

iDigBio: A Network Partner for Specimen-Based Research and Data

Integrated Digitized Biocollections

www.idigbio.org



Who are we?

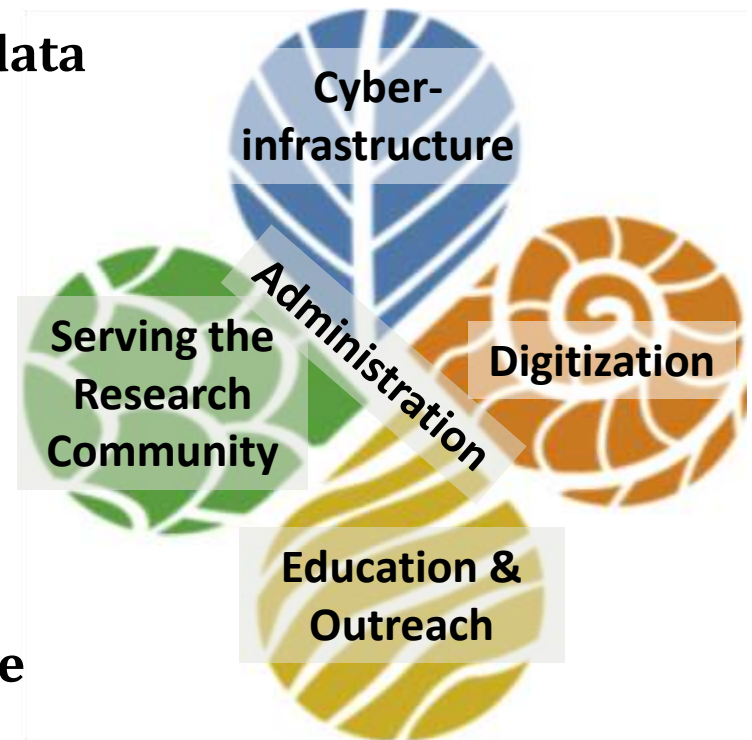
- Coordinating center for the national effort to digitize non-federal U.S. natural history collections
 - Based at the University of Florida and Florida State University
- Central resource for NSF's Advancing Digitization of Biodiversity Collections (ADBC) program
 - 10 year, \$100 million nationwide effort
 - National network of institutions organized by theme to focus research, drive digitization efforts, & build community
 - Thematic Collection Networks (TCNs)
 - Partners to Existing Networks (PENs)



"To advance scientific knowledge by improving access to digitized information in vouchered scientific collections across the US."

What do we do?

- **Enable digitization of biodiversity collections data**
 - Develop efficient & effective standards & workflows
 - Workforce education & training
- **Provide portal access to biodiversity data in a cloud computing environment**
 - Respond to cyberinfrastructure needs
 - Enable access & discoverability
- **Facilitate use of biodiversity data to address key environmental and economic challenges**
 - Researchers, educators, general public, policy-makers, ...
- **Plan for long-term sustainability of the national digitization network & effort**
 - Expand participation: partners, data sources, public, ...
 - Proliferate and broaden uses of biodiversity data

