



Welcome to iDigBio/ADBC Summit VIII

PIs: Larry Page, Director
Greg Riccardi, Digitization
Jose Fortes, Cyberinfrastructure
Pam Soltis, Research
Bruce MacFadden, Education, Outreach, & Diversity
Project Manager: David Jennings





NSF's Advancing Digitization of Biodiversity Collections Program, based on the national digitization effort as outlined in NIBA Strategic Plan, was launched in 2010 with the goal:

To digitize and make available online data associated with specimens in all non-federal natural history collections in the U.S.



Funding:

- 1. Thematic Collections Networks (TCNs)**
- 2. Central coordinating unit (iDigBio)**



1. Thematic Collections Networks

- **Two-to-four year awards to collaborating institutions to digitize data on existing specimens based on a research theme**
- **Institutions digitize and mobilize the specimen-based data (but not necessarily pursue the research)**
- **Major emphasis has been on databasing, georeferencing, and imaging**





23 Thematic Collections Networks (TCNs) = 318 institutions

- **InvertNet:** An Integrative Platform for Research on Environmental Change, Species Discovery and Identification (*Illinois Natural History Survey, University of Illinois*)
- **Plants, Herbivores, and Parasitoids:** A Model System for the Study of Tri-Trophic Associations (*American Museum of Natural History*)
- **North American Lichens and Bryophytes:** Sensitive Indicators of Environmental Quality and Change (*University of Wisconsin Madison*)
- **Digitizing Fossils to Enable New Syntheses in Biogeography-Creating a PALEONICHES-TCN** (*University of Kansas*)
- **The Macrofungi Collection Consortium:** Unlocking a Biodiversity Resource for Understanding Biotic Interactions, Nutrient Cycling and Human Affairs (*New York Botanical Garden*)
- **Mobilizing New England Vascular Plant Specimen Data** to Track Environmental Change (*Yale University*)
- **Southwest Collections of Arthropods Network (SCAN):** A Model for Collections Digitization to Promote Taxonomic and Ecological Research (*Northern Arizona University*)
- **The Macroalgal Herbarium Consortium:** Accessing 150 Years of Specimen Data to Understand Changes in the Marine/Aquatic Environment (*University of New Hampshire*)
- Developing a Centralized Digital Archive of **Vouchered Animal Communication Signals** (*Cornell University*)
- **Fossil Insect Collaborative:** A Deep-Time Approach to Studying Diversification and Response to Environmental Change (*University of Colorado at Boulder*)
- **Great Lakes Invasives:** Documenting the Occurrence through Space and Time of Aquatic Non-indigenous Fish, Mollusks, Algae, and Plants Threatening North America's Great Lakes (*University of Wisconsin Madison*)
- **InvertEBase:** Reaching Back to See the Future: Species-rich Invertebrate Faunas Document Causes and Consequences of Biodiversity Shifts (*Field Museum of Natural History*)
- **The Key to the Cabinets:** Building and Sustaining a Research Database for a Global Biodiversity Hotspot (*Appalachian State University*)
- **The Microfungi Collections Consortium:** A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems (*INHS, University of Illinois*)
- **Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific:** Faunal Responses to Environmental Change over the last 66 million years (*University of California-Berkeley*)
- **Cretaceous World:** The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway (*University of Kansas*)
- **LepNet:** Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores (*Northern Arizona University*)
- **MAM:** The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world (*University of Pennsylvania*)
- **SoRo:** Using Herbarium Data to Document Plant Niches in the High Peaks and High Plains of the Southern Rockies (*University of Colorado*)
- **oVert:** Open Exploration of Vertebrate Diversity in 3D (*University of Florida*)
- **Capturing California's Flowers:** Using Digital Images to Investigate Phenological Change in a Biodiversity Hotspot (*California Polytechnic State University San Luis Obispo*)
- **The Pteridological Collections Consortium:** An Integrative Approach to Pteridophyte Diversity Over the Last 420 Million Years (*University of California – Berkeley*)
- **Digitizing "Endless Forms":** Facilitating Research on Imperlied Plants with Extreme Morphologies (*New York Botanical Garden*)

