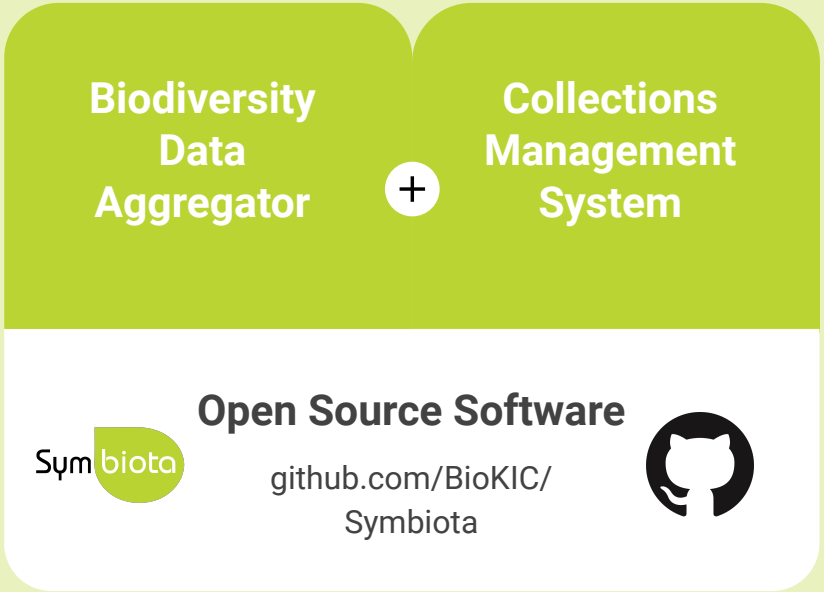
Growth and Evolution of the Symbiota Portal Network

Katie Pearson

Project & Data Manager

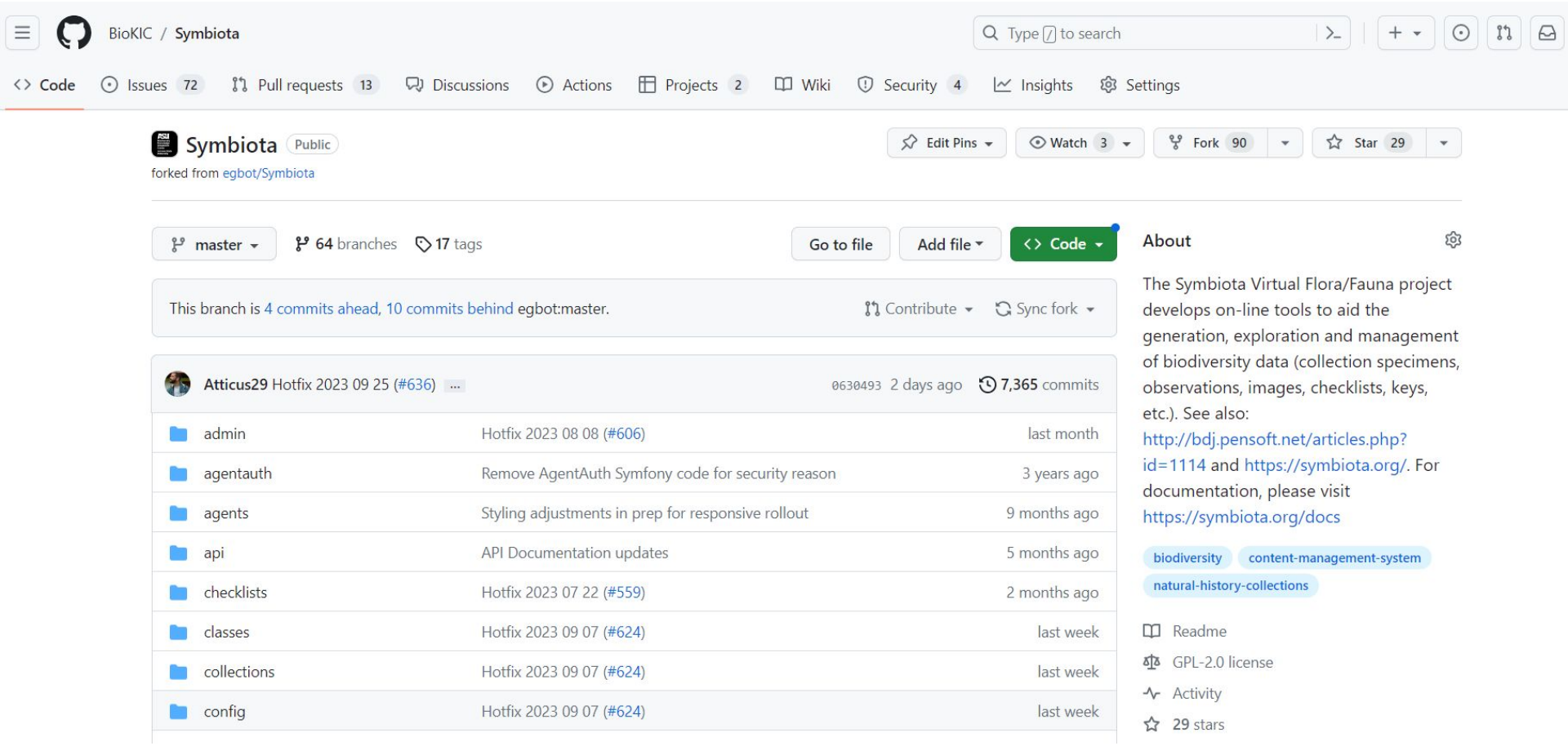
Edward Gilbert, Nico Franz, Samanta Orellana, Greg Post, Lindsay Walker, Jenn Yost



Symbiota

Open source software for creating **themed data portals** that help collections communities **share** and **actively manage** biodiversity data.

https://github.com/BioKIC/Symbiota



Browse articles by subject

User Guide

Learn to access, view, and download data and checklists.