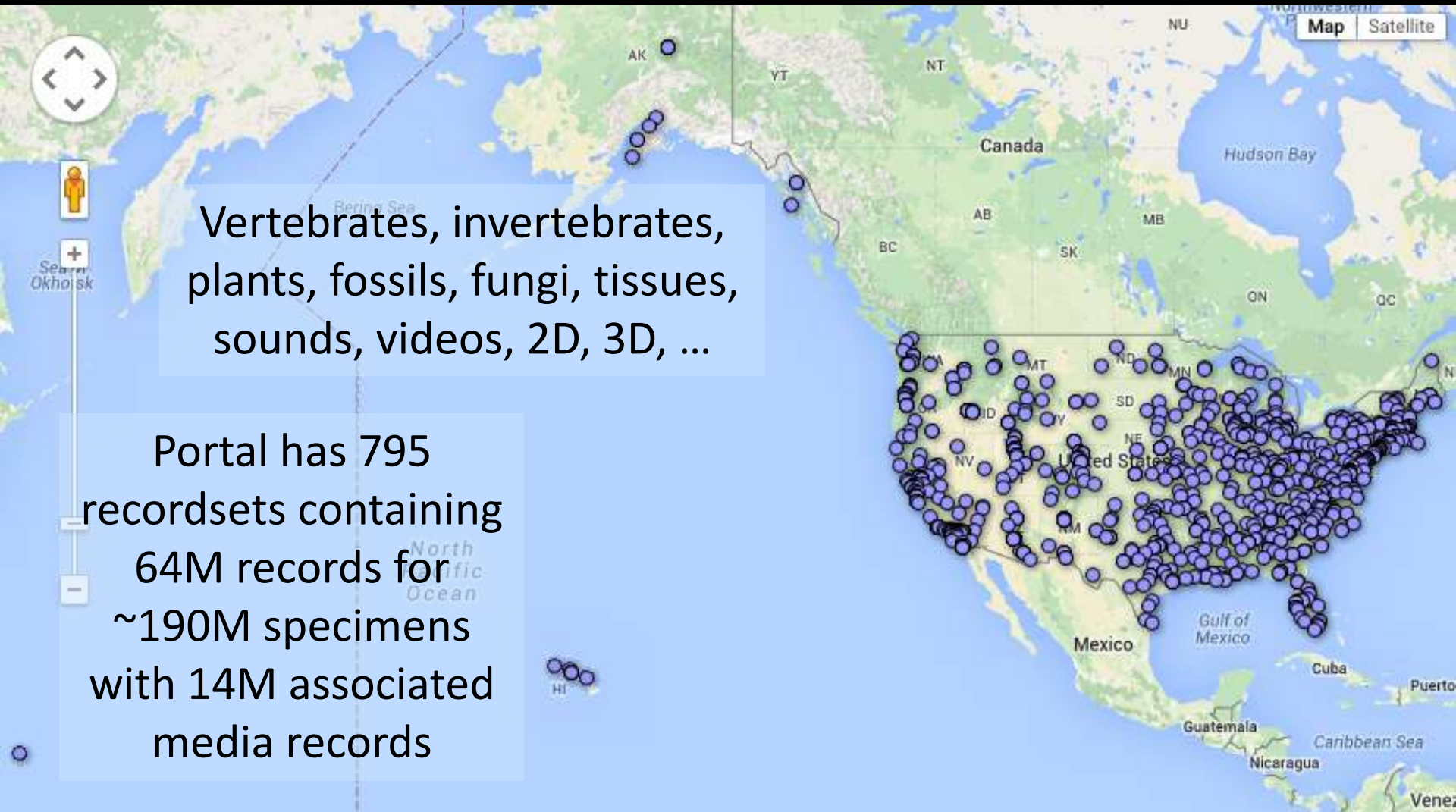


Why are we doing it?

Estimates suggest there are between
500 million and 1 billion
 biological and paleobiological specimens
 in the United States and potentially
3-4 billion worldwide.
 Many are digitized, but most are not.
An untapped trove of information!



NATIONAL NETWORK OF THE ADVANCING DIGITIZATION OF BIODIVERSITY COLLECTIONS PROGRAM



500+ collections in 275+ institutions in 50 states (18 TCNs + 17 PENs)

How do we do it? Collaboration!



Where are we headed?

- More recordsets from more providers (“*all*”)
- Improve **data access & discoverability**
- Highlight, promote, & facilitate **broad and diverse uses of biodiversity data**
- Promote/improve data quality & standards
- Develop **sustainability strategies**
- Facilitate public participation/crowdsourcing



Before we get too far... Enjoy your alphabet soup...

Acronym	Meaning
iDigBio	Integrated Digitized Biocollections
NSF	National Science Foundation
ADBC	Advancing Digitization of Biodiversity Collections
TCN	Thematic Collection Network
PEN	Partner to Existing Network
CSBR	Collections in Support of Biological Research
IMLS	Institute for Museum and Library Services
GBIF	Global Biodiversity Information Facility
BCoN	Biodiversity Collections Network
GRBio	Global Registry of Biodiversity Repositories

www.idigbio.org/wiki/index.php/Glossary_of_Terms

www.idigbio.org/portal

Welcome to the iDigBio Portal

If you are familiar with our portal's interface, you can start searching [Specimen Records](#). If this is your first time here, you might consider browsing our [tutorial](#). Our data are based on the [Darwin Core](#) and [Audubon Core](#) standards.

Search 795 Recordsets

Scientific ↑

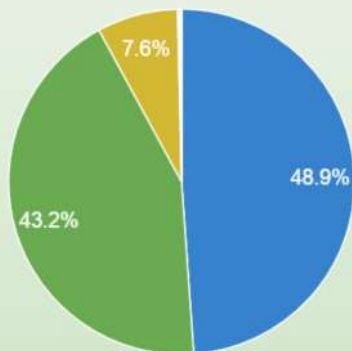
Jump To

[Advanced Search](#) [Publishers List](#)

[Tutorial](#) [iDigBio API](#)

Specimen Records

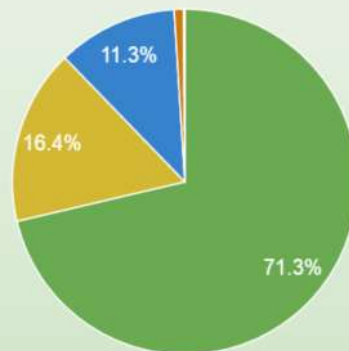
64,603,114



☐ Animalia
 ☐ Plantae
 ☐ Fungi
 ☐ Chromista
 ☐ Protozoa
 ☐ other
 ☐ Bacteria
 ☐ Protista

Media Records

14,484,140



☐ Plantae
 ☐ Fungi
 ☐ Animalia
 ☐ Chromista
 ☐ Protozoa
 ☐ Bacteria

Click a pie wedge to jump to an advanced search for records with the given kingdom. Click a legend name to remove/add a pie wedge.



