

Assessment of Faunal Diversity along the Laterite
Landscapes of Karnataka's Coastal Plains and
Conservation of the Same through Wide Scale
Community Involvement

Need for project

The spectacular laterite hills and plateaus along the coastal plains of South Karnataka are perceived as “wastelands” by the government authorities as well as local communities. This landscape supports great floral and faunal diversity throughout the year, especially in the monsoons. The current attitude towards these landscapes has led to large scale destruction of habitat due to overgrazing, quarrying and monoculture plantations for timber/fuel/pulpwood.

Images below:

Land cleared and flattened for construction (Top left), Dumping of garbage in the grassland (Top right), Exotic acacia plantations (Bottom left), New roads and plantations across grassland patches (Bottom right)



Objectives:

1. Assessment of faunal biodiversity
2. Involvement of local communities
3. Outreach and awareness

Assessment of faunal biodiversity

Sampling notes:

Birds

We walked regular routes and transects across 15 laterite grassland and scrub habitats of varying sizes around Manipal in the coastal district of Udupi from December to March. Sampling took place every day from 6 AM to 9 AM and from 4 PM to 6 PM.

Birds encountered outside of the sampling months were also included in the overall list.

We also used documented data collected in the past

Amphibians

We covered various microhabitats across the habitats around Manipal to enlist the amphibian diversity in the grassland and scrub habitats. A minimum of one hour was spent at each site every evening in August-September 2014 and June-August 2015.

Reptiles

We did not survey reptile diversity exclusively but relied on encounters and calls for snake “rescue” to assess and understand the species diversity found in the region.

Mammals

We used camera traps in strategic locations to document mammalian diversity. We also relied on chance encounters, tracks and scat evidence as well as the knowledge of locals to understand the species diversity in the region.

Birds

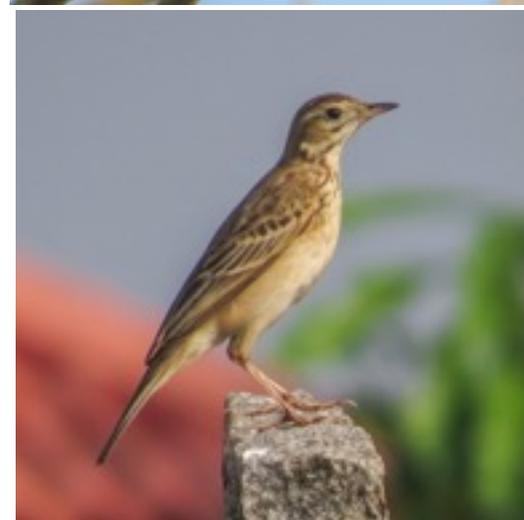
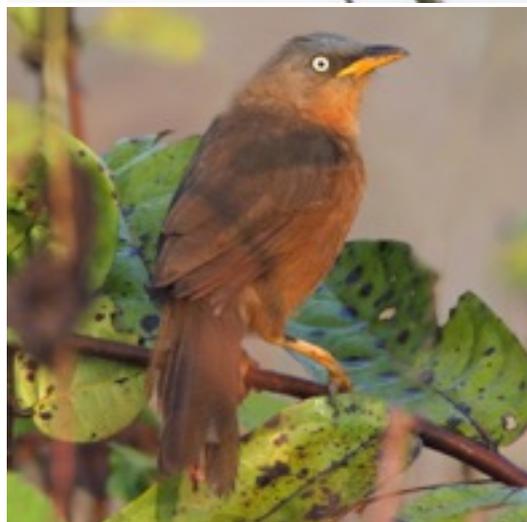
A total of 184 species were recorded from the grassland-scrub habitats, with the numbers pushing to over 220 if the habitat was to account for surrounding scrub forests as well. Some of the important finds were the presence of a number of Western Ghat endemics as well as a number of subcontinental endemics.

We also recorded the nesting of the little known Sri Lankan Frogmouth from one such scrub forest.