2. iDigBio

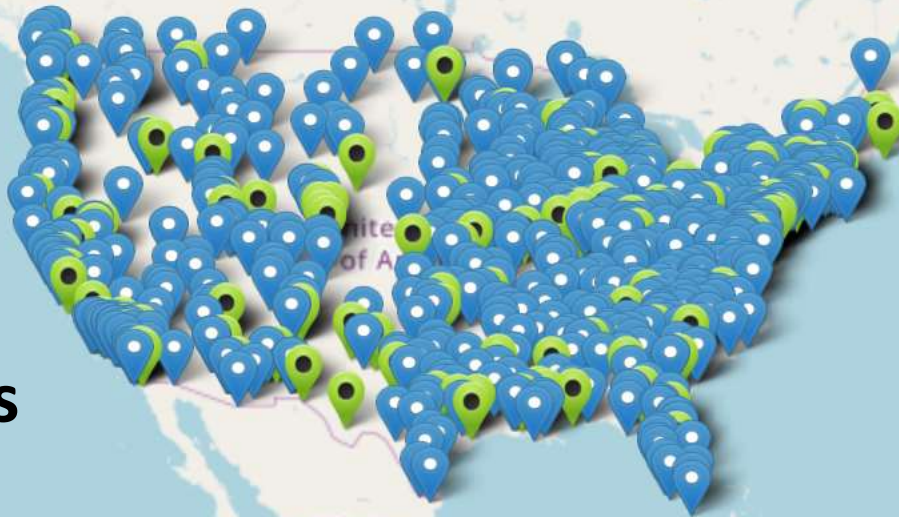
- **Engage the collections community**
- **Enable digitization of biodiversity collections data**
 Develop efficient & effective standards & workflows
 Workforce education & training via workshops/webinars
- **Provide portal access to biodiversity data**
 Enable data access & discoverability
 Respond to cyberinfrastructure needs
- **Promote use of data to address scientific, environmental & economic challenges**
