natural environment.Systematic field surveys carried out in both study sites documented a total of 27 butterfly species, belonging to the families Nymphalidae, Pieridae, Lycaenidae, Hesperiidae, and Papilionidae. Species richness was comparatively higher in the CSAU campus due to the availability of diverse vegetation, open green spaces, and relatively lower anthropogenic disturbance. In contrast, Shyam Nagar exhibited reduced species abundance and diversity, primarily due to habitat fragmentation, scarcity of native larval host plants, and limited nectar resources.

Urban expansion has resulted in the replacement of natural vegetation with concrete infrastructure, leading to the formation of isolated habitat patches. Such fragmentation restricts butterfly movement, disrupts breeding cycles, and increases the risk of local extinction. Additional stressors such as vehicular emissions, dust and noise pollution, indiscriminate pesticide use in residential gardens and agricultural fields, and the urban heat island effect have further altered butterfly phenology and seasonal abundance patterns.The proliferation of invasive plant species, particularly Lantana camara, has also influenced butterfly community structure. While it provides nectar for certain generalist species, it suppresses native flora essential for the survival of specialist butterflies, thereby contributing to a shift in species composition.The findings underscore the ecological consequences of unplanned urbanization and highlight the urgent need for site-specific conservation strategies. Measures such as the conservation of remaining green patches, restoration of native larval host and nectar plants, creation of butterfly-friendly corridors, and incorporation of pollinator-sensitive planning within urban development frameworks are essential to ensure the long-term survival of butterfly diversity in Shyam Nagar and the CSAU campus, Kanpur.

Keywords: Butterfly Diversity, Habitat Fragmentation, Shyam Nagar, CSAU Kanpur, Urban Ecology, Bio-indicators, Conservation.

BIOLOGICAL CONTROL OF AGRICULTURAL PESTS USING NATURAL ENEMIES

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Biological control is an environmentally sustainable approach to managing agricultural pests through the use of natural enemies such as predators and parasitoids . This study examines the effectiveness of biological control agents in reducing pest populations and minimizing crop damage while decreasing reliance on chemical pesticides. Field and laboratory investigations were conducted to evaluate the impact of commonly used natural enemies, including Coccinella (ladybird beetle), and Trichogramma species (parasitoid wasps) on major crop pests. The results revealed a significant reduction in pest infestation levels and an improvement in crop yield compared to untreated control plots. Biological control strategies also contributed to enhanced biodiversity, improved soil health, and reduced pesticide residues in agricultural ecosystems. Furthermore, the integration of biological control with integrated pest management (IPM) was found to be more effective and economically viable for long-term pest suppression. The findings highlight the potential of biological control as a key component of sustainable agriculture, promoting ecological balance and supporting safe food production. Adoption of biological control methods can play a vital role in addressing challenges associated with pesticide resistance, environmental pollution, and human health risks.
Keywords: Biological control, natural enemies, agricultural pests, IPM

HUMAN–WILDLIFE CONFLICT IN DISTRICT JAMMU: CHALLENGES AND POSSIBLE SOLUTIONS

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Human–wildlife conflict (HWC) is becoming a serious issue in Jammu district, where villages, farms, and towns are expanding into wildlife habitats. Common problems include crop damage by wild animals, livestock losses to predators, and occasional human injuries from encounters with species like leopards and wild boars. These conflicts affect both conservation efforts and the livelihoods of local communities.
This study uses field surveys and community interviews to understand the types of conflicts, the areas most affected, and how people view wildlife. Results show that lack of awareness, weak compensation systems, and poor coordination between authorities and villagers make the situation worse.

The paper suggests practical steps such as habitat protection, better compensation schemes, awareness programs, and involving local communities in decision-making. By focusing on coexistence, the study highlights the need to balance wildlife conservation with human welfare in Jammu district.
Keywords: wildlife habitat, conflict, conservation,

SUSTAINABLE AQUACULTURE PRACTICES IN RURAL WETLANDS: LESSONS FROM FIVE FFPO IN MALWA REGION OF MADHYA PRADESH

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Sustainable aquaculture practices play a crucial role in increasing fish production and improving rural livelihoods in arid and semi-arid regions. Through the PMMSY scheme 2020, the Government of India is modernizing the fisheries sector, promoting sustainable farming practices, and improving the socio-economic conditions of fish farmers. In this context, Fish Farmer Producer Organizations (FFPOs) provide members with opportunities for coordinated efforts in production planning, input supply, technical support, and marketing.

The Malwa region of Madhya Pradesh is characterized by low rainfall and seasonal rural water bodies, which typically hold water for about 6-7 months of the year. These water bodies, originally constructed for agricultural purposes, are now also being used for fish farming, ensuring optimal utilization of limited water resources. However, traditional fish farming methods faced challenges due to poor quality seed collection, low productivity, lack of feed management, and limited access to technical guidance.

With the support of PMMSY, five FFPOs were established in the Malwa region—Kalapipal (Shajapur), Badnawar (Dhar), Badgaon (Ujjain), Mhow (Indore), and Hatpipliya (Dewas). SFAC acted as the implementing agency, and Kamdar Agro Research & Development, Indore, MP, served as the Cluster-Based Business Organization (CBBO). Each FFPO has approximately 500 members who depend on seasonal water bodies for their livelihoods.

Through FFPO-led interventions, farmers have shifted from collecting monsoon-bred IMC (Indian Major Carp) Spawn to a fingerling stocking system, adopted polyculture of Pangasius and common carp, established market linkages using online marketplaces (ONDC), and improved pond management under expert guidance. Among these initiatives, the Kalapipal FFPO achieved the greatest success, producing 10,000 kg of Pangasius and common carp, and achieving a turnover of ₹12.41 lakhs in 2024-25. In summary, this research shows that the FFPO-based institutional framework and technological interventions play a significant role in increasing productivity, income, and employment, which has proven beneficial for sustainable aquaculture and rural development in semi-arid regions.

Keywords: Sustainable Aquaculture, FFPO (Fish Farmer Producer Organization), Seasonal Wetland Fisheries, Poly Culture (Pangasius & Common Carp), PMMSY (Pradhan Mantri Matsya Sampada Yojana)

ASTONISHING MAIDENHAIR TREE (GINKGO BILOBA L.): ITS CULTIVATION AND THERAPEUTIC ATTRIBUTES

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Its excellent medical potential and widespread demand for its herbal products have led to indiscriminate exploitation and a severe risk of extinction. A durable and effective method has been created for both seed and semi-hard stem cutting propagation. Certain growth hormones have been applied at varying concentrations. At 10 mg/l (96.67%), catchin acid had the highest sprouting percentage, whereas tanic acid had the lowest at 2.5 mg/l (24.0%). IBA 250 mg/l (85.33%) had the statistically significant rooting (%) and root length/plant in the second year. Average root length/plant was measured in IBA 250 mg/l, 13.67 cm, and in IBA + Phloroglucinol, 250+10 mg/l, and Salicyclic acid, 25 mg/l, 7.33. 250 mg/l (14.67 cm) in NAA. Additionally comparable were the statistically significant seed germination percentages in IBA 250 mg/l (85.74%) and NAA 500 mg/l (84.73%). From 2005 to 2013, monthly measurements of the FYM doses—15, 30, 45, and 60 t/ha with control—were made and statistically examined annually. The FYM x Spacing project was designed to investigate the commercial viability of leaf production. FYM 30 t/ha produced the most leaves between 2009 and 2013. The primary goal of the current study was to standardize the methods of propagation through the use of semi-hard stem cuttings and seed germination influenced by phenolic chemicals and certain growth hormones. The IBA yielded the most noteworthy outcomes in the cases of semi-hard stem cuttings and seed germination. Interestingly, a sizable percentage of sprouting and rooting was also induced by catchin and galic acid.

Keywords : Ginkgo biloba L., Indole butyric acid, Indole acetic acid, Phenolic acids, FYM

CLIMATE CHANGE
&
ENVIRONMENTAL SCIENCES

Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation.

