

FINAL ACTIVITY REPORT

BIFA2_07: Filling a longstanding data gap for birds: the Central Highlands of India

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1. Executive summary

Our aim in this project is to fill a major biodiversity data gap in the Central Indian Highlands by mobilizing existing avian occurrence records, carrying out fieldwork in under-surveyed locations, and conducting training sessions and workshops for both experts and enthusiasts in mobilizing further records beyond the duration of the project.

The two target states for this project were Madhya Pradesh and Chhattisgarh: both are biodiversity-rich States with relatively little known about the distribution and abundance of flora and fauna. This project was carried out by recruiting two local project personnel (one each from the two States) and working with local stakeholders to generate information and to build capacity.

As part of this, the project identified and digitized legacy bird information (from 1982 onwards) across the two States, from notebooks of experienced birdwatchers. Project personnel conducted a series of workshops on documenting, digitizing and sharing

biodiversity information, reaching a large number of people; many of whom joined in the effort to record and upload biodiversity observations to GBIF data providers eBird and iNaturalist. And finally, surveys were conducted to cover both States as widely as possible by project personnel, and generate and share more bird observations than were previously available.

The project was successful overall in meeting its objectives, to a greater degree in Chhattisgarh than in Madhya Pradesh. The involvement and enthusiasm of local stakeholders, including citizens groups and government departments was crucial in this.

In all, during the main activity period of the project (August 2017 to March 2018), 227,000 records were uploaded to eBird and 2,000 records were uploaded to iNaturalist from the region. The increased activity in terms of information generation and uploading to GBIF data providers continues after the project period has ended, and is expected to continue into the long term.

2. Contact information

Dr Suhel Quader, Project Lead
Nature Conservation Foundation, Mysuru, India
Email: suhelq@ncf-india.org

3. Project summary

This report is being written well after the completion of the project and all project activities are now complete. In the following sections, we make reference to our various project partners, notably the Forest Department of Chhattisgarh, and the voluntary groups Birds and Wildlife of Chhattisgarh, Chhattisgarh Wildlife Society (Raipur, Chhattisgarh), The Nature Volunteers (Indore, Madhya Pradesh), and Citizens for Nature (Jabalpur, Madhya Pradesh).

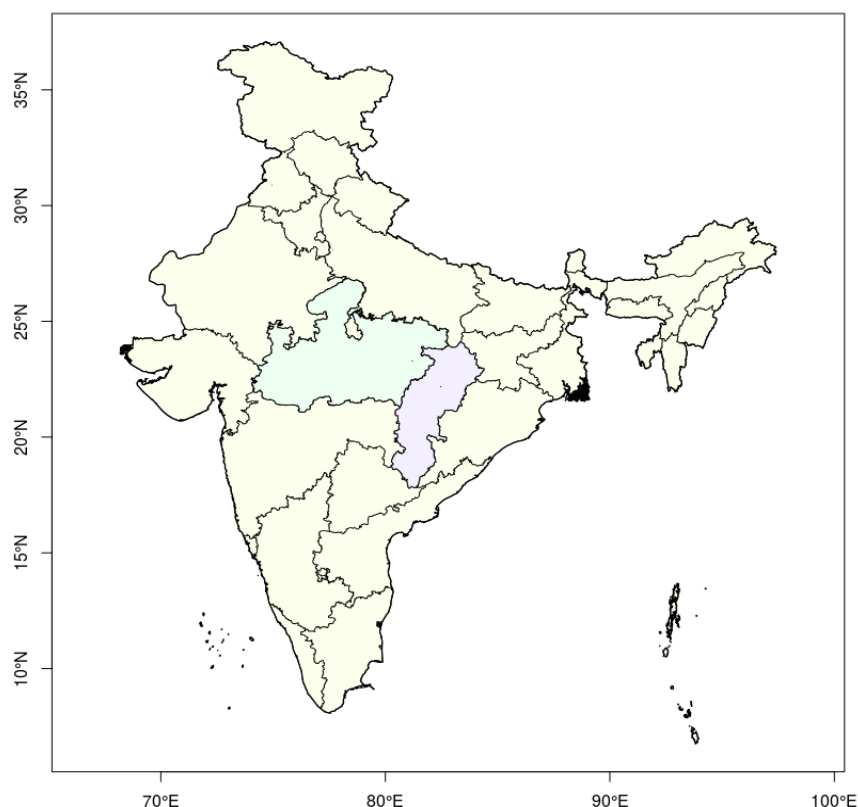


Figure 1. Map of India, with target States highlighted in colour: Madhya Pradesh (West) and Chhattisgarh (East).