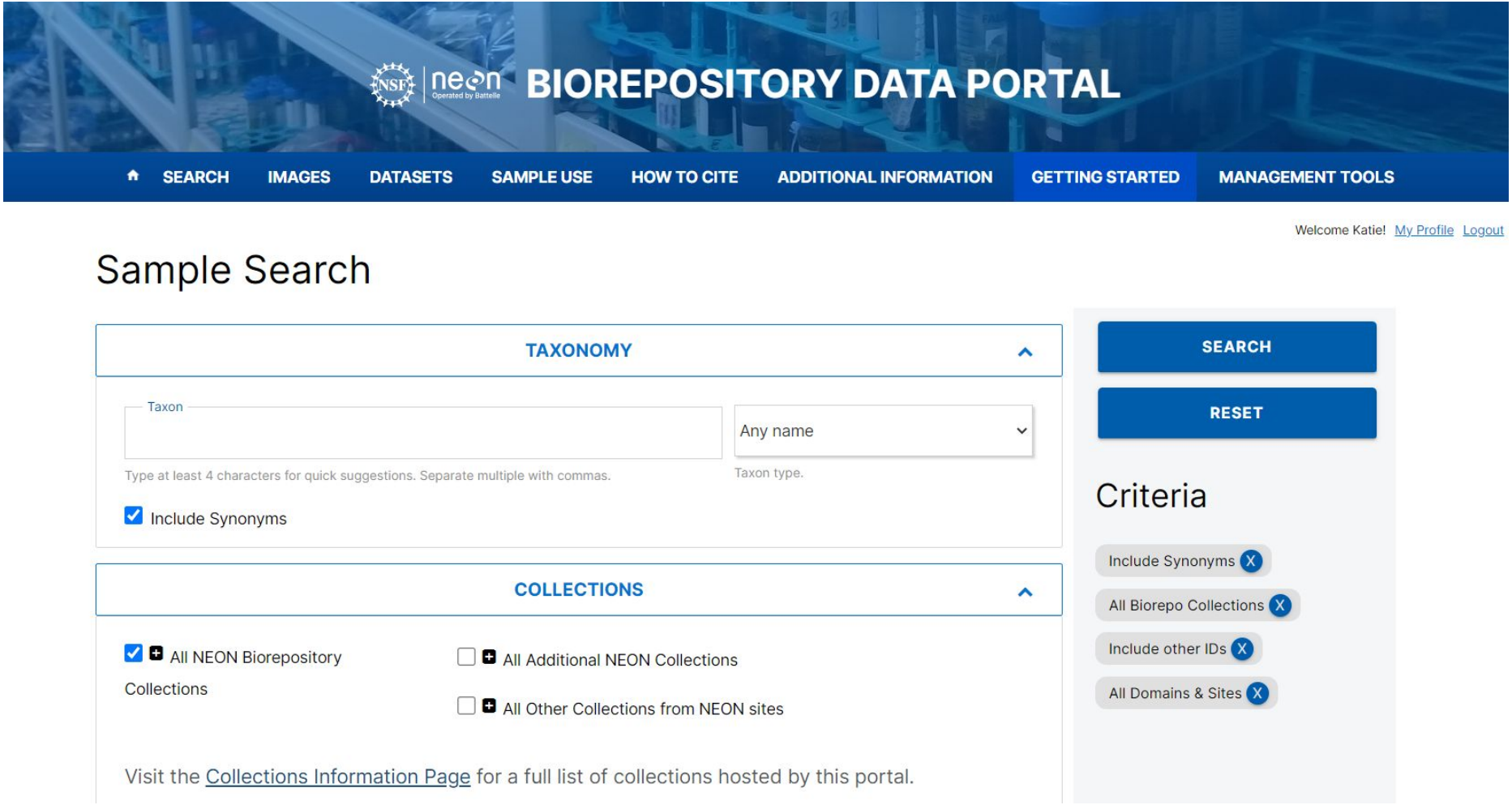
Editor Guide

Learn to edit, manage, import, and export data in Symbiota portals

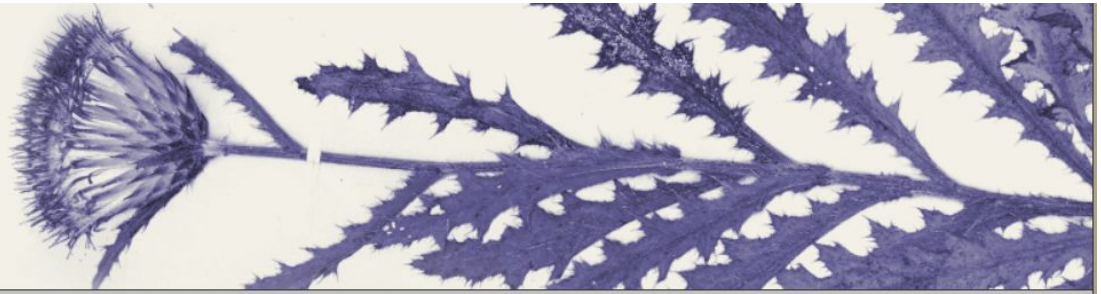
Collection Manager Guide

Learn to clean data, edit permissions, upload data, and perform other administrator functions.

https://symbiota.org/docs


BIOREPOSITORY DATA PORTAL
SEARCH
IMAGES
DATASETS
SAMPLE USE
HOW TO CITE
ADDITIONAL INFORMATION
GETTING STARTED
MANAGEMENT TOOLS
Welcome Katie! My Profile Logout
Sample Search
TAXONOMY
Taxon
Any name
Type at least 4 characters for quick suggestions. Separate multiple with commas.
Taxon type.
Include Synonyms
COLLECTIONS
All NEON Biorepository Collections
All Additional NEON Collections
All Other Collections from NEON sites
Visit the Collections Information Page for a full list of collections hosted by this portal.
SEARCH
RESET
Criteria
Include Synonyms
All Biorepo Collections
Include other IDs
All Domains & Sites

Consortium of Midwest Herbaria



Specimens & Observations | Specimens | Observations | Federal Units

Select/Deselect all collections

Consortium of Midwest Herbaria

Search >

- **Albion College** (ALBC) more info...
- **Amway Herbarium** (AMWH) more info...
- **Augustana College** (AUGIE) more info...
- **Butler University, Friesner Herbarium** (BUT) more info...
- **Calvin College** (CALVIN) more info...
- **Central Michigan University Herbarium** (CMC) more info...
- **Chicago Academy of Sciences, Botany Collection** (CHAS-Herb) more info...
- **Chicago Botanic Garden** (CHIC) more info...

Albion College (ALBC)

Occurrence Data | Determination History | Images | Linked Resources | Traits | Admin

Collector Info

<<

Catalog Number ?: ALBC000001

Tag Name (optional) ?:

Additional Identifier Value:

Collector / Observer ?: C. W. Fallass

Number ?: 427

Date ?: 1926-06-06

Duplicates

Auto search

Associated Collectors ?:

Verbatim Date ?:

Exsiccati Title:

Number:

Latest Identification

Scientific Name ?: Abies balsamea

Author ?: Mill.

Identification Qualifier ?:

Family ?: Pinaceae

Identified By ?:

Date Identified ?:

Locality

Country ?: United States

State/Province ?: Michigan

County ?: Ingham

Municipality ?:

Location ID ?:

Locality ?: Lansing

Security: Security not applied ?

Deactivate Locality Lookup

Latitude | Longitude | Uncertainty ? | C | F | Datum ? | << | Verbatim Coordinates ?

Elevation in Meters ? - << | Verbatim Elevation ? | Depth in Meters ? - | Verbatim Depth ?

Misc

Label Processing

Zoom? Rotate: L <> R Med Res. High Res.

