

The importance of open-access data in biodiversity conservation, environmental education and scientific research is indisputable. The open data is a pivotal point for involving citizens in nature conservation, and thus it is the base of cooperation between the citizens and governmental institutes. The lack of a widely accessible general ornithological database in Romania motivated us to create the OpenBirdMaps (openbirdmaps.ro), as a part of the OpenBioMaps (openbiomaps.org) framework.

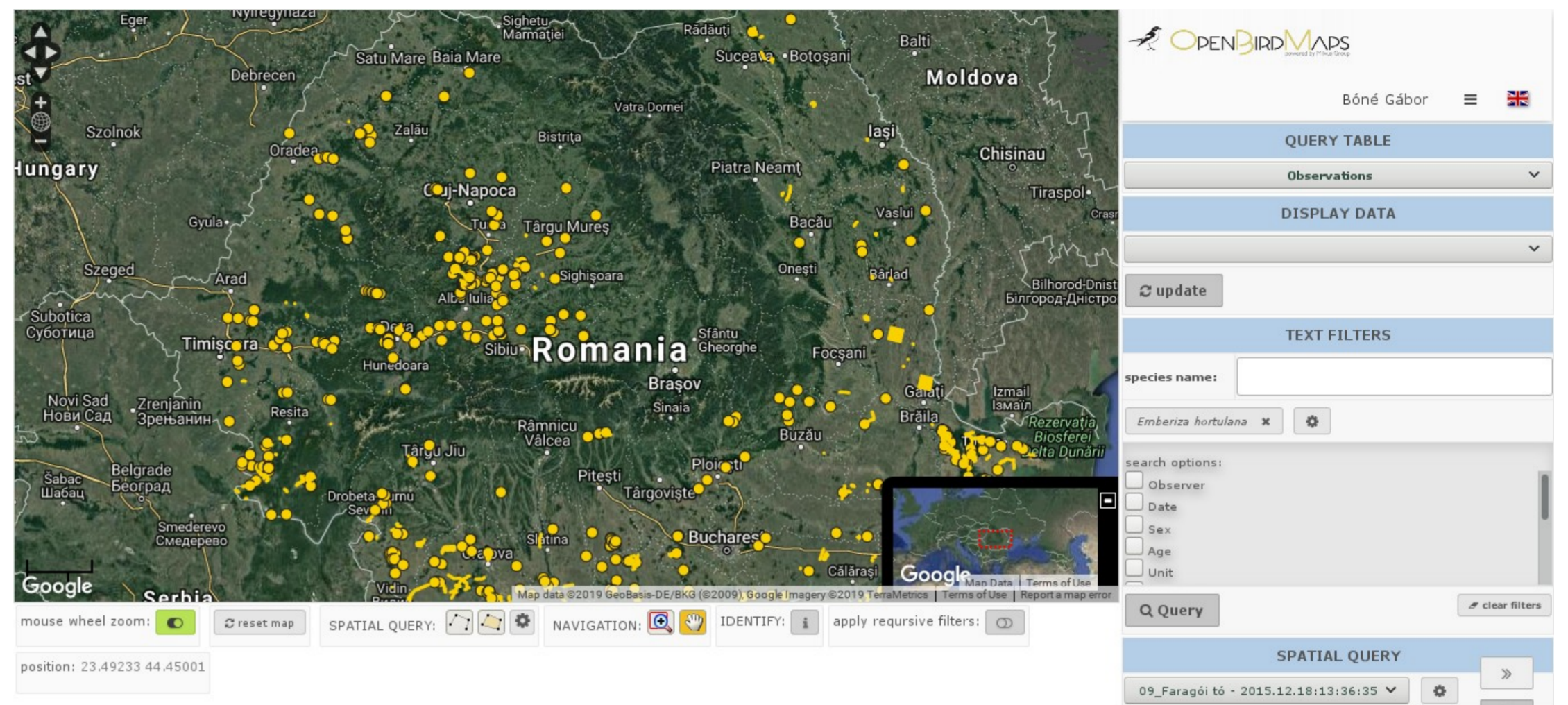


Figure 1. The map page of the OpenBirdMaps

