Assessing the State of India's Birds using FOSS

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State of India’s Birds Partnership

India FOSS 2025 Conference
NIMHANS Convention Centre
21st September, 2025

The State of India's Birds (SoIB) Partnership

“ … *aims to provide the* ***best current knowledge on the status and conservation of India's birds***. ”

“ … *by* ***curating, analysing, and synthesizing available information*** *to bring out a variety of* ***knowledge products*** *for use by policymakers, managers, researchers, conservationists, media, and other stakeholders.* ”

Knowledge products are ***freely available***.

All our science and results are ***open and public***

atree

BNHS India CONSERVING NATURE SINCE 1883

Centre for Ecological Sciences, IISc

FES FOUNDATION FOR ECOLOGICAL SECURITY

nature conservation foundation

National Biodiversity Authority, India 2003

ncbs National Centre for Biological Sciences Tata Institute of Fundamental Research

SACON South India Centre of WII

THE HABITATS TRUST

Wetlands INTERNATIONAL

Wildlife Institute of India

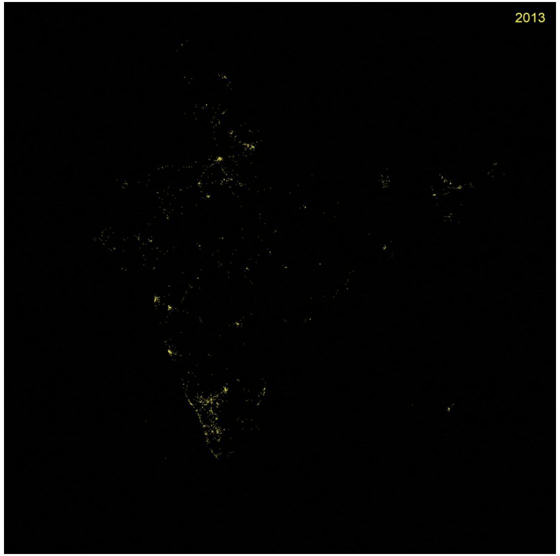
Wildlife Trust of India

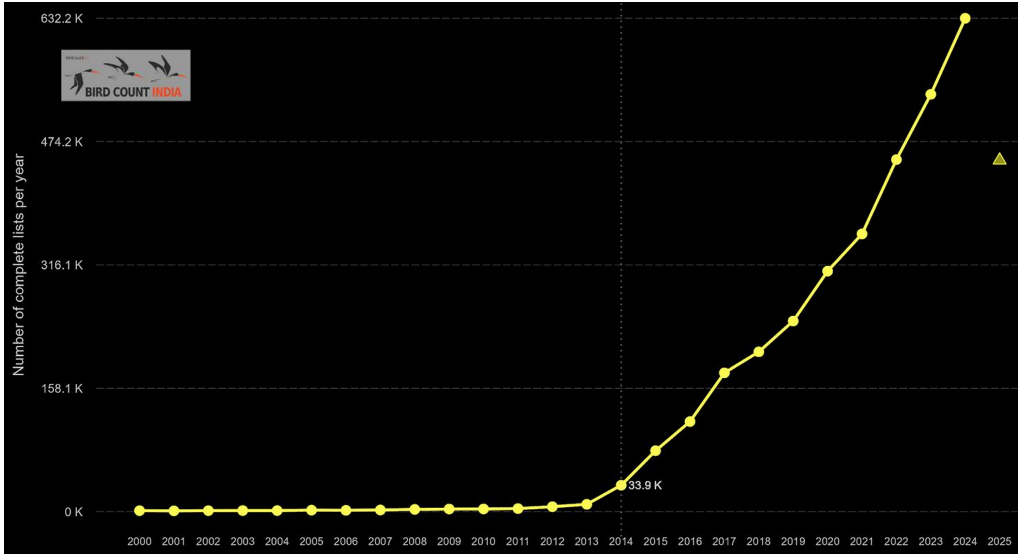
WWF

ZOOLOGICAL SURVEY OF INDIA 1916

Citizen Science data via eBird

- **57,953** people, **3.8M** hours of birding
- **70M** observations
- **708K** locations
- **1379** species

