

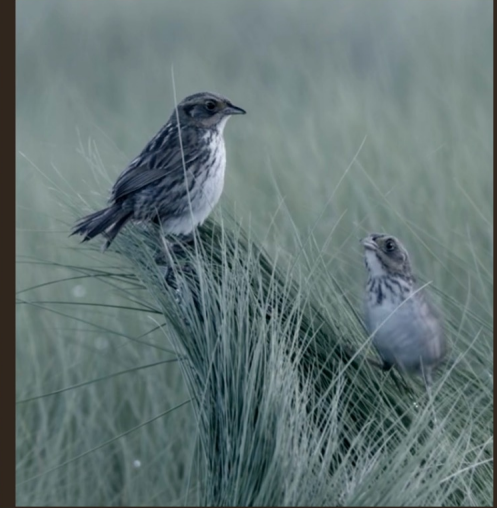
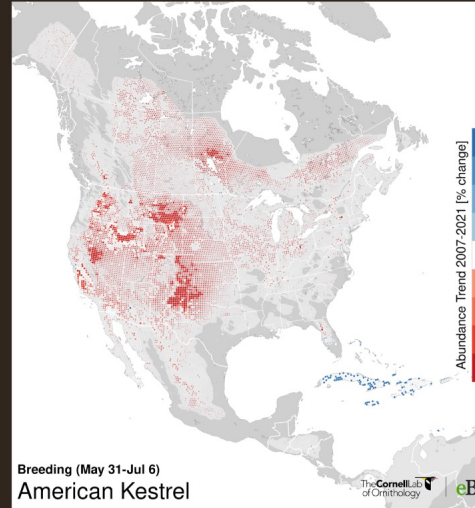
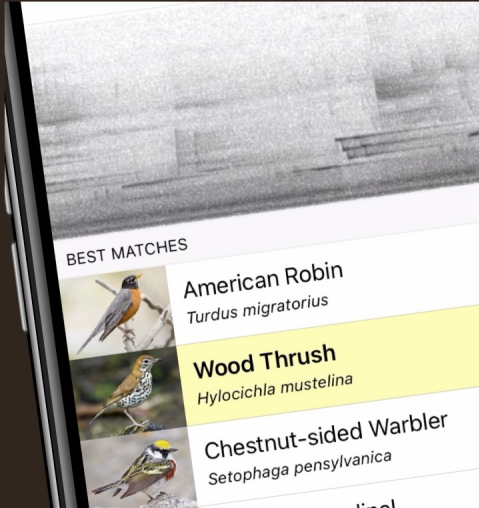
From Participatory Science to Flyway Atlas: Building Global Analytical Capacity with eBird Status and Trends and Bird Concentration Areas

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Science to Action Framework



Technology  CREATES

Activated
public  POWERS

Actionable
science  MOVES

Key actors  EXECUTE

Conservation
action

[CMS Appendix I](#)
[CMS Appendix II](#)

[Species by country](#)
[About](#)