Image 1 of 1

Tesseract OCR

OCR whole image

OCR w/ analysis

OCR Image

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?Inches | , , ,1        ! I I I I I I2  I I I I I I
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16 117 118 119 I
T?FFEN Color Control Patches
Centimetres
```

55+ community portals

55+ community portals

91 million records shared via Symbiota portals

Xanthoparmelia ajoensis
Sharnoff, Stephen

Xanthoparmelia californica
Sharnoff, Stephen

Xanthoparmelia coloradoensis
Sharnoff, Stephen

Xanthoparmelia cumberlandia
Bungartz, Frank

Xanthoparmelia lavicola
Fenstermacher, Joselyn

Xanthoparmelia lineola
Fenstermacher, Joselyn

55+ community portals

91 million records shared via Symbiota portals

1,800 natural history collections

55+ community portals

91 million records shared via Symbiota portals

1,800 natural history collections

969 collections
using Symbiota as their primary collection management system

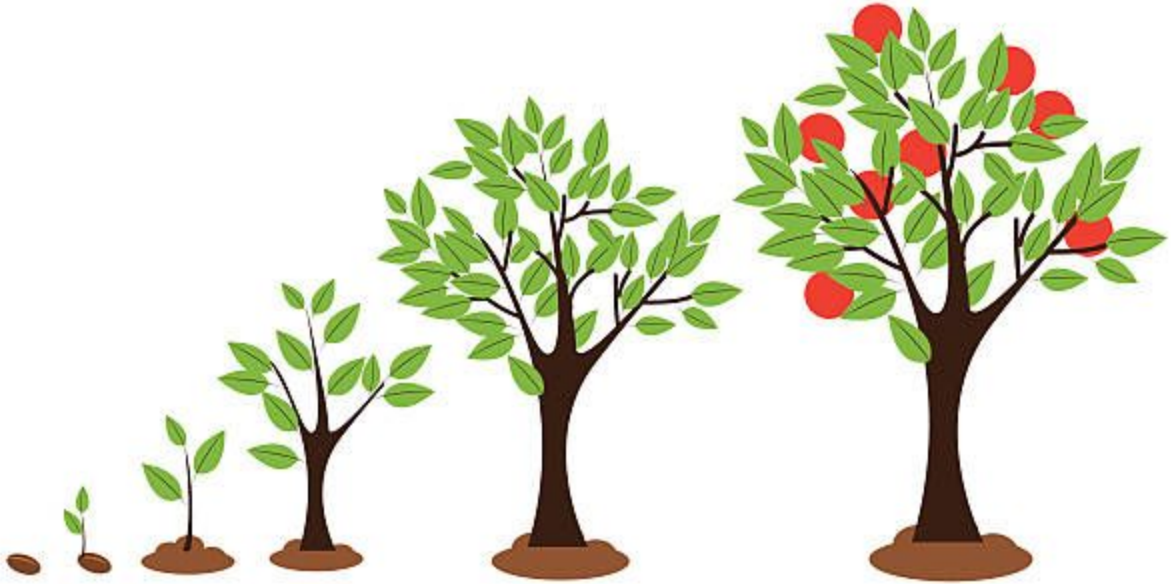
55+ community portals

91 million records shared via Symbiota portals

1,800 natural history collections

969 collections
using Symbiota as their primary collection management system

850+ snapshot collections
using Symbiota for community connection