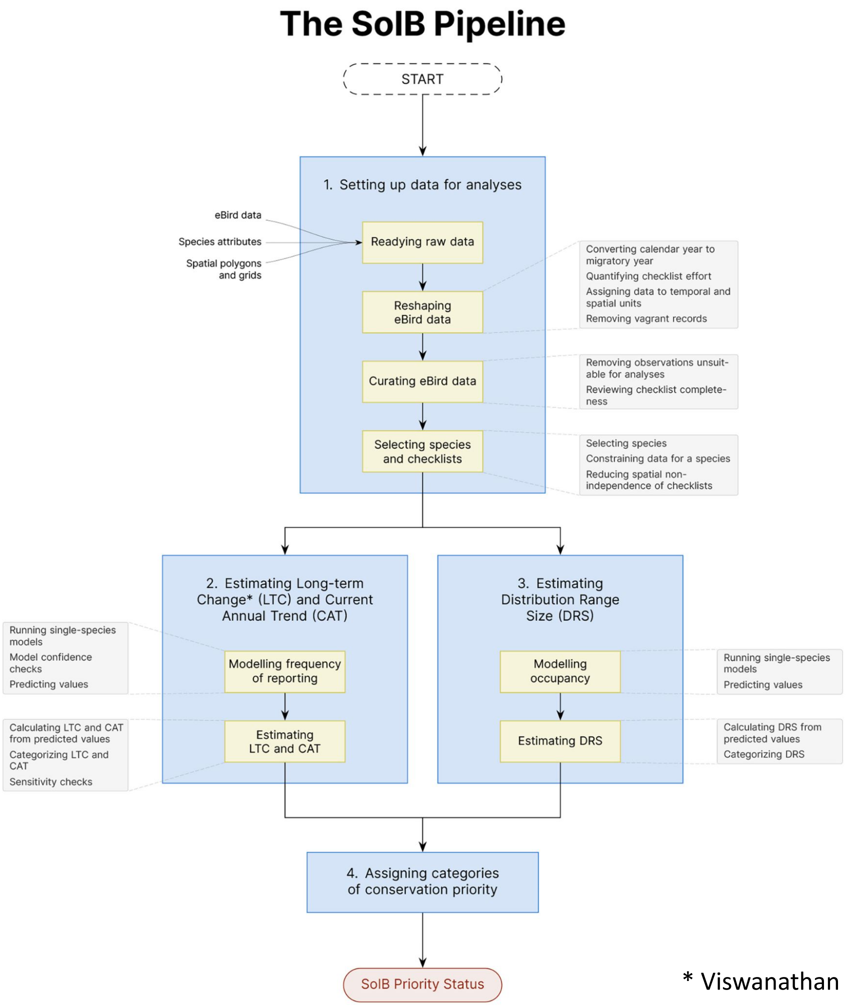




unstructured bird observations data

R for powerful statistical modeling & visualization

- data cleaning and curation
  - `tidyverse`
- statistical modeling
  - `lme4`
  - `unmarked`
- parallelization
  - `parallel`
  - `foreach`
- visualizations
  - `ggplot2`



STATE OF INDIA'S BIRDS

* Viswanathan et al. (2025)

Open scientific methods and results

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Published August 25, 2023 | Version v1

Report | Open

State of India's Birds, 2023: Range, trends, and conservation status

SoIB

Contributors

Contact person: The SoIB Partnership

DOI:10.5281/zenodo.11124589

Worldwide, common and widespread species are declining; in India, lack of information has meant that conservation attention has been focussed on only a few species (usually large, charismatic and threatened). Powered by citizen science, the State of India's Birds report was created to fill this gap by assessing the conservation status of the majority of species that regularly occur in the country.