 Researchers, educators, general public, policy-makers, etc.
- **Assist in planning long-term sustainability of national digitization effort**





**TCNs = 318 institutions, and
iDigBio, VertNet, etc.
another 93 institutions**

**iDigBio is working
with 411 institutions**



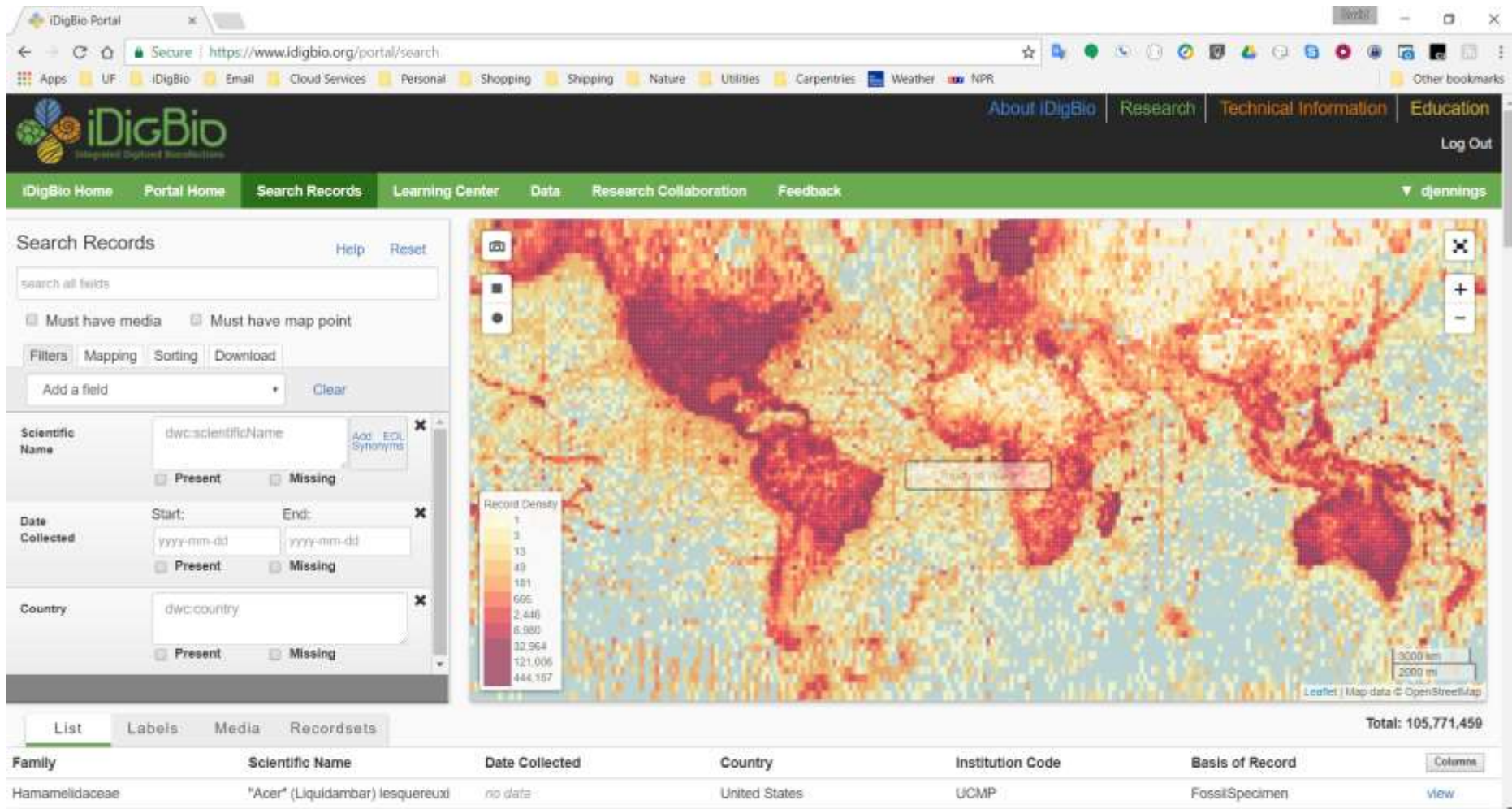
Specimen records and data on associated media (2D, 3D images, audio recordings, tissues, etc.) are ingested by iDigBio



