



LiFE
Lifestyle for
Environment



Ministry of Environment, Forest & Climate Change (MoEFCC)
Government of India

CSIR-National Botanical Research Institute (NBRI)

**Environmental Information, Awareness, Capacity Building & Livelihood
Programme Centre (NBRI-EIACP-PC-RP) Rana Pratap Marg, Lucknow**



NBRI-EIACP

**INTERNATIONAL DAY
FOR BIODIVERSITY**

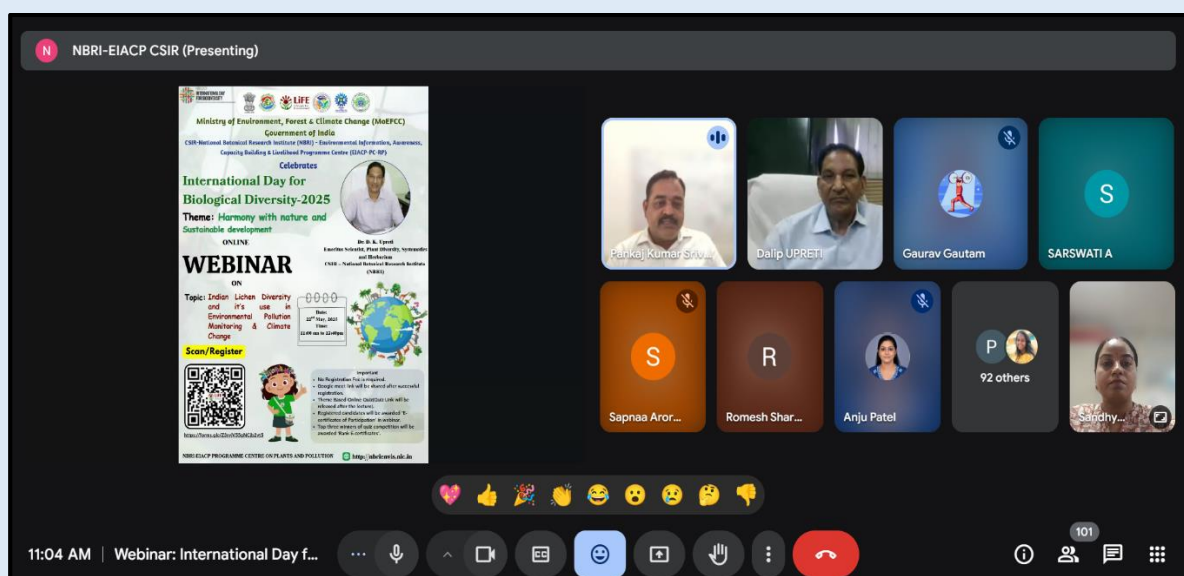
Harmony with nature and sustainable development

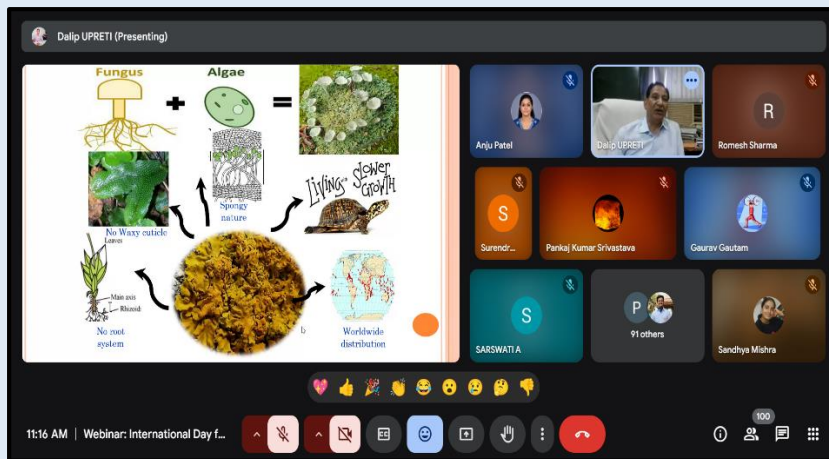
**Webinar on the Topic “Indian Lichen Diversity
on 22, May 2025**



Webinar on International Day for Biological Diversity (IDB) -2025 on the theme “Harmony with Nature and Sustainable Development”

