



SDG 14. Life Below water

14.2 SUPPORTING AQUATIC ECOSYSTEMS THROUGH EDUCATION

14.2.1. FRESH WATER ECOSYSTEMS



Monthly Talk in Marine Biology

Critters Beneath Our Feet : India's Groundwater & Subterranean Biodiversity

14th August 2024
2:30 pm
School of Marine Sciences Auditorium

Jointly organised by
Marine Biology Alumni Association (MBAA)
Society of Marine Biologists (SOMB)

Faculty Coordinators

Speaker
DR. RAJEEV RAGHAVAN
Dr. Rajeev Raghavan is an Assistant Professor at the Kerala University of Fisheries and Ocean Studies (KUFOS). Rajeev's research interest is on fundamental and applied aspects of tropical aquatic biodiversity, particularly focusing on systematics, molecular ecology, extinction risk, and conservation. Together with his team, he has described 23 new species, three new genera and two new families of fish, and one new genus and species of shrimp. Rajeev is also closely associated with the International Union for Conservation of Nature (IUCN) and is currently the South Asia Chair of the IUCN Freshwater Fish Specialist Group, and the IUCN Freshwater Fish Red List Authority Coordinator for the continents of Asia and Oceania. He has to his credit more than 200 publications (with >4000 citations) in the peer-reviewed literature, and has been listed in the Elsevier-Scopus top 2% scientists of the world since the year 2020. Since 2022, Rajeev is also the Editor of the Asian Freshwater Fish section of Zootaxa. For his exceptional contributions to fisheries science and fish conservation, Rajeev was awarded the Fisheries Society of British Isles - 'FSBI Medal' in the year 2023, the first Asian awardee till date.



14.2

Supporting Aquatic Ecosystems through Education

14.2.1. FRESH WATER ECOSYSTEMS

1. PUBLIC INTERACTION PROGRAM ON MICRO LEVEL AQUIFER MANAGEMENT

CUSAT and CGWB, Kerala Region, Thiruvananthapuram organized a one-day Public Interaction Programme on “Microlevel Aquifer Management” among the Youths on 07.08.2024 at School of Marine Sciences, CUSAT, Ernakulam district. Totally 66 students and 8 faculties from the Dept of Marine Sciences & Geophysics participated in the program. The program was inaugurated by Senior. Prof. (Dr.) S. Bijoy Nandan, Dean, Faculty of Marine Sciences, School of Marine Sciences, CUSAT and Prof (Dr) Sunil P.S. Head of the Dept, felicitated the program. Technical lectures on Groundwater management, Geophysical methods used for GW exploration, local groundwater issues, water conservation and management in the district were delivered.

The students in the Department conducted a skit on "Ground Water Conservation" which showed the importance of conservation and management of the precious water resources.



Fig. 14.2.1. Participants and Trainers at Public interaction program on Micro level aquifer management

2. Training programme on Hydrogeology of Ernakulam District

A training programme was conducted to introduce the hydrogeological characteristics of Ernakulam district, Kerala to the students and faculty community of various institutions from Kerala. The event was conducted on 10-02-2024 focusing to promote conservation of fresh water ecosystem. It also aids to enable the students and participants understand the importance of ground water in irrigation and related activities. The event focused on understanding and detailing of regional characteristics of Ernakulam region.



Fig. 14.2.2. Certificate issued to Dr. Joji V.S. in connection with the training programme on Hydrogeology of Ernakulam District

3. EXPERT TALK ON CRITTERS BENEATH OUR FEET: INDIA'S GROUNDWATER & SUBTERRANEAN BIODIVERSITY

The university hosted a compelling and engaging talk led by Dr. Rajeev Raghavan, an esteemed expert in freshwater biodiversity entitled "Critters Beneath Our Feet: India's Groundwater & Subterranean Biodiversity," on 14 August 2024. The presentation explored the intricate ecosystems beneath the earth's surface and their crucial role in sustaining aquatic biodiversity. Dr. Rajeev is associated with the International Union for Conservation of Nature (IUCN) and is currently the South Asia Chair of the IUCN Freshwater Fish Specialist Group, and the IUCN Freshwater Fish Red List Authority Coordinator for the continents of Asia and Oceania. Dr. Rajeev highlighted the rich biodiversity found within subterranean ecosystems, home to numerous unique and endemic species adapted to life in groundwater environments. He explained how these ecosystems play a pivotal role in water purification, nutrient cycling, and ecosystem resilience, supporting aquatic life above ground. Additionally, he addressed the critical threats these habitats face, such as over-extraction, pollution, and habitat degradation, all of which endanger the delicate balance of India's aquatic biodiversity.

