Inselbergs of Tumakuru

On the night of 16 December 2025, the three of us set off towards Bengaluru and then on to Tumakuru with one goal in mind: learn as much as possible about inselbergs and rocky outcrops in the time we had in Tumakuru and eventually develop a Detailed Project Report outlining an action plan for the ecological restoration of one of these rocky outcrops.

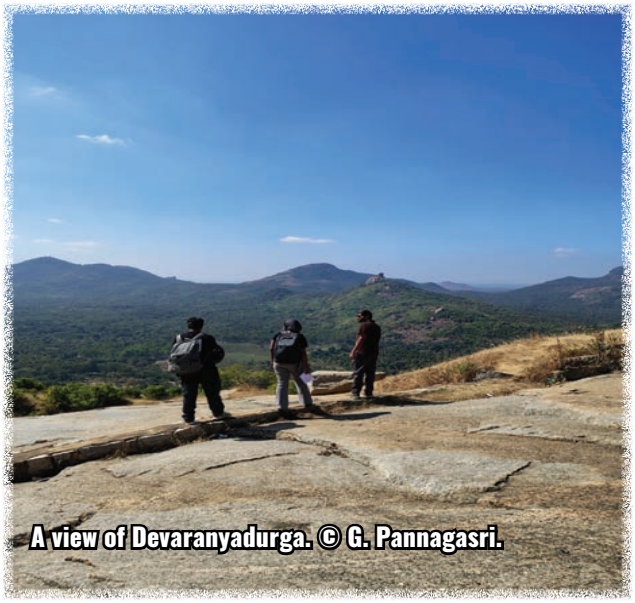
Inselbergs are isolated granite and gneiss hills that punctuate the plains and are vital landscapes. These ecosystems are often dismissed as 'wastelands', but they host unique microhabitats, endemic plants & animals, freshwater features, and cultural sites.

The next morning, we met with B.N. Sachin who works with Wildlife Awareness and Reptile Conservation Organisation (WARCO) and visited three main areas around Tumakuru exploring the different inselbergs.

Devarayanadurga Hill:

Devarayanadurga is a Reserve Forest. Historically, this landscape was dominated by grasslands, as evident from photographs from around 1850 showing open rocky hills with sparse vegetation. At present, most parts of the hills support dry deciduous vegetation, with dense green cover in several areas.

To observe the landscape at a glance, we stopped at a viewpoint area that is under high tourism pressure. A ropeway project has been proposed to boost tourism further. Tourism-related impacts observed include littering, blasting carried out for road expansion, and open gutters that have altered natural water flow. These open drains also pose a risk of



A view of Devaranyadurga. © G. Pannagasri.

trapping small wildlife. Fencing has been installed to prevent cattle grazing, which has also restricted wildlife movement. Artificial lighting installed for visitor safety has resulted in light pollution.

Soon after, we visited an open rocky viewpoint behind the Bhoga Lakshminarasimha Temple. Evidence of past quarrying was observed in the form of chipped granite surfaces. Although quarrying activity appears to have stopped. The area is heavily littered, including empty alcohol bottles and plastic waste largely associated with temple activities. Garbage is being burned at several locations, and in some places, surrounding vegetation has also been affected by fire.

Invasive species observed include *Tecoma stans* (yellow bells) and *Chromolaena odorata*. Signs of logging were noted along the access path. Lichens and mosses were observed growing on rock surfaces which form one of the microhabitats of inselbergs.


Admiring the inselberg. © Sachin B.N.

Sri Rajendrappa Swami Gudi – Aregujjanahalli Betta

A temple and a community gathering hall are present on the hilltop which are accessible through a drive right on the inselberg's rocky surface. There was evidence of pressure on wildlife in the form of snares indicating hunting activity. A water body with *Nymphoides* sp. (white aquatic flowers) was present on the rock surface.

Threats observed include agricultural encroachment, evidence of earlier mining activity, plantations of eucalyptus on hilltops and non-natives like Agave, *Vinca rosea*, *Chromolaena odorata*. Parts of the area are used for processing and storing agricultural harvest. Fencing on one side by the forest department plantation restricts animal movement. Close to the temple, littering of plastic waste was observed.