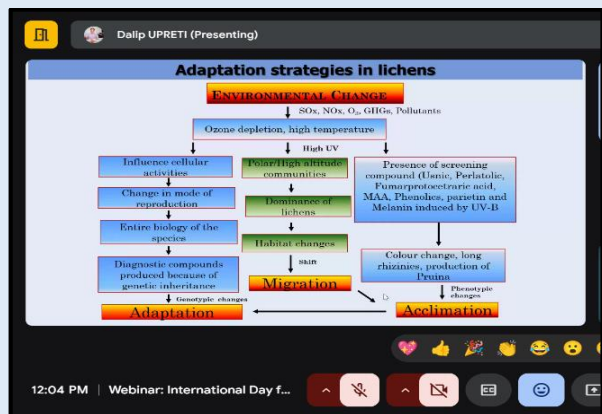
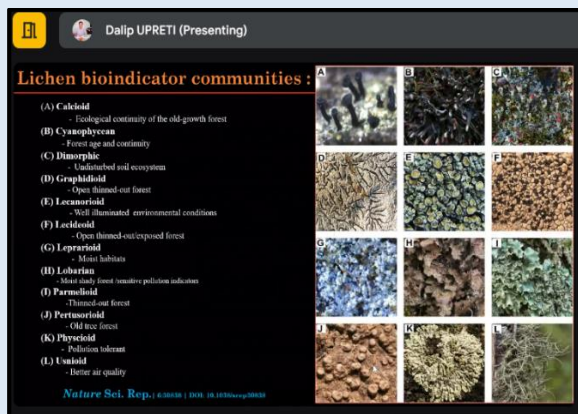
In observance of the **International Day for Biological Diversity (IDB)- 2025**, NBRI-EIACP Programme Centre, Lucknow, organized an online webinar on this year’s theme, **“Harmony with Nature and Sustainable Development”** on **22 May 2025**. The webinar featured an enlightening expert lecture by **Dr. D. K. Upreti**, a renowned lichenologist and **Emeritus Scientist, CSIR-NBRI** on the topic **"Indian Lichen Diversity and Its Use in Environmental Pollution Monitoring & Climate Change."** Dr. Upreti's extensive research has significantly advanced the field of lichenology in India, with over 400 research papers and several books to his credit.





Dr. Upreti highlighted India's rich lichen biodiversity, encompassing over 2,000 species across diverse ecosystems, from the Himalayas to coastal regions. He emphasized the ecological significance of lichens as symbiotic

organisms composed of fungi and algae or cyanobacteria, which play crucial roles in nutrient cycling and serve as indicators of environmental health.



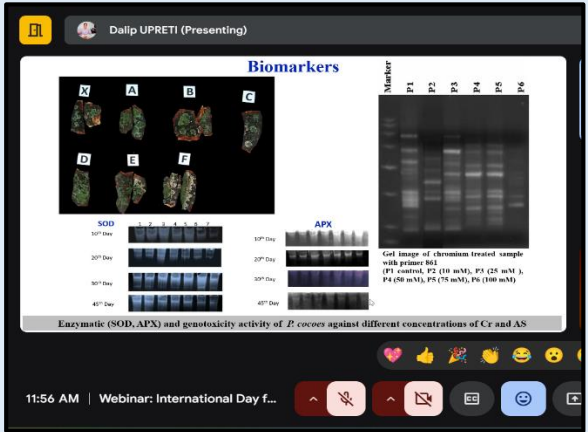
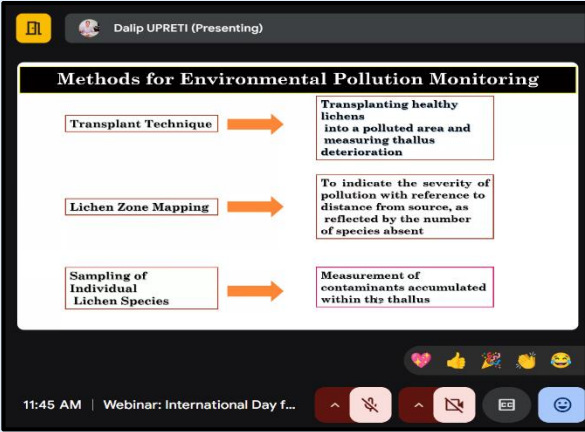
Addressing climate change, Dr. Upreti explained how shifts in lichen diversity and distribution patterns can serve as indicators of climatic variations. He referenced studies from the Garhwal Himalayas, where changes in lichen communities correlated with increasing anthropogenic activities and environmental stressors. Such observations underscore the

Lichen herbarium records to study climate change

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graph TD
    A[CLIMATIC FLUCTUATIONS] --> B[Species Turnover]
    B -- Causes --> C[Major shifts in terrestrial ecosystem]
    B --> D[Importance of Herbarium]
    D --> E[Herbarium specimens >50 years old]
    E --> F[Recent collections]
    F --> G[Significant change in community composition]
    H[Rainfall, Temp] --> D
    I[Anthropogenic activities] --> D
    J[Carbon, Nitrogen concentration] --> D
    K[Emberger's Index] --> E
    L[Emberger's Index] --> F
    M[Comparisons] --> G
  