The second edition of the report (SoIB 2023) extends and updates the assessments presented in SoIB 2020, based on several refinements in analytical methodology as well as a much larger information base—with a mammoth 30 million field observations uploaded to the eBird platform from over 30,000 birdwatchers spanning across the country, which includes four additional years of data than in SoIB 2020, amounting to 20 million additional data points. This enabled evaluation of the distribution range size of 942 Indian birds (867 in 2020), and their trends in abundance both in the long term (over 25+ years) and currently (since 2015). Using these three measures, plus information from the IUCN Red List of global threat status, this report places Indian species into Low, Moderate and High categories of Conservation Priority for India. In addition, SoIB 2023 has introduced new sections in the report to emphasise the importance of systematic monitoring of birds as well as the various threats to birds in India.

Visit https://stateofindiasbirds.in/ for more details.

Files

00_SoIB 2023.pdf

Files (23.3 MB)

Name	Size	Download all
00_SoIB 2023.pdf md5:636d97ddb0ce1eabf1c5598fd3945a0e	13.3 MB	Preview Download
01_README.txt md5:658a96d86e58947027be6cc4bc152b4f	659 Bytes	Preview Download

https://github.com/stateofindiasbirds

ECOSPHERE

AN ESA OPEN ACCESS JOURNAL

DOI: 10.1002/ecs2.70290

CONCEPTS & THEORY | Open Access

State of India's Birds 2023: A framework to leverage semi-structured citizen science for bird conservation

Ashwin Viswanathan, Karthik Thrikkadeeri, Pradeep Koulgi, Praveen J., Arpit Deomurari, Ashish Jha, Ashwin Warudkar, Kulbhushansingh Suryawanshi, M. D. Madhusudan, Monica Kaushik, Naman Goyal, Rajah Jayapal, Suhel Quader, Sutirtha Dutta, Tarun Menon, Vivek Ramachandran ... See fewer authors

First published: 17 July 2025 | https://doi.org/10.1002/ecs2.70290

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Published June 28, 2024 | Version v2023

Software | Open

Source code behind State of India's Birds 2023 analyses and results

SoIB

Contributors

Contact person: The SoIB Partnership

DOI: 10.5281/zenodo.12698374

Version of the GitHub repository corresponding to all outputs associated with SoIB 2023 results. See the README on GitHub or visit https://stateofindiasbirds.in/ for more details.