iDigBio Portal has 115M records for 345M specimens with 27M associated media records



Flexible search across all data, indexed fields, media, geolocation, map boundary, auto-completion, synonyms, ...



Search Records

search all fields

☐ Must have media ☐ Must have map point

Filters Mapping Sorting Download

Add a field Clear

Scientific Name Add EOL Synonyms

☐ Present ☐ Missing

Date Collected Start: End:

☐ Present ☐ Missing

Country

☐ Present ☐ Missing

Record Density

- 1
- 3
- 13
- 49
- 181
- 695
- 2,446
- 8,980
- 32,964
- 121,006
- 444,167

Total: 105,771,459

Family	Scientific Name	Date Collected	Country	Institution Code	Basis of Record	Columns
Hamamelidaceae	"Acer" (Liquidambar) lesquereuxii	no data	United States	UCMP	FossilSpecimen	view

<https://www.idigbio.org/portal>



View search results as list, labels, or media

List	Labels	Media	Recordsets							Total: 188,896
Family	Scientific Name	Date Collected	Country	Institution Code	Collected By	Locality	Occurrence ID	Catalog Number	Cobates	
Suberitidae	<i>Tuberella sapotis</i>	1899-10-19	Puerto Rico	USNM	United States Fish Commis...	Mayaguez Harbor	http://n2t.net/ark:/65665/33f...	7662	View	
Pteridae	<i>Abais nicppe</i>	1981-10	Puerto Rico	UPRM	Emmer, J. C.	Guayama	23df7709-ccb0-11e4-8f0b-0...	4626	View	
Pteridae	<i>Abais nicppe</i>	11/15/81	Puerto Rico	UPRM	De Jesés, L.	Ponce	23df7219-ccb0-11e4-8f0b-0...	4624	View	
Pteridae	<i>Abais nicppe</i>	11/15/87	Puerto Rico	UPRM	De Jesés, L.	Ponce	23df79b7-ccb0-11e4-8f0b-0...	4627	View	
Pteridae	<i>Abais nicppe</i>	9/4/89	Puerto Rico	UPRM	Blanco, J.	Aguadilla	23aa6164-ccb0-11e4-8f0b-0...	820	View	
Pteridae	<i>Abais nicppe</i>	11/14/48	Puerto Rico	UPRM	Torres, C.	Mayaguez	23df70f4-ccb0-11e4-8f0b-0...	4625	View	
Catagidae	<i>Abasia sp.</i>	1977-10-07	Puerto Rico	USNM	S. Altshuler	La Parguera	http://n2t.net/ark:/65665/3e...	266843	View	
Delphacidae	<i>Abrosoga errata</i>	1914-07-27	PUERTO RICO	AMNH	Unknown	Maricao	um uid 866a070b-d8e1-11...	UDCC_TCN 00016869	View	
Delphacidae	<i>Abrosoga errata</i>	1947-11-14	Puerto Rico	USNM	no data	Toro Negro MT., P.R.	http://n2t.net/ark:/65665/3e...	no data	View	
Delphacidae	<i>Abrosoga errata</i>	1962-07-01	PUERTO RICO	USNM	J. Maldonado Capriles	Punta	um uid 28ab0c86-ca62-11...	UDCC_TCN 00042679	View	
Pemphigidae	<i>Abrosoga errata</i>	1944/USNM	PUERTO RICO	USNM	P. W. Crampton & P. K. Krombe	How 100 km S.E. Maricao St	um uid 90ab071e-ca63-11...	UDCC_TCN 00042678	View	

List

Labels

Media

Recordsets

[Abrosoga errata Caldwell & Martorell, 1951](#)

PUERTO RICO, Maricao, none, Maricao

Lat: 18°10' 58" Lon: -66°58' 49"

AMNH, UDCC_TCN 00016869, Unknown



Delphacidae

Animalia, Arthropoda, Insecta, Hemiptera

1914-07-27

[Abelmoschus moschatus medik. Medik.](#)

Puerto Rico, Mayaguez (MITA).

Lat: 18°12' 15" Lon: -67°6' 1"

NY, 01007392, A. H. Liogier



Malvaceae

Plantae, Tracheophyta, Magnoliopsida, Malvales

1981-03-

[Pecten mayaguezensis Dall & Simpson](#)

Puerto Rico, Mayaguez Harbor

Lat: 18°25' 30" Lon: -67°9' 11"

USNM, Invertebrate Zoology, 160062, United States Fish Commission



Pectiniidae


Animalia, Cnidaria, Anthozoa, Scleractinia

List

Labels

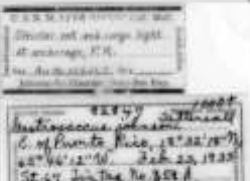
Media

Recordsets




3 of 3

[Anolis cristatellus wileyae MCZ, Herp](#)




1 of 1

[Coelmannella johnsoni USNM, Invertebrate Zoology](#)




1 of 1

[Adiantum obliquum US. Botany](#)



3 of 3

[Platycrepidius UPRM, INVOL](#)