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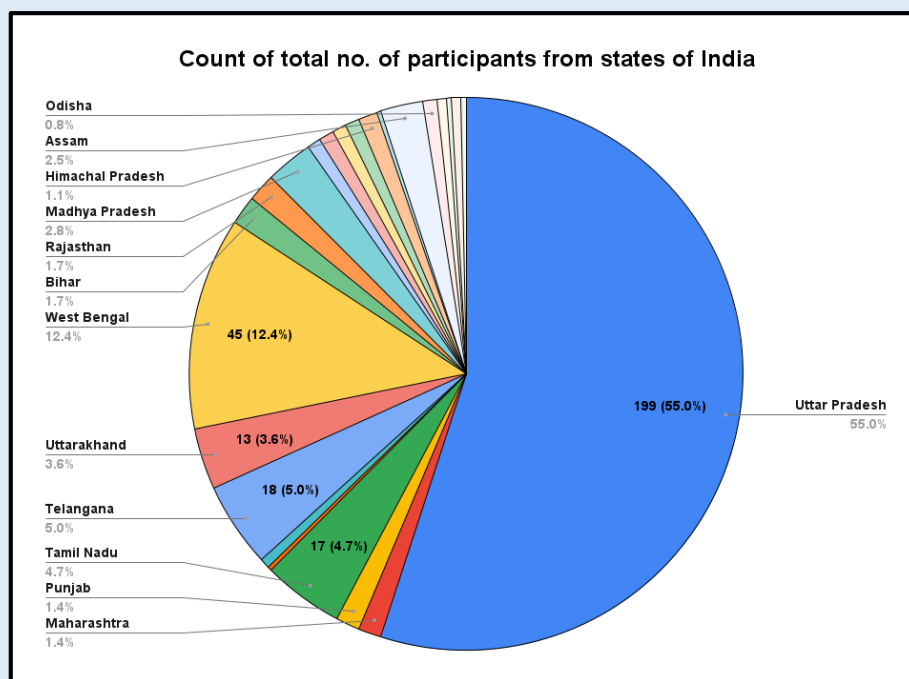
The diagram illustrates the process of using lichen herbarium records to study climate change. It starts with **CLIMATIC FLUCTUATIONS**, which leads to **Species Turnover**. This turnover causes **Major shifts in terrestrial ecosystem**. **Species Turnover** also leads to the **Importance of Herbarium**, which is influenced by **Rainfall, Temp**, **Anthropogenic activities**, and **Carbon, Nitrogen concentration**. The **Importance of Herbarium** leads to **Herbarium specimens >50 years old**, which is measured by **Emberger's Index**. These specimens are then compared with **Recent collections**, also measured by **Emberger's Index**. Finally, the comparison leads to a **Significant change in community composition**.



Persistent Organic Pollutants
(Min – Max)

POPs	2013	2014
Polychlorinated biphenyls	18.94	16.83
Organic MW 178(17)	117.2(24.26)	109.2(20.7)
Aroclor1260	24.47	21.94
Organic MW 192 (19)	119.9(18.1)	95.1(13.1)
Aroclor1254	11.33	9.89
Dibenz-p-dioxin (2400)	17.7(4.49)	16.7(4.49)
Fluorene	9.29	7.17
Organic MW 166 (2)	16.6(3)	18.8(3.5)
Phenanthrene	15.86	9.25
Anthracene	9.18	6.75
Organic MW 176 (7)	18.9(3.4)	15.9(3.4)
Pyrene	18.32	10.84
Organic MW 202(1)	17.9(3.96)	17.2(2.2)
Benzeneanthracene	5.49	4.67
Organic MW 228 (2)	11.3(3.5)	11.4(4.4)
Chrysene	9.95	9.05
Organic MW 238 (9)	10.7(2.0)	12.4(1.7)
Benzofluoranthene	5.71	5.7(1.2)
Organic MW 252 (10)	1.6(0.5)	1.5(0.5)
Benzo[a]pyrene	4.21	3.77
Organic MW 276 (3)	1.9(0.6)	1.8(0.6)
Benzo[b]fluoranthene	1.9(0.6)	1.8(0.6)
Organic MW 278 (3)	1.1(0.4)	1.1(0.4)
Benzo[k]fluoranthene	2.13	2.05
Organic MW 276(3)	10.8(4.9)	10.8(2.1)
Indeno[1,2,3-cd]pyrene	1.78	2.39
Organic MW 278 (3)	10.8(4.9)	10.8(4.4)

A total of 362 candidates enthusiastically registered during the webinar from 24 states of India, and 123 educational institutes. Among the highest candidates from Uttar Pradesh (199), followed by West Bengal (45), Telangana (18), Tamil Nadu (17), and Uttarakhand (13), etc.