CMS Appendix II

Select a country for additional species-level information for CMS Appendix II

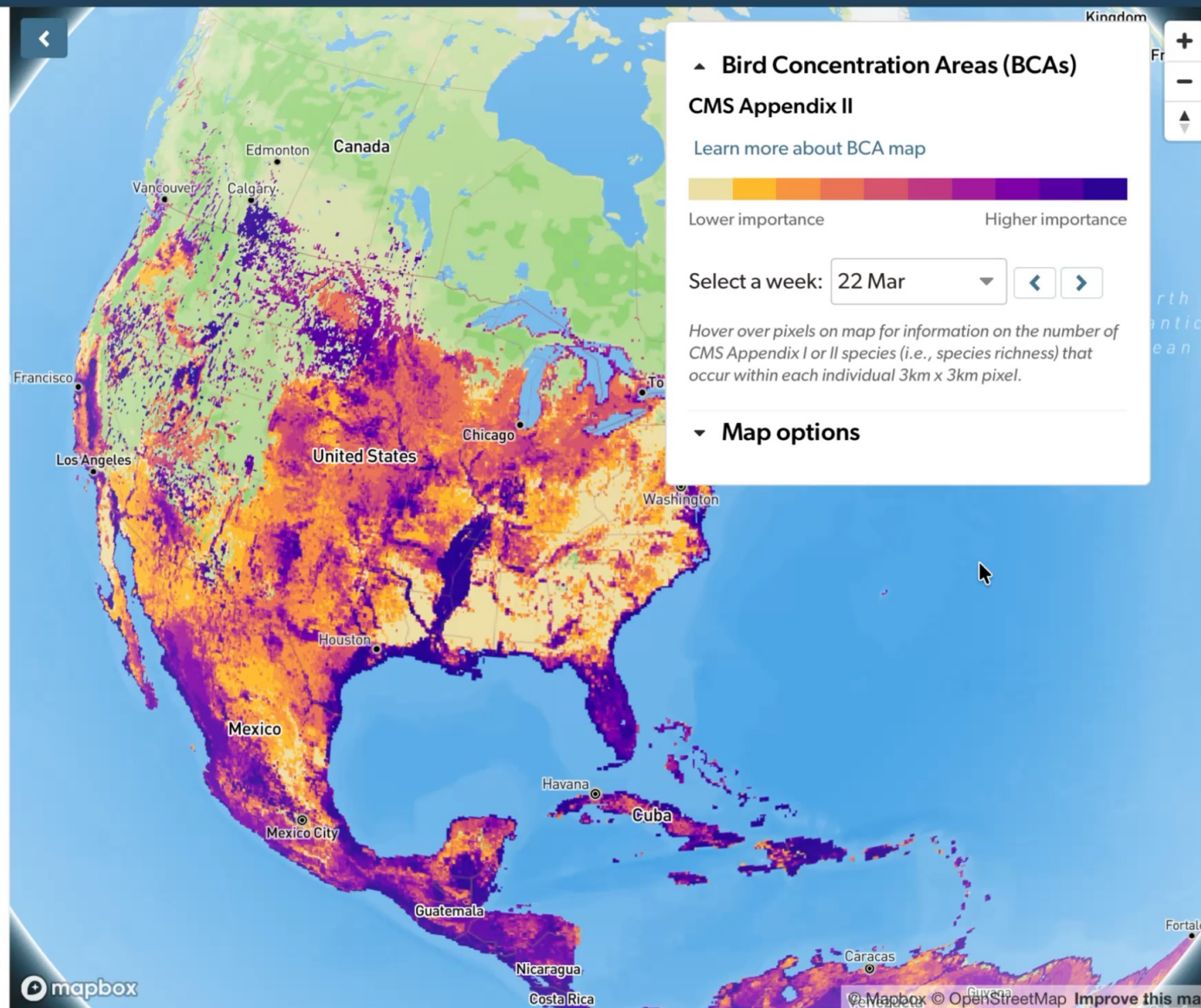
Filter species table

Species	Status*	BOW †	S&T ‡
American Kestrel	LC	Link	Link
American Oystercatcher	LC	Link	Link
American Golden-Plover	LC	Link	Link
Andean Flamingo	VU	Link	Link
Southern Giant-Petrel	LC	Link	Link
Aplomado Falcon	LC	Link	Link
Arctic Tern	LC	Link	Link

