EDDMapS: A platform for data aggregation, collection, and sharing of occurrence and management data

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EDDMapS find · map · track

Background

Large amounts of data are needed as a foundation to create models and decision support systems. Ideally, the data has a wide geographic scope with standardized measures over many years. Even if a single data set does not meet these criteria, it is possible to make use of smaller datasets. Unfortunately, this requires a significant amount of time to find data sets, translate them into an accessible format, understand the specifics of each data set to make them interoperable, and receive permission for reuse.

In 2005, the Early Detection and Distribution Mapping System (EDDMapS) was launched to aggregate data from existing sources without replacing the system originally responsible for the data
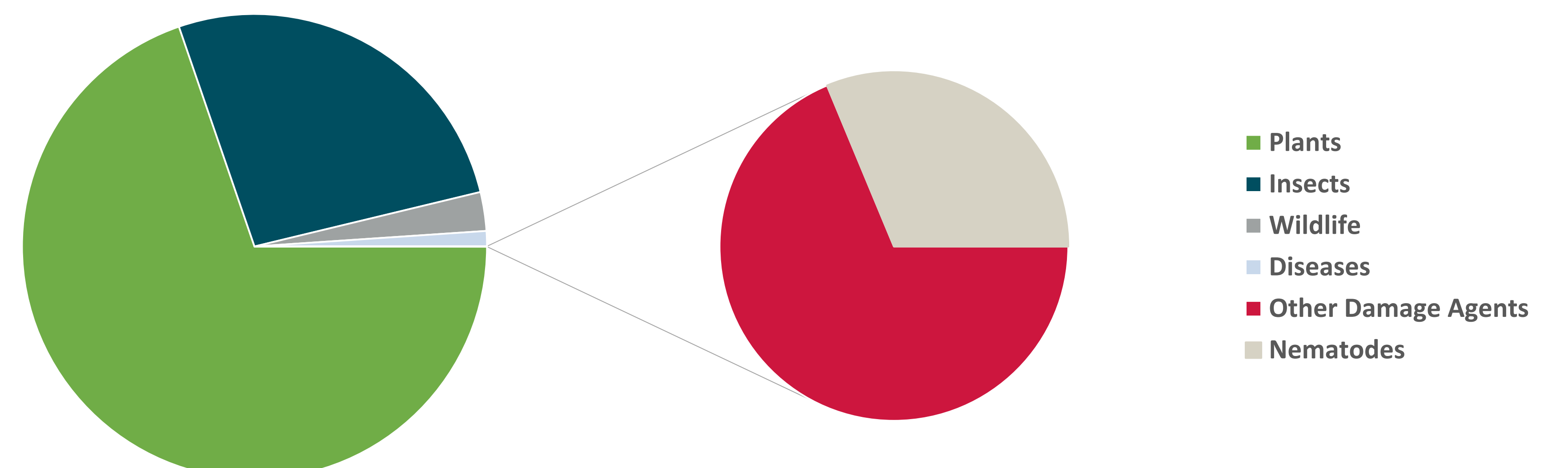
Reports, users, and subject per year