IMPACT OF AIR POLLUTION ON INDIAN MONUMENTS WITH SPECIAL REFERENCE TO LAL QILA

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Air pollution, a ubiquitous and growing environmental concern, poses a significant threat to the preservation of cultural heritage, particularly historical monuments. This research paper investigates the impact of air pollution on Indian monuments, focusing on the iconic Lal Qila (Red Fort) in Delhi. By evaluating the relationship between air pollutants and their adverse effects on architectural structures and aesthetic elements, this study aims to shed light on the broader issue of safeguarding heritage sites from the detrimental consequences of urban pollution.

The research employs a mixed-method approach, combining air quality monitoring, material analysis, and historical documentation to assess the degradation caused by air pollution comprehensively. It also reviews the existing literature on the subject, revealing the global extent of this challenge and the urgent need for conservation measures. Through an in-depth examination of Lal Qila's historical significance and architectural attributes, the paper emphasizes the cultural importance of preserving such monuments for future generations.

Analyzing air pollution levels in Delhi, the study presents empirical data that underscores the severity of the issue and its specific impact on Lal Qila. The findings highlight the visible signs of degradation, including surface discoloration, erosion, and material decay, linked to the city's deteriorating air quality. Moreover, the research discusses ongoing conservation initiatives undertaken to counteract these effects and emphasizes the importance of a multidisciplinary approach involving government agencies, conservation bodies, and public awareness campaigns.

In conclusion, this research underscores the urgent need for a coordinated response to the complex interplay between air pollution and heritage conservation. It underscores the importance of integrating scientific analysis, public engagement, and policy interventions to ensure the protection of cultural landmarks like Lal Qila. The lessons drawn from this case study offer valuable insights into addressing the broader challenge of preserving India's rich historical legacy amidst the modern-day urban environmental threats.

This research contributes to the broader discourse on sustainable urban development and heritage conservation, serving as a call to action for policymakers, researchers, and concerned citizens to collectively safeguard the invaluable cultural heritage that holds a mirror to the nation's past and shapes its future.

Keywords: Air pollution, Heritage preservation, Architectural degradation, Conservation efforts, Preservation strategies, Aesthetic deterioration, Air quality monitorin

THE CLIMATE CRISIS: IMPACT ON LIVING BEING AND CONSEQUENCES ACROSS THE GLOBE.

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Climate change represents one of the most pressing challenges of the 21st century, exerting profound effects on natural systems, human societies, and global economies. Rising temperatures, shifting precipitation patterns, intensifying extreme weather events, and accelerating sea-level rise are no longer distant projections. They are present realities. These impacts are unevenly distributed, disproportionately affecting vulnerable populations in developing nations while sparing few communities worldwide from some form of disruption. This chapter examines the far-reaching consequences of the climatic crisis across geographic, ecological, and socio-economic dimensions. It explores how the interplay between environmental change, policy responses, and adaptive capacity shapes outcomes, and it underscores the urgent need for coordinated, science-driven regulations to mitigate further harm. Climate change is reshaping the planet's physical, ecological, and socio-economic systems at an unprecedented pace. Driven largely by anthropogenic greenhouse gas emissions, the crisis manifests through rising global temperatures, altered precipitation patterns, melting ice sheets, sea-level rise, and increased frequency of extreme weather events. These changes have cascading effects on biodiversity, human health, food and water security, economic stability, and geopolitical relations. The impacts are unevenly distributed, disproportionately affecting vulnerable populations and ecosystems. This chapter synthesizes current scientific knowledge on the multifaceted consequences of climate change worldwide, explores regional disparities, and evaluates regulatory and policy frameworks aimed at mitigation and adaptation. The evidence underscores the urgent need for coordinated international action to safeguard planetary and human well-being.

Keyword: Climate change, human societies, global economies, climatic crisis, policy responses.

STUDY OF TEACHER RESPONSES AND PRACTICES ON ROLE OF PBL FOR WASTE MANAGEMENT

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Wastes pose a potent threat to environmental pollution as well as an increasingly urgent threat to human health, biodiversity, and ecological stability. Schools, as foundational institutions of learning, play a critical role in shaping environmentally responsible attitudes and behaviours among young learners to manage waste and restore the environment. This paper examines effective approaches that schools can adopt to curb waste production and thereby reduce potent environmental pollutants through curriculum, pedagogy, infrastructure, and community engagement. Drawing on best practices and contemporary research, the study highlights five key strategies: integrating environmental education across subjects; promoting hands-on experiential learning through school-based initiatives such as waste segregation, composting, and energy audits; fostering student-led eco-clubs and green campaigns; implementing sustainable school infrastructure and resource-use practices; and building strong partnerships with parents, local bodies, and community organisations. The paper argues that when these approaches are combined, they cultivate long-term environmental stewardship and contribute measurably to reducing wastes and pollutants at the local level. The findings mainly based on interactions with teachers and some students present the potential of school ecosystems to act as catalysts for environmental sustainability and recommend a whole-school, action-oriented approach for lasting impact.
Keywords : Waste management, PBL, energy audit, environmentally responsible attitudes

STUDY OF SEASONAL MICROBIAL FLORA IN GROUNDWATER AT ROOMA, UTTAR PRADESH

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This study evaluates the seasonal dynamics of microbial flora and the physicochemical quality of groundwater in Raniya, Uttar Pradesh, a region heavily reliant on aquifers for domestic use. Over an one-year period, groundwater samples were collected quarterly from ten bore-well sites to cover pre-monsoon, monsoon, post-monsoon, and winter seasons. The investigation focused on quantifying the Total bacterial Count (TBC), totla Yeast Count (TYC),to assess water safety. Concurrently, physicochemical parameters including pH, temperature TDS, nitrate, iron and sulphate were analyzed to determine their influence on microbial proliferation.The results revealed profound seasonal heterogeneity in microbial density. The monsoon season exhibited the highest microbial load, with counts significantly exceeding WHO permissible limits, likely attributable to surface runoff and rapid aquifer recharge. Correlation analysis demonstrated a strong positive relationship between microbial abundance and nutrient concentrations, specifically where nitrate levels exceeded 15 mg L^{-1}, the pre-monsoon season recorded the lowest microbial recovery. Spatial analysis suggested that agricultural leaching and inadequate sanitary protection around wellheads are the primary contributors to the alteration of microbial flora. The study concludes that the groundwater in Raniya poses a season-dependent health risk, necessitating continuous surveillance and the implementation of protective sanitary protocols during peak rainfall periods.
Keywords: Groundwater, microbial flora, seasonal variation, coliforms, nutrient leaching, Rooma.

APPLICATIONS OF GREEN NANO-MATERIALS FOR SUSTAINABLE ENERGY, WASTE MANAGEMENT, AND ECO-FRIENDLY INDUSTRIAL PRACTICES

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Green nanomaterials have become a transformative solution for environmental sustainability in many areas, especially in making energy more sustainable, managing waste, and using eco-friendly industrial practices. These materials, made using plant extracts, microorganisms, or biodegradable polymers in ways that are good for the environment, have special properties like a large surface area, increased catalytic activity, and the ability to change how they react. Green nanomaterials are very important in the energy sector because they make solar cells, fuel cells, and energy storage devices work better. This makes them cleaner and more reliable than fossil fuels. Green nanoparticles are becoming more and more common in waste management to break down organic pollutants, heavy metals, and micro plastics through adsorption, catalytic breakdown, and bio-remediation. These methods greatly lower the harmful effects on the environment while encouraging the reuse of resources. Industries are also using green nanomaterials instead of dangerous chemicals to make products last longer, improve manufacturing processes, and lower their carbon footprints. Some uses are eco-friendly coatings, antimicrobial packaging, smart textiles, and catalysts that don't pollute the air. Green nanotechnology is in line with global environmental policies and supports the Sustainable Development Goals (SDGs), especially in areas like clean energy, clean water, responsible consumption, and climate action. This is because it combines high performance with sustainable synthesis routes. Even though there have been some promising developments, researchers are still looking into problems with large-scale production, long-term effects on the environment, and regulatory frameworks. In general, green nanomaterials are an important way to build a cleaner, safer, and more sustainable future through responsible and creative use of technology.