*International Union for Conservation of Nature (IUCN) Status

†Birds of the World, ‡eBird Status and Trends

▼ *IUCN Status legend

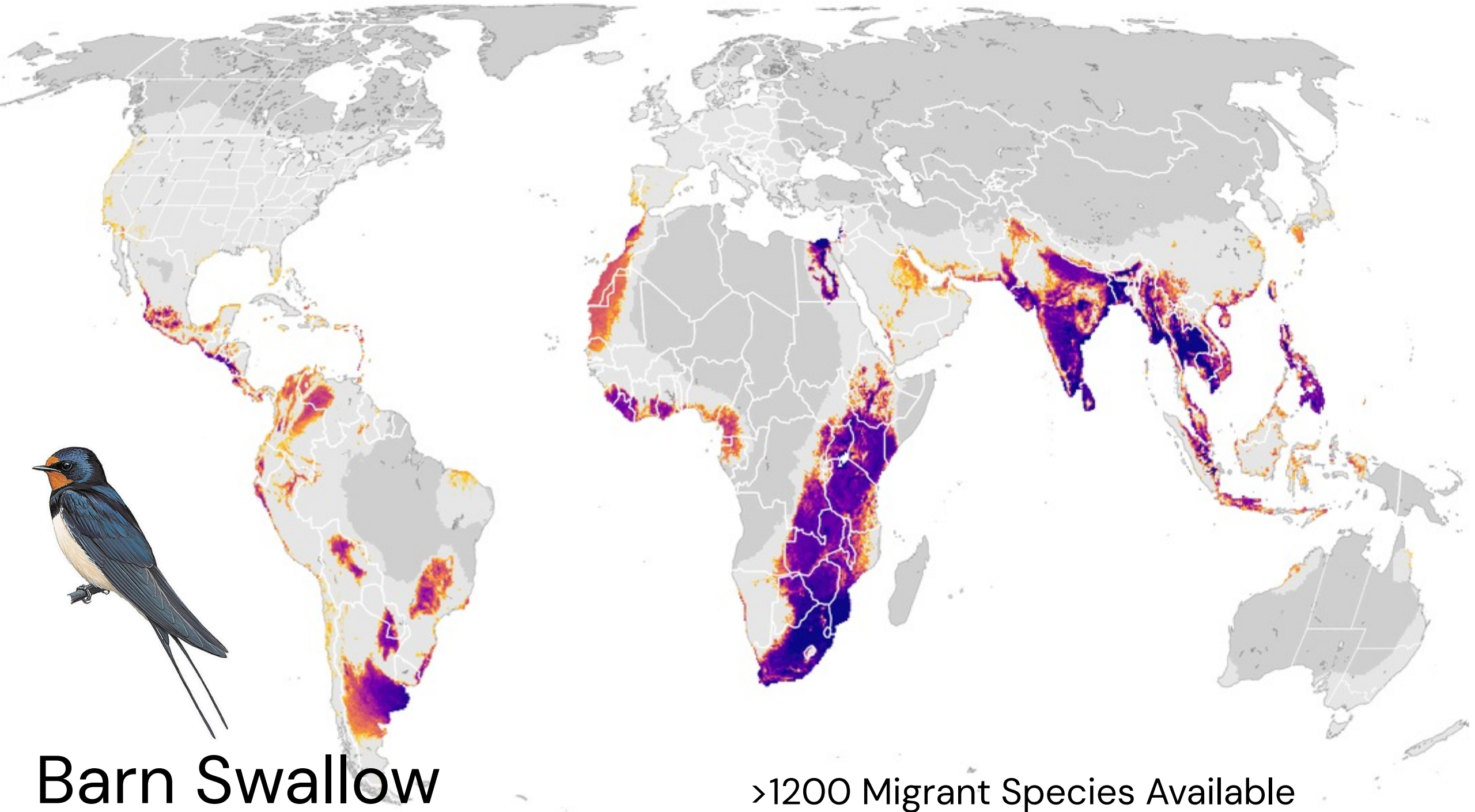


eBird

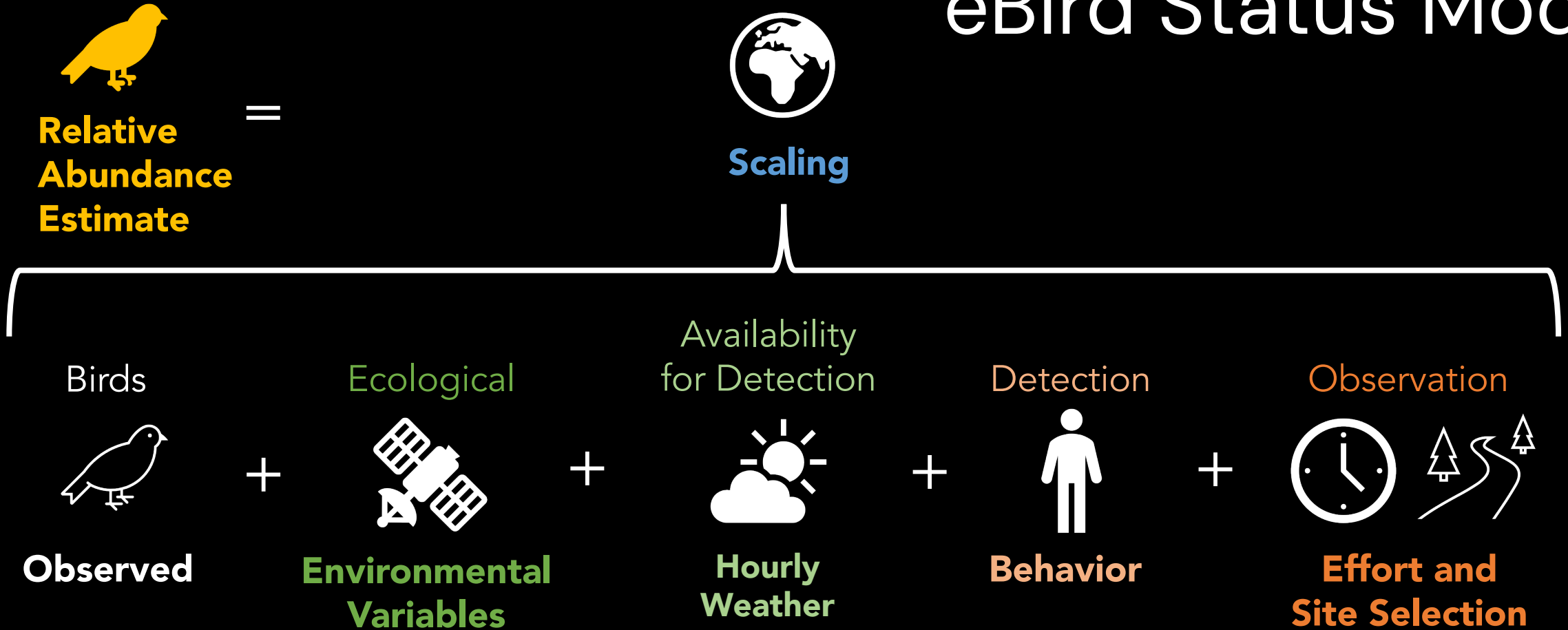


>2.4 B observations

>1.3 M eBirders



eBird Status Model

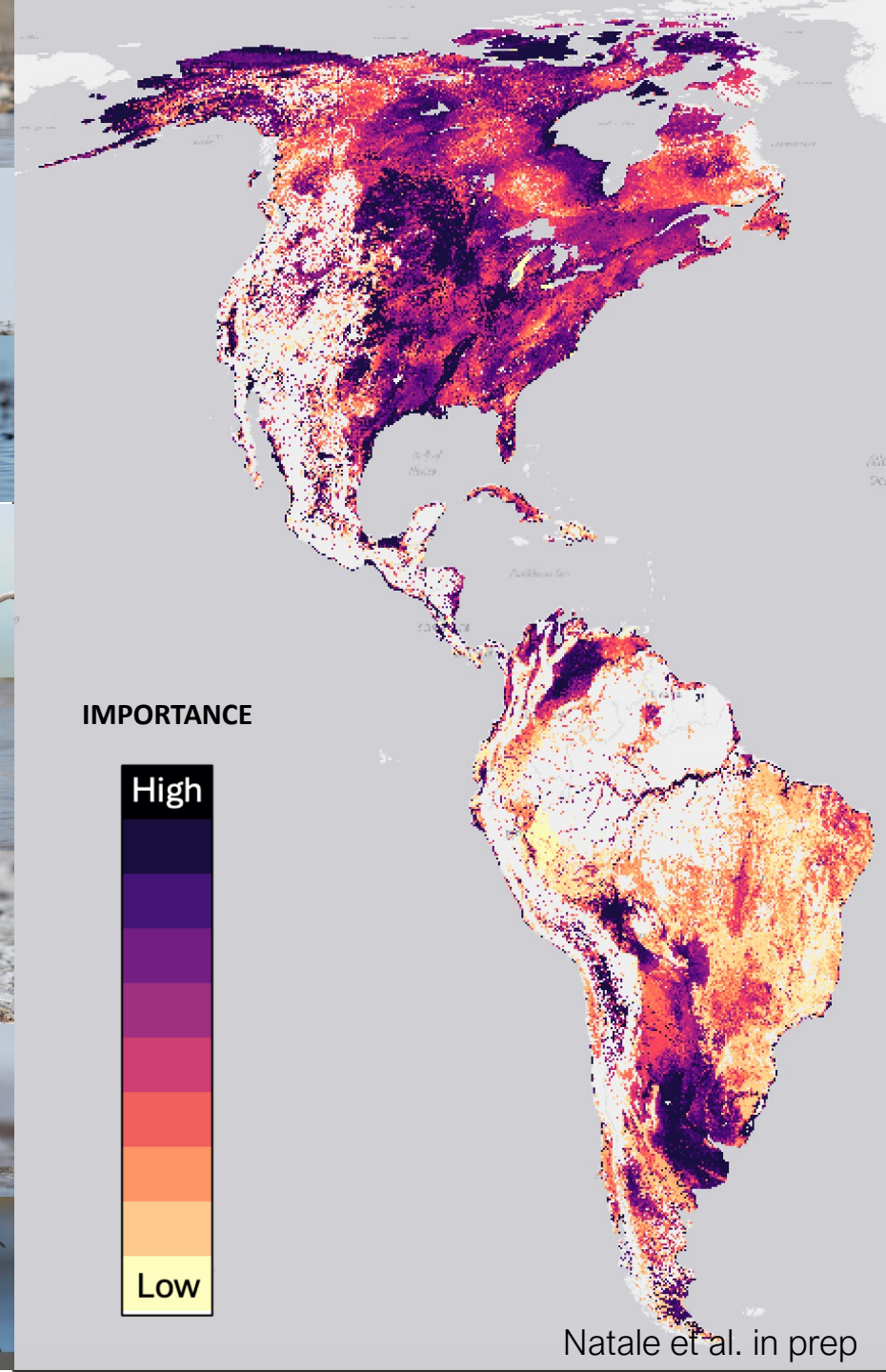


Addresses two primary needs with participatory science:

- Fills gaps and makes estimates at all locations
- Controls for variation in observers and standardizes estimates

Bird Concentration Areas (BCAs)

- Identify the most important areas for bird populations
- Cloud-native raster format friendly for visualization
- Can include results from other analyses, if % of population