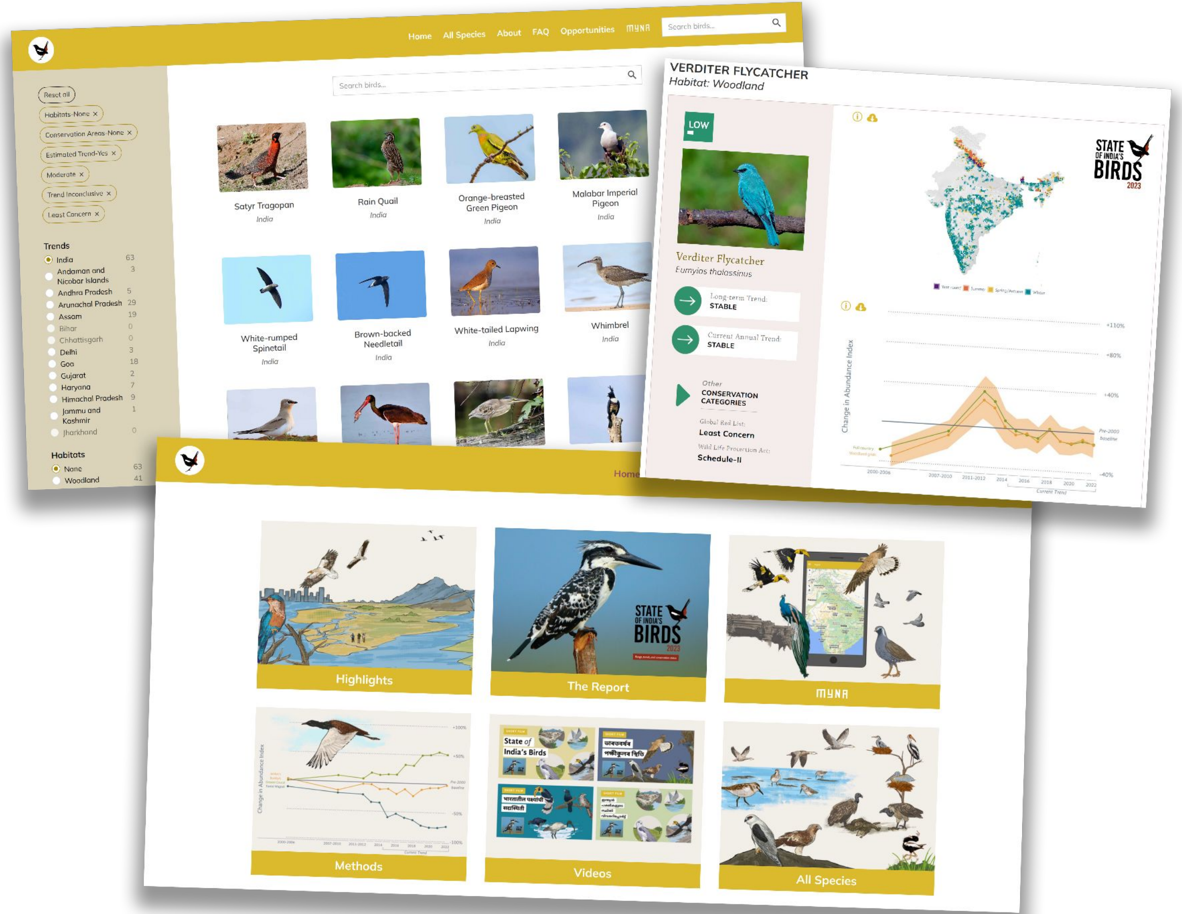
Files

stateofindiasbirds/soib_2023-v2023.zip

Files (171.2 MB)

Name	Size	Download all
stateofindiasbirds/soib_2023-v2023.zip md5:44e88b6bb4a896f858bd2099c508da71	171.2 MB	Preview Download