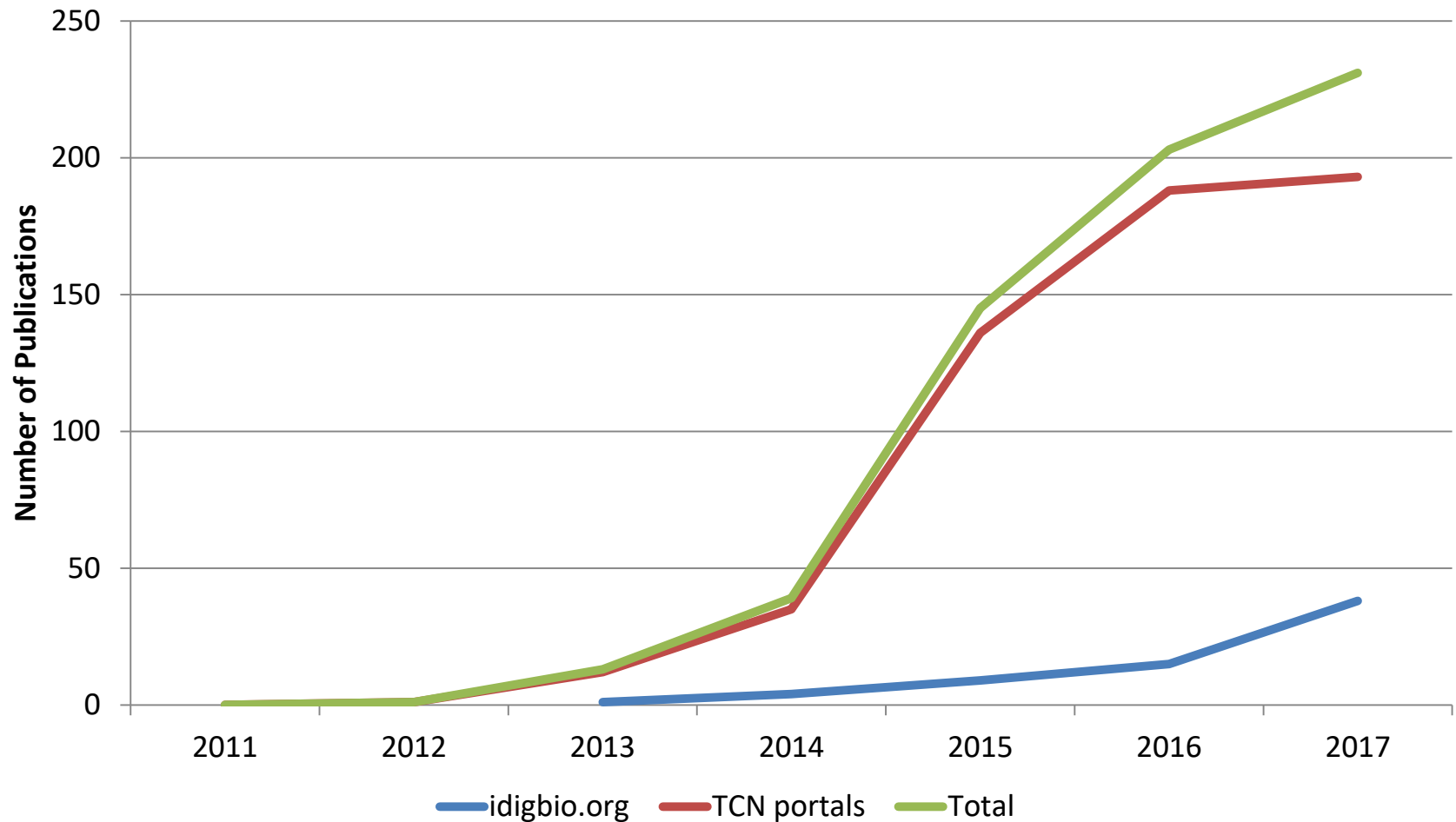


3 of 3

[Coereba flaveola TTRS, Ornithology](#)