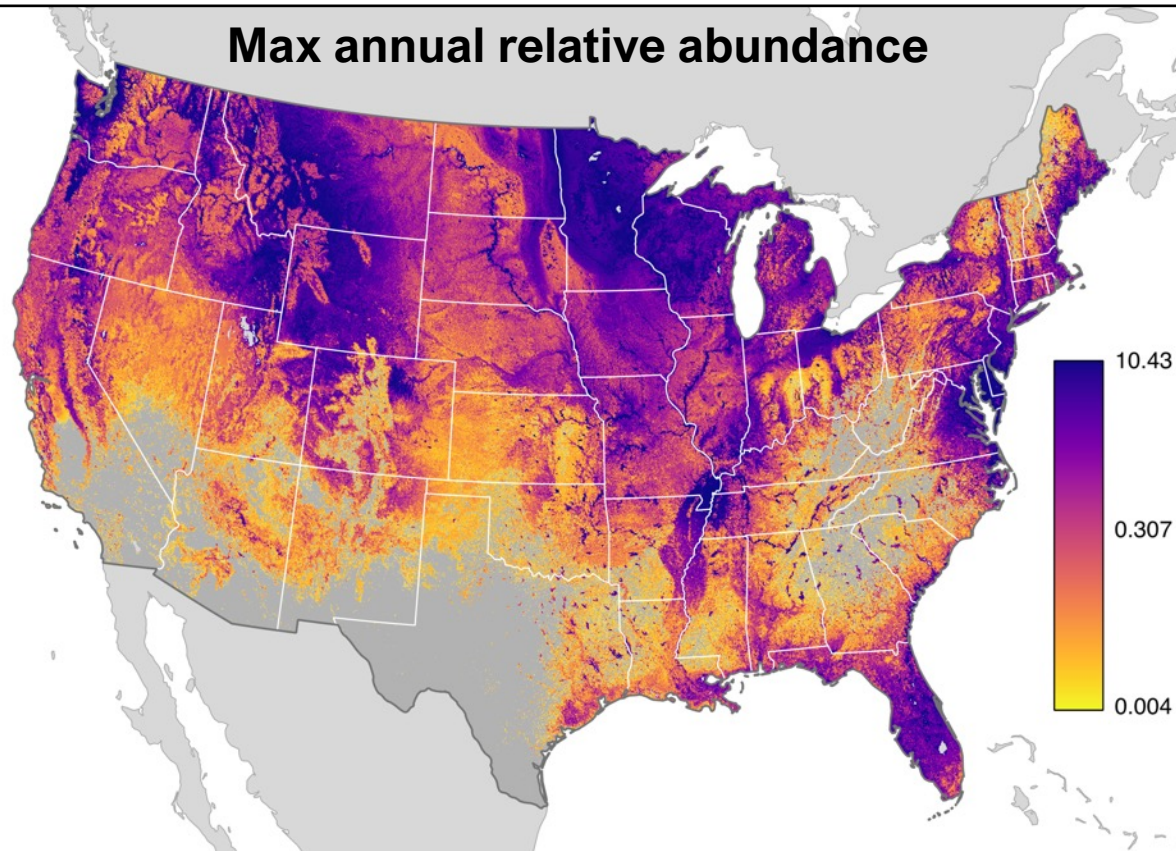




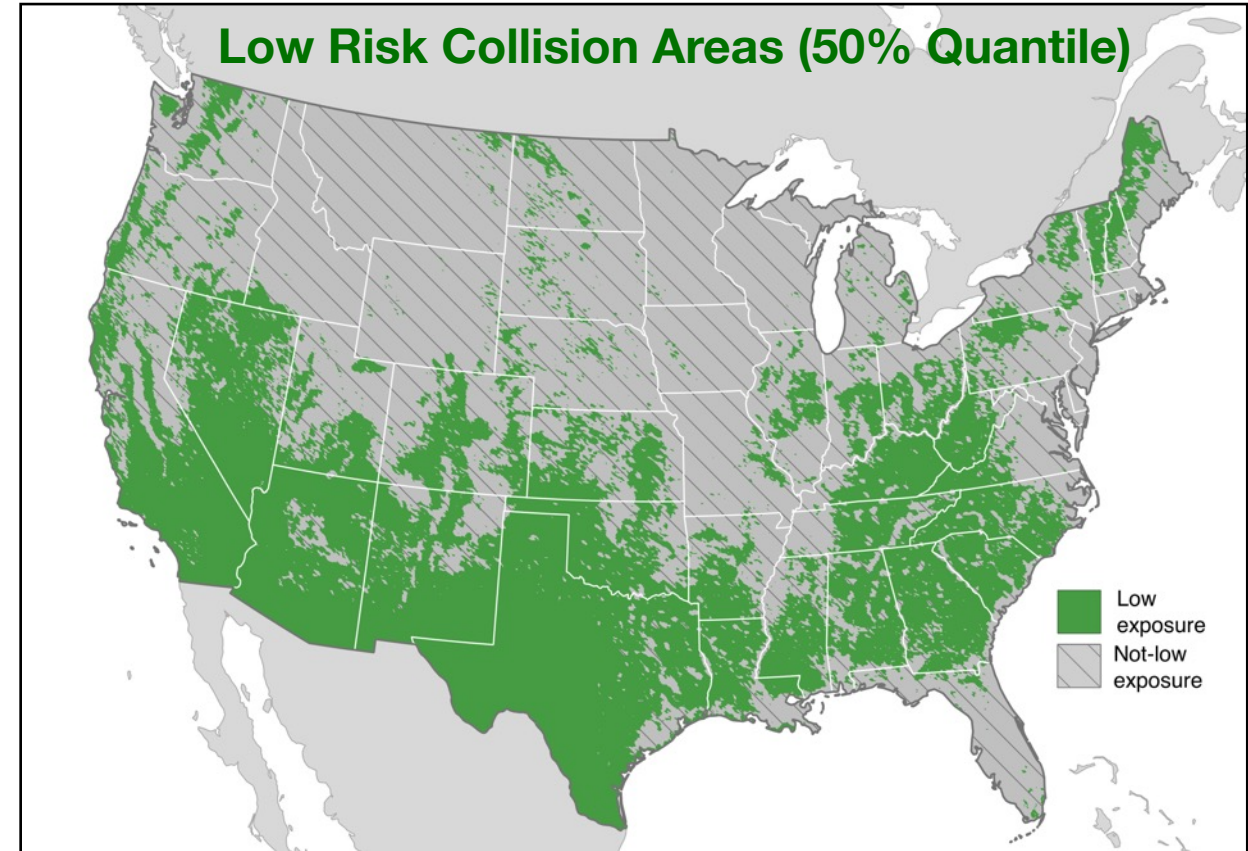
Risk assessment for renewable energy



Max annual relative abundance

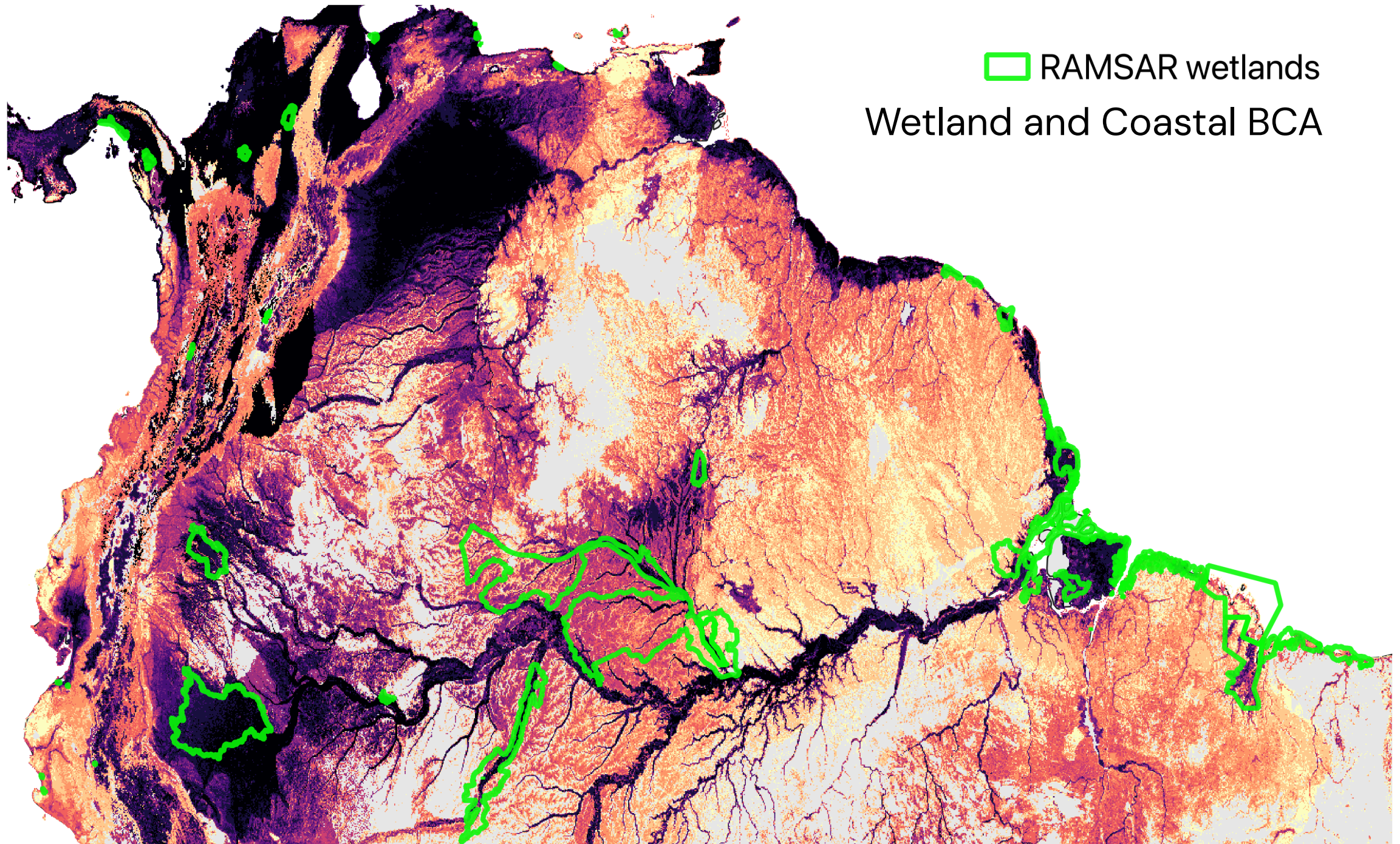


Low Risk Collision Areas (50% Quantile)



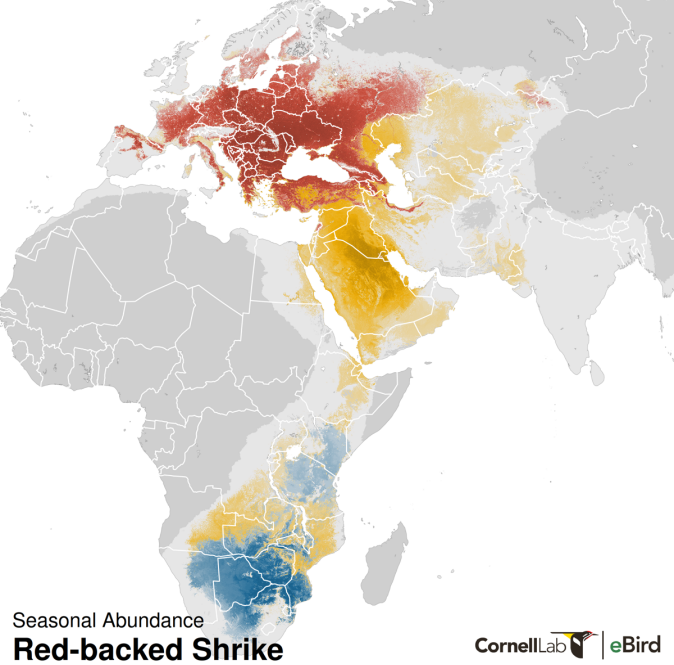
Supporting regulatory information needs

Regulated Industry	Species Groups of Interest (most likely to be impacted)
Power line infrastructure	Raptors, waterbirds
