

RECORDINGS OF CROWS FROM AROUND THE WORLD

with data from xeno-canto API

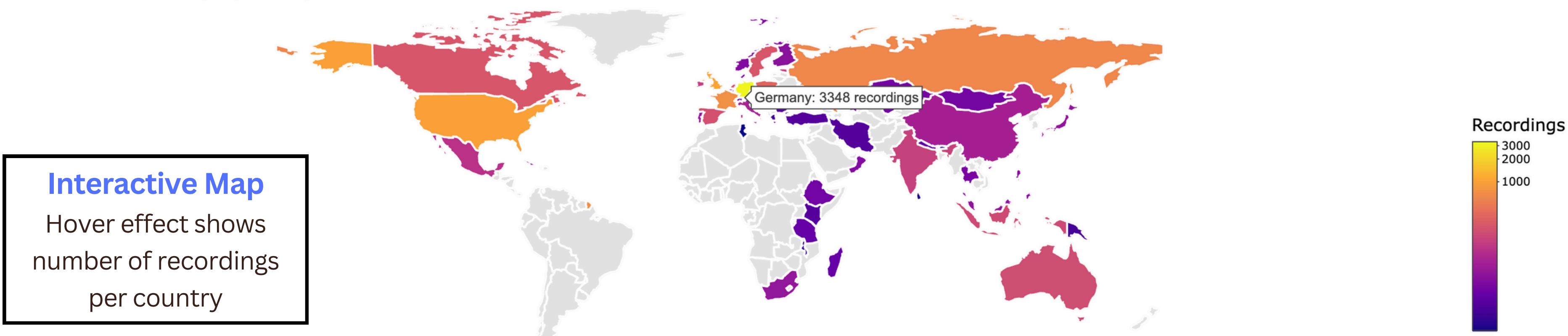


How to use this app:

This app pulls data from the public API, xeno-canto.org, on birds of Order: *Passeriformes*, Family: *Corvidae (Crows, Jays)*, Genus: *Corvus*.

Predict species using a random forest classification model trained on recordings of crows from the API. The model predicts the most likely crow species based on two inputs: Country and Season of the recording. It uses a 5-fold cross-validation framework to optimize accuracy and outputs the top 3 predicted species along with their predicted probabilities. To ensure performance and reliability, the model is trained once and cached for use throughout the session. A confusion matrix is also displayed to evaluate model performance on the training data. Note that the data are filtered to exclude country/season combinations with less than 10 recordings.

Number of Crow Recordings by Country



Data Table

ID	Scientific Name	Common Name	Recordist	Country	Location	Type	URL	Audio	Length	Date	Season
628125	<i>pusillus</i>	Palawan Crow	Jelle Scharringa	Philippines	Puerto Princesa Subterranean River NP, Palawan	flight call, wingbeats	Link		0:53	1985-04-05	Spring
616145	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Ulot River, Paranas, Samar National Park, Eastern Visayas	call, flight call	Link		0:47	2020-02-24	Winter
616142	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Near waterfall trail, Samar National Park, Eastern Visayas	call	Link		0:23	2020-02-22	Winter
616141	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Near waterfall trail, Samar National Park, Eastern Visayas	call	Link		3:17	2020-02-22	Winter
614886	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Near waterfall trail, Samar National Park, Eastern Visayas	call, flight call	Link		0:23	2020-02-22	Winter
614885	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Near waterfall trail, Samar National Park, Eastern Visayas	call	Link		1:01	2020-02-22	Winter
614882	<i>samarensis</i>	Small Crow	Frank Lambert	Philippines	Near waterfall trail, Samar National Park, Eastern Visayas	call	Link		0:16	2020-02-22	Winter

Showing 1 to 25 of 10,707 entries

Classification model

Outcome: **Species**

Predictors:

- **Country**
- **Season** (Fall, Winter, Spring, Summer)

Predict Species Based on Country and Season of the Recording

First, select a **country**. Then, select a **season**. Note that the options for the season will automatically update after a country is selected to display only valid country/season combinations based on the available data. Then, click **Predict Species** to predict the top 3 species along with their predicted probabilities.