3.1. Activities completed

The three major activities that have been completed are as follows.

Undertaking field surveys, focussing on under-represented areas

This has been done by the two project personnel recruited for this purpose, one each from Madhya Pradesh and Chhattisgarh. After being recruited and trained, they began their field surveys in August 2017. From then until the end of the project period (March 2018), their field effort has totaled 3,800 km of bird surveys, with a total survey duration of 750 hours. In the course of this, they have generated c.30,000 new observation records directly and several times that much through training and outreach (see section 5). These have contributed to deliverables 1 and 2.

Conduct capacity-building workshops

The purpose behind these workshops was to introduce a wide set of interested people to the project, train them in generating bird observation information, and enlist their help in spending more time looking for birds, and then uploading their observations to eBird. In all,

19 workshops were conducted, training a total of over 1,400 people. Details are in section 5. These activities are part of deliverable #3.

Compiling biodiversity data holding inventories and uploading legacy data

During the course of the project, we identified a number of individuals who, we were informed, possessed observation data in notebooks or other media. Note that we decided not to focus on data contained in museum specimens and in the published literature, as inventorying and digitizing them is not as time-critical as uncovering unpublished information available with private individuals (mostly amateur naturalists), who often do not have adequate storage and archiving mechanisms. When we met these people in person and discussed the goals of the project (and the data requirements), it became clear that the majority of them did not have the kind of data that we were seeking. A couple of well-known bird experts had no written notes at all. Others had only photos. There was one main exception to this: Mr AMK Bharos from Raipur in Chhattisgarh, who has been watching birds in central India since the 1980s, and has been keeping meticulous notes of what he has seen, when and where. With assistance from project personnel, he has uploaded nearly 30,000 historical records from Madhya Pradesh and Chhattisgarh. More information is given in section 5.

3.2. *Ongoing and post-project activities*

Post the end of the project period, further promising activities are underway.

In Chhattisgarh, the Forest Department is interested continuing the work on more comprehensive bird documentation in the State. A proposal for this, for which they will provide funding, is in its final stages of approval. Drawing from the BIFA project, this proposal and project will continue to survey less-understood parts of the State, and will involve further training and capacity building of forest personnel as well as amateur enthusiasts, with all data being uploaded to eBird.

As anticipated, the interest generated by the BIFA project has led to a sharp increase in data submissions to eBird, not just during the project period, but carrying on thereafter. For example, the post project period April to July 2018 saw 98,600 records uploaded from the two States, a quadrupling of the upload numbers (24,500 records) during the same months of the previous year (before project activities started). In this way, the project is showing long-term impact and value.

4. Project objectives

The main goals of this project were to (i) identify, digitize and publish existing data, (ii) identify gaps and target field data collection there, (iii) train local naturalists in collecting biodiversity data.

The progress of this project was intended to be assessed in terms of the number of records being generated, the number of people trained in workshops, finding and digitising historical records, and the progress of fieldwork. These indicators have been assessed mostly quantitatively (eg number of records, number of people trained).

The project duration was April 2017 to March 2018. We got off to a rather slow start, since recruitment of project personnel was delayed by 1.5 months. We wanted to ensure that personnel were recruited from the two specific States of operation (Madhya Pradesh and Chhattisgarh), and finding suitable people took longer than expected. Subsequent to recruitment of project staff, there was a period of planning, orientation and training of personnel – and work on the ground started in August 2017.

The achievements for each project objective are listed below.