Biodiversity
Information
Standards
T O W S

Darwin Core

Audubon Core

Search across all data, all/individual fields, customize, use autocomplete, synonyms, ...

iDigBio Home Portal Home Search Records Tutorial Data Research Tools Feedback dljennings

Search Records

Help Reset

search all fields

☐ Must have media ☐ Must have map point

Filters Mapping Sorting Download

Add a field Clear

Scientific Name Add - FOLIO Synonyms X

☐ Present ☐ Missing

Date Collected Start: End: X

☐ Present ☐ Missing

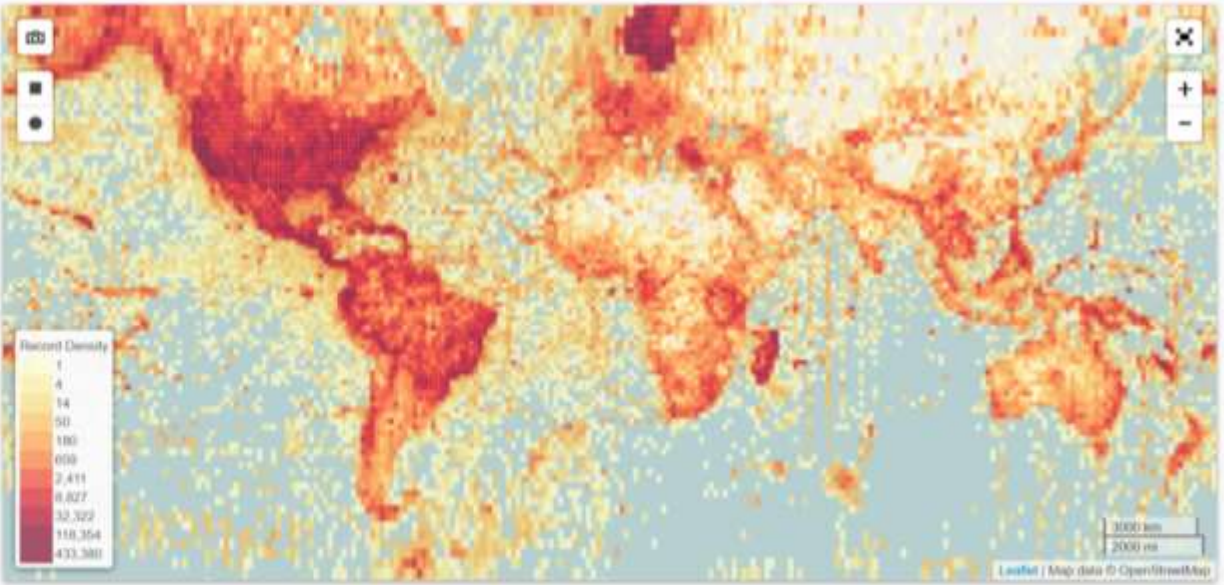
Country X

☐ Present ☐ Missing

List Labels Media Recordsets

Total: 64,603,114

Family	Scientific Name	Date Collected	Country	Institution Code	Basis of Record	Columns
Hamamelidaceae	"Acer" (Liquidambar) lesquereuxii	no data	United States	UCMP	FossilSpecimen	view
Hamamelidaceae	"Acer" (Liquidambar) lesquereuxii	no data	United States	UCMP	FossilSpecimen	view
Alveolitidae	"Alveolites" fougleri (Milne-Edward ...)	no data	Sweden	NRM	fossilSpecimen	view
Vitaceae	"Ampelopsis" acerifolia	1988	USA	YPM	FossilSpecimen	view



