CENTRE FOR APPLIED RESEARCH AND PEOPLE'S ENGAGEMENT

PRAKRITI RESEARCH FELLOWSHIP

PRAKRITI RESEARCH FELLOWSHIP (2024-2025)

FINAL SUMMARY

CENTRE FOR APPLIED RESEARCH AND PEOPLE'S ENGAGEMENT

PARTNERS

PRAKRITI RESEARCH FELLOWSHIP

SPORTZ INTERACTIVE

Lions to Power

MIT Quest for Excellence

FAIRMACS across all boundaries

Prajanya kendrekar

Kedar Deshpande

Kedar Shah

Manjot Kaur

Arvind Iyengar

Noopur Desai

Mukund Bhogale

Naveen Aranha

Madras Hedgehog in Tiruppur, Tamil Nadu

Abinesh Muthaiyan

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Background:

The Madras Hedgehog (*Paraechinus nudiventris*), endemic to southern India, faces threats from hunting, habitat loss, roadkill, and illegal trade. Although currently listed as "Least Concern" by IUCN, its recent inclusion under Schedule II of the Wildlife (Protection) Act, 1972 indicates rising vulnerability. This project focused on studying the species' dietary habits, ecological role, and designing conservation measures to support its protection. Hedgehogs act as natural pest controllers, benefiting agriculture, but remain poorly understood and unprotected.

Objectives:

Identify dietary patterns using molecular techniques.
Develop a conservation action plan addressing habitat loss and illegal trade.
Build community-based frameworks for sustainable habitat protection.

Key Outcomes:

First systematic dietary data confirming dependence on invertebrates and grains.
District-specific conservation action plan submitted to authorities.
Strengthened community engagement through VFCs and trained volunteers.
Awareness campaigns reduced exploitation of hedgehogs.
Established sustainable partnerships among villagers, NGOs, and forest officials.
Provided scientific basis for inclusion in biodiversity priorities.

Plan Ahead:

Complete molecular dietary profiling and publish findings.
Launch Hedgehog Monitoring Network with VFCs and schools.
Implement roadkill mitigation in high-risk zones.
Expand Tamil-language education programs.
Strengthen policy advocacy for legal protection and biodiversity action plan inclusion.

For more project details, please visit - https://linktr.ee/Abinesh_Muthaiyan

Conservation of Asiatic Wild Dog in Kanha Tiger Reserve, MP

Aditya Rana

Background:

The Dhole (*Cuon alpinus*), once widely distributed across South, East, and Southeast Asia, now has a fragmented range due to habitat loss, prey depletion, and persecution. Currently found in 11 Asian countries, its global population is estimated at fewer than 2,500 individuals, making it an endangered species. In India, Dholes have been extirpated from about 60% of their historic range. Madhya Pradesh, especially Kanha Tiger Reserve, is a key stronghold for the species, but site-specific ecological data are limited. This project aims to fill that knowledge gap to support long-term conservation.

Objectives:

Determine population status, distribution, and diel activity patterns of Dholes in Kanha Tiger Reserve.

Investigate the dietary spectrum of Dholes.

Build capacity among forest department staff for long-term monitoring.

Key Outcomes:

Distribution and dietary information is available to managers for targeted conservation.

Forest staff trained for long-term species monitoring.

Plan Ahead:

Continue data collection and finalize results.

Develop a monitoring protocol booklet in the local language.

Submit annual reports to Kanha management and The Corbett Foundation.

Present findings at national/international conferences and publish research articles.

Biodiversity Conservation Through Nature Education, Karnataka

Dhananjay Kumar

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Background:

The Central Western Ghats, a global biodiversity hotspot, supports high endemism and provides vital ecosystem services. However, rural schoolchildren—especially those in government and blind schools—have limited access to experiential nature education. Existing methods are mostly visual and fail to include visually impaired learners. This project aimed to bridge that gap through inclusive, multisensory, place-based education, using tools like tactile models, soundscapes, Braille guides, and eco-trails.