(i) mobilizing existing bird occurrence records

After our preliminary searches, which included online searches as well as in-person visits to old-time birdwatchers and ornithologists in the two target States, we discovered that there was very little legacy data available. One clear exception to this was Mr AMK Bharos from Chhattisgarh, who had meticulous notes spanning several decades of birdwatching in central India. With assistance from project personnel, he has uploaded nearly 30,000 historical records from Madhya Pradesh and Chhattisgarh. More information is given in section 5. With this large tranche of data safely uploaded to eBird, the majority of usable historical bird data from the two States appears to have been mobilized.

(ii) carrying out fieldwork in under-surveyed regions

The two project personnel (one each in Madhya Pradesh and Chhattisgarh) spend a large fraction of their time in field surveys of less-surveyed regions, generating a large amount of very valuable information. The coverage was more comprehensive in Chhattisgarh (a

smaller State with a very supportive Forest Department) than Madhya Pradesh. See section 5 for more details.

(iii) conducting training for naturalists in mobilizing further data beyond the duration of the project

Training and outreach workshops and events were carried out in a number of locations across the two States. There was great interest in these events from birdwatchers, enthusiasts, forest department personnel and students alike; and in all, nearly 1,500 people participated in these events.

5. Project deliverables

The original list of deliverables (paraphrased and abbreviated where needed) is given below:

1. A sharp increase in the number of bird occurrence records from the the States of Madhya Pradesh and Chhattisgarh. We aim to generate over 50,000 specific georeferenced bird observations (plus an additional 2,000 observations on other taxa) within the project period.
2. A doubling in the rate at which such observations are added from the region to eBird (and hence GBIF), continuing beyond the conclusion of the project.
3. Training and outreach workshops reaching a minimum of 300 birdwatchers and enthusiasts across the region, which will contribute to deliverables #1 and #2.
4. A plan, based on the experience from this project, for how to similarly begin filling gaps from other major under-represented regions of India.
5. Although not strictly a deliverable from this project, we anticipate that those who have been in our training workshops on birds will rapidly expand their interests to other taxa as well and begin contributing quality observations of other biodiversity to GBIF data sources.