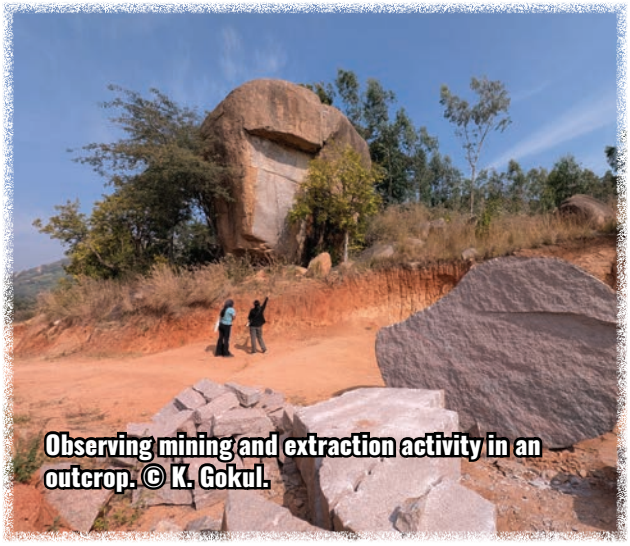
Maranayakanapalya Bamboo Plantation

This site is locally known as the bamboo plantation area, as bamboo has been planted extensively at the hill base by the forest department. Based on information from a local resident, three Sloth Bears regularly use this site as habitat. Signs indicating leopard territorial marking were observed. Other wildlife sightings included spiders, flock of Plum-headed Parakeets, and other birds. A man-made water hole was also seen at the base of the inselberg. Threats include monoculture plantations, grazing, extraction of resources like firewood and fodder, forest fires, intentional burning of grasses, and invasive species.

12th Battalion KSRP, Tumakuru

On 18 December 2025, we got the opportunity to visit a restoration effort at the 12th Battalion of Karnataka State Reserve Police, Tumakuru. On the way there our hired scooter started spurting out fuel and had to be dealt with immediately.


Interaction with Commandant Hamza Hussain. © Sachin B.N.


Observing mining and extraction activity in an outcrop. © K. Gokul.

Repaired for the time being and accompanied by a pumpkin we headed to the battalion where we met Hamza Hussain, Commandant of the 12th Battalion who wished us well for our project and was interested in hearing our observations about their initiative. We were shown around by S. Raghunandan who is currently leading the aforestation project at the battalion. He showed us the different tree species that had been planted on the hill and told us about their uses and identification characters.

Based on interactions with police personnel, the area was historically a grassland with open rocky patches. The hills that currently surround this project are also exposed to boulders dominated by grass, which is the natural vegetation type in the area. We observed that there were no measures taken to control invasives, a potential hindrance for growth of native species, we were told literature need not be consulted to take up restoration as long as you observe what is naturally there and increase its density. We believe that it is a drawback as literature review for confirming the nativity and learning from past restoration efforts can be extremely beneficial if not essential before trying to restore a habitat. Hence, there was a lack of habitat-specific planning or ecological approach to restoration and rather the focus was on greening an otherwise naturally grassy habitat albeit using tree species found to be native to the region in a broad sense. The effort was not systematically monitored which means there wouldn't be any way to analyse scientifically the changes that the planting will bring in the ecosystem there, not allowing for appropriate course correction and management either.

Monitoring, documentation, and disseminating findings from efforts like these can be useful to another trying to undertake restoration.

Thimmanayakanahalli Kere

On 19 December 2025 we started off early with Yogi, a local and a caretaker at Eesha Farmhouse and went through the vegetation patch past the Thimmanayakanahalli Kere (a lake) that leads to the foot of the Setupalya Betta, a hill. The lake was adjacent to a eucalyptus plantation which transitioned into a scrubby patch dominated by *Lantana camara* and *Chromolaena odorata*, along with some native tree species. Surprisingly, there was barely any regeneration of eucalyptus in this adjacent area. Pongamia, Jamun, and bamboo appear to have been planted by the forest department. The landscape includes mixed patches with a small stream flowing across the area twice. Camera trap records from this

A session with Lohit, Asha, Chinmay and Sachin. © G. Pannagasri.

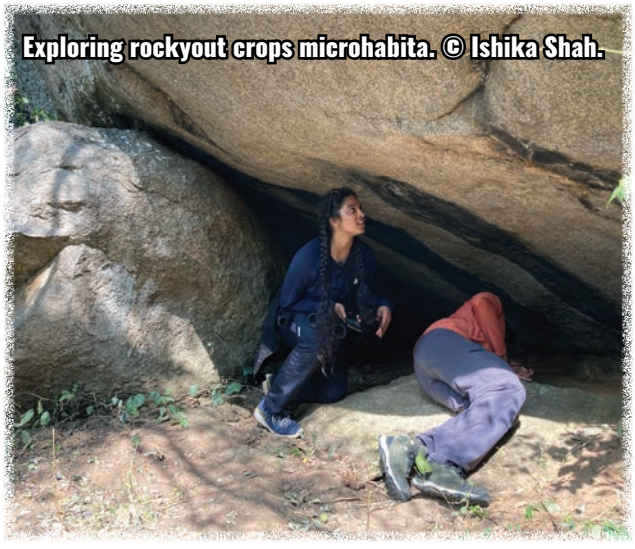
Plague cointaining details of plant planted by forest department in Thimmanayakanahalli Kere. © G. Pannagasri.