Objectives:

Teach students about local taxa.
Conduct eco-activities (walks, planting, biodiversity mapping).
Build awareness of human–wildlife coexistence.

Key Outcomes:

Designed and implemented nature education outreach programs reaching 1500+ students across Karnataka.
Enhanced students' understanding of local biodiversity, ecosystems, and environmental issues.
Conducted field-based activities to develop skills in species identification and ecological observation.
Trained and mentored future nature educators to independently lead community programs.
Made learning locally relevant and experiential, fostering stronger connections with nature.

Plan Ahead:

Scale up programs across more districts (Uttara Kannada, Chikkamagaluru, Shivamogga).
Create region-specific handbooks and bilingual (Kannada & English) resources.
Strengthen eco-clubs with structured calendars.
Train teachers as biodiversity educators.
Expand inclusive education to all blind schools in Karnataka.

Conservation of Salem Ornamental Tarantula in Eastern Ghats of Tamil Nadu

Gautam Kadam

Background:

India harbors over 120 species of mygalomorph spiders, with ~90% endemism. The Salem Ornamental Tarantula (*Poecilotheria formosa*), endemic to the Eastern Ghats, is under threat from habitat loss, anthropogenic pressures, and pet trade.Despite being popular in the pet market, it faces extinction risk due to deforestation, logging, and development. Historical records exist from Nallamalai Hills (Andhra Pradesh) and Kiluvamalai (Tamil Nadu), with the latter being the only confirmed record in Tamil Nadu after its first description in 1899. Sparse ecological and conservation data highlight the urgent need for detailed assessment.

Objectives:

Evaluate the conservation status of *P. formosa* within the Eastern Ghats of Tamil Nadu.
Identify habitat requirements (macrohabitat) and tree preferences.
Identify and address illegal pet trade.

Key Outcomes:

Tree preferences: Breeding females strongly prefer *Albizia amara*; non-breeding individuals also found on *Prosopis juliflora*, *Wrightia tinctoria*, and *Strychnos nux-vomica*.

Plan Ahead:

Extend study to other *Poecilotheria* species for ecological, biogeographic, and taxonomic revalidation.
Strengthen monitoring and documentation of illegal wildlife trade in tarantulas.

Biodiversity Conservation in Surendranagar's Commons in Chotila, Gujarat

Manya Singh

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Background:

This project focuses on community-driven conservation of approximately 40,000 hectares of tropical scrub savanna in Surendranagar, Saurashtra, Gujarat. Recognizing the ecological and cultural significance of semi-arid grasslands, the initiative integrates formal ecological methods with local knowledge from pastoralist (Maldhari) communities. The project aims to address grassland degradation, human-wildlife conflict, and underrepresentation of grasslands in mainstream conservation planning.

Objectives:

Develop an evidence-based database on the Chotila landscape's biodiversity, with emphasis on vegetation, mammalian species (including Indian gazelle, Indian grey wolf, and striped hyena), and key ecological threats. Foster community awareness and engagement through inclusive outreach, education, and participatory methods.

Key Outcomes:

Baselines established for vegetation, floral diversity, and key mammal species (leopard, hyena).
Livestock depredation and crop loss assessments completed.
Outreach highlights: film screenings, wildlife cricket event, documentary, youth training, women's workshop, and nature trail with photography exhibition.

Plan Ahead:

Expand youth training to 30 participants across 10 villages.
Conduct ongoing biodiversity and socio-economic baseline assessments.
Pilot grassland restoration, invasive species management, and human-wildlife conflict mitigation.
Establish community-led livestock banks and strengthen grassland governance.
Support recovery of key species and develop knowledge resources for policy advocacy.

For more project details, please visit -
https://www.instagram.com/conservationindica?igsh=MTBhNTE2ZHYxZDV6aA%3D%3D&utm_source=qr

Urban Nature Education : A Community Approach in Hyderabad

Nivedita Tuli

Background:

In cities across the world, children are experiencing “nature-deficit disorder”, a condition characterized by declining physical and mental health and well-being due to lack of time spent outdoors. In India, access to ecological education and protected areas is limited to children from affluent backgrounds. Public imagination of nature is limited to charismatic habitats like rainforests and mountains, and creatures like lions, tigers, and elephants. There is a need to develop urban children’s capacity to notice and engage with diversity “critters” in their own neighbourhoods. Place-based urban ecological education must be accessible to all children, across the spectrum of class, caste, race, religion, gender, and ability.