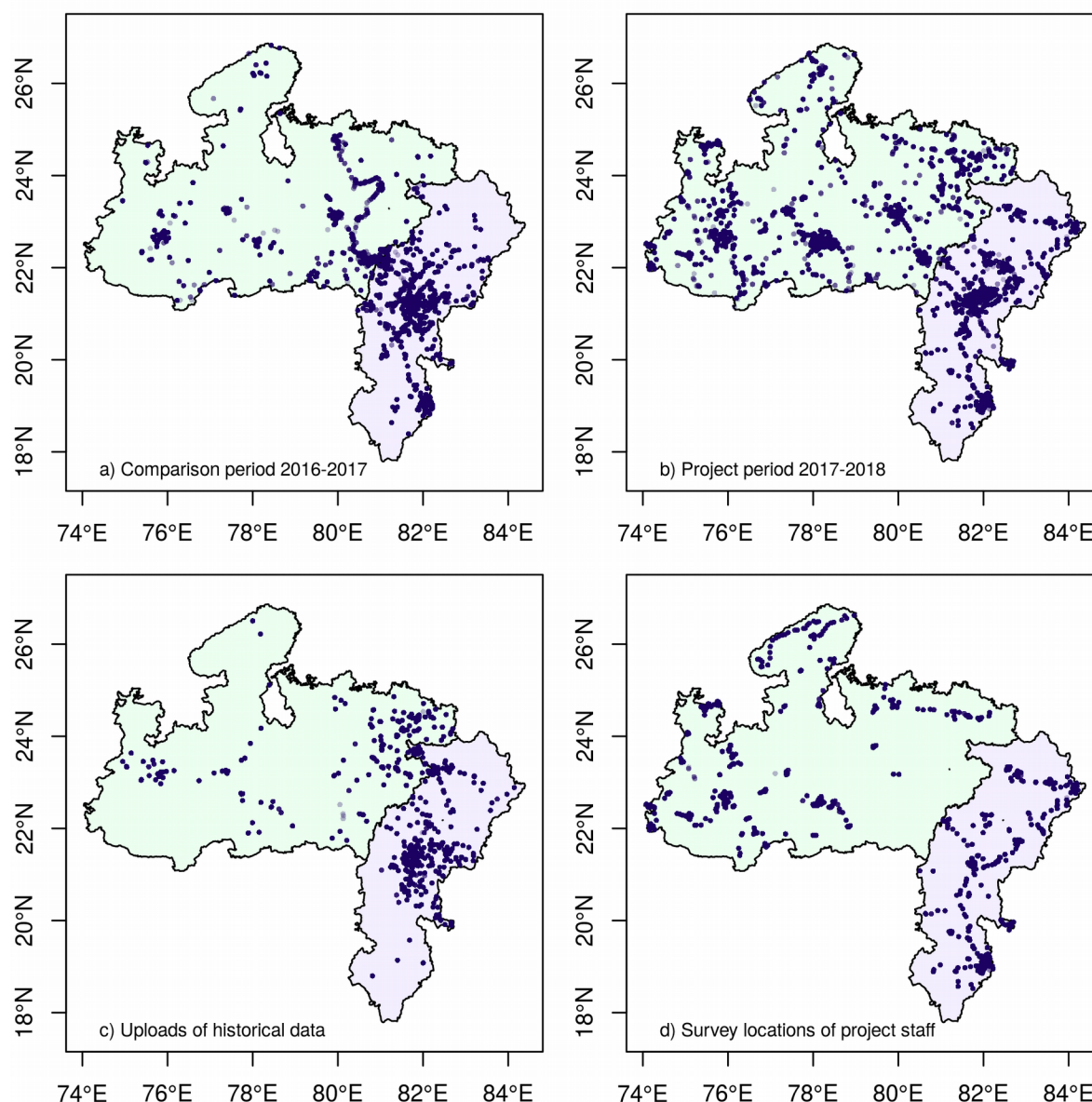


Figure 2. Locations of records uploaded to eBird. a) Comparison period from the previous year (Aug 2016 to March 2017) spanning the same months are the project: 99,000 records. b) Project activity period (Aug 2017 to March 2018): 227,000 records. c) Historical data (from before 2000) uploaded during the project period and few months after (Aug 2017 to June 2018): 26,500 records. d) Survey locations of project personnel during the project period (Aug 2017 to March 2018): 31,700 records.

Each of these deliverables is discussed separately, below.

1. *A sharp increase in the number of bird occurrence records from the the States of Madhya Pradesh and Chhattisgarh. We aim to generate over 50,000 specific georeferenced bird observations (plus an additional 2,000 observations on other taxa) within the project period.*

In all, 226,919 bird observations were uploaded to eBird from the two States during the project period. Figure 2 shows a comparison of bird observations that existed before the project started, and those generated during the course of the project. A large number of historical records were also uploaded (Figure 3).