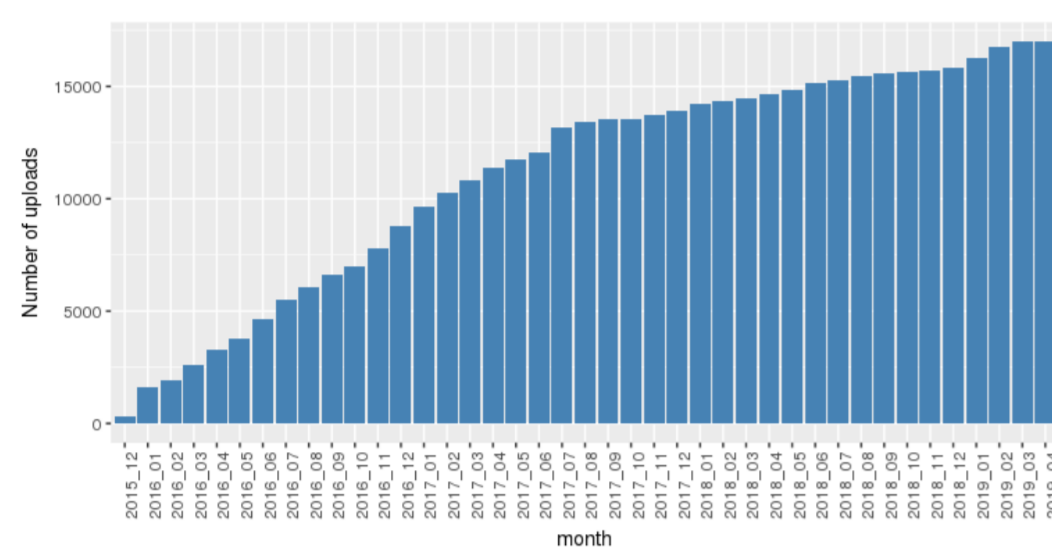


Figure 2. Cumulative number of data uploads

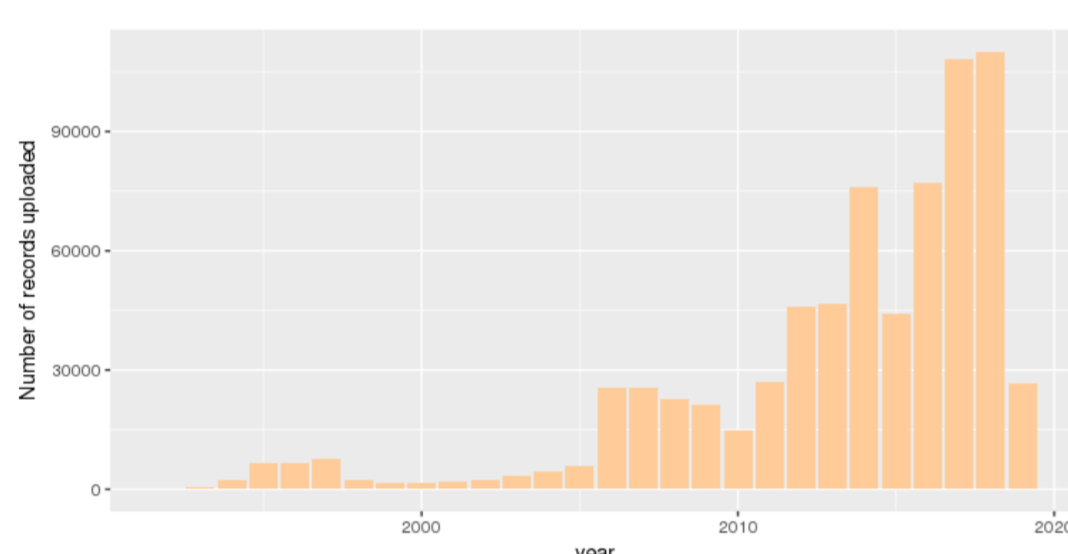


Figure 3. Number of records per year

OpenBirdMaps, launched in 2016 by Milvus Group Association, is dedicated to collect and freely publish information regarding the spatial and temporal distribution of wild birds in Romania. The aim was to create a user friendly system that stimulates amateur or professional ornithologists to share their observations.

Most (82%) of the 700.000 records available at the moment can be freely used for scientific, conservational and educational purposes.