**Records** · **Subjects** · **Reporters**
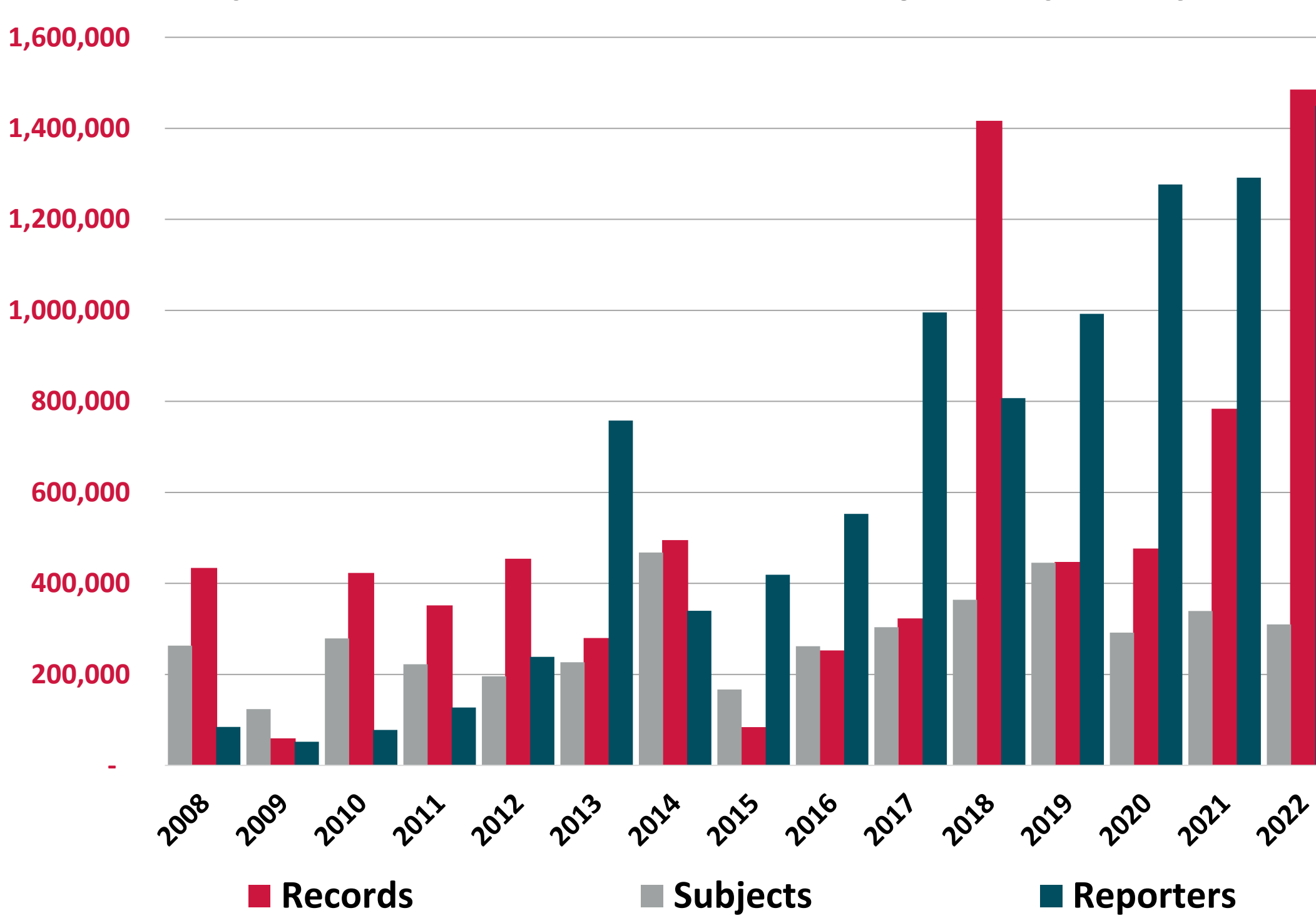
Scope of the data and participation has continued to increase. The entire data set now features more than 7.8 million occurrence records from 40,845 reporters.

The data pertains to 5,580 taxa, although it does not necessarily have data in every year and location for every species. Similarly, while the majority of data is in North America, there are records from 61 countries, 84 states. and 3,713 counties.