Solar energy	Migratory songbirds, waterbirds
Wind energy	Raptors, migratory songbirds
Communication towers	Migratory songbirds
Transportation infrastructure	Raptors, migratory songbirds, seabirds
Oiled and produced waters	Migratory songbirds, waterbirds
Commercial fisheries	Seabirds



 RAMSAR wetlands

Wetland and Coastal BCA

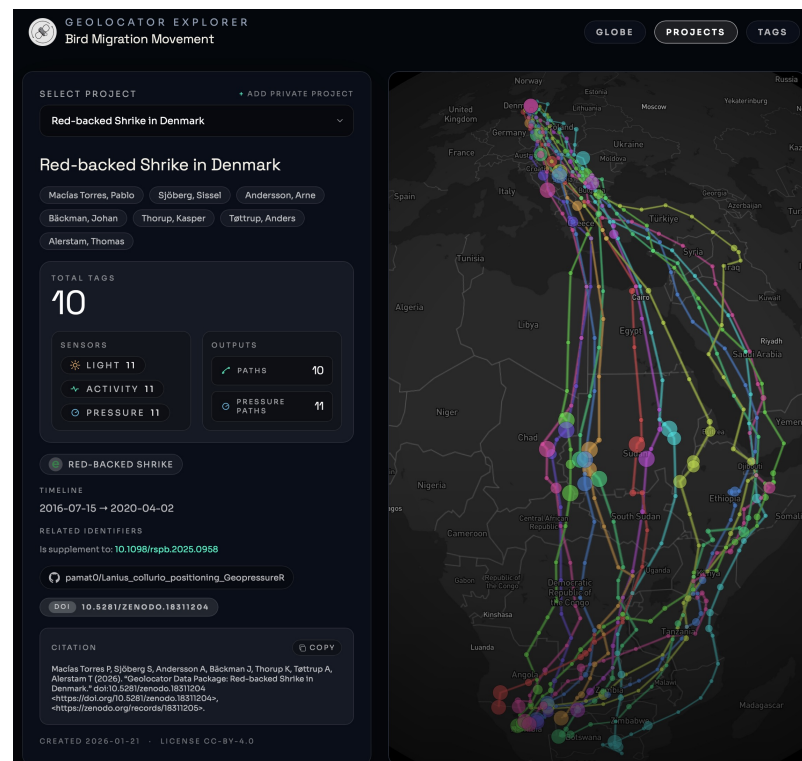


BirdFlow

Uses tracking data to improve models that can infer movements from eBird Status data products.

