



ICAR-Sponsored **Winter School**

on

**Aquatic Biodiversity Conservation
using Integrative Taxonomic,
Biological and Molecular tools**

December 01 – 21, 2026

Organized by

**Germplasm Exploration, Evaluation and Conservation Division
ICAR-National Bureau of Fish Genetic Resources, Lucknow**

Background

Globally, aquatic biodiversity is declining at an alarming rate, with freshwater ecosystems experiencing particularly significant losses. These threats are driven by habitat degradation and loss, pollution, overexploitation, and climate change, resulting in the loss of species and genetic diversity and increasing risks to endemic and threatened species.

Several international organisations, including United Nations bodies and intergovernmental conventions, are working towards the conservation and sustainable use of aquatic biodiversity. In this context, the FAO Global Plan of Action (GPA) for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture (AqGR) provides an international framework to support the conservation, sustainable use of aquatic genetic resources, including farmed aquatic species and their wild relatives.

Effective implementation of these conservation priorities requires comprehensive characterisation of aquatic genetic resources at both interspecific and intraspecific levels, together with appropriate in-situ and ex-situ conservation approaches. Interspecific characterisation is essential for accurately documenting fish diversity, resolving closely related and cryptic species, understanding evolutionary relationships, and identifying species-specific ecological and biological characteristics. Intraspecific characterisation comprises biological and genetic characterisation, including the assessment of genetic diversity and identification of genetic stocks, and is pivotal for understanding population-level variation and developing effective conservation and sustainable management strategies. These characterisation approaches provide the scientific basis for designing and implementing appropriate conservation measures to safeguard and maintain genetic diversity for future generations.

About the Winter School

The objective of this national-level winter school is to develop taxonomic, biological & molecular level expertise for assessment, characterisation, and conservation of fish genetic resources.

The winter school will be conducted by the Germplasm Exploration, Evaluation and Conservation Division of ICAR-NBFGR from 1–21 December 2026, and will comprise a series of lectures and hands-on training sessions covering taxonomic, biological, and molecular approaches to aquatic biodiversity assessment, genetic characterisation, and conservation. The major topics are as follows:

- Conventional taxonomy and radiographic imaging: Identification of fishes using morphological; meristic, and anatomical characters; and radiographic imaging
- Biological and morphometric characterisation: Estimating growth parameters and condition factor indices from length-weight data; reproductive biology and gut content analysis.
- Ex-situ conservation: Cryopreservation of fish sperm; broodstock management for hatchery production; conservation aquaculture; and genetic management of threatened species.
- Molecular tools for genetic diversity assessment: Isolation of total genomic DNA and quantification; Primer designing and PCR amplification of microsatellite loci, genotyping on PAGE; and mitochondrial genes (barcoding and genetic divergence); neutral and adaptive genetic diversity; data analysis and interpretation.
- GIS and remote sensing: Basic concepts of geospatial tools, creating maps, layers, coordinate systems; Creation and editing of shapefiles for spatial mapping using open-source tools; Applications in fisheries research and aquatic resource mapping

About ICAR-NBFGR

ICAR-NBFGR serves as a national focal point for research on aquatic genetic resources and the diversity they encompass. The Bureau works to mainstream genetic-diversity considerations and to build the capacity of stakeholders and fellow researchers. It also provides scientific inputs to support policymaking and India's compliance with international obligations including sustainable development goals.



Through its mission to collect, catalogue and document fish genetic resources using partnerships and cutting-edge technologies, ICAR-NBFGR assesses and conserves this vital genetic wealth for healthy ecosystems, supporting resilient fisheries, intellectual property protection and sustainable utilisation. The Bureau is recognized and designated by the National Biodiversity Authority (NBA), Government of India, as the nodal repository under section 39 of the Biological Diversity Act, 2002. The institute has strengthened its status by establishing the National Fish Museum and Repository.

Over the years, the institute has transformed into a leading institution to address research related to the conservation of aquatic genetic resources. The institute has seen tremendous growth in its research programmes in important areas viz., whole genome sequencing, population genetics, transcriptomics, ex-situ and in-situ conservation, sperm cryobanking, molecular disease diagnostics and therapeutics, national surveillance programme for aquatic diseases, antimicrobial resistance in fisheries and aquaculture, exploration of newer and unexplored geographical areas for assessment of fish diversity, etc.

Faculty

The faculty will comprise leading scientists, experts, teachers, and researchers with extensive experience in their respective fields of specialisation.

Eligibility and selection

Assistant/Associate Professors, Scientist/Senior Scientist, or equivalent from ICAR institutes/SAUs/State fisheries officials under NARES working in fisheries resource management, fish genetics, aquaculture, taxonomy, biotechnology, life sciences, and allied disciplines are eligible. The intake is limited to 25 participants. Selection will be based on merit and first-come, first-served, subject to receipt of applications duly forwarded by the competent authority.