Record Density






1 4 14 50 100 600 2,411 8,827 32,322 118,354 433,380

Leaflet | Map data © OpenStreetMap

View search results as table, pseudolabels, or images

										Total: 237,084
List	Labels	Media	Recordsets							
Family	Scientific Name	Institution Code	Collection Code	Date Collected	Collected By	Country	Locality	Occurrence ID	Catalog Number	Columns
Pinaceae	Abies amabilis	UAM	Plant specimens (A...	1993-07-08	Collector(s): John D...	United States	W side of Nakat Inle...	http://arctos.databa...	9979	view
Pinaceae	Abies amabilis	UAM	Plant specimens (A...	1993-07-08	Collector(s): John D...	United States	Just I., mouth of Fil...	http://arctos.databa...	10032	view
Pinaceae	Abies amabilis	UAM	Plant specimens (A...	1997-07-09	Collector(s): Mary C...	United States	Alexander Archipela...	http://arctos.databa...	19196	view
Pinaceae	Abies amabilis	UAM	Plant specimens (A...	1997-08-26	Collector(s): Phyllis ...	United States	Thorne Arm, Revlia...	http://arctos.databa...	144097	view
Pinaceae	Abies amabilis	UAM	Plant specimens (A...	2013-07-15	Collector(s): K. Sma...	United States	S of Pt. Baker, E of ...	http://arctos.databa...	250713	view
Pinaceae	Abies lasiocarpa (H...	MO	MO	1879-07-19	John Muir	United States	Head of Navigation ...	urn:catalog:MO:Tro...	100327950	view

List	Labels	Media	Recordsets
<p>Acalypta elegans</p> <p>United States, Alaska, Kanuti NWR Lat: 66°22' 15" Lon: -152°1' 16" UAM, Insect specimens, 164024, Collector(s): Derek S. Sikes</p> <p><i>Animalia, Arthropoda, Insecta, Hemiptera</i></p> <p>2010-06-21</p>	<p><i>Tingidae</i></p> 	<p>Acanthocinus pusillus</p> <p>United States, Alaska, Fairbanks, Creamer's Field Lat: 64°52' 6" Lon: -147°44' 12" UAM, Insect specimens, 95967, Collector(s): Luke Werner</p> <p><i>Animalia, Arthropoda, Insecta, Coleoptera</i></p> <p>1991-09-25</p>	<p><i>Cerambycidae</i></p> 
<p>Acartophthalmus nigrinus</p> <p>United States, Alaska, Etolin Is. Lat: 56°8' 33" Lon: -132°20' 7" UAM, Insect specimens, 234152, Collector(s): Derek S. Sikes</p> <p><i>Animalia, Arthropoda, Insecta, Diptera</i></p> <p>2011-07-21/2011-07-22</p>	<p><i>Acartophthalmidae</i></p> 		

List	Labels	Media	Recordsets
 <p><i>Acalypta elegans</i> UAM, Insect specimens</p>	 <p><i>Abletinella abietina</i> MVZ</p>	 <p><i>Mammuthus</i> UAM, Earth Science</p>	 <p><i>Acer glabrum subsp. douglasii</i> UAM, Plant specimens (ALA)</p>
 <p><i>Actitis macularia</i> MVZ, Bird eggs/nests</p>			

Results mapped/rendered and downloadable

Search Records [Help](#) [Reset](#)

search all fields

☐ Must have media ☐ Must have map point

[Filters](#) [Mapping](#) [Sorting](#) [Download](#)

Current Search

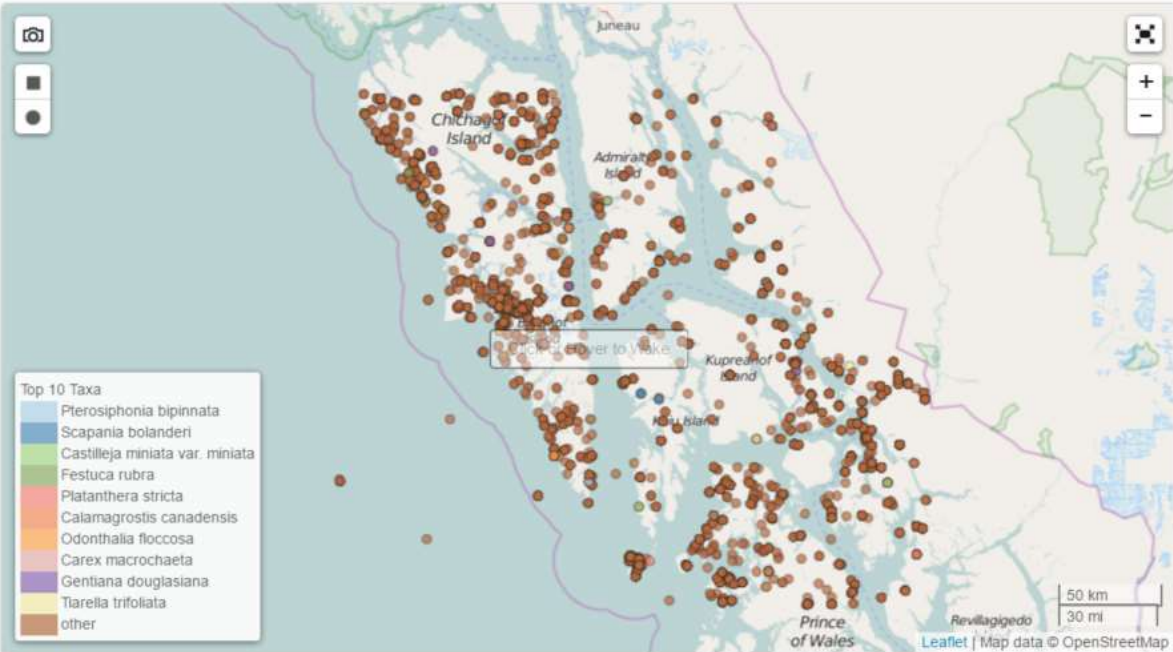
Kingdom = plantae. Bounds are NW lat = 58.0022767 [↻](#)