Trends, distribution range, conservation status



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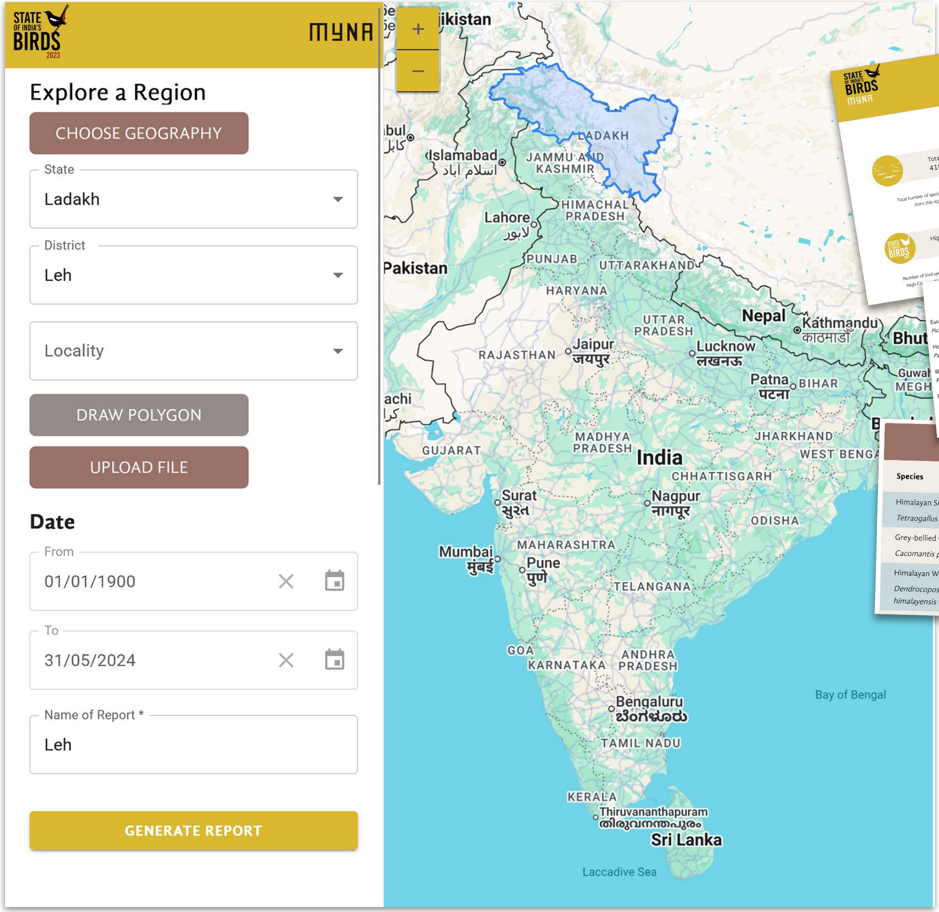
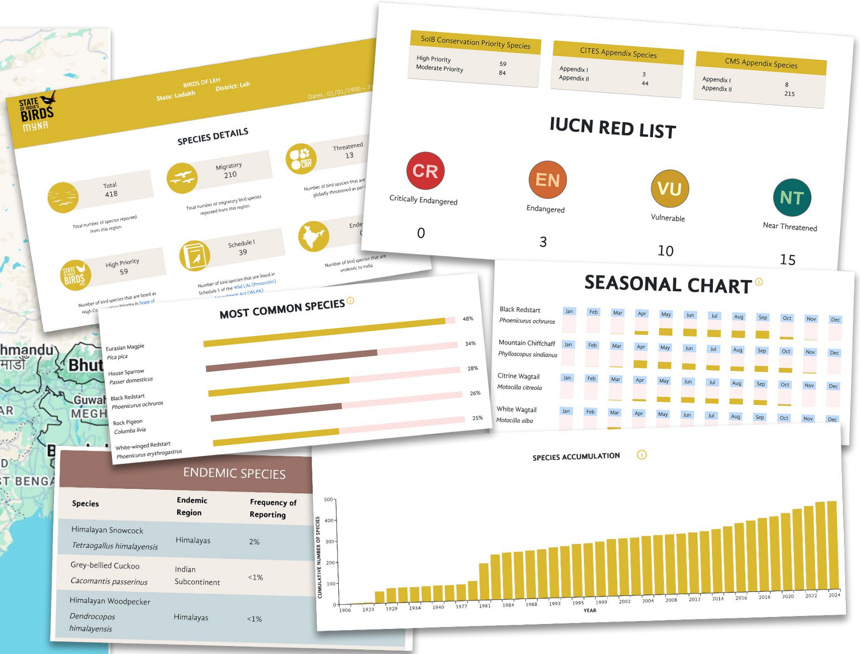
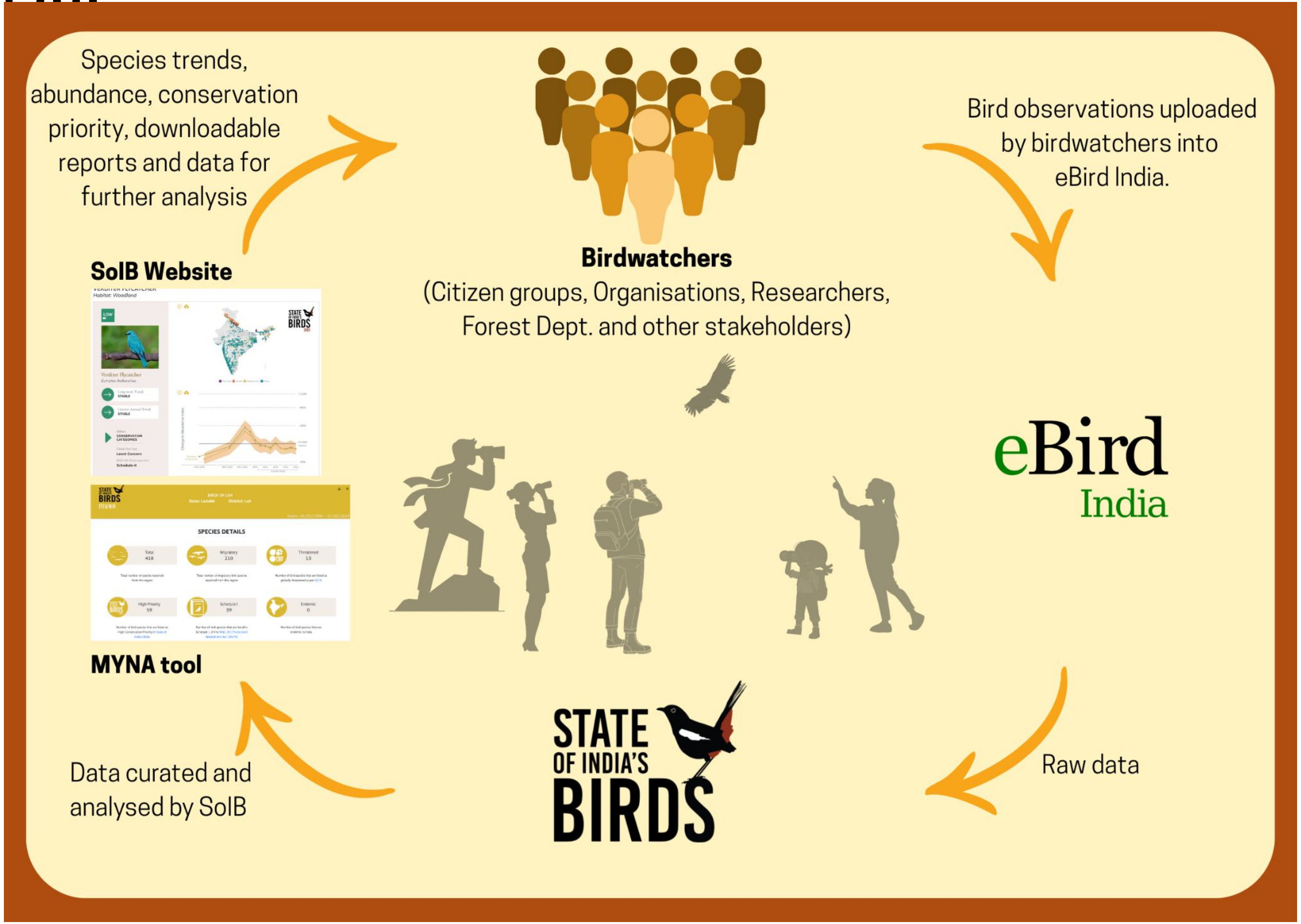
Regional Bird Reports