Keywords: Green Nanomaterials, Environmental Sustainability, Sustainable Energy, Waste Management, Eco-Friendly Industrial Practices

BIODIVERSITY: ITS ROLE AND BENEFITS

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Biodiversity is the variability of life on Earth. It can be measured on various levels, for ex. genetic variability, species diversity, ecosystem diversity and phylogenetic diversity. There have been many claims about biodiversity's effect on the ecosystem services, especially provisioning and regulating services. Ecosystem services have been grouped in three types–

1-Provisioning services which involve the production of renewable resources (eg: food, wood, fresh water).

2-Regulating services which are those that lessen environmental change (eg: climate regulation, pest/disease control).

3-Cultural services represent human value and enjoyment (eg: landscape aesthetics, culturalheritage, outdoor recreation and spiritual significance).

Biodiversity's relevance to human health is becoming an international political issue, as scientific evidence builds on the global health implications of biodiversity loss. This issue is closely linked with the issue of climate change, as many of the anticipated health risks of climate change are associated with changes in biodiversity. Some of the health issues influenced by biodiversity include dietary health and nutrition security, infectious disease, medical science and medicinal resources, social and psychological health. Biodiversity is also known to have an important role in reducing disaster risk, including rising sea levels. Biodiversity provides critical support for drug discovery and the availability of medicinal resources. A significant proportion of drugs are derived, directly or indirectly, from biological sources: at least 50% of the pharmaceutical compounds on the US market are derived from plants, animals and microorganisms, while about 80% of the world population depends on medicines from nature for primary healthcare. Only a tiny fraction of wild species has been investigated for medical potential. Biodiversity also affords many non-material benefits including spiritual and aesthetic values, knowledge systems and education.

Keywords: Biodiversity, genetic variability, species diversity, ecosystem diversity and phylogenetic diversity, environmental change.

WASTE MANAGEMENT TECHNOLOGIES AND THEIR ENVIRONMENTAL IMPLICATIONS IN CLIMATE-VULNERABLE AREAS

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The need for efficient and sustainable waste management systems becomes critical for safeguarding ecosystems and community well-being. This study reviews a range of modern waste management technologies, including engineered landfills, composting, anaerobic digestion, incineration with energy recovery, pyrolysis, and advanced recycling systems, and examines their environmental implications in climate-sensitive areas. Improper waste handling contributes to substantial environmental and health risks, such as greenhouse gas emissions, contamination of soil and water resources, the spread of vector-borne diseases, and increased vulnerability to disasters, particularly during extreme weather events. Technologies such as composting and anaerobic digestion offer low-emission pathways by converting organic waste into valuable by-products like biogas and nutrient-rich compost, thereby mitigating methane generation. Waste-to-energy facilities can reduce dependence on landfilling; however, they require stringent operational controls to minimize the release of pollutants. Recycling and material recovery systems decrease the demand for virgin resources and lower carbon footprints, though their effectiveness depends heavily on proper waste segregation, which is often lacking in climate-stressed regions.The study emphasizes the importance of climate-resilient waste management infrastructure, including flood-resistant landfill designs, decentralized treatment units, and adaptable waste collection networks capable of functioning during extreme weather. Integrating modern technological solutions with local knowledge, robust policy frameworks, and active community participation is essential. Overall, the findings highlight that sustainable and environmentally responsible waste management is vital for mitigating climate impacts, protecting public health, and enhancing long-term resilience in vulnerable communities..

Keywords: Sustainable Waste Management, Environmental Sustainability, Sustainable Energy, Waste Management, Eco-Friendly Industrial Practices

COMBATING CLIMATE CHANGE THROUGH INFORMATION AND COMMUNICATIONS TECHNOLOGIES

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Climate Change has emerged as a huge threat confronting farm and allied sectors. The rising temperature has disrupted the growth patterns of many crops. The yields of various crops have been severely affected and emergence of new insect pests and diseases is on the rise. Not only crops but livestock, fisheries, water bodies are also impacted by disruption in weather parameters as a result of climate change. Agriculture is a source of livelihood for about 50 percent of the population. As such any negative effect of climate change on agriculture sets a series of adverse effects on the vast majority of populace depending upon this vital sector. It thus become very important and urgent to convey timely information to farming community regarding weather conditions so that they can take pre emptive measures. Information and Communications Technologies (ICTs) have become effective tools for disseminating, monitoring, modeling, and mitigating impacts of climate change through increased efficiency, precision and timeliness of operations. ICTs help with climate action via real-time monitoring, smart grids, better forecasting, and informing policy, but their growing energy demand, data centers, and device production create a substantial carbon footprint. Satellites, sensors, and supercomputers provide data for complex climate models, improving weather forecasting, predicting extreme events, and tracking environmental changes. Data from ICTs informs policymakers, supports national adaptation plans and helps manage disaster risks.

Keywords: Climate Change, livestock, fisheries, water bodies, livelihood

PHYTO-DIVERSITY AND THEIR ROLE IN ATTENUATION OF DUST POLLUTION IN AND AROUND OPENCAST MINING AREAS OF BUNDELKHAND REGION OF UTTAR PRADESH, INDIA.

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Opencast mining, a very important economic activity in many countries especially developing world today including India, causes significant environmental degradation in and around the vicinity of mining areas. In the current investigation an attempt has been made to identify the floristic composition in and around of two selected opencast granite mines each of Jhansi and Lalitpur district belonging to Bundelkhand region of Uttar Pradesh, India. Present study revealed that there are a total of 96 species belonging to 39 different families from which maximum plant species found from Fabaceae family i.e. 16 species followed by Poaceae (07spp); Rutaceae (06spp) and so on. In present investigation the existing species which are growing in such fragile environment and some are having dust scavenging nature could be useful for making greenbelt in and around mining areas to combat the air pollution.
Keywords: Air pollution, Bundelkhand region, Floristic composition, Opencast mining, Dust scavenging Plant species.

DESIGN FOR RECYCLING

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Design for Recycling (DfR) guidelines provide technical criteria to ensure products and packaging can be effectively collected, sorted, and processed into high-quality raw materials at their end-of-life.

Core Principles of Design for Recycling.

Material Selection: Prioritize mono-materials (single polymer types like PE, PP, or PET). Avoid mixing incompatible plastics or using multi-layer films that are difficult to separate.

Color Optimization: Transparent or unpigmented materials are highly preferred as they have the highest market value and versatility for reuse. Dark or carbon-black pigments should be avoided as they are often undetectable by infrared sorting machines.

Simple Disassembly: Design components like caps, lids, and labels to be easily and completely removable. Use "tear-off" facilities for plastic facings on paper-based products.

Label and Adhesive Compatibility: Use labels made of the same material as the main body or water-soluble adhesives that wash off easily during the recycling process.

Minimize Contaminants: Avoid additives that alter material density (e.g., glass fibers or heavy fillers) or non-recyclable components like PVC, vulcanized rubber, and complex electronics.

Most of the national and international guidelines and standards aimed towards increasing recyclability of plastic-containing products are focused on packaging. This is partly because a major part of the plastic used each year (around 40 percent) in Europe is used to produce packaging and partly because there is law-enforced extended producer responsibility for packaging and packaging waste in the EU since the early 1990s. Another explanation is also the fact that relatively clean plastic material (not including hazardous or potentially dangerous additives) is being used in packaging compared to other plastic-containing products because much of the plastic packaging comes in direct contact with food and consumer products. This makes the recycled plastic originating from plastic packaging moreappealing to use in different products compared to recycled plastic originating from for example electronics or construction products. Design for Recycling (DfR), independent of sector or material, lacks explanations and definitions. Designing a product for recycling not only needs to mirror the criteria and demands for the product functionality. There is also a need of knowledge where the discarded product will end up, what sorting it will go through, what recycling technology will be applied and what next life product is foreseen for the material as a recyclate (recycled plastic material). DfR needs also to take into consideration the recycled content during the design phase of the product. Few product manufacturers or designers have the whole picture, nor control, over the infrastructure a product will go through before its end of life. This becomes obvious when mapping existing DfR guidelines, primarily in Europe, where the vast majority concerns plastic packaging.