Download CSV - Build time: 0 hrs 0 mins 10 secs

Email [ⓘ](#)

Downloads

Search	Status
Kingdom = plantae. Bounds are NW la...	Click To Download



Total: 5,348

[List](#) [Labels](#) [Media](#) [Recordsets](#)

Family	Scientific Name	Institution Code	Collection Code	Date Collected	Collected By	Country	Locality	Occurrence ID	Catalog Number	Columns
Pinaceae	Abies amabilis	UAM	Plant specimens ...	2013-07-15	Collector(s): K. S...	United States	S of Pt. Baker, E ...	http://arctos.data...	250713	view
Pinaceae	Abies lasiocarpa	UAM	Plant specimens ...	1993-07-20	Collector(s): Mich...	United States	Prince of Wales I...	http://arctos.data...	8705	view
Pinaceae	Abies lasiocarpa	UAM	Plant specimens ...	1993-07-21	Collector(s): Mich...	United States	Prince of Wales I...	http://arctos.data...	8733	view
Pinaceae	Abies lasiocarpa	UAM	Plant specimens ...	2012-08-30	Collector(s): Kare...	United States	Tracy Arm, Sawy...	http://arctos.data...	250750	view
Aceraceae	Acer glabrum su...	UAM	Plant specimens ...	1961-05-08	Collector(s): Elbe...	United States	Alexander Archip...	http://arctos.data...	42221	view
Aceraceae	Acer glabrum su...	UAM	Plant specimens ...	1979-07-19	Collector(s): Lind...	United States	Alexander Archip...	http://arctos.data...	42222	view
Aceraceae	Acer glabrum su...	UAM	Plant specimens ...	1979-08-29	Collector(s): Mar...	United States	Alexander Archip...	http://arctos.data...	42779	view

Specimen record page with summary, details, flags, associated media, georeference, provider, ...

Specimen Record

Plantae > Pteridophyta > Polypodiopsida > Polypodiales > Pteridaceae

Adiantum aleuticum

From UAM Herbarium (ALA), Vascular Plant Collection (Arctic)

Continent	North America	Institution	UAM
Country	United States	Code	
State/Province	Alaska	Collection	Plant Specimens (ALA)
Locality	E Side Of Island, No Entrance Of Red Bluff Bay	Code	
Latitude	56.8512	Catalog	244018
Longitude	-134.7091	Number	
		Collected By	Collector(s): Mary C. Sterns, Michael E. Shephard
		Date	2000-08-17
		Collected	



Media



Data Flags Raw

Taxonomy

Scientific Name	Adiantum aleuticum
Higher Classification	; Filicopsida; Polypodiales; Pteridaceae; (Ruprecht) Paris
Kingdom	plantae
Phylum	pteridophyta
Class	Filicopsida
Order	Polypodiales
Family	Pteridaceae
Genus	Adiantum
Specific Epithet	aleuticum
Nomenclatural Code	ICBN

Data Flags Raw

Type	Description
geopoint_datum_error	Geographic Coordinate has Invalid Geodetic Datum.
idigbio_isocountrycode_added	iDigBio ISO 3166-1 alpha-3 Country Code Added.
dwc_phylum_added	Darwin Core Phylum Added.
dwc_class_replaced	Darwin Core Class Corrected.
dwc_kingdom_added	Darwin Core Kingdom Added.

Advantages of sharing data with iDigBio

- Quality
- Continual improvement
- Attribution/metrics
- Discoverability
- Depth/breadth

Data Flags Raw

Type	Description
geopoint_datum_missing	Geographic Coordinate Missing
dwc_phylum_added	Darwin Core Phylum Added.
dwc_continent_added	Darwin Core Continent Added.
dwc_country_replaced	Darwin Core Country Corrected.
idigbio_isocountrycode_added	iDigBio ISO 3166-1 alpha-3 Cou
dwc_kingdom_added	Darwin Core Kingdom Added.