Country

Australia

Season

Winter

Predict Species

Torresian Crow: 35.6%



Forest Raven: 24.0%



Australian Raven: 20.2%



Season choices

Automatically updates to include only valid country/season combinations based on the available data

Prediction

Top 3 species with predicted probabilities

Statistics by species

Sensitivity and specificity from the trained model, for each species

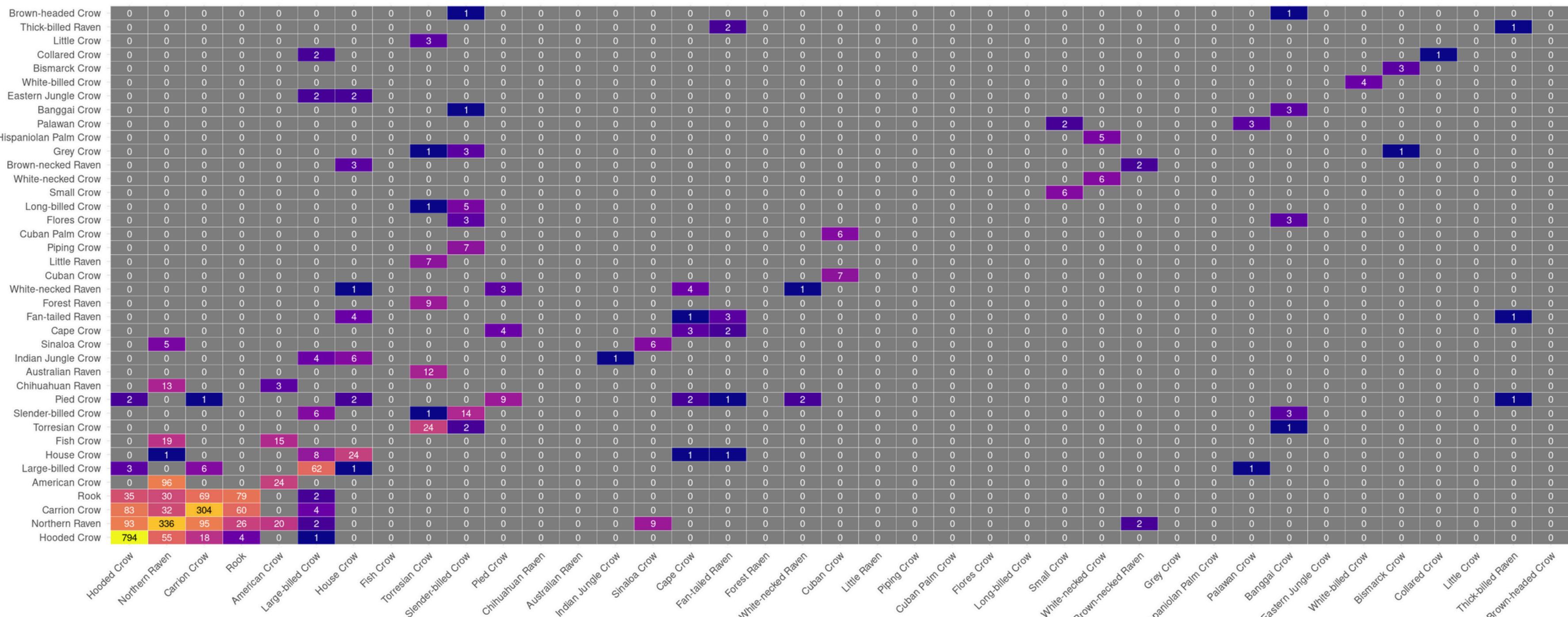
Species	Sensitivity	Specificity
American Crow	0.2	0.99
Australian Raven	0	1
Banggai Crow	0.75	1
Bismarck Crow	1	1
Brown-headed Crow	0	1
Brown-necked Raven	0.4	1
Cape Crow	0.33	1
Carrion Crow	0.63	0.91
Chihuahuan Raven	0	1
Collared Crow	0.33	1

Showing 1 to 10 of 39 entries

Model Accuracy Statistics

The model correctly predicted the species 64.4% of the time. The true accuracy of the model is expected to fall between 62.6% and 66.2% with 95% confidence. The model's accuracy is significantly better than random guessing (No Information Rate = 32.7%). Cohen's Kappa, which adjusts for chance agreement, is 0.55 (moderate). A confusion matrix is displayed below to visualize model performance on the training data.

Confusion Matrix



Predicted

Freq
100
10
1