Western Ghat endemics found during the surveys:

1. Grey-headed Bulbul
2. Flame-throated Bulbul
3. Nilgiri Flowerpecker
4. Crimson-backed Sunbird
5. Rufous Babbler
6. Malabar Parakeet

Images below: Flame-throated Bulbul (Top left), Grey-headed Bulbul (Top right), Rufous Babbler (Bottom left), Blyth's Pipit (Bottom right)



Amphibians

A total of 22 amphibian species were recorded from the laterite scrub-grassland ecosystem during the monsoons when suitable areas turn in to temporary wetlands. These included a number of endangered and several species endemic to the Western Ghats region. We also discovered at least one species new to science (Description of the new species has been submitted and awaits full acceptance from a peer-reviewed journal). The new species also happens to be localised to laterite wetlands as per our surveys and represents a major breakthrough in terms of providing a flagship species and emphasising the need for further studies in such habitats.

Species endemic to the Western Ghats and recorded during the survey: *Euphlyctis mudigere*, *Euphlyctis aloysi*, *Fejervarya sahyadris*, *Indosylvirana intermedius*, *Hydrophylax malabarica*, *Indirana semipalmata*, *Microhyla* sp, *Ramanella mormorata*, *Pseudophilautus wynaadensis*, *Raorchestes tuberothumerus*, *Polypedates occidentalis*, *Rhacophorus malabaricus*

Images below: *Euphlyctis mudigere* (Top left), *Pseudophilautus wynaadensis* (Top right), *Hydrophylax malabaricus* (Bottom left), *Indosylvirana intermedius* (Bottom right)



Reptiles

A number of interesting snake species turned up during our surveys. We also encountered some species on “rescue” calls. 21 species of snakes were encountered in total - including Russell’s Viper, Saw-scaled Viper, Indian Cobra, Indian Rock Python, Whitaker’s Boa, Hump-nosed Pit Viper, Dumeril’s Black-headed Snake, Giri’s Bronzeback, Common Bronzeback, Common Wolf Snake, etc.

Images below: Indian Cobra (Top left), Demeril’s Black-headed Snake (Top right), Montane Trinket (Bottom left), Common Wolf Snake (Bottom right)



Mammals

We used camera traps at 15 different strategically located sites where surveys had turned up evidence of the presence of certain mammal species in the form of signs and tracks. Eventually, we were able to document and establish the presence of 20 mammal species (not counting bats, small rodents) including the Indian Leopard, Ruddy Mongoose, Golden Jackal, Crested Porcupine, Small Indian Civet, Malabar Langur, Black-naped Hare etc.

The presence of large mammals in an otherwise human-dominated landscape is indicative of the health of the ecosystem. Although the large carnivores recorded during the surveys are known to be adaptable and have been recorded to scavenge, our conversations with the locals revealed minimal conflict and thus, hope that there is enough prey base to support these predators.

Other encouraging signs included a breeding population of leopards - a female successfully raised two cubs to adulthood.

Images below: Ruddy Mongoose (Top left), Black-naped Hare (Top right), Indian Leopard (Bottom left), Crested Porcupine (Bottom right)



Short note: Man-animal conflict (Potential concern)

While no cases of animal attacks on humans were reported, and sporadic hunting incidents were reported; as human populations further encroach upon erstwhile wild habitats - the potential of conflict increases. Below is a series of photographs where a group of around 50 woodcutters move about in a stretch of grassland where the exotic Acacia has been planted in order to collect wood for fuel and timber. The paths they use are used by leopards, porcupines and others at night.



Leopard using the path a few hours later

Porcupine using the same tracks

Involvement of Local Communities

A total of 45 kids from the local communities were involved in sourcing information, or joined us for our survey routes for various periods of time (ranging from a week to almost 6 months). A lot of them were useful informants about local practices including hunting, providing location details and helped us with communication and language issues.

We involved multiple college students from all backgrounds in job roles relevant to their careers. These roles included filming documentaries, designing posters, social media content for spreading awareness, holding classes and workshops for students. All the participants had an enriching experience and learnt immensely about laterite grasslands are keen on continuing or being involved with conservation projects in one way or the other.

We initiated the “Backyard Frog walk” program which allows local landowners to host nature walks. These landowners benefit monetarily, raise money for school libraries as well as inculcate a sense of pride and ownership for the wildlife found in their backyards.

MANIPAL BACKYARD FROGWALK

When: Weeknights in July, August, September
Where: We meet at 1900 hrs at Seven Beans

If interested, please book a date in advance.