Symbiota

Symbiota designed as a **checklist** and **identification key** management tool

2008

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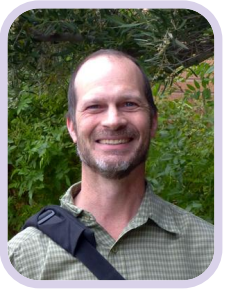
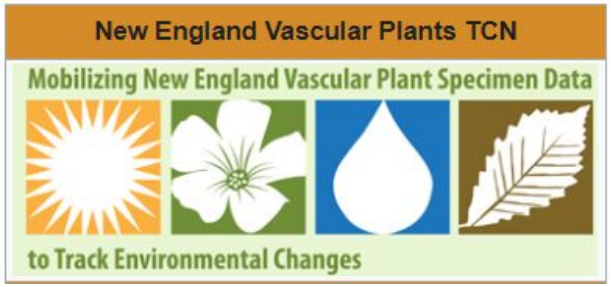
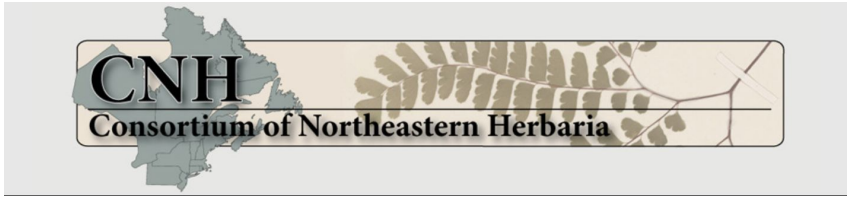


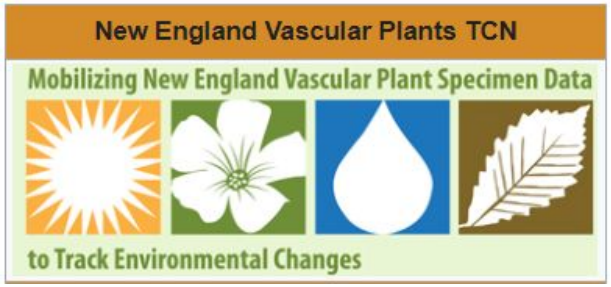
Symbiota

Symbiota designed as a **checklist** and **identification key** management tool

Constant, iterative development of Symbiota into a **collaborative collection management system** and biodiversity **data aggregator**


New England Vascular Plants TCN
Mobilizing New England Vascular Plant Specimen Data
to Track Environmental Changes


CNH
Consortium of Northeastern Herbaria


New England Vascular Plants TCN
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InvertEBase TCN
Invert
EBase

Invert
EBase
Invert E Base
Reaching back to see the future
Home
Project Information
Search
Images
Inventories
Glossaries
Associated Projects

Portals + Communities

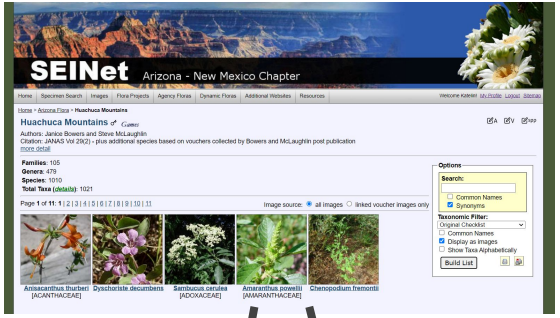
Themed portals with **user communities** coalesced around **common goals** (digitization/data mobilization)

- Taxonomic
- Geographic
- Institutional
- Project-based

Portal Directory:
symbiota.org/symbiota-portals