Data Corrected Data Use Raw

The table below represents monthly iDigBio portal use statistics for this recordset. **Search** in query. **Download** indicates in how many instances a record from this recordset was downloaded (visually) in the search results in a browser window. **Records Viewed** and **Media Viewed** in full detail. Note: Monthly statistics aggregation began on Jan 15th 2015; therefore, reporting.

Month of	Search	Download	Seen
01 / 2015	4,644,439	39,693	249
02 / 2015	14,478,408	18,174	872
03 / 2015	11,134,952	92,788	604

Data Corrected Data Use Raw

This table shows any data corrections that were performed on this recordset to improve the capabilities of iDigBio Search. The first column represents the correction performed. The last two columns represent the number and percentage of records that were corrected. A complete list of the data quality flags and their descriptions can be found [here](#). Clicking on a data flag name will take you to a search for all records with this flag in this recordset.

Flag	Records With This Flag	(%) Percent With This Flag
dwc_kingdom_added ⓘ	219527	99.388
dwc_phylum_added ⓘ	219527	99.388
geopoint_datum_missing ⓘ	215241	97.448

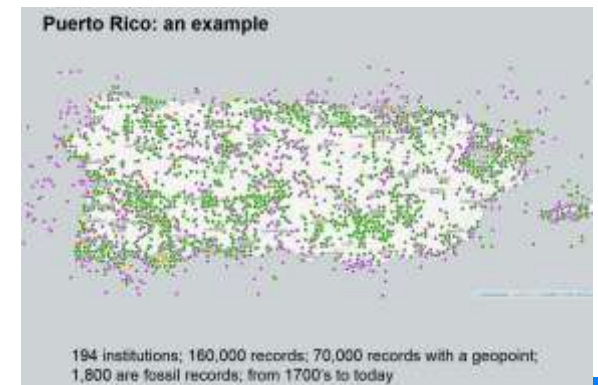
Monthly Spotlight on Biodiversity

- www.idigbio.org/tags/biodiversity-spotlight
 - Natural history info, current research, & links to specimens in iDigBio
 - Tips & tricks for using the iDigBio portal and search API
- Madagascar
 - February 2016
 - Portal Corner: using the portal search interface
- Graygreen Reindeer Moss (*Cladonia rangiferina*)
 - January 2016
 - Coding Corner: using R and iDigBio Search API
- Fathead Minnow (*Pimephales promelas*)
 - May 2016
 - Coding Corner: using R and iDigBio Search API