Cost: Rs 300 per person
*For students - Rs 100 per person

For more information:
Call: +91-9686915235
Email: ramitsingal@gmail.com

You don't have to be in a forest or a sanctuary to witness the wonders of the wild. The backyards of some of the houses in Manipal play host to some amazing biodiversity as well!

Take this opportunity to learn and observe different varieties of frogs and other animals that thrive here in the monsoon season. Take a peek at the secrets of the lives that dwell in the dark.

This is a conservation initiative and all the proceeds from the workshops go back to the house owners who maintain the habitat in their backyards and/or to fund the libraries of local government schools.



Outreach and Awareness

Awareness campaigns involving workshops, nature walks, small events were held in almost all local English-medium schools, some colleges and over 20 of the community/Kannada-medium schools, reaching out to over 2300 students in the process.

(Total schools covered = 46 across 2 districts, 9 towns)



Grade 8 students after a presentation on laterite grasslands. They now have a course on conservation as part of their curriculum.



1st year engineering students received presentations on laterite landscapes as part of their EVS course.

Several presentations, film screenings, open discussions etc for non-student audiences were also held.



Screening the project's frog documentary at a Beach Movie Festival, Udupi



Speaking about the project at the Zeiss Conservation Awards 2015, New Delhi

Several posters and charts have been put up in schools, shops, public spaces, etc.

MAJOR VENOMOUS SNAKES OF COASTAL KARNATAKA'S LATERITE LANDSCAPES

				
RUSSELL'S VIPER <i>Daboia russelii</i> 90-130 cms	SAW-SCALED VIPER <i>Echis carinatus</i> 25-50 cms	INDIAN COBRA <i>Naja naja</i> 140-180 cms	COMMON KRAIT <i>Bungarus caeruleus</i> 90-130 cms	HUMP-NOSED PIT VIPER <i>Hypnale hypnale</i> 25-50 cms
Thick body, Chain-like pattern.	Short, Pattern on body helps camouflage.	Hood-when erect, Pattern on hood, Rice-like oval scales.	Double-bands along body, Big hexagonal scales, along spine's length.	Short, Arrow-shaped head, Sits with head raised.
				

In case of bite, stay calm and don't panic. Don't exert, drink water, or eat food.
Don't constrict area around wound. Clean gently with antiseptic. Rush to nearest hospital.
Carry a torch at night. Do not walk barefoot, keep to marked path, and keep surroundings clean.

The Rufford Foundation
www.rufford.org 



COMMON FROGS OF LATERITE WETLAND ECOSYSTEMS IN SOUTHERN COASTAL KARNATAKA

- #1 BULL FROG (GROUND WATER)
- #2 GLEUNG FROG (BUSH TREE)
- #3 CRICKET FROG (GROUND WATER)
- #4 (GROUND) NARROW-MOUTHED FROG
- #5 (GROUND) PHEENVAYA
- #6 (BUSH) BUSH FROG
- #7 (BUSH) BUSH FROG
- #8 (SHRUBS) BURROWING FROG
- #9 (SHRUBS) TOAD
- #10 GOLDEN FROG (GROUND WATER)
- #11 SKITTERING FROG (WATER)
- #12 TREE FROG (BUSH TREE)

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Several home-to-home visits were made as well. During snake rescue calls, special efforts were made to talk to the inhabitants at the site about the relevance of snakes in the habitat they occupied.

On three days, we went from door to door to distribute posters and talk about laterite habitats and their inhabitants with local house owners. In general, most people received us well and healthy and informative discussions took place. We spoke to over 60 such households.

Media outreach was consistent with our initial aims and the project and/or its activities were featured in multiple newspapers and magazines such as:

1. Udyavani
2. The Hindustan Times
3. Bangalore Mirror
4. The Manipal Journal
5. Deccan Herald
6. AM Plus

The 'Manipal Backyard Frogwalk' was covered by national dailies and the model has received attention from various quarters as one to follow and pick up in other parts of the country.

We tried our best to capitalise upon the ease of access and the growing popularity of social media. Our Facebook page "My Laterite: My Habitat" is regularly followed by 700 people. However, the content - which includes the two short documentaries (one on amphibians and the other on small creatures in the grassland ecosystem) has reached out to over 10,000 people in total.

Manipal University Press has agreed to publish two books - one each on the birds and frogs of Manipal respectively - with special focus given to laterite grasslands and associated habitats in both books.