Observation dates may predate the founding of the system. There are 189 years represented in the data with a strong bias toward after 2005.
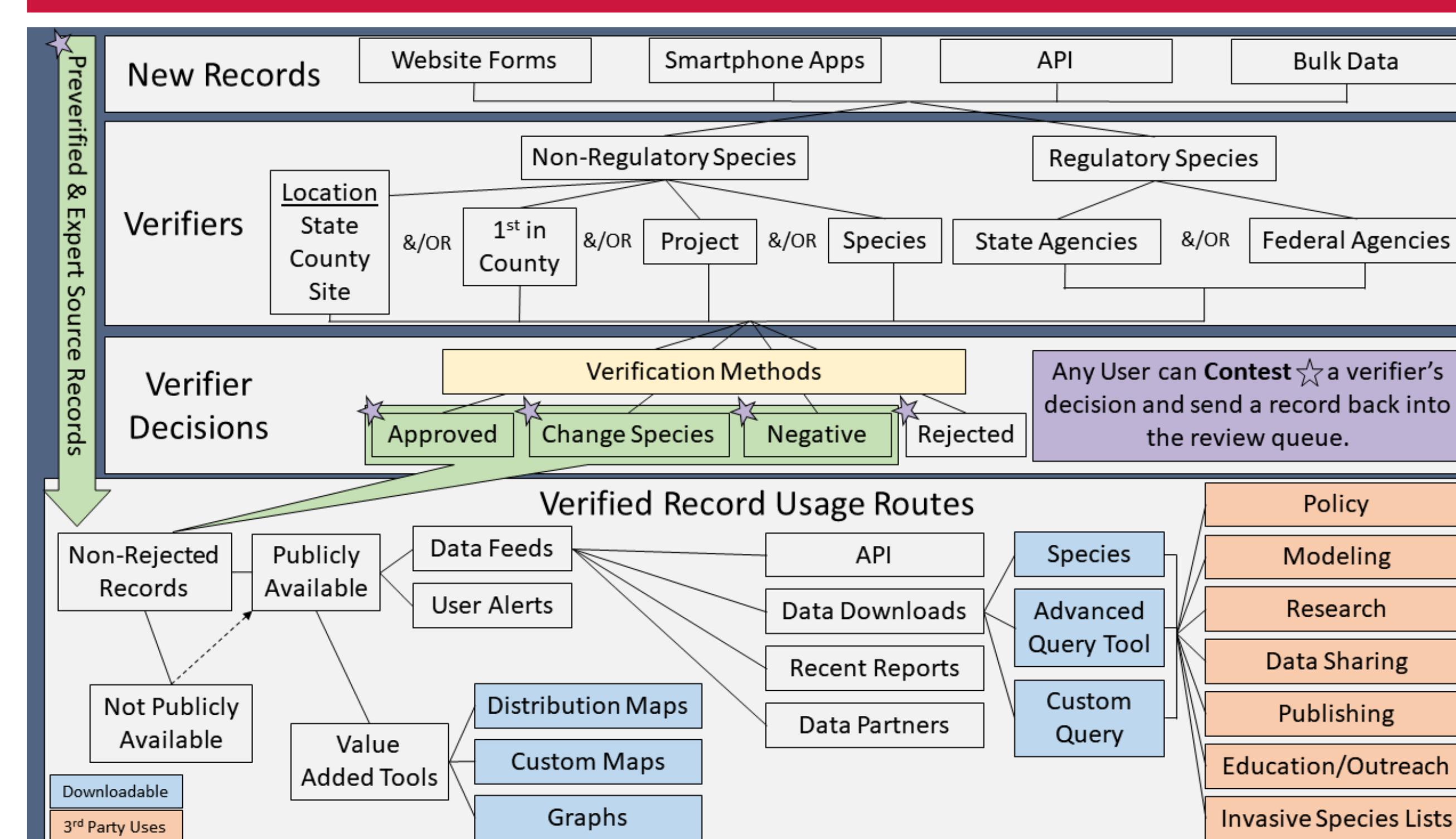
Reports by year added

Reported · **Aggregated**

Reports are either aggregated from other systems (grey) or are directly reported to EDDMapS (red).

Active users by year

Active users includes individuals that report, verify reports, or request to download data

As data increased, visualizations were added and functionality was developed for groups to collect data directly in the EDDMapS platform