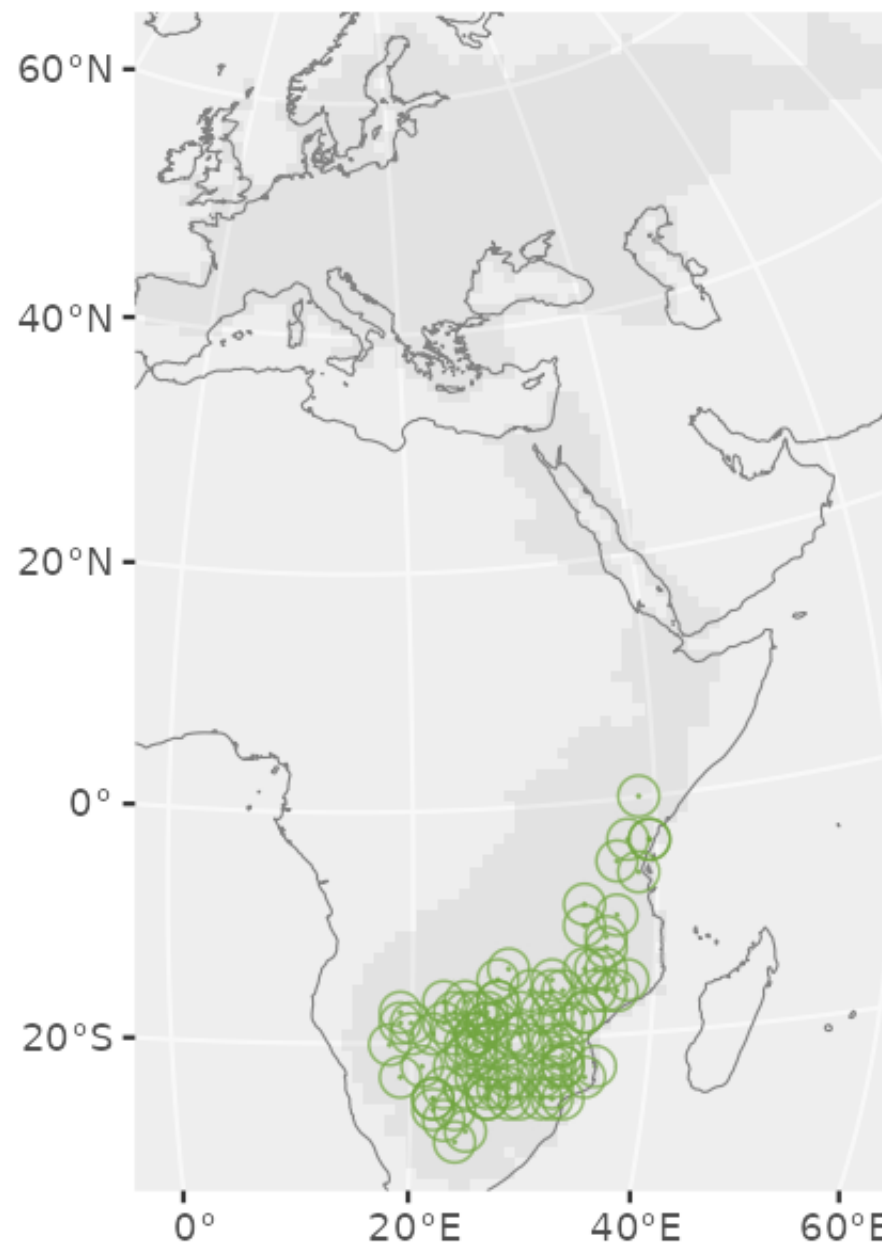


CornellLab | eBird



Red-backed Shrike

March 22



Date



April 1

April 15

May 1

Stay Length
(weeks)