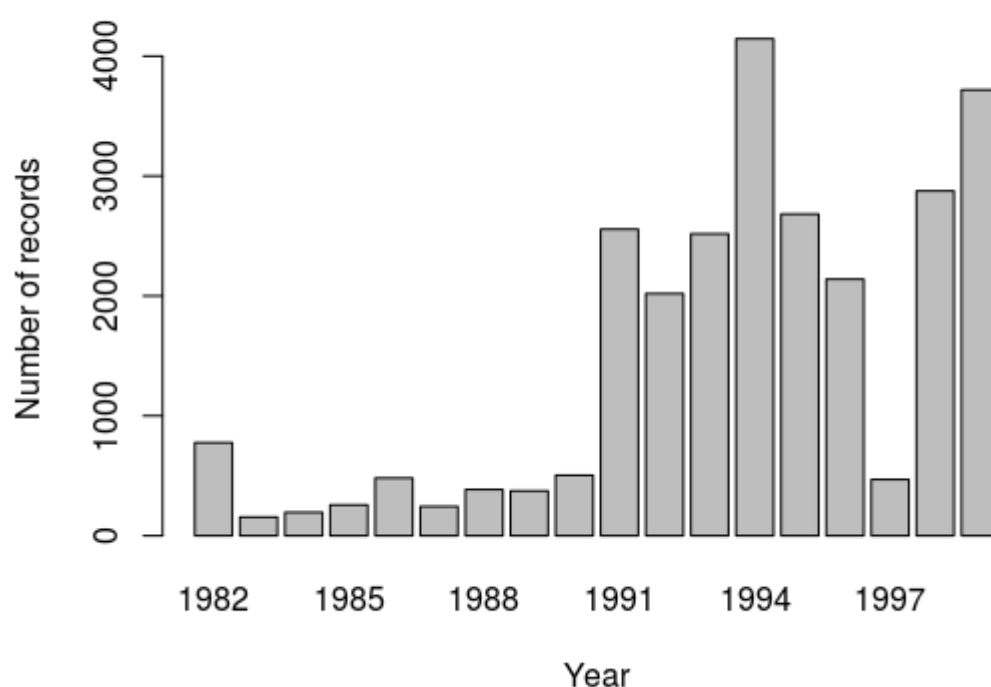


Figure 3. Historical records (from before 2000) uploaded during and immediately after the project period (Aug 2017 to June 2018). A total of 26,500 such historical records were uploaded, from as early as 1982, with the bulk of records coming from the 1990s.

We also made an effort, in our workshops and beyond, to encourage photographers and enthusiasts to contribute non-bird observations to iNaturalist (and thence to

GBIF). This was done particularly systematically in Chhattisgarh, but not in Madhya Pradesh. In total, nearly 2,000 records were uploaded to iNaturalist during the project period, compared with 360 during a 'control' period of the same months in the previous year (Table 1). The majority of these are from Chhattisgarh, demonstrating that the increase is due to efforts made in the project, rather than a general increase over time (which is not apparent from Madhya Pradesh uploads). The Table also demonstrates the continuation of uploads after the end of the project period (compared to a post-project 'control' period the previous year).

Table 1. Number of observations (with number of observers in parentheses) uploaded to iNaturalist from the two project States in different time periods.

Time period	Type	Madhya Pradesh	Chhattisgarh
Aug 2016 to March 2017	Project period 'control'	260 (11)	90 (6)
April 2017 to July 2017	Post-project 'control'	360 (9)	39 (1)
Aug 2017 to March 2018	Project period	255 (34)	1711 (44)
April 2018 to July 2018	Post-project	161 (28)	1114 (33)

2. *A doubling in the rate at which such observations are added from the region to eBird (and hence GBIF), continuing beyond the conclusion of the project.*

Figure 2 shows that the rate of eBird uploads from the two target States more than doubled during the project period (Aug 2017 to March 2018) when compared with the same range of months in the previous year – 227,000 versus 99,000 records. This increased rate continued beyond the end of the project. In the four months immediately after the project ended (April to July 2018), 98,600 records were uploaded to eBird, compared with 24,500 in the same four months of the previous year.

3. *Training and outreach workshops reaching a minimum of 300 birdwatchers and enthusiasts across the region, which will contribute to deliverables #1 and #2.*

During the project period, 19 workshops and events were conducted across the two States (Table 2). Some of these were smaller and more detailed training events;

others were larger outreach events. In all, nearly 1,500 birdwatchers, enthusiasts, students, and forest department staff were reached through these events.



Post-workshop field trip, Indore, September 2017

4. *A plan, based on the experience from this project, for how to similarly begin filling gaps from other major under-represented regions of India.*

We have not yet worked on a detailed plan for filling further gaps, but the experiences from this project have underlined how essential it is to have (a) an enthusiastic local naturalist who can be trained to carry out surveys, (b) a cooperative and supportive administration that is interested in the survey and its results, and helps in a variety of ways, (c) a network of enthusiasts in different parts of the region (not concentrated in a single city, for example) with whom one can work towards the goals of the project.

5. *Although not strictly a deliverable from this project, we anticipate that those who have been in our training workshops on birds will rapidly expand their interests to other taxa as well and begin contributing quality observations of other biodiversity to GBIF data sources.*

This has been happening (Table 1), largely through increased participation in (and uploads to) iNaturalist, a GBIF partner and data provider.

Table 2. Month, location and number of participants in workshops and events conducted during the project period. 'CT' and 'MP' refer to Chhattisgarh and Madhya Pradesh states, respectively.