Keywords: Recycling, raw material.

FUNCTIONAL MICROBIOME CHARACTERIZATION FOR ASSESSING ENVIRONMENTAL CHANGE IMPACTS ON MICROBIAL COMMUNITIES

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Microorganisms were fundamental to ecosystem functioning, driving essential biogeochemical cycles and sustaining ecosystem services across marine, terrestrial, freshwater, and host-associated environments. Rapid environmental change driven by climate variability, pollution, and anthropogenic disturbance had increasingly altered microbial communities in ways that were not adequately explained by taxonomic composition alone. This limitation prompted a shift in microbial ecology toward function-centered analyses enabled by advances in functional meta-omics. This review examined how metagenomics, metatranscriptomics, metaproteomics, and integrated multi-omics approaches advanced understanding of microbial functional potential, activity, and metabolic output under environmental perturbation. Conceptual frameworks linking genetic potential to realized function were synthesized, highlighting the roles of functional diversity, redundancy, and network organization in community resistance and resilience. Case studies across diverse ecosystems illustrated how environmental stressors reshaped microbial metabolic pathways and ecosystem services, often without corresponding changes in taxonomic structure. The review also evaluated bioinformatic tools and analytical pipelines used for functional annotation, pathway reconstruction, and cross-omics data integration. Key challenges associated with multi-omics research were identified, including high computational demands, lack of methodological standardization, and difficulties in integrating heterogeneous datasets for predictive modeling. Despite these constraints, functional microbiome characterization was shown to provide critical insights for forecasting ecosystem responses to environmental change and for informing applications in environmental management, bioremediation, and sustainable resource use. Overall, the transition from taxonomic inventories to function-based frameworks was presented as essential for advancing predictive microbial ecology and for understanding the role of microbiomes in maintaining planetary health.

Keywords: Functional meta-omics; Microbial ecology; Metagenomics; Environmental perturbations; Functional diversity; Ecosystem resilience

HEATWAVE–FOREST FIRE INTERACTIONS UNDER CLIMATE CHANGE: EMERGING RISKS FOR TROPICAL FOREST LANDSCAPES IN CENTRAL INDIA

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Forest fire activity across tropical forest landscapes is increasingly shaped by intensifying heatwaves under a warming climate, yet the nature of heat–fire coupling varies substantially across ecological and climatic contexts. This study investigates how different characteristics of heatwaves influence forest fire activity across Indian forest ecoregions, with particular attention to fire-prone tropical dry deciduous systems of central India. Using long-term daily maximum temperature observations (1950–2024), satellite-derived active fire detections (2001–2024), and climate projections from CMIP6 models, heatwave metrics were systematically linked to fire occurrence at the ecoregion scale. The analysis reveals strong climate-regime dependency in heatwave–fire relationships, with fuel-sufficient tropical forests exhibiting pronounced positive coupling between heatwave intensity and fire activity, indicating heat-amplified fire regimes. In contrast, semi-arid systems display weaker or negative responses, reflecting fuel-limited fire behaviour. Within the central Indian landscape, recurring pre-monsoon heat stress substantially enhances fuel desiccation and fire persistence, resulting in thousands of fire incidents annually. Mid-century climate projections suggest significant intensification of heatwave conditions under both moderate and high emission scenarios, implying heightened risks of more frequent and intense forest fires. These changes are expected to accelerate forest degradation, reduce ecosystem resilience, and increase vulnerability of biodiversity-rich landscapes. The findings highlight that effective forest fire mitigation and biodiversity conservation require climate-informed, ecoregion-specific strategies that explicitly account for region-dependent heat–fire mechanisms under ongoing climate change.

Keywords: Forest fires; Climate change; Central India; Tropical forests; Ecosystem resilience

ENVIRONMENTAL SUSTAINABILITY AND POLICY CHALLENGES IN PROMOTING RURAL COMMUNITY TOURISM IN BUNDELKHAND, INDIA

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Bundelkhand, a semi-arid region in central India, faces severe environmental challenges such as water scarcity, droughts, and resource degradation, which undermine efforts to promote rural community tourism as a pathway for sustainable development. This study examines the interplay between environmental sustainability and policy frameworks in fostering rural tourism, drawing on an exploratory-analytical approach informed by stakeholder perspectives and the Driver-Pressure-State-Impact-Response (DPSIR) framework. Data were collected through semi-structured interviews (n=45), focus group discussions (FGDs), and secondary policy reviews in selected districts. Findings highlight drivers like cultural heritage and biodiversity exerting pressures through uncontrolled tourism growth, leading to degraded environmental states (e.g., habitat loss) and socioeconomic impacts (e.g., migration). Correlation analysis reveals a negative relationship ($r = -0.68$, $p < 0.05$) between tourism intensity and water resource availability. Thematic analysis identifies policy gaps in implementation, community involvement, and monitoring. Recommendations advocate for integrated policies emphasizing eco-tourism, community-based management, and renewable energy adoption. This research advances sustainability literature by contextualizing global frameworks in an Indian arid region, providing actionable insights for policymakers to balance tourism growth with environmental protection in vulnerable areas.

Keywords: Rural tourism, Environmental sustainability, Policy challenges, Eco-tourism, Community involvement.

BIODIVERSITY CONSERVATION

Nutritional and Food Security, Biodiversity conservation, Promotion and conservation of indigenous species, Strategic and advocacy for nature conservation, Scientific approach of native species conservation, Scientific temper to protect and restore the nature, Livelihood

EVALUATION OF ECOLOGICAL DISTRIBUTION AND STATUS OF AVIAN FAUNA OF KANWAR WETLAND (A RAMSAR SITE), (BIHAR) WITH SPECIAL REFERENCE TO THE CONSERVATION STATUS AS PER WILDLIFE PROTECTION AMENDMENT ACT, 2022

Pramod Kumar* and Ajay Govind Bhatt
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The present paper also aims to review the current status of native and migratory waterbirds in the Kanwar Wetland, with a focus on associated conservation issues. The Wildlife (Protection) Amendment Act, 2022 has updated the schedule categorization of species from the previous classifications outlined in the Wildlife (Protection) Act, 1972. In light of these changes, an effort has been made to assess the current conservation and schedule status of avian fauna (both resident and migratory) of the Kanwar Wetland in Bihar. The IUCN status of the avian fauna has been represented based on their present ecological status.

During present study, a total of 165 avian species has been listed based on the primary and secondary data. Out of 165 species, 144 are classified as Least Concern (LC), followed by 14 species as Near Threatened (NT), 4 species as Vulnerable (VU), 2 species as Critically Endangered (CR), and 1 specie falls under the Endangered (EN) category as per IUCN.

The major threats to the avian population in Kanwar Wetland and its surrounding areas include the degradation of migratory bird habitats, primarily due to illegal encroachment of wetland areas, excessive weed growth, and increasing anthropogenic pressures. These pressures arise from unplanned urbanization and settlements, unsustainable agricultural practices, and over-extraction of natural resources.

The present study will aid students, scholars, and researchers in understanding the ecological conditions of the Kanwar Wetland, as well as the ecosystem services it provides to both local and migratory avian fauna. At the local level, this wetland supports a large number of people by providing essential ecosystem services, including flood and storm control, clean water supply, food resources (such as fish and edible vegetation), fibre, raw materials, scenic beauty, and opportunities for education and recreation.

Furthermore, the study will support future assessments of avian biodiversity in the region and contribute to the development of effective conservation and management strategies for this Ramsar site.