Objectives:

Project Critterabad aimed to: (1) revitalize an abandoned park in a low-income neighbourhood in Hyderabad as a nature learning centre; (2) cultivate the “arts of noticing” critters among local children through ecological education lessons; (3) develop a manual for educators so that this initiative can be replicated.

Key Outcomes:

Project Critterabad’s anchor site, Prem Nagar Rock Garden in Hyderabad was revitalized as a nature learning hub for the neighbourhood.

A Summer Nature School was organized in Prem Nagar basti.

A Monsoon Workshop series was conducted in the Arsh Mahal basti, adjoining the Mir Alam Talab, a historic water body.

A Travelling Nature Museum was curated and used as a pedagogical tool for lessons in Prem Nagar and Arsh Mahal.

A public educators’ workshop was organized, an urban ecology reading circle was held monthly, an intern was trained to design and conduct lessons, policy briefs were submitted to the municipal corporation.

A detailed manual titled, Project Critterabad: Lessons from the Margins of Urban Ecology has been developed.

Plan Ahead:

The Manual is being professionally designed for wider circulation. Nivedita shall be expanding her ecological education and restoration efforts with EcoSattva by designing an experiential nature learning programme for the Kham Eco Park.

Conservation Threatened Endemic Trees of Northern Western Ghats

Pratiksha Mestry

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Background & Introduction:

The Western Ghats (Sahyadri) is a UNESCO World Heritage Site and recognized as the 36th global biodiversity hotspot. However, the Northern Western Ghats are more fragmented and degraded compared to the southern region due to increasing anthropogenic pressures that threaten its biodiversity.

Against this backdrop, two threatened woody tree species—Prunus ceylanica (Endangered) and Hydnocarpus pentandrus (Vulnerable)—were selected for study and conservation efforts.

Objectives:

Assess the current population and regeneration status of H. pentandrus and P. ceylanica to identify suitable reintroduction sites.
Study fruit and seed traits for both species.
Develop strategies for large-scale propagation.
Replenish declining wild populations.
Raise awareness among stakeholders and local communities about the conservation of these species.

Key Outcomes:

Developed a distribution map for both focal species.
Established baseline data for mass multiplication protocols.
Distributed saplings to local communities and nursery growers across the Northern Western Ghats.
Conducted awareness sessions with communities to share information and gather traditional knowledge about the species.
Facilitated community and student participation in species reintroduction efforts.

Plan Ahead:

Scale up propagation efforts to produce larger quantities of saplings for wild population restoration.
Continue monitoring reintroduced plants for growth parameters like collar diameter, height, and flushes.
Share findings with forest department and other officials to guide conservation planning.
Publish results in a peer-reviewed scientific journal to contribute to broader conservation knowledge.

For more project details, please visit - https://www.instagram.com/reel/DPTegYqk9QH_CJ22YlOqB06MrQa2k5o_yKXM_I0/?igsh=dWR2Nzc3cWhodTFr

e-DNA Investigation Invasives in Bengal

Srijan Haldar

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Background:

The invasive Suckermouth Catfish, native to South America, has become a significant threat to aquatic biodiversity in the Gangetic basin, particularly in stagnant and slow-moving water bodies in Kolkata and Howrah. Its introduction—often unregulated—has disrupted local ecosystems by outcompeting native fish species, negatively impacting both biodiversity and the livelihoods of communities dependent on fisheries and aquaculture. In response, this project, in collaboration with the NGO *The Climate Thinker*, employs **environmental DNA (eDNA) monitoring** as a non-invasive, scientific approach to detect and map Pterygoplichthys populations. Early detection allows for targeted removal, and ongoing post-removal monitoring ensures water bodies remain free from re-invasion. The project aims to develop a sustainable model for invasive species management, preserving native biodiversity while safeguarding local livelihoods.