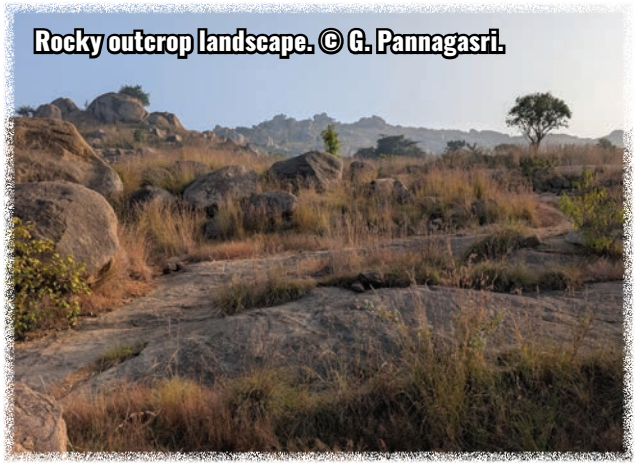
region between 2006 and 2020 have shown the presence of wildlife like Striped Hyena, Leopard, Wild Boar, Sloth Bear, and Jungle Cat. Mixed tree patches contained native trees and shrubs with moderate *Chromolaena* presence. Tussock grasses dominate several areas. Inselbergs on both sides are covered with bamboo and other trees, with *Chromolaena* present in patches. We got to learn the local Kannada names of the plants and trees that are common to the area along with some of their uses from Yogi.

Later after lunch and resting, we had the opportunity to interact with and interview Y.T. Lohith, a wetlands specialist at WWF-India and Asha, an artist and educator. We learned regarding their experience in this landscape, the way they work with communities and also realised how connected water bodies around here are to the inselbergs. We made a bonfire and discussed more about the region and about how they started working in the area.

Setupalya Betta hillocks

On 20 December 2025, we visited the hillocks close to our accommodation. Even though it looked intact from the outside, it had multiple threats which included agricultural encroachment, soil extraction for areca nut and ragi plantation, extraction of granite blocks, non-native and invasives like eucalyptus, *Lantana camara*, *Chromolaena odorata*, custard apple.


Exploring rockyout crops microhabita. © Ishika Shah.


Rocky outcrop landscape. © G. Pannagasri.

On the same day, we also visited the hillock next to the previous one. It was a difficult climb with no pathway and dominated by thorny bushes. While climbing we witnessed bear scat, fodder and wood extraction, and the common invasives. We were surprised to see non-natives like tamarind and neem growing at the top of the hill. While coming back from the hill, we saw more than 10 species of butterfly. By this time, all three of us were in love with the rocky outcrops. With each passing day we felt more connected to these outcrops.

12th Battalion – Alternate Hill

On 21 December 2025, we started off early on a foggy morning to the field, on one scooter to Koratagere. We climbed the hill that's next to KSRP's campus. This hill was dominated by dense perennial grasses, with rocks largely obscured. Invasive species such as agave, *Chromolaena odorata*, and *Lantana camara* were observed mainly at the vegetation fringe and lower slopes. Downhill areas also include horse gram cultivation, custard apple trees, and pongamia. Trees were sparse, stunted, and widely spaced.

Threats include increasing invasive species, agricultural expansion closer to the road, potential future encroachment, and plantation drives by the police department.

A visit to Janastu:

Followed by that, we rode back to Devarayanadurga to Janastu's Iruway Rural Research Lab to attend their annual flagship programme called Anthill Hacks, a week-long un-conference where people from different disciplines like ecology, business, technology, and social work come together to share their work around a set theme. This year the theme was "Commons" and accordingly there was a talk on community gardening being a lucrative practice for small landholders. Sheshadri Ramaswamy who works on floral biodiversity especially in southern India discussed with us his views on inselbergs and the native flora that's commonly found on them where he described to us what the typical characteristics of the vegetation would be. We attended a couple more engaging session and it was really heartening seeing the community they've built, free for everyone to be themselves, especially the kids.

Halekote Betta via Jenugundu Jungle Trail

On 22 December 2025, we climbed the Devarayanadurga Betta, past the Penakonda gate to the Bhoga Lakshminarasimha Temple. We were taken there by T.V. Praveen, a local floriculturist and wildlife enthusiast. The area contains multiple caves, and it holds a great historical significance. The hilltop is dominated by grasses, while surrounding areas are densely vegetated with trees.