Keywords: Kanwar Wetland, Avian Fauna, Conservation Status, Wildlife Protection Act, IUCN, Ramsar Site

CLIMATE CHANGE AND BIODIVERSITY CONSERVATION

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Aquatic biodiversity is completely dependent on water systems and their flow characteristics. Fresh water makes up only 0.01% of the world's water and approximately 0.8% of the Earth's surface, yet this small fraction of global water supports at least 100,000 species out of approximately 1.3 million described species**.** Inland water and freshwater biodiversity constitute a valuable natural resource in economic, cultural, aesthetic, scientific and educational terms (Dudgeon *et al*., 2006). An estimated 126,000 described species rely on freshwater habitats, including species of fishes, mollusks, reptiles, insects, plants, and mammals. Biodiversity conservation will lead to strengthening of ecosystem rebound and will improve the ability of ecosystem to provide necessary services during increasing climate pressures. Climate change has created potential major threats to global biodiversity and strongly affected ecosystem services. Existing levels of greenhouse gases concentrations in atmosphere have led to a rapid increase in average global temperature. Climate change impacts on vegetation, water resources and habitat integrity may negatively affect fire regimes, forage production, water supplies, crop pollination services, and outdoor recreation and quality of life. They have a disastrous influence on economy of all countries, because there are several damages because of natural events. Therefore, there is an urgent need to present this paper basically focuses on the significance of biodiversity, the consequences faced by the plants, animals, humans and ecosystem due to the anthropogenic activities and the possible and effective mitigation and adaptation strategies in terms of conservation of biodiversity which can protect the planet from the adverse impacts on environment.
Keywords: Biodiversity, Conservation Approaches, Aquatic Pollution, Ecosystem services and Species extinction.

BIODIVERSITY CONSERVATION AND HUMAN-WILDLIFE COEXISTENCE IN CHANGING CLIMATE: A CASE STUDY OF VINDHYAN TROPICS

Sudhanshu Kumar*****, Aman Verma and Gopal Shankar Singh
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Vindhyan hill is a part of Gangetic plain rich in both animal and plant biodiversity. Human beings settled in this region are absolutely depending on natural resources lying around their settlement. Domestic and agriculture systems are operated in conjugation with forest mingled with wildlife and human settlement. These systems were managed through traditional know-how and do-how mechanism. However, in the recent past these systems were at verge of alteration not only due to rising population pressure and changing climate but also because of destroying ecological and cultural boundary of natural system raising human wildlife conflict. The conflicts of geopolitical boundaries are gradually receding at par for the management issues. The feasibility of coexistence is only possible by maintaining natural ecosystem in form of ecosystem function. This paper will deal with biodiversity, human wildlife conflict, conservation strategies and traditional knowledge-based practices in Vindhyan region.
Keywords: Human-wildlife coexistence, Human-wildlife conflict, Traditional knowledge.

EVALUATION OF ZOOPLANKTON COMMUNITY STRUCTURE AND TROPHIC DYNAMICS OF KANWAR WETLAND (RAMSAR SITE), BIHAR

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The present study aimed to assess the zooplankton diversity and overall ecological condition of the Kanwar Wetland in Begusarai district of Bihar. A total of 115 zooplankton species were recorded during the study period, comprising 63 species of Rotifera (55%), 16 species each of Cladocera and Protozoa (14% each), 13 species of Copepoda (11%), 4 species of Ostracoda (3%), and 3 species of Nematoda (3%).

Among all the zooplankton groups, members of the class Rotifera consistently dominated throughout the study period as well as across all selected sites of the Kanwar Wetland. Rotifera exhibited the highest species diversity, whereas Nematoda contributed the least. The presence of several higher trophic indicator zooplankton species indicates substantial anthropogenic pressure and the influx of large amounts of organic matter from the surrounding catchment into the wetland, which has accelerated the eutrophication process in the Kanwar Wetland.

During the present investigation it was observed that many researchers and scholars reported Kanwar Wetland as a eutrophic water body; however, it is actually an organically rich wetland, characterized by the natural accumulation of organic matter rather than nutrient pollution. The limnetic zone of the wetland is significantly affected by weed infestation, primarily due to its shallow depth, which facilitates the growth and spread of aquatic macrophytes. This natural productivity supports diverse flora and fauna but also poses ecological management challenges.

Keywords: Zooplankton, Trophic status, Kanwar Wetland, Anthropogenic activities

INTEGRATION OF STUNTED SEED PRODUCTION WITH WETLAND BIODIVERSITY CONSERVATION: A SUSTAINABLE AQUACULTURE APPROACH

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Wetlands are among the most productive ecosystems on Earth, supporting rich biodiversity and providing vital ecosystem services. At the same time, increasing demand for fish seed in aquaculture has led to intensive production practices that often exert pressure on natural resources. Stunted seed production, a technique involving controlled growth suppression of fish seed followed by compensatory growth, has emerged as a cost-effective and efficient strategy in aquaculture. This article explores the integration of stunted seed production with wetland biodiversity conservation, highlighting its ecological, economic and conservation benefits. By aligning aquaculture practices with wetland management principles, stunted seed production can contribute to sustainable fish production while conserving native biodiversity and ecosystem functions.
Keywords: Stunted Seed, Wetlands, Biodiversity Conservation, Sustainable Aquaculture, Compensatory Growth.

*EX-SITU*C ONSERVATION OF THREATENED & ECONOMIC PLANTS OF INDIAN DESERT IN BOTANICAL GARDEN OF BOTANICAL SURVEY OF INDIA, JODHPUR

C. S. Purohit*****, Amit Kumar and S. L. Meena
Botanical Survey of India, Arid Zone Regional Center, Jodhpur, Rajasthan
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Rajasthan is a state in north India having a large proportion of its area notified under desert. Rajasthan has largest, 87 percent of the desert while Gujarat and Haryana have the rest 13 percent. It also has the India's oldest mountain range, The Aravalli, running across the state from northeast to southwest direction. Spanning from the arid habitat of the desert to dense forests of Aravalli, Rajasthan is a home of a varieties of flora of fauna. This region also harbors number of native plants and animal species, some of which fall under the threatened category. A total 1500 flowering and non-flowering plants are rare and endangered in India (Singh et al., 2015), of which 44 species are in Rajasthan as reported by Kumar & Purohit (2015). Several ethno botanical studies on the Indian desert has led to the recognition and enumeration of several economically important plant species but due to anthropogenic factors many of these plant species have come under the threatened category. To determine the present status of such taxa, several extensive survey were conducted in the past decades. *Ex-situ* conservation efforts included various ways to ensure germination and observations on germination, phenology and growth of plants revealed many sensitive; risk prone stages i.e. survival in different growth stages from various pest attacks and birds (squirrel, peacock and grass-hopper) as well as proper post plantation care. Using these techniques, *Acacia senegal*, *Anogeissusserice*avar. *nummularia*,*Caralluma edulis*,*Ceropegia bulbosa*, *Citrullus colocynthis*, *Commiphora wightii*, *Cymbopogon citratus*, *Lasiurus scindicus*,*Manilkarahexandra*,*Moringa concanensis*, *Opuntiaficus-indica*, *Pavonia arabica* var.*massuriensis*, *Prosopis cineraria*, *Tephrosia falciformis*, *Tecomella undulata*,*Withania coagulans*etc. have been *ex-situ* conserved in experimental botanical garden, Jodhpur. The present study deals with conservation efforts for threatened plant species of Indian desert, Rajasthan.
Keywords: Indian desert, Threatened, Economic, Ex-situ conservation, Botanical Garden.

