



Freshwater Biology Regional Centre

Zoological Survey of India, Hyderabad, Andhra Pradesh



Government of India
Ministry of Environment and Forests

The Indian subcontinent is endowed with water resources in the form of rich rivers and streams. By virtue of its geographical position, varied terrain and climatic zones, it supports a rich diversity of fresh water inland and coastal wetlands. It has wetlands distributed from the cold arid Trans-Himalayan zone to wet Terai regions of Himalayan foothills and Gangetic plains, extending down to the Southern peninsula and beyond to the Andaman and Nicobar and Lakshadweep Islands. These vast and varied wetland systems are directly or indirectly associated with riverine systems of the respective Ganges, Brahmaputra, Narmada, Tapti, Godavari, Krishna and Cauvery rivers. India has a total 67,429 wetlands, covering an area of about 4.1 million hectares. Of these, 2,175 are natural and 65,254 are man-made (artificial). About 25 wetlands are declared as *Ramsar sites* (Wetlands of International Importance). The various wetland ecosystems support 47% of India's flora and fauna, including endemic and endangered species. Wetlands help discharge important ecosystem functions / ecological services like controlling floods, water storage or supply, water purification, retention of pollutants/nutrients/sediments, ground water recharge or discharge, maintenance of underground water tables, hydrological cycle, habitat for aquatic birds, nurseries for fisheries and other wildlife, stabilization of local climate, protecting bio-diversity, recreation, tourism and cultural heritage besides providing sustainable livelihoods to stakeholders.

The Freshwater Biology Regional Centre at Hyderabad, Andhra Pradesh, established in February, 1979, under the Vth Five Year Plan of Government of India, is one of the 16 Regional Centers of the Zoological Survey of India (ZSI), a premier research institute in animal taxonomy and systematics.

The jurisdictional limits of the Centre extends to all hues and shades of freshwater wetlands/ lakes in tropical India (rivers, lakes, reservoirs, ponds, etc.). The Centre is primarily engaged in the limnoecology and wetland faunal diversity, through field ecological/faunistic surveys and other wetland studies.

Major Programmes undertaken

The Centre has the unique distinction of initiating holistic hydrobiological studies on lakes/wetlands of international importance (*Ramsar sites*), notably Chilika lagoon (1985-97), Odisha; Loktak Lake (1991-1993), Imphal, Manipur, Keoladeo Ghana National Park (1998- 2000), Bharathpur, Rajasthan, Kolleru Lake (2006- 2009), West Godavari/Krishna Districts, Andhra Pradesh, besides lakes of national importance like Kanwar Jheel (Kabar lake) (1988-91), Begusara, Bihar and major man made raw water reservoirs like Hussain, Osman and Himayat sagars, Hyderabad, Pocharam, Wyra, Khammam Distt. and others (Fauks sagar, Durgam Cheruvu, Safilguda, etc.). Further, extreme aquatic environment like hyper alkaline, hyper saline Crater Lake, Buldana, Maharashtra, a high/impact meteor lake, were investigated and results published.

Areas surveyed

A large number of wetlands were surveyed extensively for documentation of faunal components and related

fresh water ecological studies. The Centre, to date, has carried out 48 extensive field surveys and about 350 intensive field surveys covering major and minor wetlands/ lakes, streams, ponds, etc. in Andhra Pradesh, Bihar, Rajasthan, Maharashtra, Manipur and Karnataka.



Available Taxonomic Expertise

Taxonomic expertise on fishes, amphibians, reptiles, aquatic insects, zooplankton and molecular taxonomy are available currently at the Center. Besides catering to scientific advisory/ identification services on major freshwater plankton groups-rotifera, cladocera, ostracoda,

aquatic insects and malacofauna, the Centre's expertise also extends to freshwater/estuarine fishes, amphibians and reptiles. Additionally, the Centre also conducts Aquatic Biomonitoring studies, as component of Environmental Impact Assessment Studies (EIA), for various State Government institutions.



National Zoological Collections (NZC)

The Centre is one of the 16 faunal repositories of National Faunal Collections under the National Biological Diversity Act and has holdings of over 25,000 specimens and 7700 identified examples.



Modern Infrastructure and Advanced Research facilities

The Centre is well equipped with facilities like modern analytical instruments for carrying out research in: limno - ecological / hydro biological studies, fish/amphibian/insect identification studies and animal DNA Bar coding studies. It has been equipped with high end DNA analyses laboratory with RT PCR and DNA sequencer, optical instruments like Nikon 80i Model Trinocular Microscope with Fluorescence, computerized Digital Cameras, GPS and other traditional light microscope equipments.



Publications

8 books and 76 research papers were published in various National and International journals by the scientists of the Centre.

- Fauna of Kabar lake wetland ,Bihar.
- Fauna of Godavari Estuary, Andhra Pradesh.
- Fauna of Vamsadhara and Nagavali estuaries, Orissa/Andhra Pradesh.
- Ecological studies on hyper-saline lake (Crater lake, Buldana).
- Limnofaunal studies on Kondakarla, A.P.
- Fauna of Andhra Pradesh (9 volumes).
- Fauna of Pocharam, Wyra lake, etc., Andhra Pradesh.



Library

The Centre's library has 5645 books and subscribes to 14 periodicals (Indian & Foreign) for benefit of in-house scientists and research scholars from the adjoining universities, research institutes and others.

Museum

The Centre houses representative wetland faunal collections (Major groups) besides digital coloured blow ups/ ecological charts on wetland ecology/functions and services for generating public awareness towards wetland biodiversity, ecology and their sustainable development.

Other Extension Activities

Identification and advisory services are offered to scientists, researchers and students of other scientific institutes and universities. The laboratory and library facilities are also availed by various research institutes around. Invited lectures and talks on various aspects of wetlands, biodiversity, ecology and conservation are delivered to the students of universities / colleges from time to time.

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For more details visit <http://www.zsi.gov.in>

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