Benefits of a **Community Hub**

- Platform to accomplish the shared goals
- Meeting place for the passionate
- Group curation of taxonomy
- Leverages the work of others - Finding duplicates - transcriptions, annotations, georeferences
- Make data findable by those who want it
- Users can interact with the data and with you
- Produces data quality flags
- Easy pipeline to data aggregators like GBIF and iDigBio



Darwin Core Archive

Aggregators

GBIF
Global Biodiversity Information Facility

iDigBio
Integrated Digitized Biocollections

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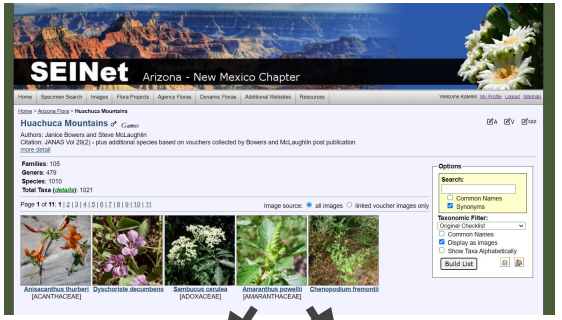
- Easy pipeline to data aggregators like GBIF and iDigBio
- Connections to other systems



Other portals

Arctos

Other specimen data providers & systems

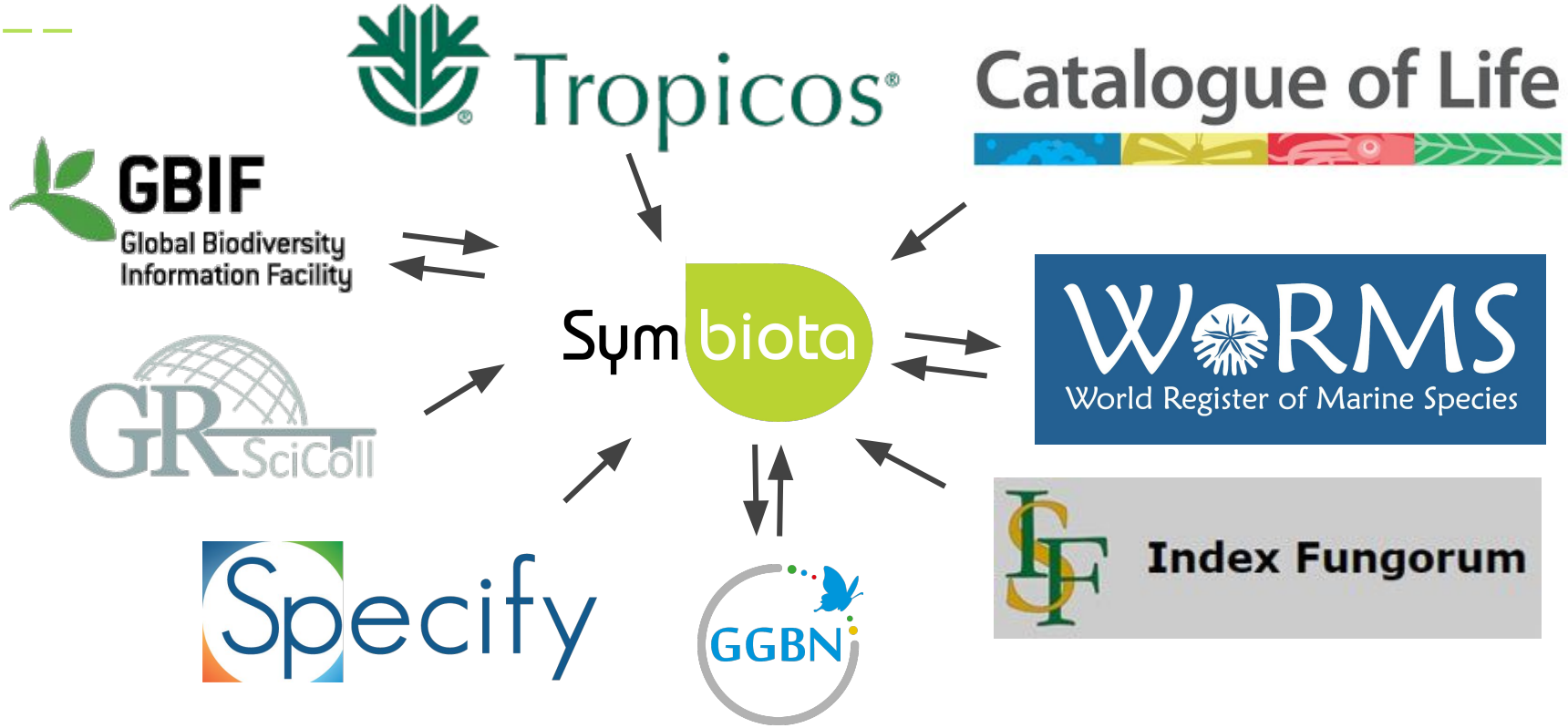
zenodo

API-enabled data providers

AusTraits

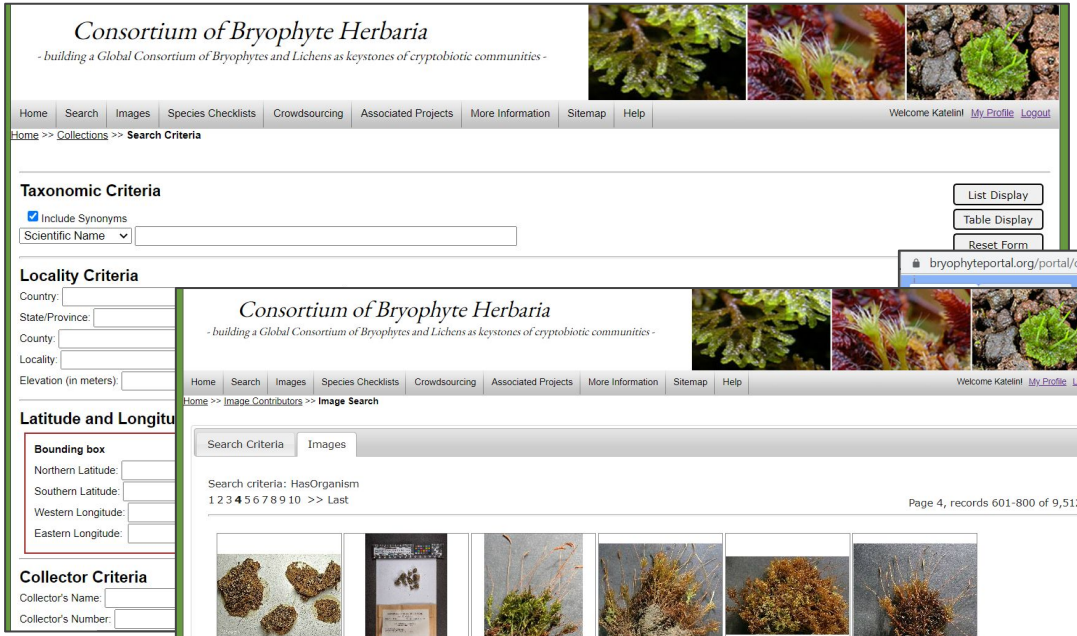
BOLD SYSTEMS

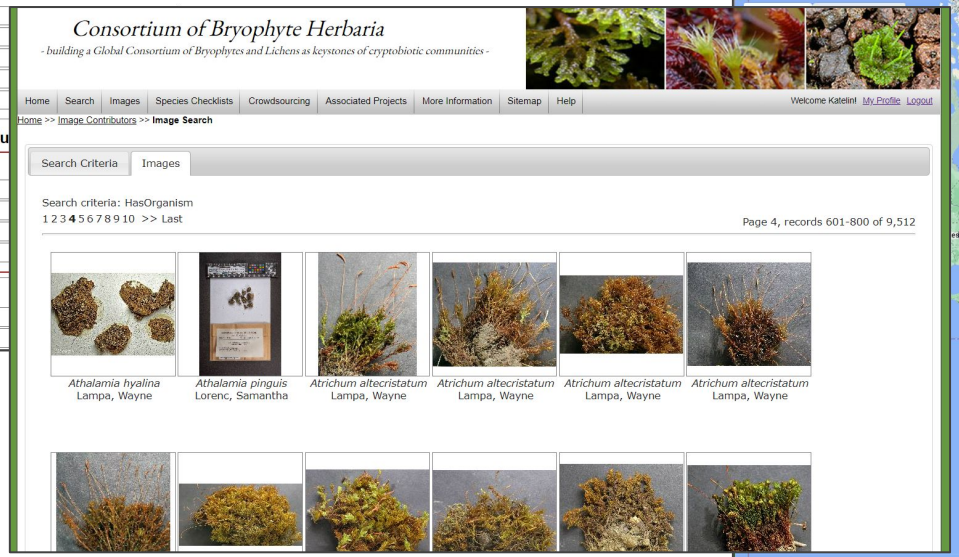
Current integrations

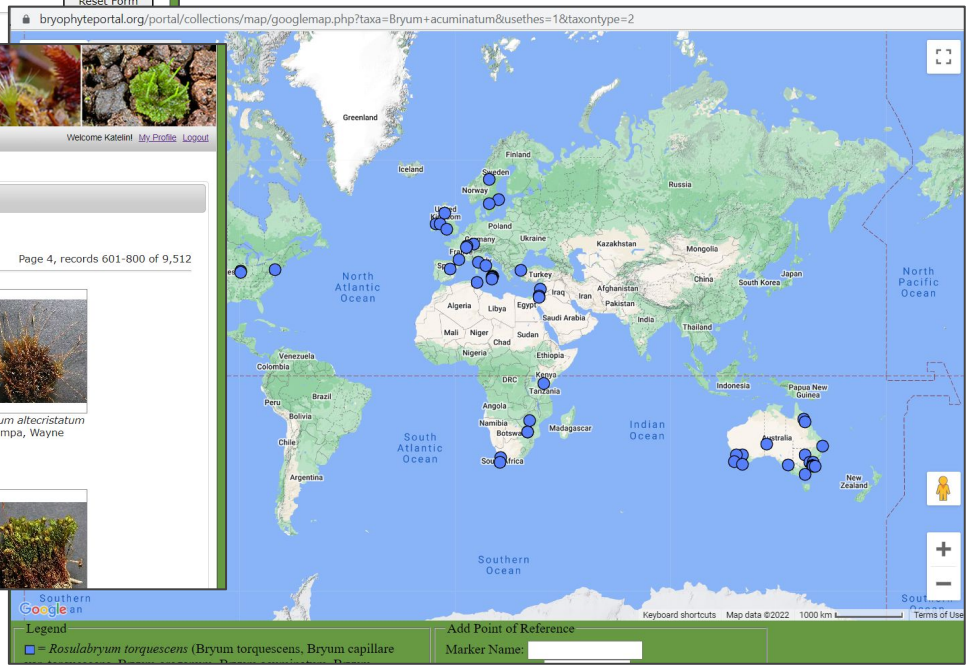


Community Functions

Public Search & Mapping Pages







Community Functions

Home | Specimen Search | Images | Flora Projects | Agency Floras | Dynamic Floras | Additional Websites | Resources