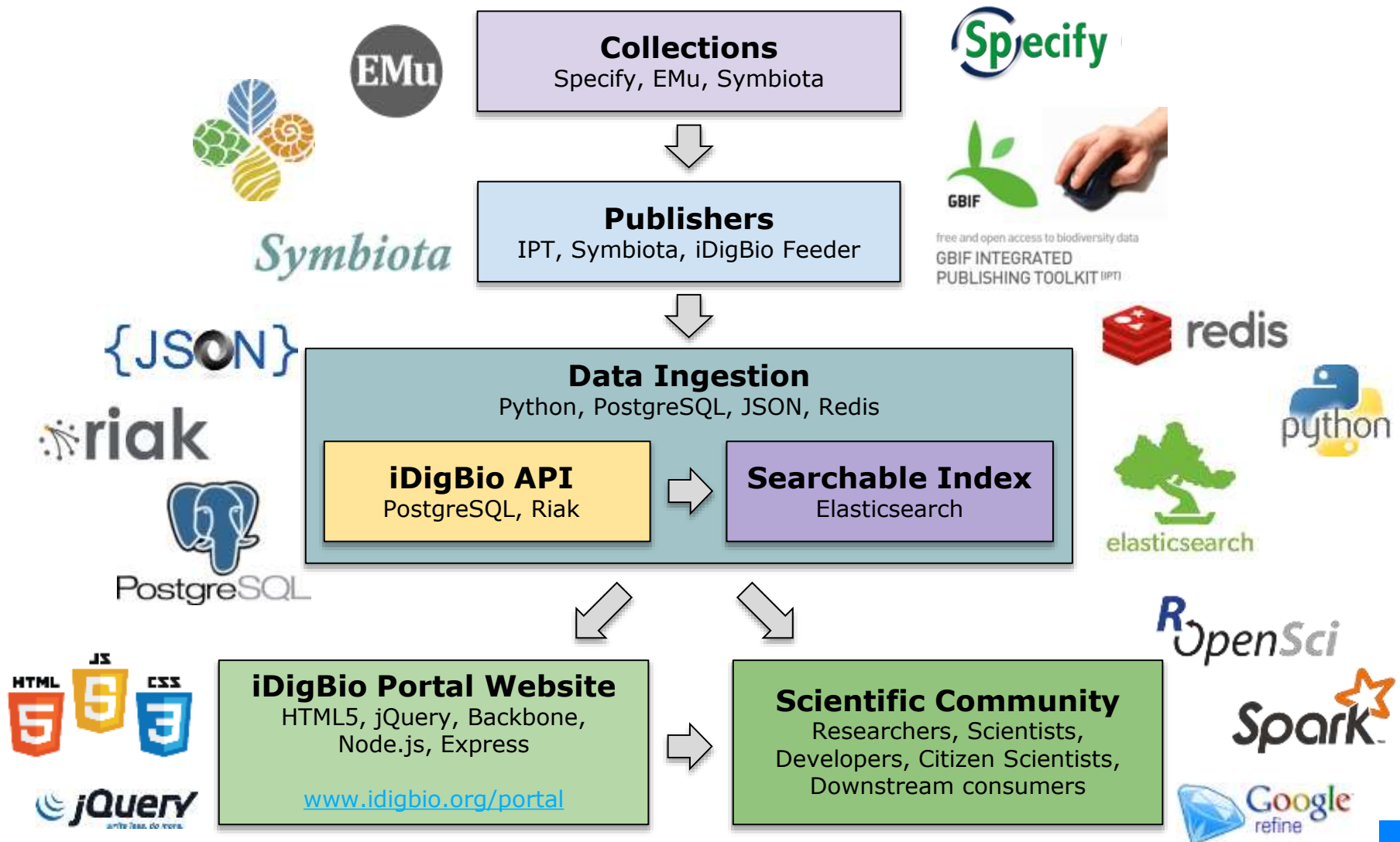


Monthly Spotlight on Research

- www.idigbio.org/tags/research-spotlight
 - Use of iDigBio data in research projects
 - Importance of vouchered specimen collections & data for research
 - Ways that collections data can be used in research projects
 - Positive outcomes of data use, such as policy or conservation actions
- Preserving historic bee specimens to protect future bee biodiversity (Aug 2016)
 - Bee conservation, decline, and shifts in community species composition in relation to environmental disturbances
- Playing with biological specimen data in iDigBio – limitations and solutions for research (May 2016)
 - iDigBio Data Quality Flags to assist with cleaning data
 - iDigBio Working Groups as a mechanism for community