INDUSTRIALIZATION AND BIODIVERSITY: A CASE STUDY OF MANDIDEEP, MADHYA PRADESH

Kusum Kashyap
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Mandideep Industrial Area, located near Bhopal in Madhya Pradesh, is one of the largest industrial hubs of Central India. While industrialization in Mandideep has contributed significantly to economic development and employment generation, it has also exerted considerable pressure on local biodiversity. This case study assesses the impact of industrial activities on flora, fauna, and ecosystem services in and around Mandideep. The study highlights habitat degradation, pollution, and land-use changes as major drivers of biodiversity loss. The findings underline the urgent need for sustainable industrial practices and biodiversity-friendly planning to balance development and environmental conservation.
Keywords: Mandideep, Industrialization, Biodiversity loss, Pollution, Habitat degradation, Madhya Pradesh

NATURAL HISTORY COLLECION OF THE STATE MUSEUM LUCKNOW: ITS ROLE IN STUDYING ANCIENT BIODIVERSITY AND CLIMATE CHANGE

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Recently the museum specimens have played a major role in global climate change research but still they have more diverse scope for further studies. The Natural History collections are very wide, it is referred to the preserved specimens of flora, fauna, minerals, fossils etc. It may be in the form of dry preserved skeleton, stuffed specimen, cabinet skin, eggs, trophies, skull, herbarium as well as wet preserved specimens etc. There are a few important collections throughout the world among them the specimens preserved in the State Museum Lucknow is specially mentioned. They are natural repository, preserved since 1823. It is quite feasible for a researcher to conduct a study on these specimens and compare it with the most modern specimens in the wild. The collections are relevant for the Plumage study, Ancient DNA analysis, Comparative studies, Anatomical research, Feeding biology and are also a good resource for conducting research on, Ancient biodiversity as well as Climate change. Conducting a systematic research on museum collection have given a positive results regarding ecological and evolutionary changes. The data from Natural History collections have immense potential at temporal, spatial and phylogenetic scales. And they offer a unique opportunity to study chemical, morphological and genomic aspects of the species.
Keywords: Climate change, natural history collection, preserved specimens, State Museum Lucknow, Ancient biodiversity.

Psychological Dimensions of Climate Change in India's Farming Communities

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Department of Sociology, Bhoj University, Madhya Pradesh

Agriculture in India is not just a profession but a way of life passed from one generation to another. When climate patterns change when rains arrive too late, too early or not at all the impact is not only economic. It enters the mind as stress, fear, helplessness, sleeplessness and silent suffering. Crop failure leads to debt, debt leads to shame and shame often leads to isolation and in extreme cases, suicide. Women and children carry this burden differently but deeply through hunger, disrupted education, emotional neglect and constant anxiety. This qualitative study is based on in-depth interviews with 55 farmers from climate-affected regions of Madhya Pradesh. Their voices, stories and lived experiences form the heart of this research. The study brings together psychological theory, field narratives, government reports, newspaper accounts and case studies to understand how climate stress translates into mental distress. The findings reveal high levels of chronic stress, emotional exhaustion, fear of financial failure and a strong sense of uncertainty about the future. At the same time, the study highlights resilience found in community bonds, faith, shared suffering and hope. For farmers climate change is not just an abstract idea discussed in reports or conferences. It is lived every day in the dry soil under their feet, in the flooded fields after sudden rain and in the unanswered worry about tomorrow.

This research argues that climate change adaptation in India must include mental health support. Without addressing psychological pain, policies remain incomplete. To protect the land, we must first protect the minds of those who live on it.
Keywords: Climate change, farmer mental health, agrarian distress, qualitative psychology, India

SEASONAL EUTROPHICATION DYNAMICS AND PLANKTON COMMUNITY SHIFTS IN BITHOOR POND: A ONE-YEAR COMPREHENSIVE ANALYSIS

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Eutrophication and algal blooms are caused by nutrient enrichment in urban freshwater habitats. In Bithoor Kanpur, Uttar Pradesh, Bithoor Pond is a historically significant aquatic system that is under ecological stress due to surface runoff and seasonal nitrogen cycling. Temperature, pH, dissolved oxygen (DO), total nitrogen (TN), total phosphorus (TP), total dissolved solids (TDS), hardness, alkalinity, and other physico-chemical parameters were measured in monthly water samples. Standard limnological procedures and microscopic enumeration methods were used to quantify zooplankton assemblages (Cladocera, Copepoda) and phytoplankton communities (Chlorophyceae, Cyanophyceae, Bacillariophyceae). All indicators showed strong seasonal trends. Maximum nutrient concentrations were observed throughout the summer months (March–May), with total phosphorus peaking at 0.43 mg/L and total nitrogen reaching 4.46 mg/L. Accordingly, throughout the summer, dissolved oxygen levels dropped to a minimum of 5.28 mg/L, while during the winter (December–February), circumstances improved and DO reached 7.52 mg/L. May and June were dominated by phytoplankton blooms, and eutrophic conditions were indicated by Cyanophyceae populations that reached 300 cells/mL. Phytoplankton density and zooplankton populations (Cladocera and Copepoda) were inversely correlated, indicating resource constraint and predation pressure during bloom times. The predominant phytoplankton types found in nutrient-enriched water bodies were found to be Chlorophyceae and Cyanophyceae. Bithoor pond exhibits typical eutrophic traits caused by cyanobacterial dominance, high biological oxygen demand, and seasonal nutrient cycling. Nutrient-driven ecological stress is shown by the inverse relationship between dissolved oxygen and nutrient concentrations. We advise putting integrated management techniques into practice,
such as:

- Reduction of nutrient load via pollution control and watershed management
- Desiltation on a regular basis to eliminate accumulated sediments
- Native aquatic macrophytes are restored.
- A program for ongoing water quality monitoring
  In order to improve biodiversity, reduce the effects of eutrophication, and restore ecological balance in this urban pond ecosystem, these actions are crucial.

Keywords: Eutrophication, Cyanophyceae, Seasonal dynamics, Plankton communities, Pond restoration, Limnology, Water quality management.

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Guidelines of Fellow of Environment and Social Welfare (FESW) award

The Executive Board of the ESW Society, Khajuraho India has approved a Fellow of Environment and Social Welfare (FESW) award to recognize members of the FESW for distinguished contributions to the field of Environment and Social Science, and for promoting and sustaining the professional stature of the field.

A **fellow** is a member of a group of people who work together in a **fellowship** pursuing mutual knowledge or practice. A **fellowship** is a monetary award connected to a specific field. Usually given to scientist, professor, assistant professor and researcher.
Such accomplishments will have advanced the Education, Environment, Art and science & technology, as evidenced by:

- Sustained service and performance in the advancement of science and technology
- Publication of papers, articles, books, and standards which enhance the knowledge of Science
- Innovative development of new technology
- National and international service contributions
- Professional recognition

Requirements and Conditions will

- Candidates will have a minimum of one year's active participation in ESW.
- Candidates will be nominated by their national delegation of FES Fellow. Each delegation may nominate at maximum of two (2) candidates per year.
- Nominations shall be submitted on the official form available from the ESW Secretariat.
- Nominations must be submitted to the ESW Secretariat no later than December 31 of the year prior to that in which the individual is recognized as Fellow.
- Nominations will remain valid for three years.
- All information on nominees will be held in strict confidence.
- Fellows will be selected by the Executive board based on the Performance of Applicant.

Number of Fellows

- Maximum of 06 Fellows will be selected each year, as determined by the Executive committee.

The Award

- The ESW Chair will present the Fellow of FESW Award at the ESW Conference of the ESW Society or Annual assembly.

Letter for ESW Membership

ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Dedicated to Environment, Education, and Science & Technology entire India since Bi-millennium
Under Government of M.P., Firms & Society Act 1973
Accredited by JAP Govt. of MP & NITI Aayog, Govt. of India

……

Dear,
Applications are invited from the Eminent Scientist, Professor, Academic Institutes, University, Their affiliated Colleges, Deemed Universities, Autonomous Research Institution, and Industrial R&D Units for Member of Environment & Social Welfare Society, Khajuraho India. Membership form may be downloaded from Website http://www.godavariacademy.com.

An application filled dully sign by you in all respects should be submitted to President of ESWSociety**.** Payments are accepted only through Bank or NEFT online transfer in the account.
Name of Beneficiary: Environment and Social Welfare Society
Account Number: 77352200000561
IFS code: CNRB0017735
Name of Bank: Canara Bank, Chhatarpur, Madhya Pradesh, India
MICR Code: 471015002; SWIFT code: CNRBINBBFD

Please mail us complete membership form dully signed by you along with fee. Please inform us when you transfer payment to ESWSociety account so that we can track your payment (mail scan copy as proof to eswsociety320@gmail.com).