Welcome Katelin! My Profile Logout Sitemap

Home > Arizona Flora > **Huachuca Mountains**

Huachuca Mountains ♂ *Games*

Authors: Janice Bowers and Steve McLaughlin
Citation: JANAS Vol 29(2) - plus additional species based on vouchers collected by Bowers and McLaughlin post publication
more detail

Families: 105
Genera: 479
Species: 1010
Total Taxa (*details*): 1021

Page **1** of **11**: **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

Image source: all images linked voucher images only

Anisacanthus thurberi
[ACANTHACEAE]

Dyschoriste decumbens

Sambucus cerulea
[ADOXACEAE]

Amaranthus powellii
[AMARANTHACEAE]

Chenopodium fremontii

A V spp

Search:
Common Names
Synonyms

Taxonomic Filter:
Original Checklist
Common Names
Display as images
Show Taxa Alphabetically
Build List

Checklist Creation Features

Symbiota

Symbiota designed as a **checklist** and **identification key** management tool

2008

2011…

Constant, iterative development of Symbiota into a **collaborative collection management system** and biodiversity **data aggregator**

Symbiota Support Hub funded through National Science Foundation grant to Integrated Digitized Biocollections (iDigBio)

2021

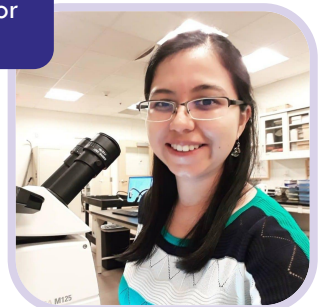
Symbiota Support Hub Team

