



FUNGAL CONSERVATION & BIODIVERSITY DOCUMENTATION IN GUJARAT, INDIA

OPEN-ACCESS FUNGAL BIODIVERSITY RESEARCH AND CONSERVATION PLATFORM
(FUNGI OF GUJARAT)

PROJECT PERIOD (PHASE I): 2025–2027
LONG-TERM VISION: 2025–2035

PROJECT LOCATION
GUJARAT, INDIA

Executive Summary

Fungi play essential roles in ecosystem functioning, including nutrient cycling, soil health, and plant interactions. Despite their importance, they remain one of the least documented and underrepresented groups in biodiversity research and conservation, particularly in India, limiting their inclusion in conservation planning and environmental decision-making.

Gujarat supports diverse ecosystems with high potential fungal diversity; however, systematic documentation remains limited, resulting in critical gaps in baseline biodiversity data. The Fungi of Gujarat initiative addresses this gap through integrated field surveys, taxonomic identification, and DNA-based methods (ITS barcoding) to generate reliable, geo-referenced biodiversity data.

During Phase I (2025–2027), the project will survey 15–25 sites, generate 300–500 records, identify 150–250 species, and develop a regional fungal checklist. All outputs will contribute to an open-access biodiversity resource.

The initiative has already documented over 150 species and compiled 300+ records. By strengthening baseline data and awareness, the project supports evidence-based conservation, long-term ecological monitoring, and the inclusion of fungi in biodiversity frameworks.

Background & Rationale

Fungi are essential for ecosystem functioning but remain one of the least documented components of biodiversity, particularly in tropical regions.

In India, fungal diversity is underexplored and existing data are fragmented. Gujarat's diverse ecosystems likely support significant fungal diversity; however, systematic documentation remains limited.

This lack of baseline data restricts understanding and limits the inclusion of fungi in conservation planning and environmental decision-making.

The Fungi of Gujarat initiative addresses this gap through integrated field surveys, taxonomic identification, and DNA-based methods to generate reliable, geo-referenced biodiversity data and develop an accessible regional dataset.

Conservation Context in Gujarat

Gujarat supports a wide range of ecosystems, including dry deciduous forests, grasslands, wetlands, and coastal habitats, each with high potential for fungal diversity.

Despite this diversity, fungal documentation remains limited and uneven, with most records derived from isolated studies or historical reports. This results in significant gaps in understanding fungal diversity across regions and habitats.

Increasing environmental pressures—including habitat alteration, land-use change, and climate variability—are likely impacting fungal communities. However, the absence of baseline data limits the ability to assess these impacts or integrate fungi into conservation planning.

Systematic, ecosystem-based documentation is essential to generate reliable and regionally representative biodiversity data for conservation planning in Gujarat.

Conservation Challenge (Threats)

Fungal diversity is increasingly affected by habitat loss, land-use change, and climate variability, which alter ecological conditions and reduce suitable habitats.

In Gujarat, these challenges are compounded by the lack of systematic fungal documentation. Without baseline data, it is difficult to assess species distribution, detect changes, or evaluate ecological impacts.

As a result, fungi remain largely excluded from conservation planning and environmental decision-making. Addressing these challenges requires generating reliable baseline data to support monitoring, conservation strategies, and policy inclusion.

Our Conservation Focus

The Fungi of Gujarat initiative focuses on documenting fungal diversity through systematic, ecosystem-based field surveys combined with taxonomic and molecular approaches.

The project integrates field observations with morphological and DNA-based identification methods to ensure accuracy and reproducibility of biodiversity data.

It also promotes open-access knowledge to support research, education, and conservation planning. The overall focus is to establish a reliable baseline dataset to support long-term monitoring and the inclusion of fungi in conservation frameworks.

Our Approach

The initiative integrates field-based surveys with taxonomic and molecular methods to generate reliable fungal biodiversity data.

Systematic field documentation includes observation, specimen collection, and habitat-level recording. Species identification is conducted using morphology and supported by DNA-based methods (ITS barcoding). All data are geo-referenced and curated.

The project also promotes conservation through workshops, seminars, student training, and community outreach, particularly in rural areas, supported by educational materials. Data are integrated with existing records and shared through the Fungi of Gujarat platform as an open-access resource.



Project Outputs

During Phase I (2025–2027), the project will deliver:

- 15–25 survey sites across diverse ecosystems
- 300–500 geo-referenced fungal records
- 150–250 identified species (morphology + ITS barcoding)
- Regional fungal checklist (1900–2027)
- Open-access fungal biodiversity database

Additional outputs include:

- Workshops and training programs
- Community outreach in rural areas
- Educational materials (presentations, posters)

Current Progress

The initiative has already made significant progress:

- 150+ fungal species documented
- 300+ curated records compiled
- Regional checklist (1900–2026) in development

Initial work has established a strong foundation for systematic biodiversity documentation and data management.

Impact and Purpose

This project generates critical baseline data on fungal biodiversity in Gujarat, addressing major knowledge gaps and supporting evidence-based conservation planning.

The data produced will be shared as an open-access resource and can support researchers, conservation practitioners, and biodiversity authorities in integrating fungi into ecological assessments and environmental decision-making.

By combining field surveys, taxonomic identification, and DNA-based methods, the initiative enables long-term monitoring of fungal diversity across ecosystems and contributes to strengthening the recognition of fungi within biodiversity frameworks in India.

Long-Term Vision

The initiative aims to develop a comprehensive and accessible fungal biodiversity resource for Gujarat. It will expand dataset coverage, strengthen regional documentation, and support long-term ecological monitoring.

The long-term goal is to integrate fungi into biodiversity research, conservation strategies, and environmental policy frameworks in India.

Project Leadership

The initiative is led by **Dr. Ravi S. Patel**, a molecular mycologist and Research Scientist with over 10 years of experience in fungal taxonomy, biodiversity documentation, and DNA-based identification.

The project is developed in collaboration with **Prof. Kishore S. Rajput** (The Maharaja Sayajirao University of Baroda, India), who serves as Principal Investigator and Scientific Mentor.

The Fungi of Gujarat platform serves as an open-access resource for data sharing, collaboration, and long-term conservation impact.

FUNGI OF GUJARAT

Open-access fungal biodiversity research and conservation platform

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