Duration Twenty-one days from December 01 to 21, 2026

Travelling allowance and accommodation

Participants will be reimbursed for their onward and return journey by the shortest route by road or rail. Reimbursement will be limited to the maximum admissible fare for AC 2-Tier by train, regardless of the mode of travel chosen by the participant. Participants are required to produce original bills to support their claim.

Boarding & Lodging

Expenses on boarding and lodging arrangements of selected candidates will be borne by the organisers, as per the existing guidelines.

- Accommodation facilities will be available only for registered participants. Family members or accompanying persons are requested to make their own accommodation arrangements.
- Local participants will not be entitled to boarding and lodging facilities. However, working lunch and sessional tea/refreshments will be served to them during the programme.
- No Daily Allowance (DA) will be admissible to the participants.

Registration & Application

Eligible candidates may submit their applications through the prescribed Registration Form, duly forwarded by the competent authority of their respective organisations, and email the completed form to icarnbfgrowthschool@gmail.com. Candidates are also required to pay a registration fee of **Rs. 50 using the QR code provided below**. A receipt will be issued upon payment.



About Lucknow

Lucknow, the capital city of Uttar Pradesh historically known as the Awadh region, is believed to begin after Lord Ram of Ayodhya. Lucknow's rise to growth and fame begins with its elevation to a capital city. The architectural contributions of the Awadh rulers, many paintings of whom are maintained at the Art Gallery today, include numerous palaces. Of the monuments standing today, the Bada Imambara, the Chhota Imambara, and the Roomi Darwaza are notable examples.

Today, Lucknow is a vibrant city with a perfect blend of the ancient with the modern, as many glitzy shopping arcades coexist with the old monuments. Lucknow has emerged as a "Science City", as numerous national laboratories, premier medical colleges, universities along with engineering and management institute exists here. The greatest attraction of Lucknow, where the past jostles with the present, is its unique ability to achieve harmony.

Lucknow, the golden city of the east retains an old world charm that fascinates one and all. Regarded as one of the finest cities of India, Lucknow emanates a culture that combines emotional warmth, a high degree of sophistication, courtesy and a love for gracious living. This sublime cultural richness famous as 'Lucknowi Tehzeeb' blends the cultures of several communities living side by side for centuries, sharing similar interests, speaking a common language.



Last date of receipt of application
30.10.2026

Intimation of selected candidates
03.11.2026



Acceptance by the participants
10.11.2026

Organizing Team

Patron

Dr Kajal Chakraborty
Director
ICAR-NBFGR

Course Director

Dr. Rajeev K. Singh
Principal Scientist & Head
Germplasm Exploration, Evaluation & Conservation Division
ICAR-NBFGR

Course Co-Director

Dr. Rejani Chandran
Senior Scientist
GEC, Division
ICAR-NBFGR

Coordinators

Dr. L. Mog Chowdhury, Senior Scientist, GEC, ICAR-NBFGR
Sh. Jaspreet Singh, Scientist, GEC, ICAR-NBFGR

Contact

Director

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ICAR-sponsored Winter School on Aquatic Biodiversity Conservation using Integrative Taxonomic, Biological and Molecular tools

December 01-21, 2026



Application for participation

1. Personal Details

1. Name (in block letters) : _____
2. Designation : _____
3. Name of the Institute : _____
and Address : _____
4. Communication : _____
address : _____
5. Email : _____
6. Phone number : _____
7. Date of birth : _____
8. Sex : _____

9. Teaching/research/professional experience (mention post held) during the last five years.

S.No.	Post Held / Experience
1.	
2.	
3.	

10. Important publications

S.No.	Title / Details
1.	
2.	
3.	

11. Mention if you have participated in any research seminar, Summer/ Winter/ Short Course etc. during last five (5) years under ICAR./ Other organizations.

S.No.	Program / Seminar / Course
1.	
2.	
3.	

12. Educational Qualifications:

Degree	Discipline & Specialization	Year	Class	University
Ph.D				
Master				
Bachelor				
Others				

I hereby declare that the information provided above is true and correct to the best of my knowledge and belief. I understand that if selected, I will abide by the rules and regulations of the ICAR-NBFGR Winter School program.

Place: _____
Date: _____

(Signature of the Applicant)

Forwarding from the Competent Authority of the applicant's institution

This is to certify that Dr./Mr./Ms. _____ is an employee of our Institute/University/College. There is "No Objection" to his/her participation in the Winter School on "Aquatic Biodiversity Conservation Using Integrative Taxonomic, Biological and Molecular Tools" to be organised by ICAR-NBFGR, Lucknow, during December 01-21, 2026. If selected, the candidate will be relieved in time to attend the Winter School program.

Name & Designation of the Competent Authority: _____

(Signature of the Competent Authority)

Office Seal



Date: _____