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&
Subterranean Biodiversity**

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Dept. of Marine Biology, Microbiology and Biochemistry, CUSAT

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Faculty Coordinators
Dr. Swapna P Antony
Dr. Chaithanya E R

Fig. 14.2.3. Brochure released for the Expert Talk on Critters Beneath Our Feet: India's Groundwater & Subterranean Biodiversity



Fig. 14.2.4. Handing over of the Memento to Dr. Rajeev Raghavan, Assistant Professor, KUFOS, for the Expert Talk on Critters Beneath Our Feet: India's Groundwater & Subterranean Biodiversity

4. AWARENESS PROGRAMMES AND OUTREACH ACTIVITIES FOCUSING ON THE FRESH WATER ECOSYSTEM CONSERVATION

A series of outreach activities and awareness programme were successfully organised by CUSAT in connection with fresh water ecosystem conservation in association with different National as well as state level organisation, schools, colleges and other institutions. The programmes were initiated by Dr. Joji V.S, Associate Professor, Department of Marine Geology and Geophysics, CUSAT. All the programmes were supported with practical sessions to the participants to have a hands on training and close understanding of the processes involved in conserving water.



Fig. 14.2.5. Awareness Programme And Outreach Activities Focusing on the Fresh Water Ecosystems at Alappuzha



Fig. 14.2.6. Awareness Programme And Outreach Activities Focusing on the Fresh Water Ecosystems at Mararikkulam

Table. 14.2.1.

Other events conducted in connection with Aquatic Ecosystems through Education

Sl No	Program details	Date of event	Benefitted group
1	Invited Lecture on "Groundwater scenario of India and National aquifer mapping program" jointly organised by CWRDM and CUSAT	01-08-2023	Students and Public
2	Awareness class on conservation of water conducted by Groundwater department, Alappuzha.	19-12-2023	Panchayat members, and staff, Alappuzha
3	Awareness workshop on groundwater management at Meenangadi	15-11-2023	Students and Public
4	Awareness workshop on groundwater management at Meenangadi	16-11-2023	Students and Public
5	Awareness class on rain water harvesting structures	19-01-2024	Students, Govt. Girls HSS, Alappuzha
6	Awareness class in connection with world water day	23-03-2024	Students and Public
7	Awareness class on Ground Water Scenario in Alappuzha District	09-02-2024	Students and Public

5. TIER III PROGRAMME ON GROUND WATER MANAGEMENT

PG Students of S.N. college, Cherthala undertook the training on "Groundwater Development and Management Practices". The program was inaugurated by Smt. Bindu T.P, Principal, S N college, Cherthala. Smt. Mini Chandran, Head of Office presided over the function, Smt S Saritha, Scientist D and Nodal officer IEC welcomed the gathering. Smt Jesna Richard, Head of Geology Dept, Dr Jesny.S, IQAC coordinator, Dept. of Chemistry, felicitated the programme. Dr.V S T Gopinath, Sc D(GP) delivered the vote of thanks Technical classes were taken by Dr. Joji V.S, Associate Professor, Dept of Marine Geology& Geosciences, CUSAT, Ernakulam, Smt Santy S R, Hydrogeologist, GWD, Alappuzha district and officers of the Region.

The students joined the drive of “My Yuva Bharath” an initiative to empower Indian youth through social mobility, educational equity, practical skills and were trained on “Sustainable practices in groundwater management”. The youth were also educated on the measures taken for prevention of casualties due to falling in abandoned bore wells and tube wells. Under the mission of Swachhata Hi Seva initiative, to implement “Swachhata and Minimizing Pendency”, Special Campaign 4.0, Central Ground Water Board, Kerala Region, Trivandrum & NCC students of Cherthala S. N college, Alappuzha district jointly organized Swachhata Hi Seva Campaign the students went on a cleanliness in the college campus. Total Students participated- 120 (Female- 82, Male - 38). Participation certificates also distributed to the students.



Fig. 14.2.7. Awareness Programme And Outreach Activities Focusing on the Fresh Water Ecosystems at S.N. college, Cherthala



Fig. 14.2.8. Handing over of the certificate to the participant at Awareness Programme and Outreach Activities Focusing on the Fresh Water Ecosystems at S.N. college, Cherthala

6. PUMPING TEST TRAINING FOR FRESH WATER MANAGEMENT & CONSERVATION

Pumping test training were given to the youth as a field experience to trace Aquifer performance. Postgraduate Students were given the opportunity and the training was conducted in association with the Experimental and Volunteering under Mera Yuva Bharat- My Bharat.



Fig. 14.2.9. Pumping test training for CUSAT students



Fig. 14.2.10. Live demo of the Pumping test for CUSAT students by CGWB and CUSAT faculties



Fig. 14.2.11. Trainer explaining about the Pumping test to CUSAT students