Each data collection tool and visualization is customized to fit the particular work flow of field personnel and story that can be told with the data. While some are widely applicable to many different groups, the capacity to adapt helps reduce barriers to adoption. County maps are frequently used where individuals do not want to disclose exact locations of pest populations while point maps are used with active groups seeking to directly manage newly reported infestations. The mapping engine can also used to enable publishing and wider distribution of model outputs.
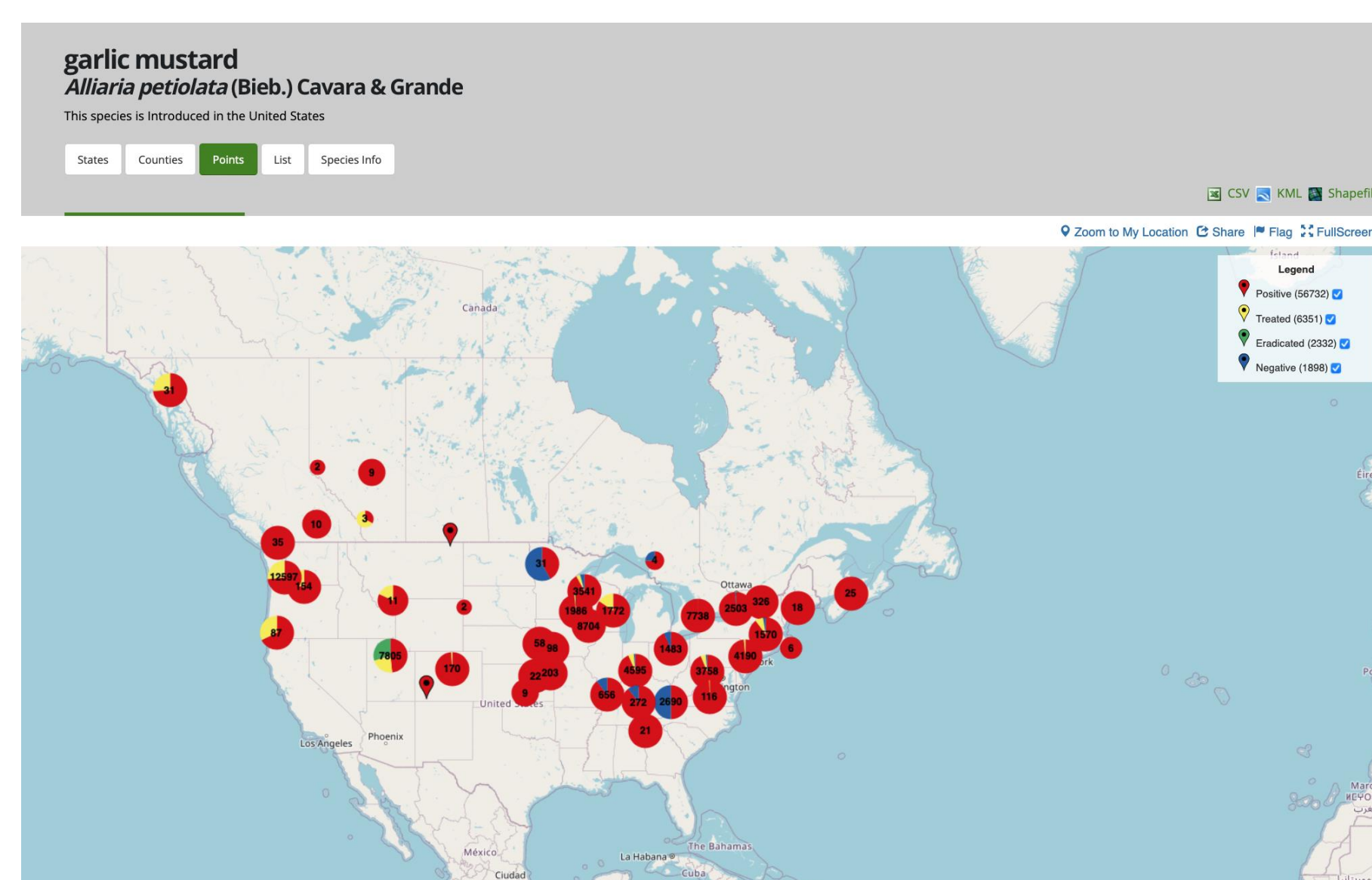
Point map showing the eradication status of data
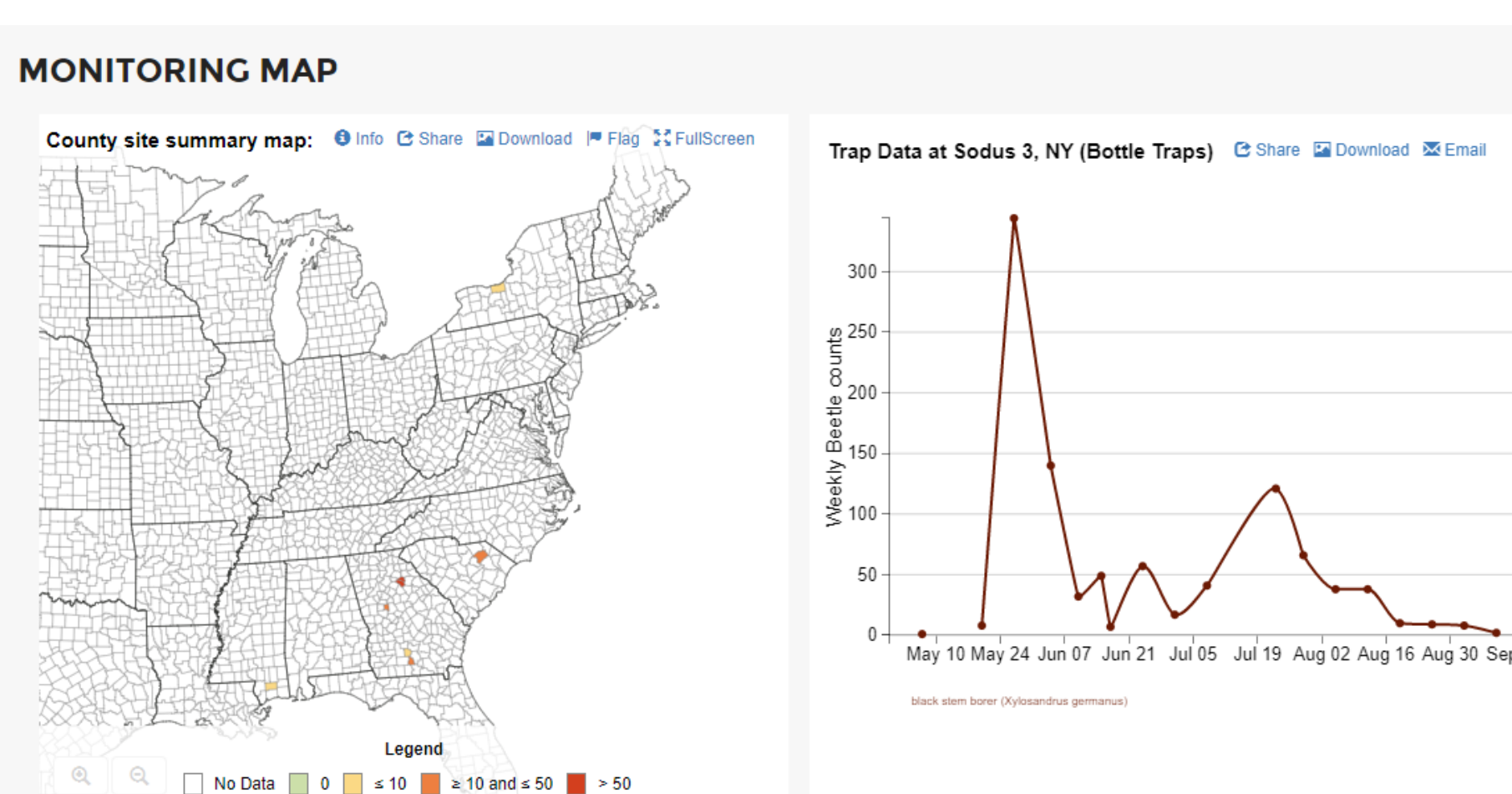
County level maps can help to visualize data without disclosing exact locations. In these cases, partners decide what will be shown when a county is clicked. In this case, it's the site with the highest trap catches