0

1

2

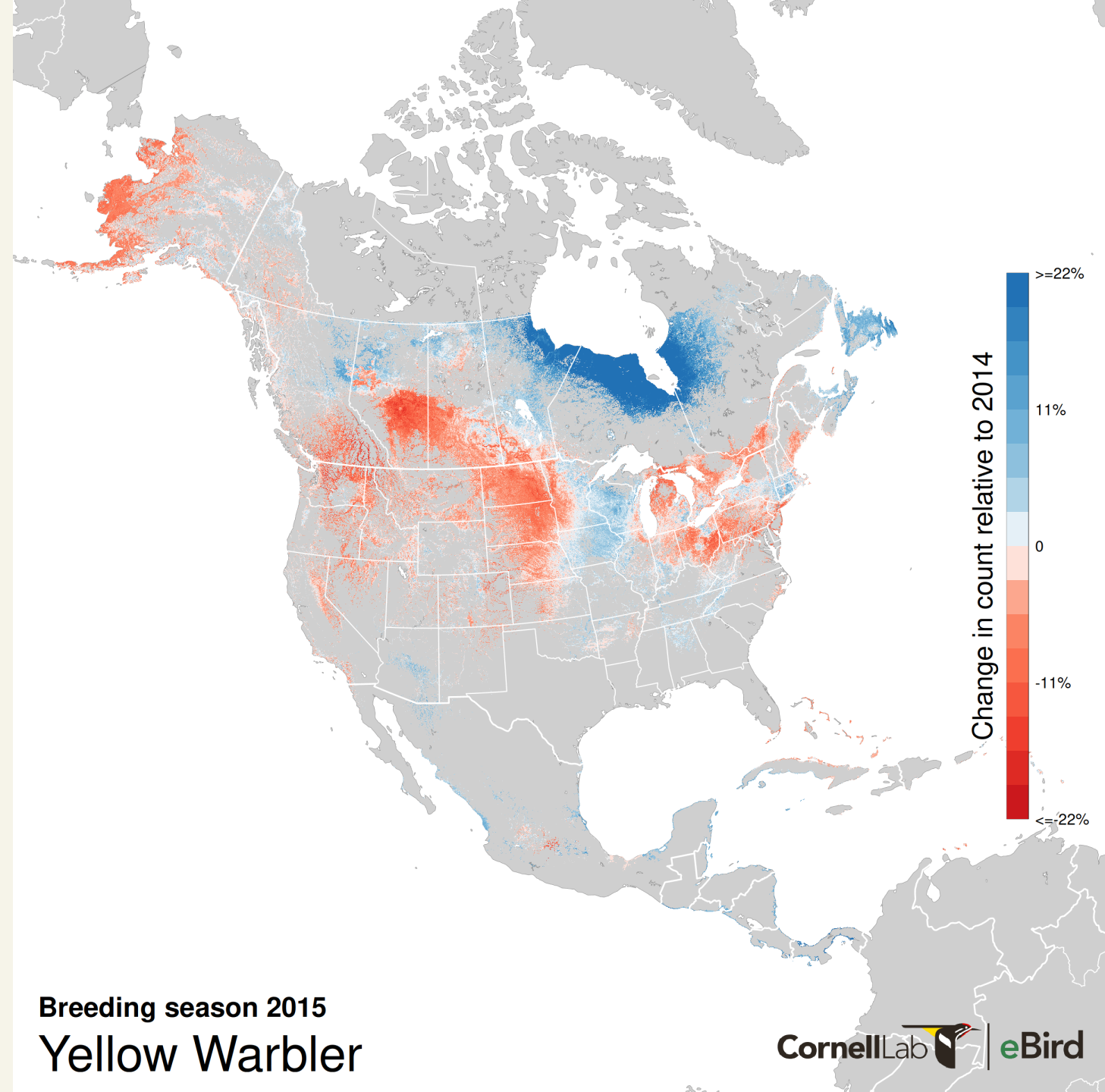
3

4

Macías Torres P, Sjöberg S, Andersson A, Bäckman J, Thorup K, Tøttrup A, Alerstam T (2026). "Geolocator Data Package: Red-backed Shrike in Denmark."
[doi:10.5281/zenodo.18311204](https://doi.org/10.5281/zenodo.18311204)

Annual trends (trajectories)

With drivers!



eBird Status and Trend Data Products

Download Data Products for Fork-tailed Flycatcher

eBird Status and Trends Data Products include estimates of species ranges, abundances, and environmental associations.

Access key required

Downloading data products requires an access key tied to your eBird username, which you can get by reading and agreeing to our eBird Products Terms of Use.

Abundance downloads

Relative abundance is the estimated average count of individuals detected by an eBirder during a 1 hour, 1 kilometer traveling checklist at the optimal time of day for each species.

Abundance map images PNG

- [Abundance map \(All seasons\)](#)
- [Abundance map \(Breeding season\)](#)
- [Abundance map \(Non-breeding season\)](#)
- [Abundance map \(Pre-breeding migration season\)](#)
- [Abundance map \(Post-breeding migration season\)](#)

Weekly abundance animation MP4

- [Weekly abundance animation](#)

Abundance geospatial data (raster) TIF

- [Mean abundance raster \(All seasons\)](#)

web download

ebirdst: Access and Analyze eBird Status and Trends Data

Overview

The [eBird Status and Trends project](#) project at the [Cornell Lab of Ornithology](#) uses machine-learning models to produce estimates of range boundaries, occurrence rate, and relative abundance at high spatial and temporal resolution across the full annual cycle of 2,282 bird species globally. These models learn the relationships between bird observations collected through [eBird](#) and a suite of remotely sensed habitat variables, while accounting for the noise and bias inherent in community science datasets, including variation in observer behavior and effort. Interactive maps and visualizations of these model estimates can be explored [online](#), and the [Status and Trends Data Products](#) provide access to the data behind these maps and visualizations. The `ebirdst` R package provides a set of tools for downloading these data products, loading them into R, and using them for visualizing and analysis.

Installation

Install `ebirdst` from GitHub with:

```
if (!requireNamespace("remotes", quietly = TRUE)) {  
  install.packages("remotes")  
}  
remotes::install_github("ebird/ebirdst")
```

This version of `ebirdst` is designed to work with the eBird Status Data Products estimated for the year 2021, with visualizations being released on the web in November 2021, and data access being made available in June 2022. **Users are strongly discouraged from comparing Status and Trends results between years due to methodological differences between versions.** If you have accessed and used previous versions and/or may need access to previous versions for reasons related to reproducibility, please contact ebird@cornell.edu and your request will be considered.

Links

- [View on CRAN](#)
- [Browse source code](#)
- [Report a bug](#)

License

- [Full license](#)
- [GPL-3](#)

Community

- [Contributing guide](#)
- [Code of conduct](#)

Citation

- [Citing ebirdst](#)

Developers

- [Matthew Strimas-Mackey](#)
Author, maintainer 
- [Shawn Ligocki](#)
Author
- [Tom Auer](#)
Author 
- [Daniel Fink](#)
Author 
- [More about authors...](#)

Dev status

Custom Terms of Use

DOIs

ebird.github.io/ebirdst

~5000 Status species, globally (soon)

~850 Trends species, mostly North American

Transferable Lessons from the Americas Flyway

01	Data Quality & Availability	Full-annual cycle data, % of population
02	Data Governance & Hosting	Web-friendly data formats aide interactivity
03	Analytical Tools & Transferability	Modeled products backed by raw obs
04	Analytical Capacity	Integration with networks and other modes

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Summary

eBird Status and Trends data products will be available for >1200 migrant bird species, with configurable, thematic Bird Concentration Areas, and are available in an interoperable format.



Seasonal Abundance
Burrowing Owl