The webinar features an interactive Q&A session and a quiz competition followed by a lecture. The quiz content included 15 questions related to the biodiversity theme, each with two marks. The top three winners of the quiz competition:

Position	Name	Institute	Class	Score
First	Samiksha Singh Dewangan	Indira Gandhi Agricultural University Raipur	Ph.D.	30/30
Second	Mariyam Abbas	National Post Graduate College,Lucknow	Bsc	28/30
Third	Prerna T D	University of Madras	M.Sc Botany	28/30

All the participants get e-certificates, and the top three winners of the quiz contest get a rank certificate.

Ministry of Environment, Forest & Climate Change, Government of India
Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP)
Programme Centre on "Plant and Pollution"
CSIR-National Botanical Research Institute, Lucknow

Section 1 of 16

International Day for Biological Diversity (IDB)- 22 May, 2025 - Online Quiz

The CSIR-National Botanical Research Institute's Environment Information, Awareness, Capacity Building and Livelihood Programme Centre (NBRI-EIACP-PC) organizing an online quiz to raise awareness about the importance of Biodiversity conservation and sustainable development.
#BiodiversityDay#HarmonyWithNatureAndSustainableDevelopment

This form is automatically collecting emails from all respondents. [Change settings](#)

Name: *
Short-answer text

**Mobile no. *
(Digits Only)**
Short-answer text

Age Group: *
☐ 10 - 19 years
☐ 20 - 25 years
☐ Above 25 years

Institute name/ University name: *
Short-answer text

Ministry of Environment, Forest & Climate Change, Government of India
Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP)
Programme Centre on "Plant and Pollution"
CSIR-National Botanical Research Institute, Lucknow

Feedback - International Day for Biological Diversity (IDB): 22 May 2025

Thank you for attending the webinar. Please take a minute to share your feedback with us. Your input is valuable and helps us improve future events.

This form is automatically collecting emails from all respondents. [Change settings](#)

Name: *
(Mr./Ms./Dr.)
(Capital letters)
Short-answer text

Do you aware about International Day for Biological Diversity before this webinar *
☐ Yes
☐ No
☐ Maybe

Was the duration of the webinar appropriate? *
☐ Too long
☐ Just right
☐ Too short

Sl. No.	Participant Name	Age Group	Institute Name	Rank	Score	Comments
1	Dr. Anju Patel	20-25 years	CSIR-NBRI	1	100	
2	Dr. Pankaj Kumar Srivastava	20-25 years	CSIR-NBRI	2	95	
3	Dr. Rakesh Kumar	20-25 years	CSIR-NBRI	3	90	
4	Dr. Anshu Singh	20-25 years	CSIR-NBRI	4	85	
5	Dr. Arun Kumar	20-25 years	CSIR-NBRI	5	80	
6	Dr. Anshu Singh	20-25 years	CSIR-NBRI	6	75	
7	Dr. Anshu Singh	20-25 years	CSIR-NBRI	7	70	
8	Dr. Anshu Singh	20-25 years	CSIR-NBRI	8	65	
9	Dr. Anshu Singh	20-25 years	CSIR-NBRI	9	60	
10	Dr. Anshu Singh	20-25 years	CSIR-NBRI	10	55	
11	Dr. Anshu Singh	20-25 years	CSIR-NBRI	11	50	
12	Dr. Anshu Singh	20-25 years	CSIR-NBRI	12	45	
13	Dr. Anshu Singh	20-25 years	CSIR-NBRI	13	40	
14	Dr. Anshu Singh	20-25 years	CSIR-NBRI	14	35	
15	Dr. Anshu Singh	20-25 years	CSIR-NBRI	15	30	
16	Dr. Anshu Singh	20-25 years	CSIR-NBRI	16	25	
17	Dr. Anshu Singh	20-25 years	CSIR-NBRI	17	20	
18	Dr. Anshu Singh	20-25 years	CSIR-NBRI	18	15	
19	Dr. Anshu Singh	20-25 years	CSIR-NBRI	19	10	
20	Dr. Anshu Singh	20-25 years	CSIR-NBRI	20	5	





Ministry of Environment, Forest & Climate Change (MoEFCC) Government of India
CSIR-National Botanical Research Institute (NBRI) - Environmental Information, Awareness,
Capacity Building & Livelihood Programme Centre (EIACP-PC-RP)
Rana Pratap Marg, Lucknow, India

CERTIFICATE

This certificate is presented to <<Name>> who has participated in the “International Day for Biological Diversity-2025” on the theme “Harmony with Nature and Sustainable Development” Webinar organized by the NBRI-Environmental Information, Awareness, Capacity Building & Livelihood Programme Centre at CSIR- NBRI, Lucknow, on 22 May, 2025.

Dr. Anju Patel
Scientist & Co-coordinator
(NBRI-EIACP-PC)

Dr. Pankaj Kumar Srivastava
Sr. Principal Scientist & Coordinator
(NBRI-EIACP-PC)