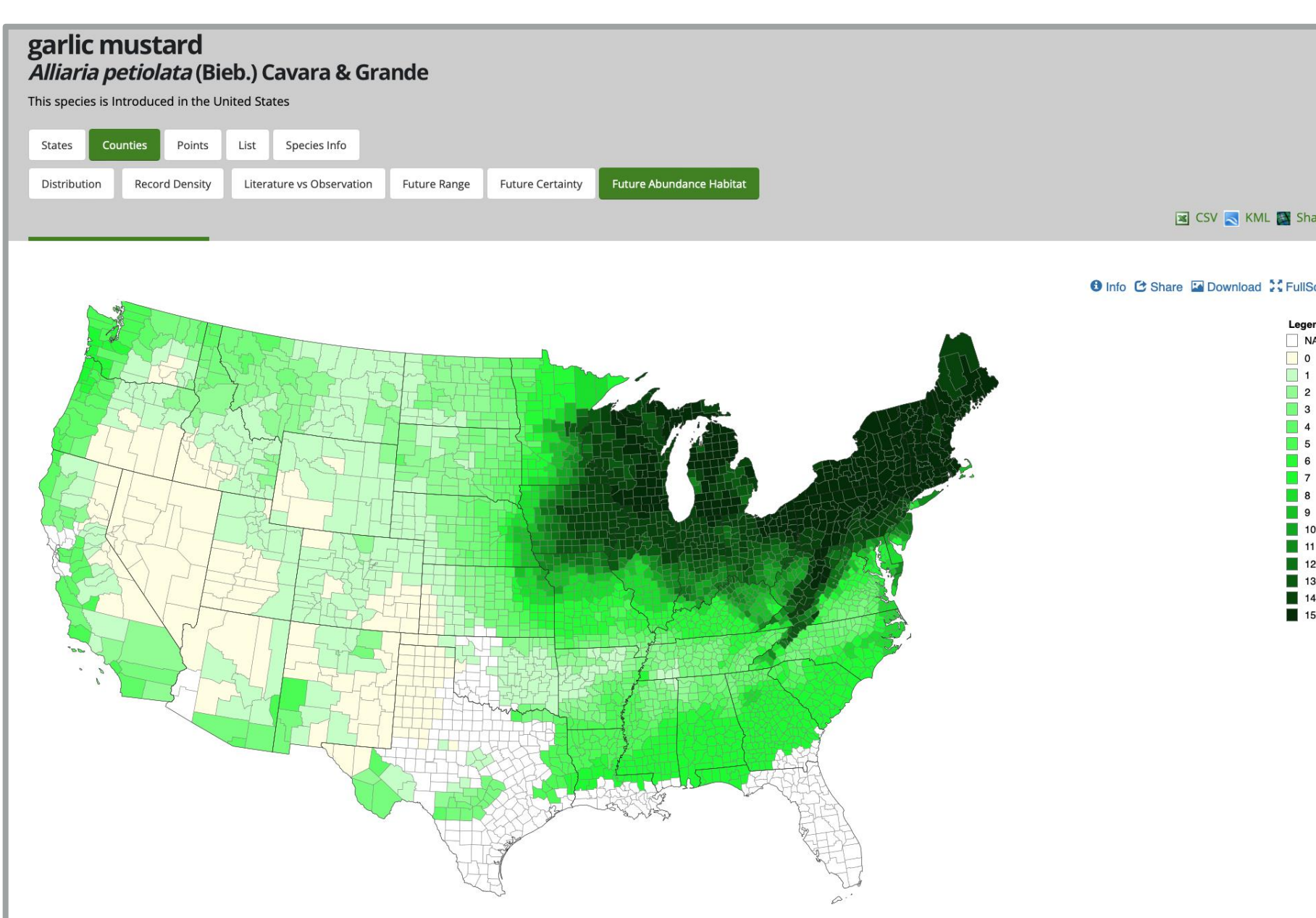
This model of habitat abundance was developed using data from EDDMapS. The mapping engine was then used to distribute the model output so it can be used on any site, including EDDMapS.
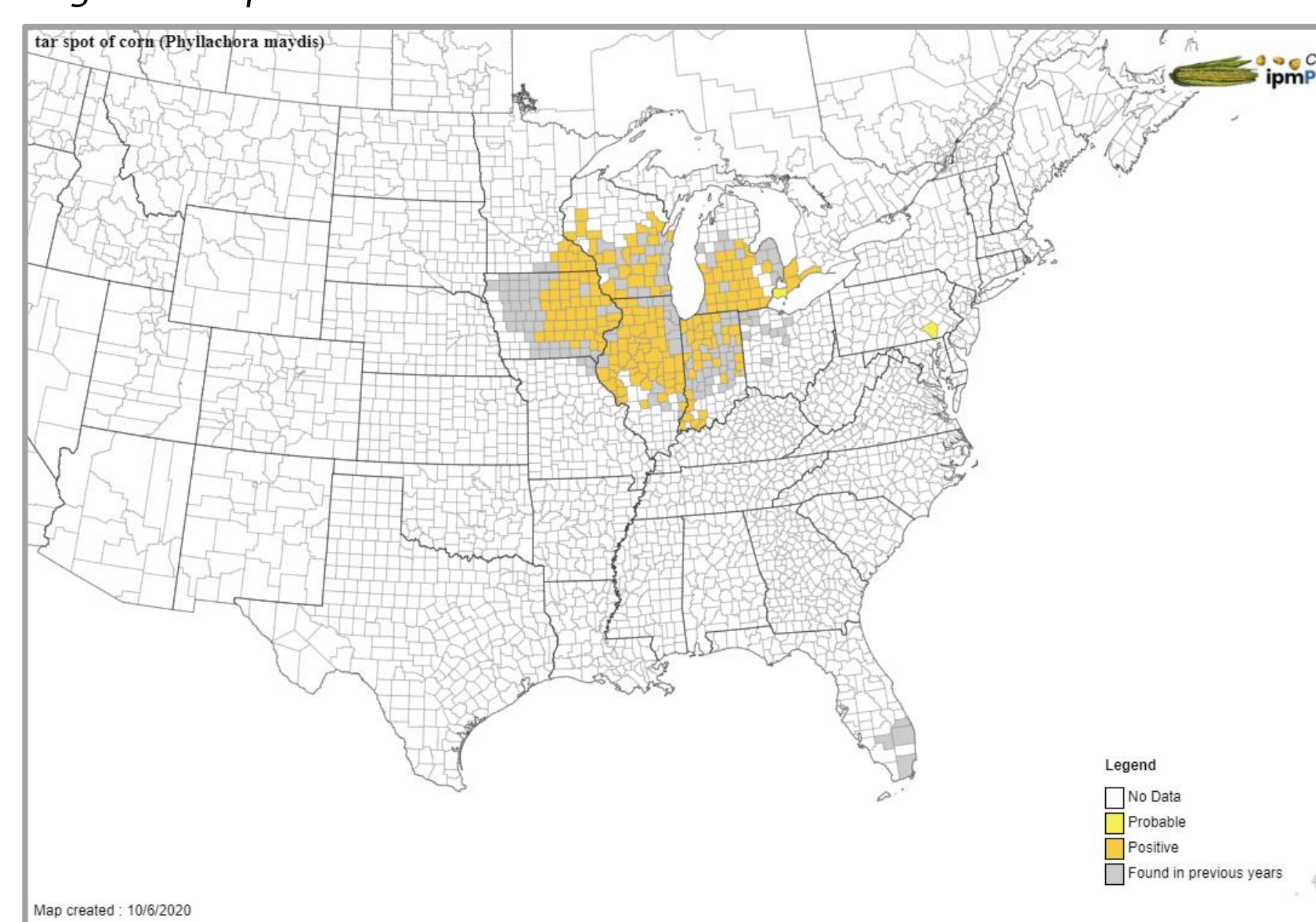
Extension specialists customized this tar spot of corn map to show where it has been seen in previous years and counties with confirmed reports in the current year.