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Only selected Life Members are privileged to write the abbreviation **F.E.S.W.** (Fellow of the Environment & Social Welfare Society) with their names.

With Regards.

All correspondence to:
Executive Director
Environment and Social Welfare Society (ESWSociety)
Head Office: Vidhyadahr Colony, Khajuraho Madhya Pradesh, India
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To
The President/Secretary
Environment and Social Welfare Society
Regional Office, Chhatarpur 471001

Photo

Dear,
I wish to be a Petron member/ Life member /General member of ENVIRONMENT & SOCIAL WELFARE (ESW) SOCIETY, Khajuraho, India and agree to abide by your rules and regulations. (For details see Letter call for Membership)

1. Name Dr……..

2. Designation……..

3. Date of birth……

4. Address

Office……..……

…….

Mailing……..……

……..……

5. Mobile /Telephone:……..

6. Email:……

7. Academic Qualification:……...

Graduation (Year/Subject)……...

Post Graduation (Year/ Subject) …….

Ph. D. (Year/ Subject)……..

Others……...

8. Field of specialization:

(1)…….

(2)…….

(3)……..……..

Signature of applicant

BRIEF RESUME

Name:	Dr. Ashwani Kumar Dubey
Date of Birth:	01 July, 1970
Fathers Name:	late Mr. Tuldidas Dubey
Qualification:	M. Sc., Ph. D.
Invited speaker:	31
Editor:	38
Reviewer:	06 including Springer International Publishing.
Conference attended:	263
Present position:	Guest Professor of Zoology
Present address:	Shri Rajiv Gandhi Govt. College Banda, Sagar, MP
Permanent address:	Godavaripuram, Bajrangnagar, Ward No.17, Chhatarpur, Madhya Pradesh
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Skill Dev. Program:	05
Editor-in-Chief:	01

Academic experience: 28 Years in Under Graduate, Post Graduate College & University as Guest Professor of Zoology in Higher Education Department, Govt. of Madhya Pradesh.

Research field: Zoology, Ichthyology, Biochemistry, Free Radical Biology, Toxicology and Stress Monitoring. Aquaculture Pathology, Water Quality Assurance, Biodiversity, Environmental Impact Assessment and Bio-Resources Conservation.

Research Guide & Project: Ph. D. 08, M. Phill. 01, M.Sc. 170

Academic Foreign Visit: Dubai, UAE 2022 & Bangkok, Thailand 2024.

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Currently: Honored for **"Award For Excellence in Teaching in Higher Education"** at Asian Institute of Technology, Bangkok, Thailand, during 15th to 17th December 2024.

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Aquatic Health Management.
Dr. Ashok Kumar Singh (Dec. 2023) Assistant Professor of Zoology, R. K. College, Madhubani, Bihar
Dr Preeti Priya (March 2024) Assistant Professor Guest Faculty of Geography, Laxmi Narayan Dubey College, Motihari, B.R.A.B.U. Bihar. Area of Specialization in Human Geography, Environmental Geography
Mr. Shakti Soni (July 2024) Social Worker, Jarhi, Sarguja, Chhattisgarh.
Dr. Abhed Pandey (August 2024) Associate Professor, Department of Aquaculture, College of Fisheries (Under Bihar Animal Sciences University, Patna, Bihar), DKAC Campus, Arrabari, Post – Raipur, District -Kishanganj, Bihar.
Dr. Sanjay Kumar Srivastava (August 2024) Proprietor, Medha Matsya Prajanan Kendra, Barohia, Post-Jagdaur, Maharajganj, Uttar Pradesh Specialization in Fishery and Consultant Trained in India and abroad.
Dr. Amarendra Kumar Pandey (August 2024) Assistant Professor of Zoology, D.A.V. Post Graduate College, Gorakhpur Uttar Pradesh,
Area of Specialization Zoology, Entomology, Biological Pest Control and Organic waste management.
Dr. Suchit Swaroop (September 2024). Associate Professor, Experimental & Public Health Laboratory, Department of Zoology, University of Lucknow, Lucknow, Uttar Pradesh. Specialization in Experimental & Public Health
Dr. Ashish Kumar (September 2024). Associate Professor of Zoology, University of Lucknow, Lucknow, Uttar Pradesh
Dr. Kavita Mathpal , (September 2024). Department of Sociology, Bundelkhand University Jhansi, Uttar Pradesh. Specialisation in Malnutrition in women.
Dr. Jyoti Uikey (September 2024). Assistant Professor of Zoology, Sarojini Naidu Govt Girls P. G. Autonomous College, Bhopal. Specialization in Aquaculture, Cell Biology and Immunology.
Dr. Manas Joshi (October 2024) Ph. D., Department of Zoology, University of Lucknow, Uttar Pradesh. Specialization in Fisheries and Fish genomics
Prof. Yashodhara Sharma (October 2024) Principal, M.B.D. Government Girls Post-Graduate College, Anwalkhera, Agra, Uttar Pradesh. Areas of Specialization are Fish and Fisheries, Wildlife Management & Aquatic Pollution.
Prof. D A. Patil (October 2024) Former Professor & Principal, SSVP Sanstha's L. K. Dr. P. R. Ghogrey Science College, Dhule, Maharashtra. Area of specialization are Botany, Angiosperm Taxonomy.
Mr. Nitin Shrikrishna Ingale (October 2024) Inspection NDT, Injotech India Pvt Ltd Pune. Area of specialization is Non Destructive Examination
Dr. Akshay Panigrahi (October 2024) Principal Scientist & Scientist in Charge (NGRC), ICAR-Central Institute of Brackishwater Aquaculture, Chennai, Tamil Nadu. Area of specialization Agriculture, Fisheries, Microbiology, Immunology, Shrimp breeding and Genetics.
Prof. Bandana Bose (October 2024) Ex-Dean, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh. Area of Specialization are Botany, Plant Physiology and Biochemistry.

Dr. Vidyanath Jha (October 2024), Retd Prof of Botany, L. N. Mithila University and Former Principal of M.R.M College, Darbhanga and M L S M College, Darbhanga, Bihar. Area of Specialization Aquatic Biology, Natural Resource Management.
Dr. Kedar Nath Mohanta (November 2024) Principal Scientist and Head, Fish Nutrition, Biochemistry and Physiology Division, ICAR-Central Institute of Fisheries Education (Deemed University), Versova, Andheri West, Mumbai, Maharashtra. Areas of Specialization are Fish Nutrition, Biochemistry, Physiology and Aquaculture.
Dr. Vitthal T. Mohite (November 2024) Associate Professor & Head, Department of Zoology, Thakur College of Science and Commerce (Autonomous), Thakur Village, Kandivali (E), Mumbai, Maharashtra. Area of specialization: Toxicology, Bioresource Management and Conservation.
Dr. Sanjay Mishra (November 2024), Professor, Department of Biotechnology, SR Institute of Management & Technology Lucknow, Uttar Pradesh.
Specializations are Biochemistry & Biotechnology, Enzymology and Protein Engineering, Cancer Biology, Reproduction Biology, Medical Biochemistry & Bioinformatics.
Professor S. N. Pandey (December 2024), Department of Botany, University of Lucknow, Lucknow, Uttar Pradesh. Area of specialization is Environmental Biology.
Dr. Bhuwan Bhaskar Mishra (January 2025) Assistant Professor, Department of Zoology, B. N. Mandal University, Madhepura, Bihar. Specialization are Insect, Pest Management, Vector Control and Toxicology.
Prof Sunil Kumar Srivastav (January 2025) Department of Zoology, Deen Dayal Upadhyay Gorakhpur University, Gorakhpur, Uttar Pradesh. Specialization are Fishery Biology and Endocrinology
Dr. Uttam Kumar Sarkar (January 2025), FNAAS, Director, ICAR-National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh. He have specialization in Fisheries Resource Management, Aquatic Biodiversity & Conservation.
Dr. Yogesh Chandra, Director, S. L. Education Institute, Pallupara Ghosi, Post Pakwara, Dt. Moradabad, Uttarpradesh. Specialization are Marketing, Human ResourceManagement, Education and Operations.
Dr. Ajaz A. Wani (February 2025) Associate Professor, Department of Zoology, Govt. Degree College Bhaderwah. Specialization in Wildlife Biology and Management.
Dr. Rajesh Kumar Shukla, (February 2025) Guest Faculty of Chemistry, Government Polytechnic College, Khirsadoh Chhindwara, Madhya Pradesh
Dr. Vijay Kumar Yadav, (July 2025) Associate Professor, Dept.of Zoology, Bipin Bihari College, Jhansi, Uttar Pradesh
Dr. Al Shaz Fatmi, (September 2025)Assistant Director, Department of Culture, State Museum Lucknow, Uttar Pradesh. The Area of Specialization is Natural History, Museology, conservation and Sustainable development
Miss. Snigdha Das, (December 2025)Vidya Bhawan Education Resource Centre, Vidya Bhawan Society, Udaipur
Dr. Chandan Singh Purohit, December (2025)Scientist D, Botanical Survey of India Jodhpur, Rajasthan.