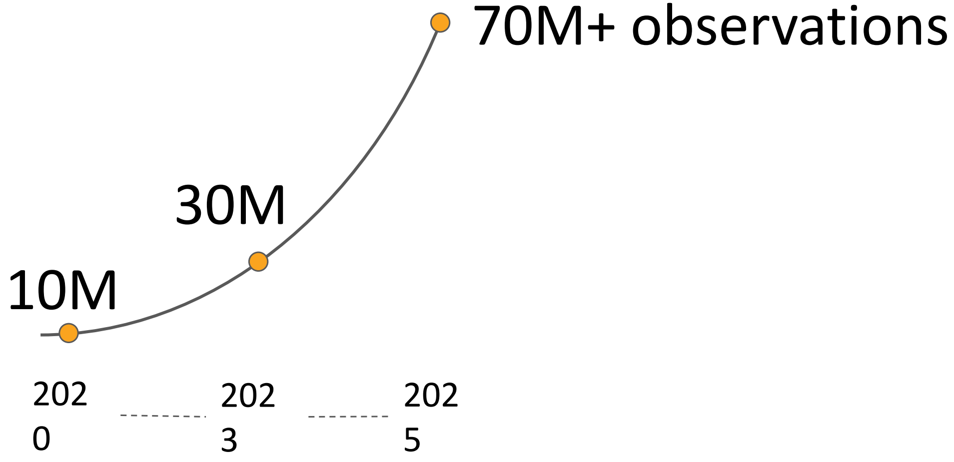


https://myna.stateofindiasbirds.in

From public data to insights for the public



Computational challenges



Scalability

Affordability

FOSS is key!

STATE OF INDIA'S BIRDS

Q & A

https://stateofindiasbirds.in