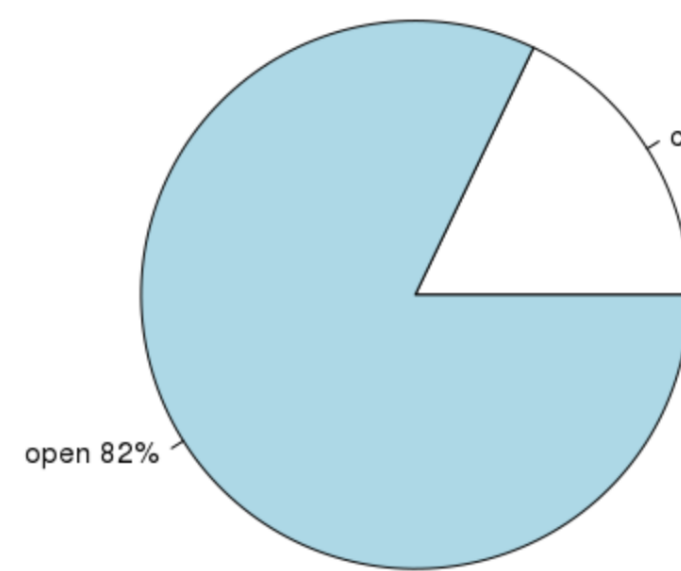


Figure 4. Distribution of accessibility of the data

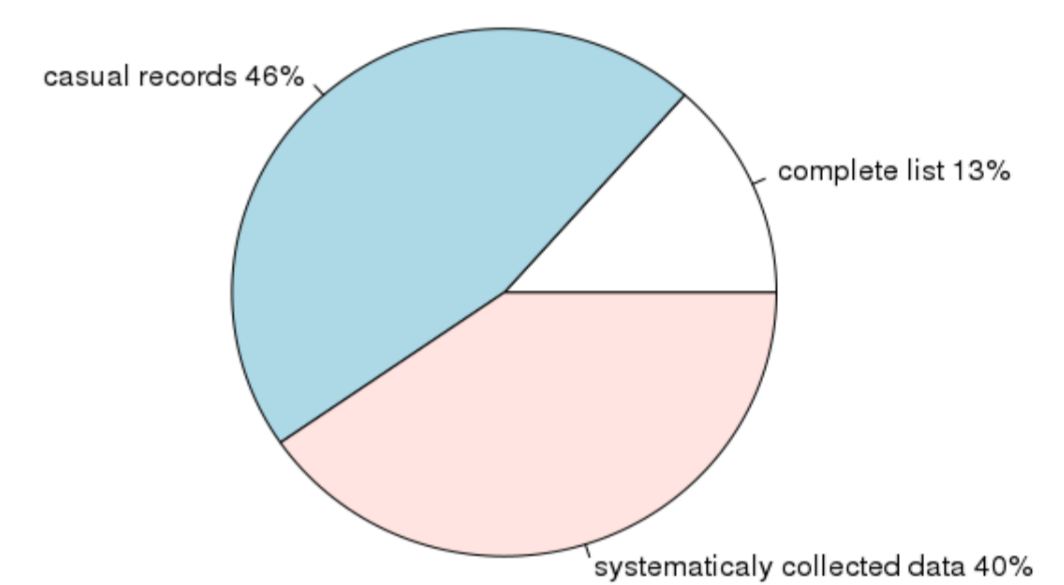


Figure 5. Distribution of data based on data collecting protocol

### The framework:

## OpenBioMaps

spatial biotic databases

The OpenBioMaps projects main objectives are to maintain an open and free biological database service, and to develop software applications to handle biological data.

These applications provide a framework for structurally and functionally independent databases.



### Plans for the near future

- Development of the mobile application
- Increasing the ease of use of the web application
- Reaching back to users by offering user statistics and basic data interpretation
- Permitting data upload for other species groups than birds
- Creating a semi-automated data verification module

### What are the main features of the application?

#### Uploading observations:

- multiple geometry types supported (point, transect, polygon)
- customizable upload forms shared between the web interface and the mobile application
  - more than 20 uploading forms for the different survey protocols and monitoring programs
- web browser
- file upload from various file types (gpx, shp, csv, xls, ...)
- preprocessed file upload (csv exported from observation.org)
- API
  - OpenBioMaps mobile app
  - R package

#### Getting the data:

- web browser
- spatial query by drawing polygons or with uploaded polygons
- textual filters by various attributes
- export files in gpx or csv formats
- desktop applications
  - R
  - QGIS

#### Miscellaneous:

- EuroBirdPortal automatic data flow
- sophisticated permission management
- multilingual support