Publications Citing Portal Data Use



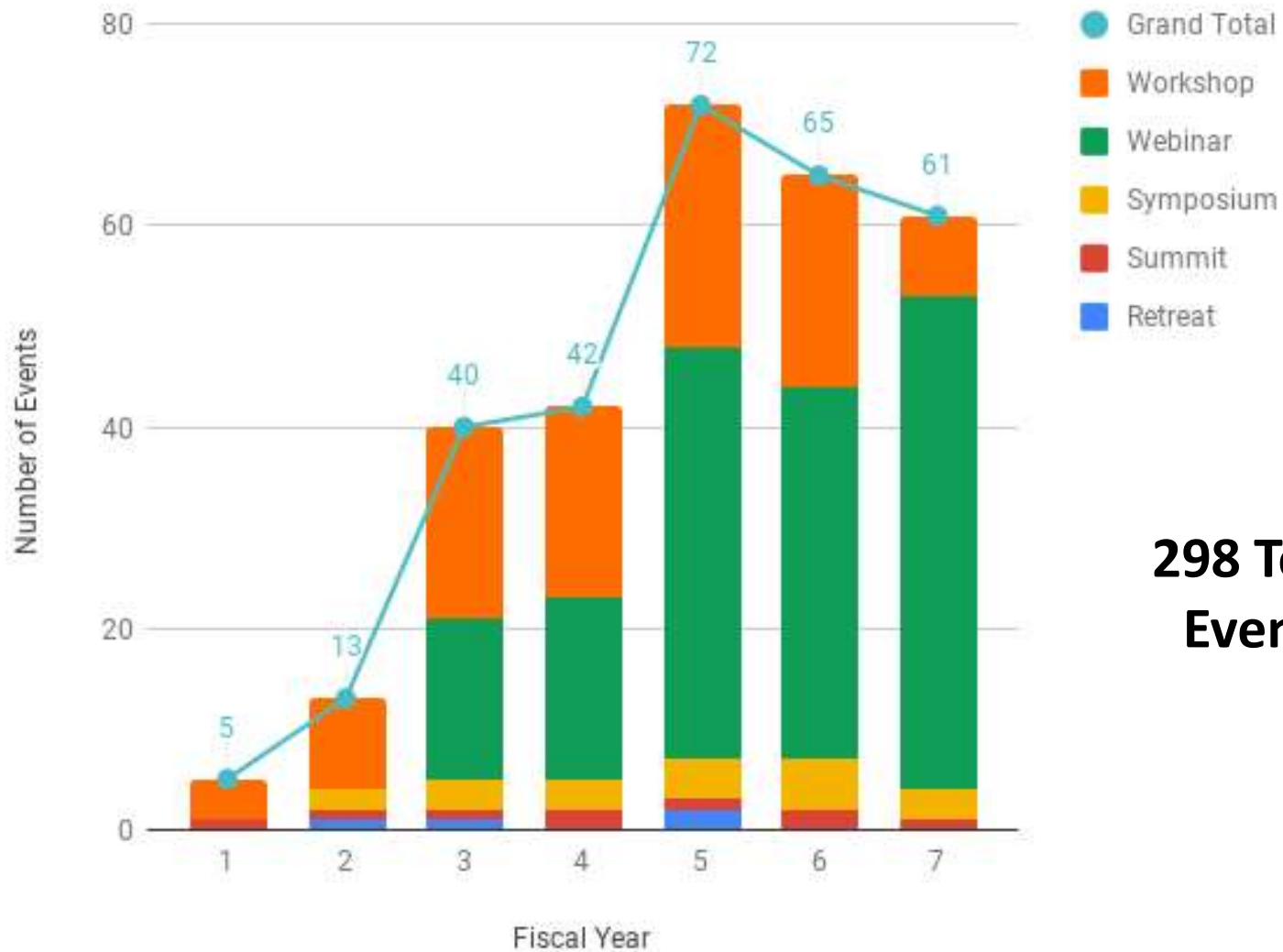


All of this has required iDigBio to engage the collections community through workshops, webinars, and other events to develop workflows, train IT and collections staff, mobilize data, etc.





