Project Update: February 2024

We received the grant money sometime around this time last year and started our project on 1st April 2023. At that time, I was affiliated with IISER Bhopal till July 2023 and the work from April to July 2023 was conducted from there. Subsequently, I moved to Wildlife Institute of India (WII) in August 2023, and as you are aware, had to shift the grant money from IISER Bhopal to WII for continuing the remaining parts of the study. This process took some time, and I could restart the work only in January 2024. However, we have a covered a lot of ground since and I want to inform you about the progress we have achieved with regards to proposed project activities:

1. Comparing bird distribution between restoration areas and outside, across seasons, through: a. vehicle surveys for raptors and other large bodied and wide-ranging birds, and b. line transect surveys for quantifying diversity of birds inside and outside enclosures.

We have completed 446 km of raptor surveys and recorded most of the target species. We plan to complete another 200 km of surveys by mid-March 2024. The dynamically updated results of the raptor survey are summarised here: raptor survey locations (shinyapps.io). Similarly, we have completed 145 km of line transect surveys in winter and summer season to compare diversity of birds inside and outside enclosures. In addition, we have completed 37 km of surveys targeted at the threatened white-browed bushchat.

2. Understanding impacts of GIB focused restoration on population and distribution parameters of associated bird species, particularly threatened species and to establish a paradigm for monitoring demographics in the future using: a. capture and banding of small birds to monitor population parameters using mark-recapture techniques, and b. nest searches for both large and small birds to monitor demographic parameters in enclosures and outside.

We did a pilot effort for banding birds in April 2023 and realised that catching birds using mist-nets is not very effective in desert conditions. Based on this observation, we ordered a new set of equipment and tried another round in June 2023. But the results from this round were also disappointing and we thus shelved the plans to monitoring population parameters using mark-recapture. We however caught one of our target species, the white-browed bushchat and banded it in order to understand its ecology and monitor its presence across seasons. In terms of nest search, we could not conduct surveys during August and September 2023, which is the main breeding season for the smaller birds. However, we conducted thorough nest search for raptor nests in January and February 2024 and were able to locate a total of 20 nests, belonging to three threatened species (white-rumped vulture, tawny eagle and laggar falcon). These nests are currently being monitored for assessing nesting success. The demographic monitoring programme was preliminary in nature and our learnings from this year will help in designing long term monitoring protocols for the landscape.

3. Ascertaining status of resident threatened species of the Thar desert - white-browed bushchat, laggar falcon, Egyptian vulture, red-headed vulture, white-rumped vulture, Indian spotted eagle and tawny eagle: a. preliminary status assessment of aforementioned species using data collected from vehicle/ line transects and other

ad-libitum surveys, and b. standardization and refinement of survey methodology for monitoring.

We have managed to collect detailed information on the status of four threatened specie, tawny eagle, white-browed bushchat, laggar falcon and Egyptian vulture, and preliminary information on the status of four more threatened species, white-rumped vulture, red-headed vulture, steppe eagle and Indian spotted eagle. The rest of the species, pallid harrier, houbara bustard, yellow-eyed pigeon, imperial eagle, saker falcon, Indian vulture and sociable lapwing, had too few detections to conclude anything meaningfully. Methodology for the eight species mentioned above has been standardised and can be easily replicated for long-term monitoring of populations. In addition, an automated species recognition model for camera trap images of these species is being prepared based on data collected under this project, for remote monitoring in the future.

4. Acquainting relevant stakeholders with avifauna of the region through in-person meetings and distribution of outreach materials: a. meetings with implementation agencies (mainly the forest department) to disseminate information obtained during the study, and b. distribution of material such as bird photos and pamphlets in schools within the study area.

We have conducted informal meetings with local wildlife enthusiasts, forest department officials and tourist guide to raise awareness about threatened birds in the landscape. A few outreach sessions have been conducted in schools and more are planned during February 2024. Some outreach material about birds in the landscape has been distributed and more will be distributed in the outreach programmes planned for February 2024.

We are well on track to complete our objectives by the proposed end date of the project on 31st March 2024. Except for objective 2, we will be able to achieve all our objectives completely. Some activities under Objective 2 (particularly monitoring nesting success) will be continued beyond the tenure of this project. I will submit a detailed closing report before the end date of the project.

We plan to apply for a second Rufford grant, mainly to complete and take forward activities under objective 2, continue long-term monitoring of threatened birds in the landscape and increase the scope of our outreach programme to promote community stewardship for conservation of some of the threatened species, particularly vultures.