Objectives:

Map the distribution of Pterygoplichthys in urban and peri-urban wetlands using eDNA and field surveys.
Engage stakeholders—including local communities, waterbody owners, and authorities—to raise awareness and coordinate management efforts.
Build capacity among college and university students in molecular ecology and invasive species management through hands-on training workshops.

Key Outcomes:

Developed a hotspot distribution map for strategic interventions.
Validated a cost-effective, minimally invasive eDNA protocol for early detection.
Conducted awareness campaigns and identified human behaviors contributing to the invasion.
Trained over 70 students in molecular ecology, strengthening future conservation capacity.
Established a replicable framework for invasive species management combining science, awareness, and education.

Plans Ahead:

Expand eDNA monitoring to other invasive and threatened native species.
Develop a regional eDNA reference library for aquatic biodiversity.
Continue student training and internships in advanced molecular techniques.
Strengthen partnerships with government agencies, academic institutions, and NGOs.
Establish long-term monitoring sites for early detection and ecosystem management.

Conserving Garo Hills' Rare Plants in Meghalaya

Tremie M. Sangma

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Background:

The project focused on the conservation of rare, endangered, and endemic plant species in the Nokrek Biosphere Reserve (NBR), Meghalaya, including *Citrus indica, Knema linifolia, Haematocarpus validus, Gleditsia assamica,* and *Sapria himalayana*. Previous biodiversity assessments highlighted a knowledge gap in plant identification, distribution, and population. Conservation success was envisioned through active involvement of the indigenous Garo community. The Prakriti Research Fellowship (PRF) enabled community engagement, awareness building, and scientific approaches to plant conservation.

Objectives:

Develop a pool of para botanists to monitor rare plants and habitats.
Engage the Garo community in the conservation of rare plants.

Key Outcomes:

Knowledge of rare plants disseminated among communities.
Leaflet and booklet developed for reference and awareness.
Para botanists trained in scientific monitoring, building confidence as guides and mediators.
Raised small nurseries for *Baccaurea ramiflora* and *Parkia timoriana* for school plantations.

Plan Ahead:

Develop a community conservation area for *Sapria himalayana*, recently observed after four years.
Further study distribution and conservation of *Nepenthes khasiana*.
Expand understanding of geographic distribution, population, and community conservation of endangered and endemic species.

Conservation Endangered Flowers Suru Valley Kargil Ladakh

Younis Khan

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Background:

Ladakh, a high-altitude, cold, and arid region of the trans-Himalayas, has a fragile ecosystem rich in floral and faunal biodiversity, including important medicinal plants like Aconitum heterophyllum, Aconitum violaceum, Podophyllum hexandrum, Ephedra girardiana, and Rhodiola imbricate. Threats such as habitat loss, overexploitation, overgrazing, and declining traditional knowledge have made conservation urgent. The project aimed to raise awareness, conserve endangered plant species, and document traditional uses of medicinal plants, particularly those used in the Sowa Rigpa system.

Objectives:

Generate mass awareness among local communities, frontline staff, PRI members, students, and traditional healers.

Conduct field visits, GIS mapping, geo-tagging, and surveys of habitats for Aconitum heterophyllum and Aconitum violaceum and initiate conservation measures.

Develop seed banks and herbal gardens in schools and nearby primary health centers.

Key Outcomes:

Community-led conservation practices strengthened, particularly by women's groups.

Cultivation of endangered plants (Aconitum heterophyllum and Aconitum violaceum) initiated locally.

Positive impact on resource use and reduction in illegal trading.

Plan Ahead:

Complete remaining habitat identification, geo-tagging, and awareness programs in additional schools.

Turtles / Tortoises Diversity in Valmiki Tiger Reserve, Bihar

Dr. H.S. Mogalekar

Project Extension Granted. Final report expected by December 2025

Bumble - Bee Conservation in Rudraprayag, Uttarakhand

Abha Purohit

Project Extension Granted. Final report expected by December 2025

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THANK YOU