Data includes any taxonomic group and any commodity or setting as long it directly pertains to an organism that may cause damage

- Plants
- Insects
- Wildlife
- Diseases
- Other Damage Agents
- Nematodes

Aggregation also involves quality control and interpretation so a single agreed standard can enable interoperability between data providers
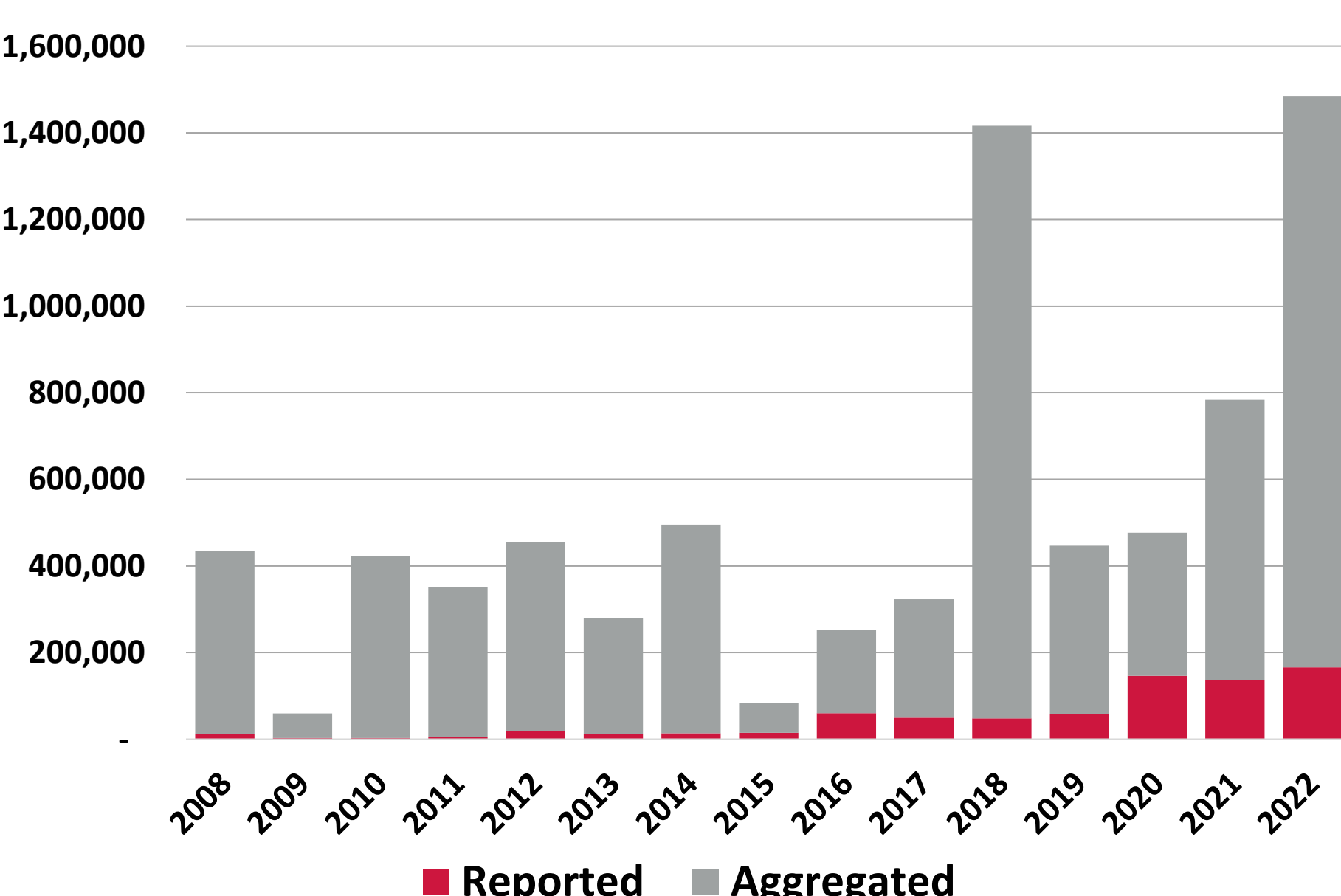

97% of reports have been verified.