Month	State	Location	Participants
Aug 2017	CT	Forest Dept HQ, Raipur	80
Sept 2017	CT	Kamanaar, Jagdalpur	70
Sept 2017	CT	Kotamsar, Jagdalpur	80
Sept 2017	CT	Forest Training School, Jagdalpur	150
Nov 2017	CT	PG College, Deobhog	150
Nov 2017	CT	Govt Science College, Deobhog	180
Nov 2017	CT	Jamguria Para, Deobhog	100
Jan 2018	CT	Forest Rest House, Jaspur	80
Jan 2018	CT	Govt Engineering College, Jaspur	100
Aug 2017	MP	Dumna, Jabalpur	30
Aug 2017	MP	Van Vihar, Bhopal	15
Sept 2017	MP	Mhow, Indore	15
Sept 2017	MP	Tarana, Ujjain	40
Oct 2017	MP	Bapcha, Agar	60
Dec 2017	MP	Bhimlod, Agar	100
Dec 2017	MP	Moya Kheda, Agar	150
Jan 2018	MP	Tighra Dam, Gwalior	15
Jan 2018	MP	Devkho, Gwalior	20
March 2018	MP	Panna Tiger Reserve	30

6. Project communications

In our communications plan, we had intended to work largely through our local partners in publicizing the project in the target region. They have been doing this through social media (largely Facebook and Whatsapp groups). In addition, the regional-language (Hindi) media covered several of our workshops and described the larger effort of which the training was a part. Towards the end of the project, in March 2018, a local TV channel in Chhattisgarh did a feature on the project, highlighting the partnership with the State Forest Department and talking about both the immediate activities and the larger goal of the project.



Workshop in Gwalior, Madhya Pradesh



Two clippings from local newspapers about our workshop in Jabalpur in Aug 2017

7. Evaluation: findings and conclusions

When evaluating the outcome of this project, we can draw a clear distinction between our experiences in the two States: Madhya Pradesh and Chhattisgarh. Despite spending considerable effort (in terms of outreach and workshops) at the beginning of the project in Madhya Pradesh, we did not see a sustained response from either the government departments or naturalists and birdwatchers in the State. As a consequence, most of the information generated during the project was from the project personnel, and from others in clustered locations across this huge State – notably around Jabalpur and Indore, catalysed by the groups Citizens for Nature and The Nature Volunteers, respectively. By contrast, after a single kick-off workshop in Raipur, the capital of Chhattisgarh, the response was much larger than we expected. This was due to a combination of a proactive and very interested Forest Department in the State and a number of naturalists and birdwatchers both within the groups Chhattisgarh Wildlife Society and Birds and Wildlife of Chhattisgarh, and independently. Here, the general consensus was that it was important to build on existing information to better document birds of the State – as baselines to measure future change, for educational purposes, and for conservation action. This common understanding meant that project work here was carried out particularly smoothly and in a broad participatory manner.

8. Recommendations and lessons learned

A clear lesson that emerges from our experience in this project is that, when attempting to carry out work of this nature over a large scale (eg the scale of a State in India), it is important to carefully assess the potential support that might already exist in the State, from both governmental and non-governmental stakeholders. In regions with good support, the work is likely to go well. Where such support is not readily forthcoming, considerable effort may need to be expended in communication and building bridges. These bridges or connections are necessary to be built not just between the project and local stakeholders, but possibly also among the various stakeholders, especially if they don't have a culture or history of communication and joint effort among each other.

9. Future plans

Central India continues to warrant attention in terms of generating biodiversity information to support research, education and conservation. Within the region, there is a lot of interest in Chhattisgarh, and a project is currently under consideration for funding to continue and

expand the work started under this BIFA project. As before, this will be carried out with the key involvement of local partners. Much more remains to be done in Madhya Pradesh in terms of engaging both citizen enthusiasts as well as the relevant government bodies. The efforts that started in the BIFA project have flowered in a couple of locations (eg Hoshangabad, Indore and Mandla districts), and the difficult task is now to expand beyond these.

Going ahead, there is no doubt that the rate at which biodiversity information flows in from Central India will continue to rise; the challenge is to make this rise as steep as possible, given the time-critical nature of the problems of biodiversity decline that we are faced with.