Jenn Yost
Community Lead

Katie Pearson
Project & Data Manager

Greg Post
IT & System Administrator

Samanta Orellana
Community Coordinator for Latin America



Ed Gilbert
IT Management Lead

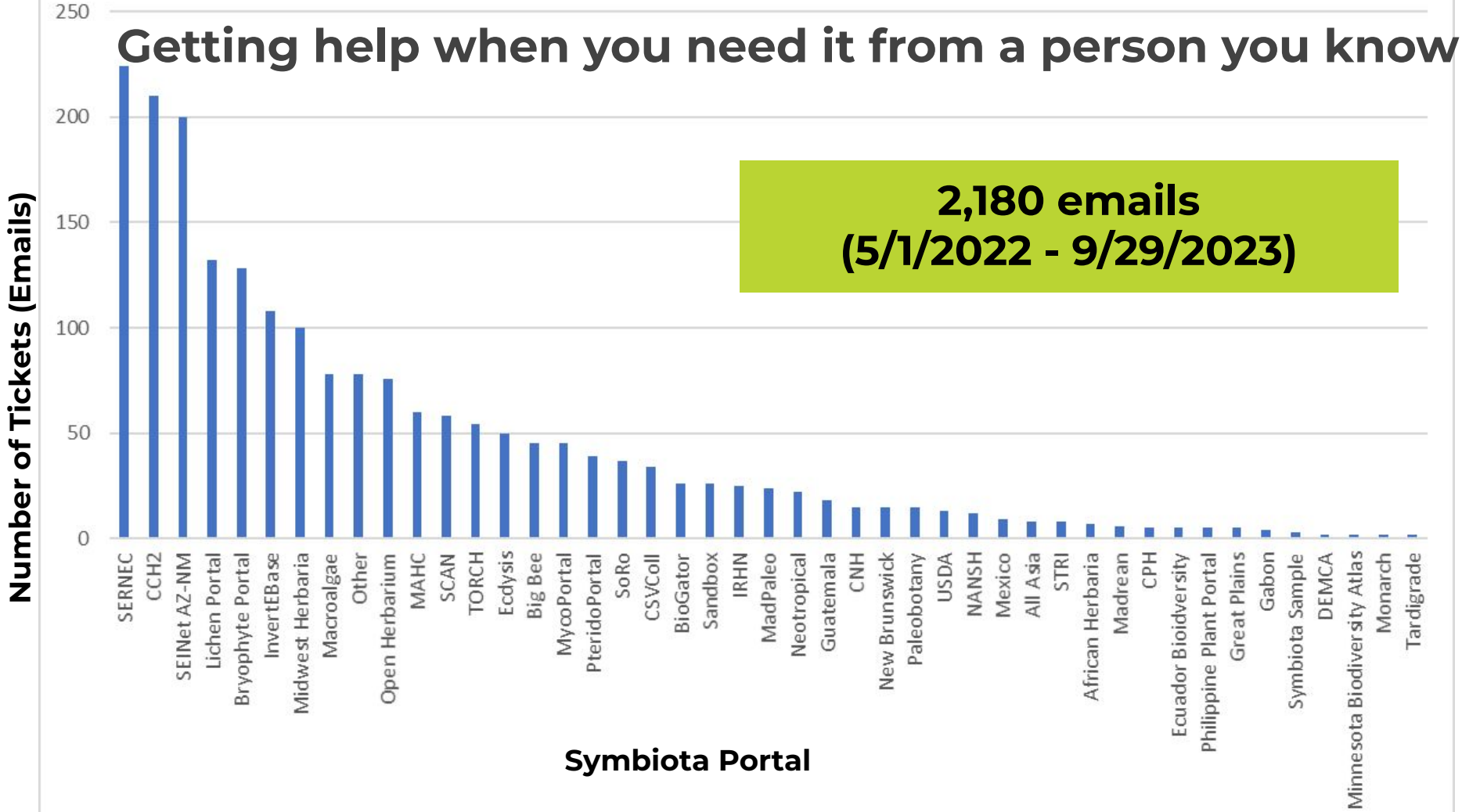
Lindsay Walker
Community Manager

Nico Franz
Management @ ASU

Logan Wilt
Developer

Mark Fisher
Developer

Getting help when you need it from a person you know



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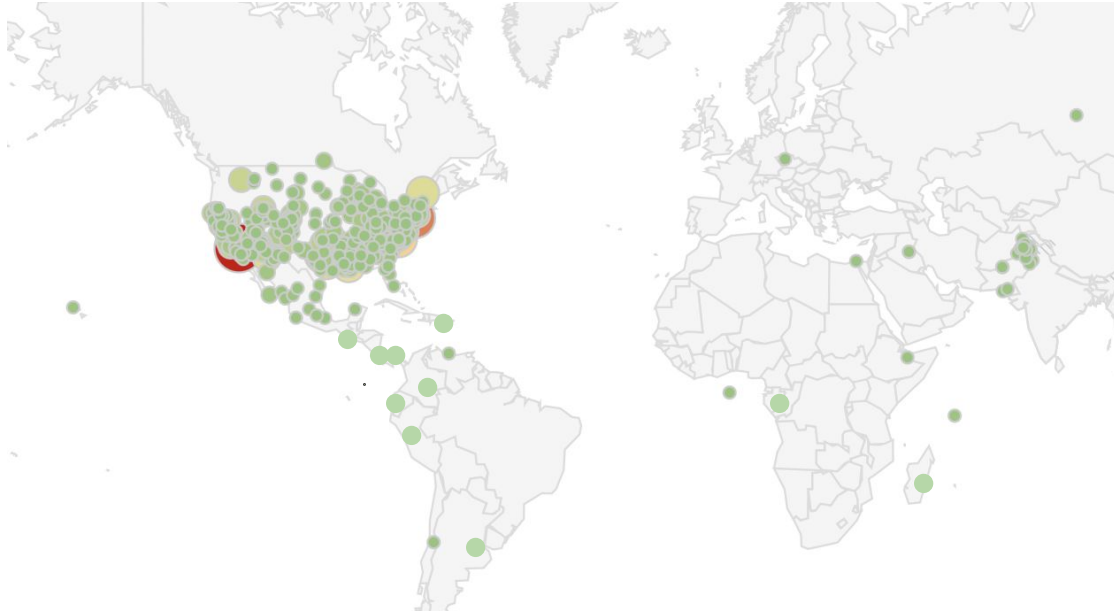
2021

present

Over **1,800 collections** use one or more of over **55 Symbiota portals** to mobilize their data with support from the Symbiota Support Hub.

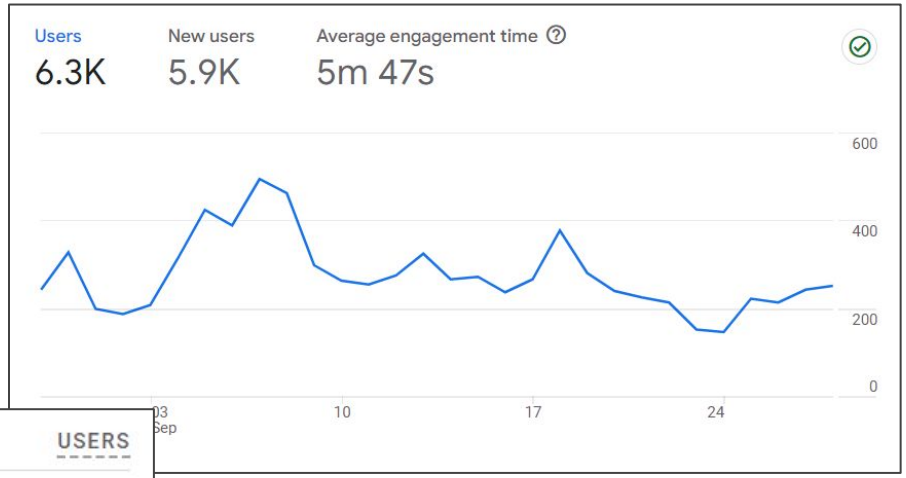
Collections Communities Supported

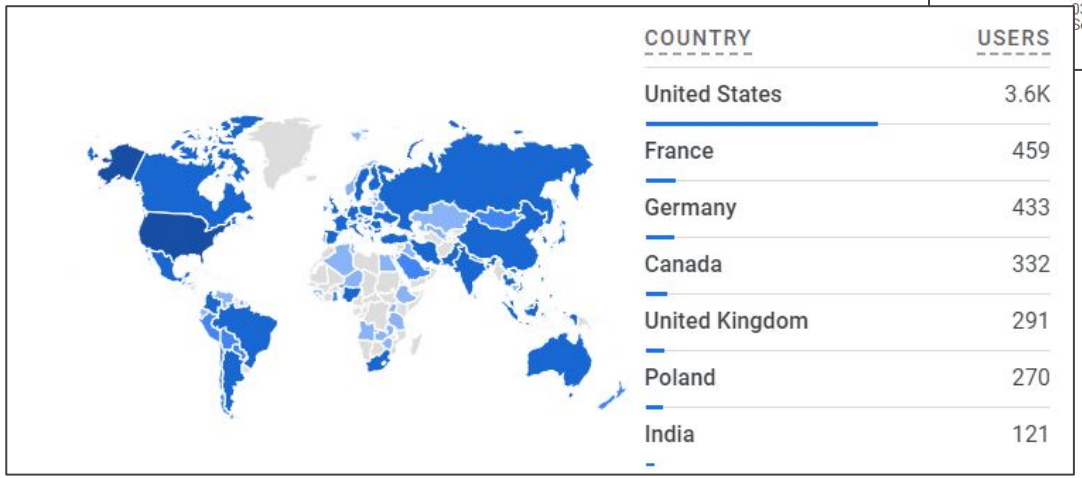
- **55+** community portals
- 969 use a portal as their **primary content management system** to curate 23 million records
- 850 **snapshot collections** use the portal for community connection
- **18 million edits** last year by 1000+ people
- 351 collections **publish 20 million records to GBIF**



Research Communities Supported

- Over **1,800 citations** of Symbiota-mediated data (from GBIF citation metrics)
- Symbiota portals see consistent, diverse **website traffic**