Over the life of the system, 1,082 experts have contributed to this data curation.
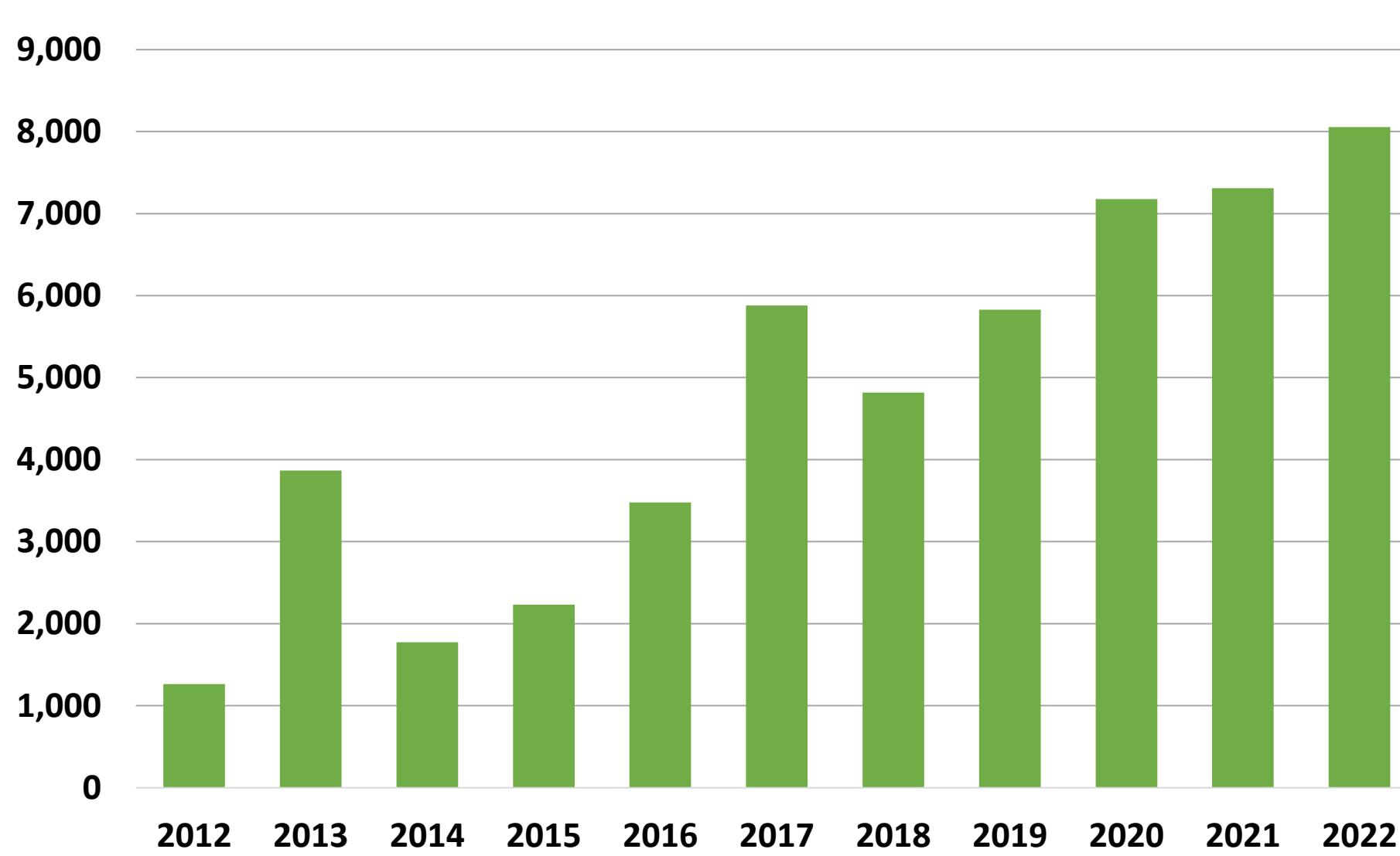
900 experts are currently active in improving the utility of the available data for a total count of more that 1,500 verifiers

- Reviewed & Public
- Unreviewed
- Reviewed & Not Public
- Awaiting information

EDDMapS is the system of record for efforts that choose to not build their own system for pest occurrence and management data

Noxious Weeds

All Taxa

Commodity and pest based programs

Summary

EDDMapS has led to a more robust and immediately useful data source as the data has become Findable, Accessible, Interoperable, and Reusable (FAIR). More information on EDDMapS and access to the data that has been made publicly available can be found at www.eddmaps.org. To get involved or ask questions, contact Joe LaForest (laforest@uga.edu)