Biodiversity observed includes spiders, Blue-faced Malkoha, Verditer Flycatcher, Indian Peafowl, quails, evidence of leopard and bear presence, ferns, lichens, and agama lizards. Threats include tourism pressure, plastic pollution, fire, cattle grazing, extraction of fodder or wood, agricultural encroachment, hunting, and invasive species such as *Chromolaena*, *Lantana*, eucalyptus, *Tecoma*, and neem.

Kavalgutte

On 24 December 2025, we set off to a hillock in Koratagere. The hill supports extensive grass cover with fewer trees. Grass diversity is high, ranging from tall tussock grasses (up to 1.8 m) to short grasses (~0.3 m). Short thorny shrubs are sparsely distributed. Trees are mostly restricted to the hill fringes, with very few on the top. Epilithic ficus species were observed.

Biodiversity observed includes high butterfly diversity, spiders, agama lizards, and Painted Spurfowl. Threats include agricultural encroachment (groundnut, castor, pigeon pea, ragi, guava), with up to four layers of cultivation extending from the fringe to near the top. Invasive species include Lantana, Chromolaena, Neem (less abundant compared to other sites).

A stream flows around the base, forming what appears to be a man-made pond. We decided this would be the rocky outcrop that we would develop our action plan for.

Agricultural activity at Kavalgutte. © K. Gokul

Perception studies:

On the same day, we prepared questionnaires and went out for surveys. We covered the local area and spoke to people across different age groups, from children to older adults. Some common perceptions about the use of fire for management of grasses emerged: (1) burning grasses in dry season provides better grass once rains return; (2) fear of wildlife, especially snakes and leopards; (3) difficulty moving through tall grasses; and (4) poor visibility, which makes people worry about leopards being nearby and has led to livestock losses.

Interacting with the locals. © K. Gokul.

Coversation around the fire. © G. Pannagasri.

Because of these concerns, burning the grass has become a common practice among local people. Interestingly, during our discussions, some children showed curiosity about the landscape and expressed interest in learning more and supporting conservation activities. By the end of our mentorship, we developed a detailed project report (DPR) titled “Action Plan for Ecological Restoration of Kavalgutte - A Rocky Outcrop in Tumakuru District”. We chose Kavalgutte because it is threatened by agricultural encroachment, invasives, livestock grazing, and burning of grasses. DPR proposes multiphasic step by step processes of possible approaches with scientific, landscape-specific, and community-linked action plans for ecological restoration of Kavalgutte. The plan prioritises stopping degradation first, allowing natural regeneration where possible, and using active restoration only where necessary and at appropriate magnitude.

These neglected landscapes host several endemic and endangered species, catering to several specialist reptiles, birds, mammals, amphibians by providing microhabitats. They also influence the nutrient and water supply in nearby areas. Thus, it is important to protect

An agama basking on the rocks. © G. Pannagasri.

these landscapes. We hope the action plan we developed will help in its restoration.

Acknowledgement:

First and foremost, we would like to thank the Zoo Outreach Organisation and Dr Sanjay Molur for giving us an opportunity to study the inselbergs of Tumakuru, Karnataka and guiding us. This study would not have been possible without the help of B.N. Sachin who guided us and shared his unwavering interest and love for the landscape with us. We are grateful to Hamza Hussain, Commandant of 12th Battalion KSRP, Tumakuru for interacting with us and S. Raghunandan for explaining the restoration work being carried out by the battalion. We also enjoyed interacting with B.G. Nisha and Chinmay C. Maliye who are contributing to exploring the taxonomic diversity of Tumakuru. We had an opportunity to meet Y.T. Lohith, who is a wetland specialist at WWF India and Asha, who is an artist and an educator, who brought more insight about the people's perception of the inselbergs of Tumakuru. We were delighted to meet T.B. Dinesh, the founder of Janastu, an NGO focused on providing free and open-source software solutions. We also met Sheshadri Ramaswamy, founder of Forestry For All who gave us insight into inselbergs. We are also thankful to T.V. Praveen, a local farmer and wildlife enthusiast for sharing his knowledge with us. We were delighted to meet B.S. Nagendra Rao, a retired deputy conservator of forest, for sharing his experience, journey and several important things about inselbergs, wildlife and people of Tumakuru. We are thankful to all the people of Tumakuru whom we came across for being kind, generous and sharing their thoughts with us.

G. Pannagasri, K. Gokul & Ishika Shah
RHATC Fellows 2025–26, Zoo Outreach Organisation, Coimbatore, Tamil Nadu, India.

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Last day with the team. © Sachin B.N.