COUNTRY	USERS
United States	3.6K
France	459
Germany	433
Canada	332
United Kingdom	291
Poland	270
India	121

1 month
1 portal
6,300 users
103,000 pageviews

New Portals

New Portals

NEW BRUNSWICK MUSEUM

MUSÉE DU NOUVEAU-BRUNSWICK

New Portals

NEW BRUNSWICK MUSEUM
MUSÉE DU NOUVEAU-BRUNSWICK

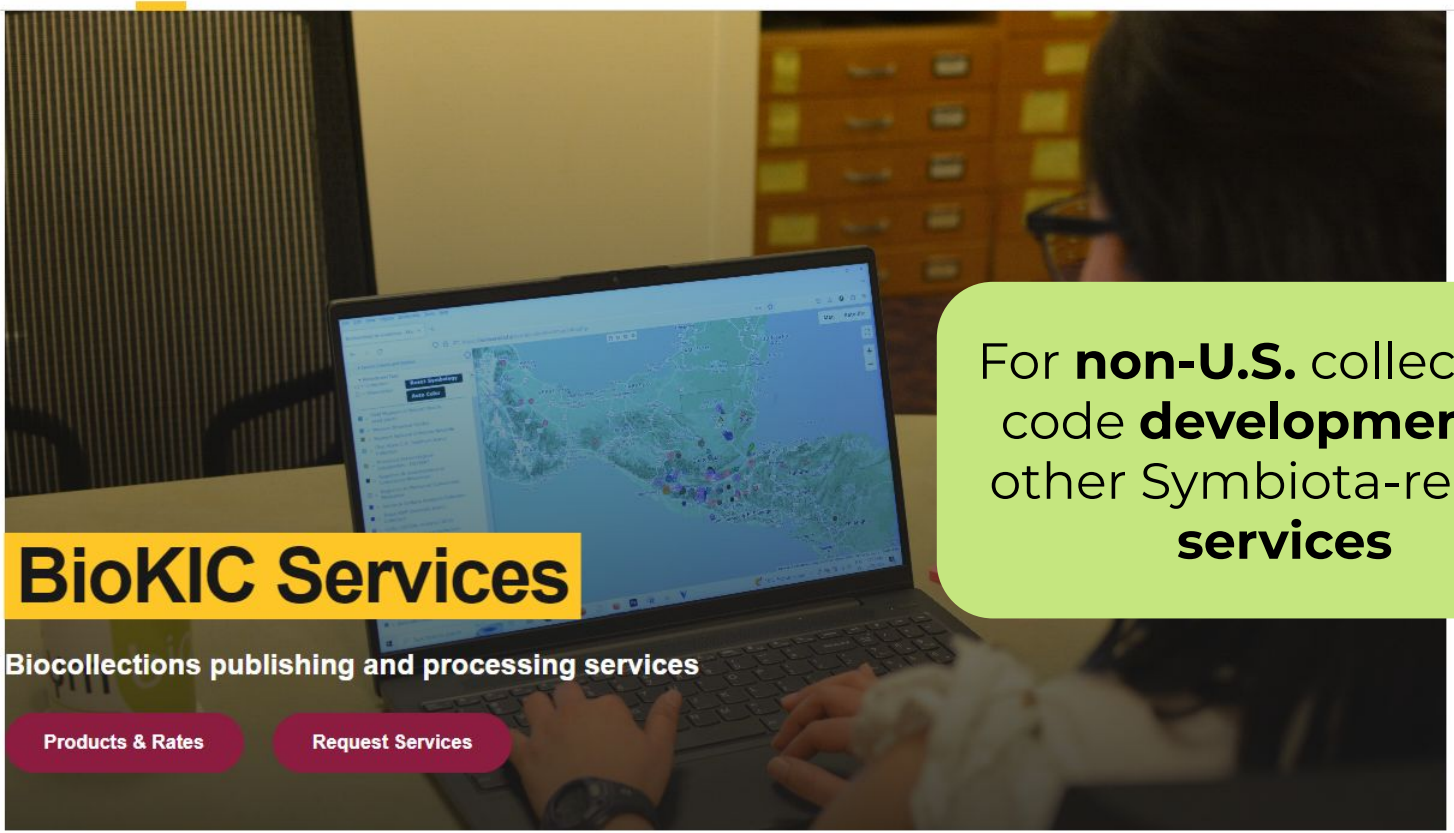
Sustainability

Arizona State University

BioKIC Services

Products and Rates | Request Services | Featured Projects

https://services.biokic.asu.edu/



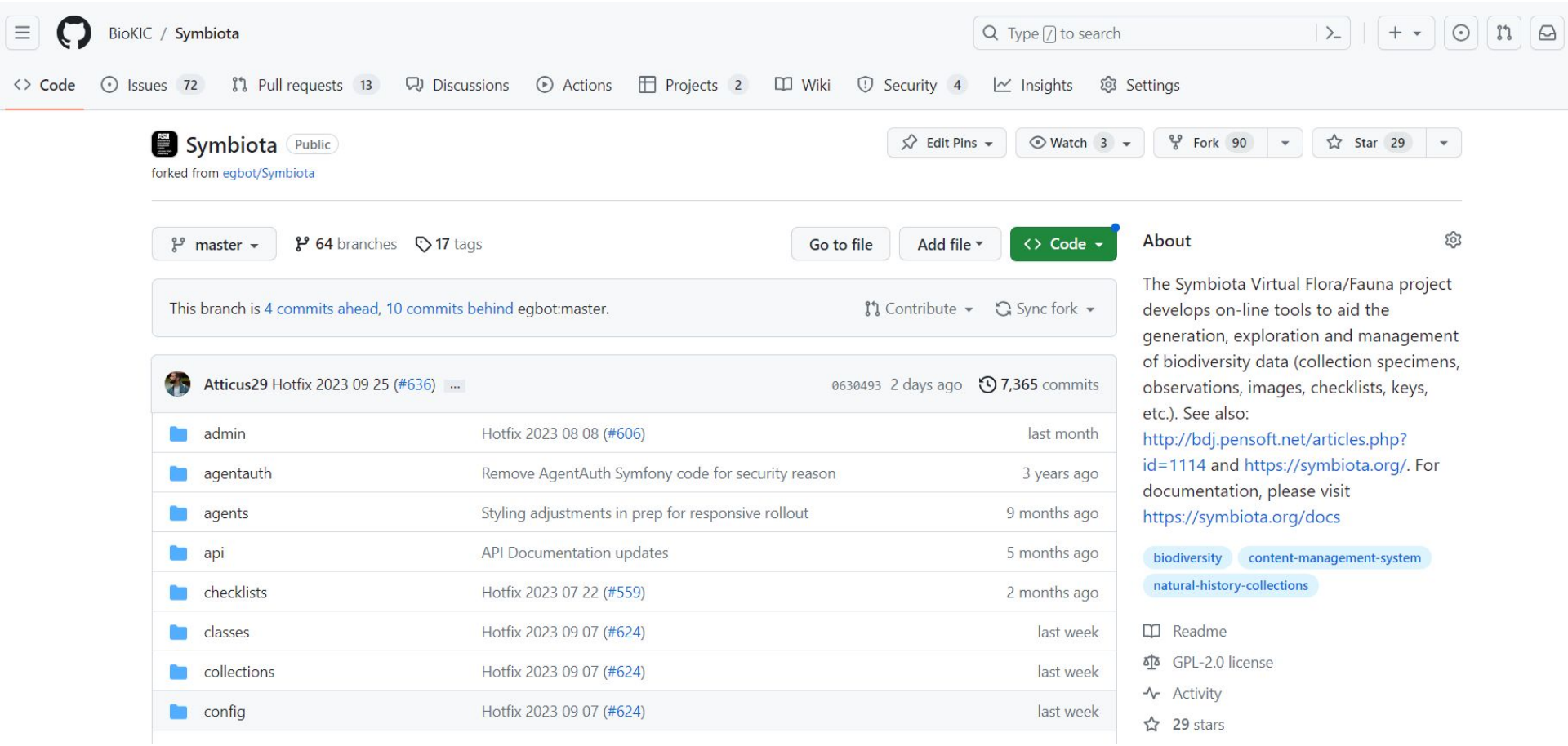
For **non-U.S.** collections, code **development**, or other Symbiota-related **services**

About

BioKIC Services provides products and services related to the digitization, management, and

Collaborations

https://github.com/BioKIC/Symbiota



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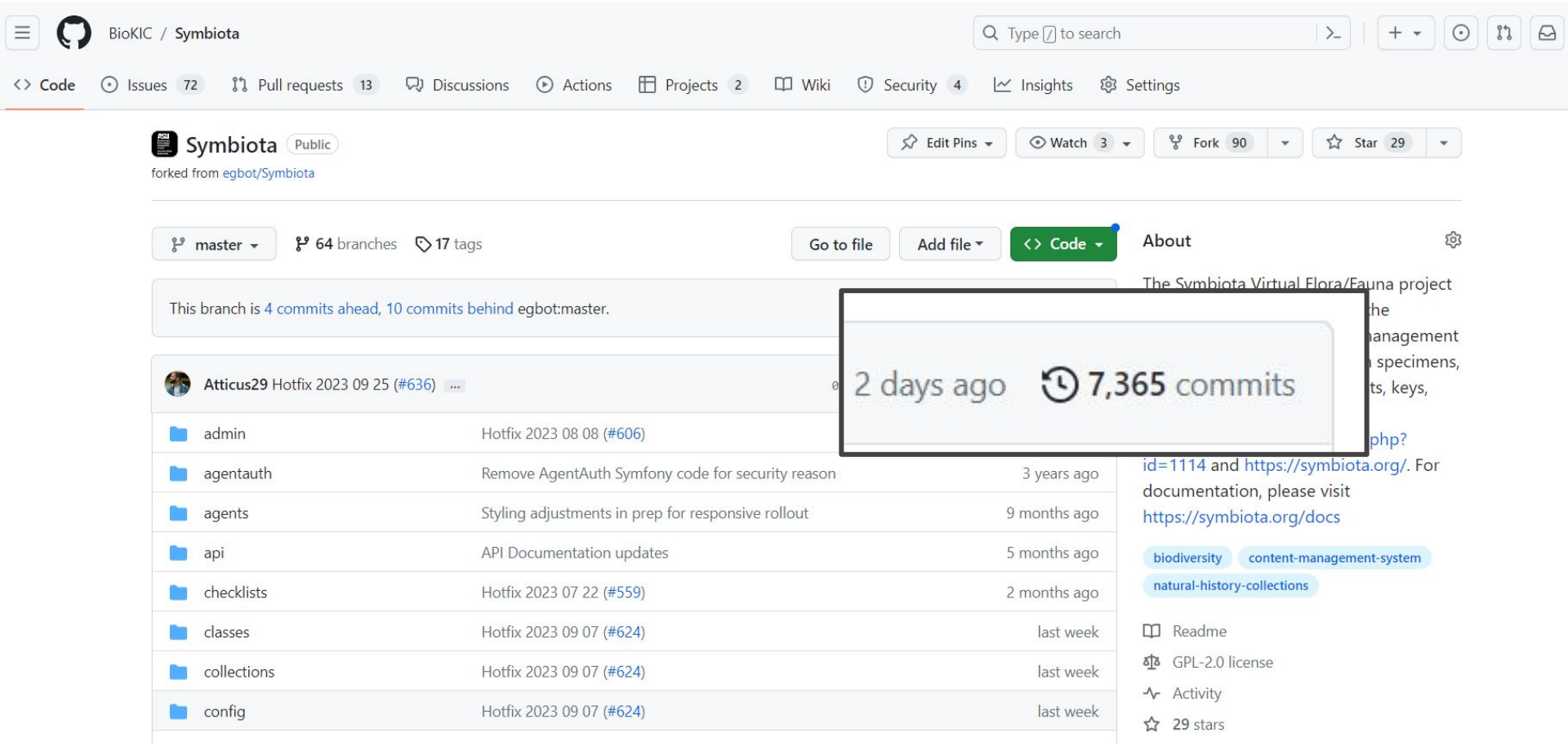

Collaborations

- Always welcoming new collections to our existing portals
  - https://symbiota.org/symbiota-portals/

Collaborations

- Always welcoming new collections to our existing portals
  - https://symbiota.org/symbiota-portals/
- New portals, proposals, integrations, tools, or development ideas
  - help@symbiota.org

Learn more at
symbiota.org

help@symbiota.org