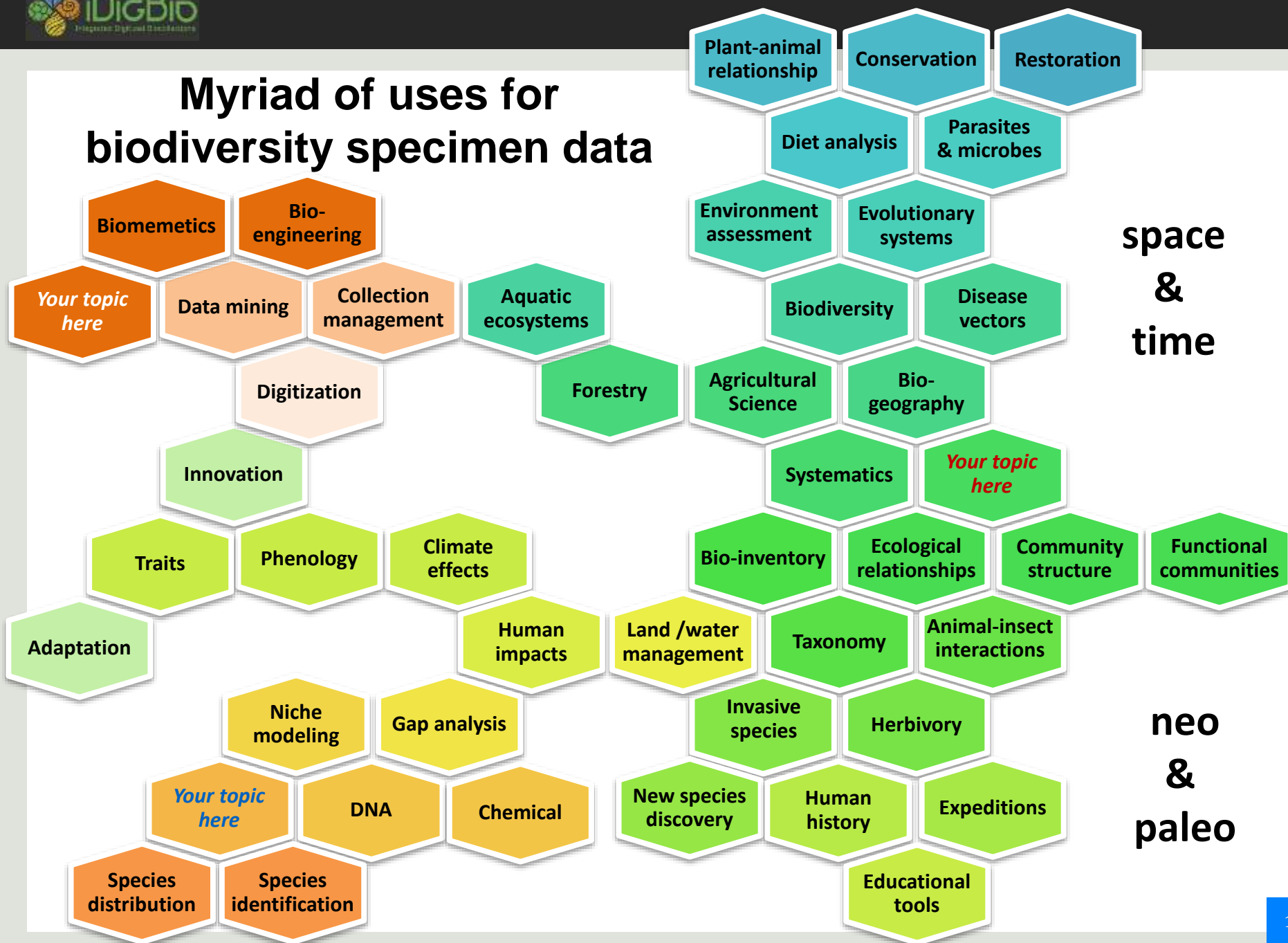
iDigBio Data Flow



Myriad of uses for biodiversity specimen data

space
&
time

neo
&
paleo



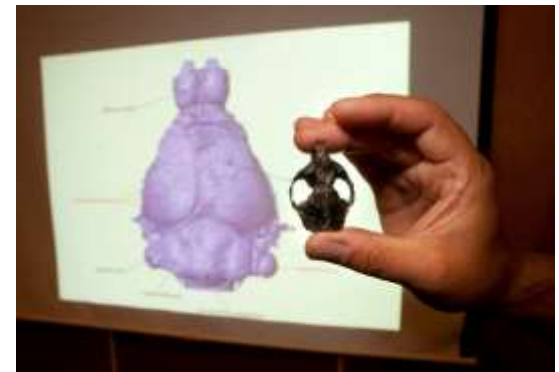
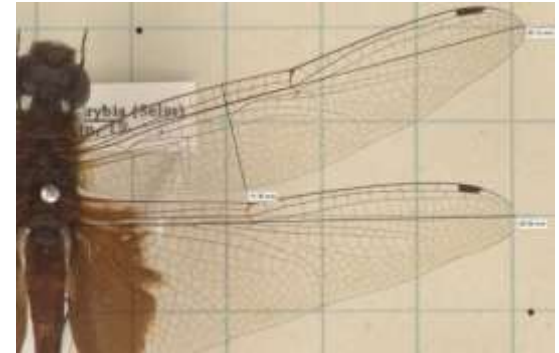
iDigBio ACTIVITIES SUPPORTED BY CYBERINFRASTRUCTURE

■ 2011-2016 ■ 2016-2021

Relationships	Trees	Metrics	Difference Viewer	Agriculture
Self-service	3D-images	Correlation	Filters	Functional
Indexing	Sound	Outliers	Summary	Molecular
Bulk Media	Statistics	Pattern Analysis	Bulk updates	Ecosystem
iDigBio IPT	Download	Vocabularies	Annotation	Trait Evolution
IPT RSS Feed	APIs	Publishers	Networking	Communities
AudubonCore	Mapping	Higher Taxonomy	Adapters	Medicinal
Specimen CSV	Images	Country Codes	Versioning	Niche Modeling
Specimen DwC-A	Specimen Search	GUIDs	Mobilizers	Phylogenetics
<i>Ingestion</i>	<i>Access & Visualization</i>	<i>Data Quality</i>	<i>Feedback</i>	<i>Research</i>

We want you to engage with us!

- iDigBio has access to data and the means to quickly answer questions about it
- Lots of opportunity for collaboration and potential funding:
 - Using the data we already have
 - (e.g., niche modeling)
 - Mining the data we have to discover the things we don't know we have
 - (e.g., extract measurements/characteristics from images or 3D models)
 - Gathering the data we don't have
 - (e.g., SCNet, TCN proposal)
 - Enhancing and enriching the data
 - (e.g., field notes, data linking)



Want to get involved?



idigbio.org/wiki



facebook.com/iDigBio



twitter.com/iDigBio



vimeo.com/iDigBio



idigbio.org/rss-feed.xml



idigbio.org/events-calendar/export.ics