General Members

Mrs. Anupama Bhargava, Assistant Teacher of English, P.S. Samadua, Jhansi, Uttar Pradesh
Mr. Vipin Kumar Soni, Former Guest Lecturer of Chemistry, Govt. Maharaja College, Chhatarpur, Madhya Pradesh
Dr. Sangeeta Chaurasia, Former Assistant Professor of Zoology, Rajeev Gandhi College, Bhopal, MP
Dr. Satyandra Prajapati, Former Assistant Professor of History, Bapu Degree College, Nowgong, MP
Dr. Sandeep Kumar Shukla, Guest Lecturer of Zoology, Govt. College, Seoni, Madhya Pradesh
Mr. Arvind Kumar Dubey, Guest Lecturer of English, Godavari Academy of Science and Technology, Chhatarpur, Madhya Pradesh
Mrs. Sudha Pauranic, Former Lecturer, Govt. School, Chhatarpur-471001
Dr. H. N. Khare (Oct.-13 to Sep. 14), Professor of Zoology, Govt. Maharaja College, Chhatarpur, MP
Dr. Umesh Patel (Oct.-13 to Sep. 14), Guest Lecturer of Zoology, Govt. Maharaja College Chhatarpur, MP

Dr. Pushpa Singh (Oct.-13 to Sep. 14), Asst. Professor of Zoology, Govt. Vivekanand College, Maihar, Madhya Pradesh
Dr. Manju Jain (Oct.-13 to Sep. 14), Former Professor of Botany, Govt. Girls College, Vidisha, MP
Dr. Vaheedun Nisha (June-13 to May-15) Guest Lecturer of Zoology, Govt. Maharaja College Chhatarpur, MP
Dr. Vidushi Sharma (Dec.-17 to Nov. 18) General Secretary, International Human Rights Organization, New Delhi
Dr. Malik Asif Aziz, (July-18 to June 19) Assistant Professor, Division of Basic Science & Humanities, Faculty of Agriculture, Wadia, SKUAST-Kashmir
Dr. J. Thilak (Jan-19 to Dec. 20) Scientist D, Southern Regional Centre, Zoological Survey of India, 130 Santhome High Road, Chennai.
Mr. Vagh Sarman Naranbhai (Jan. 20 to Dec. 20) College of Fisheries Science, Junagarh Agricultural University, Veraval, Gujrat.
Mr. Gaurav Swaroop Nigam, (Jan-20 to Dec. 20) Department of Botany, Atarra P. G. College, Atarra, Banda, Uttar Pradesh
Dr. Mathua Ahirwar (March-20 to Feb. 21) Assistant Professor of Botany, Govt. P. G. College, Rampura, Dist. Neemuch, Madhya Pradesh.
Miss. Mahima Tamta (Jan-21 to Dec. 21) Research Scholar, Govind Ballabh Pant University, Pantnagar, Uttrakhand.
Dr. Shrikant N. Chimma (Jan-21 to Dec. 21) Guest Lecturer, Institute of Dr. Bheem Rao Ambedkar Studies and Research, Gulbarga University, Kalaburagi
Dr. Pramod Kumar Fatehpuriya, College of Agriculture, Gwalior, Madhya Pradesh
Dr. Adesh Kumar , (Nov. 2022 to Oct. 2023) Assistant Professor of Zoology, School of Science, JECRC University, Ramchandrapura Industrial Area, Vidhani, Jaipur, Rajasthan. Specialization in Wildlife and Conservation Biology, Ecology Environment and Animal Behaviour, Behavior Ecology and Molecular Taxonomy.
Dr. Arun Arya , (Nov. 2022 to Oct. 2023) Former Professor of Environmental studies, M S University, Lucknow, Uttar Pradesh. Specialization in Mycology, Plant Pathology, Biodiversity, Biodeterition and conservation of object
Dr. A. Raj Shekhar, Professor of Geography, Kalinga University, Raipur, Chhattisgarh, India. Specialization in Urban And Environmental Geography
Mrs. Chitra Arya (Feb. 2023 to Jan. 2024) Gujarat.
Dr. Virendra Nath , NBRI, Lucknow
Sunita Das (July 2024) Lecturer in Political Science, Government Girls Higher Secondary School Ambikapur, Chhattisgarh.
Mr. Kuber Tiwari (July 2024) Department of Commerce, Shri Sign Baba Aadarsh Mahavidyalay Ambikapur, Sarguja, Chhattisgarh.
Mr. Aman Kumar Jaiswal (July 2024) Lecturer of Mathematics, St Charles H. Sec. School Bhatgaon, Chhattisgarh.
Mr. Aditya Barua (July 2024) Social Worker, Etawa, Uttar Pradesh
Mr. Brijesh Kumar Pandey (July 2024) English Teacher, Behind Kali Mata Temple, Ambikapur, Chhattisgarh.
Miss Kavita Rathore (July 2024) Master of Social Work, Stenographar, Bamhanpali kharsia, District-Raigarh, Chhattisgarh.

Dear,
Thanks for your interest in participation and submission of your unpublished research work in the **ESW XIII Annual National Research Conference on "Climate change and Biodiversity conservation" will be held during 01 & 02 February, 2026 at** Godavari Self-Employment Centre Nahdora-Khajuraho, Madhya Pradesh, India (12 KM from Khajuraho)

Brief schedule

Date	Event	Time
01/02/2026	**Spot registration & Breakfast**	**08:00 am to 09:00 am**
	Inaugural Session	09:30 am to 11:30 am
	Tea Break	11:30 am to 11:45 am
	TECHNICAL SESSION I (ORAL PRESENTATION)	11:45 am to 12:45 pm
	TECHNICAL SESSION II (ORAL PRESENTATION)	12:45 pm to 01:45 pm
	Lunch	01:45 pm to 02:45 pm
	TECHNICAL SESSION III (ORAL PRESENTATION)	03:00 pm to 04:00 pm
	President Meet with ESW Members	06:00 pm to 07:00 pm
	Cultural Programme at Tulsi Kala Manch	07:00 pm to 09:00 pm
	Dinner	09:00 pm to 10;30 pm
02/02/2026	**Break Fast**	**07:00 am to 07:50 am**
	TECHNICAL SESSION IV (ORAL PRESENTATION)	08:00 am to 09:30 pm
	TECHNICAL SESSION V (ORAL PRESENTATION)	**09:30 am to 10:30 am**
	TECHNICAL SESSION VI (POSTER PRESENTATION)	**10:30 am to 11:00 am**
	High Tea	11:00 am to 11:10 am
	Valedictory Session & Award ceremony	**11:20 am to 01:30 pm**

Dr.. Ashwani Kumar Dubey
Organizing secretary