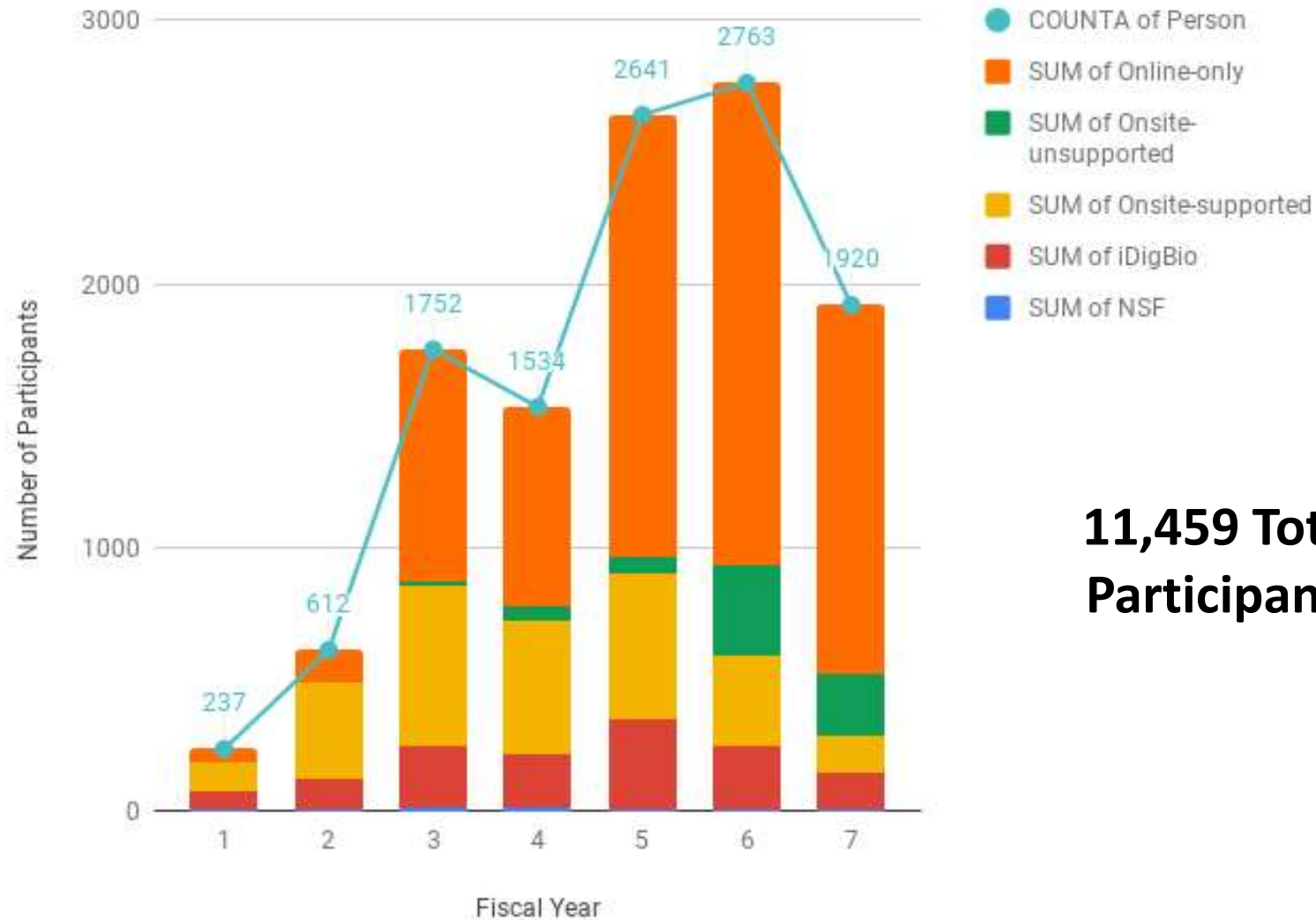
iDigBio Events Summary



**298 Total
Events**



Participants in iDigBio Events

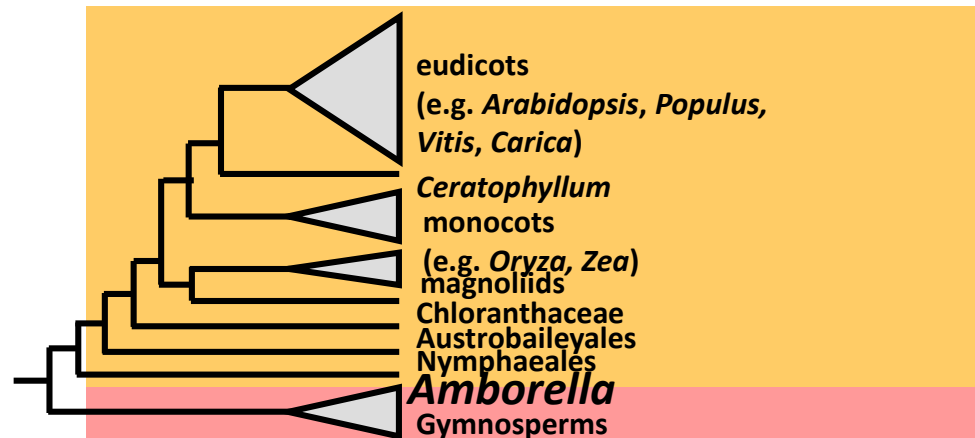
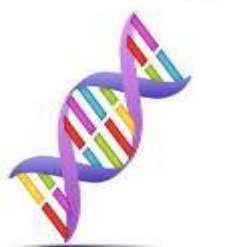


11,459 Total Participants



iDigBio promotes and facilitates
use of digitized data in research, education and outreach

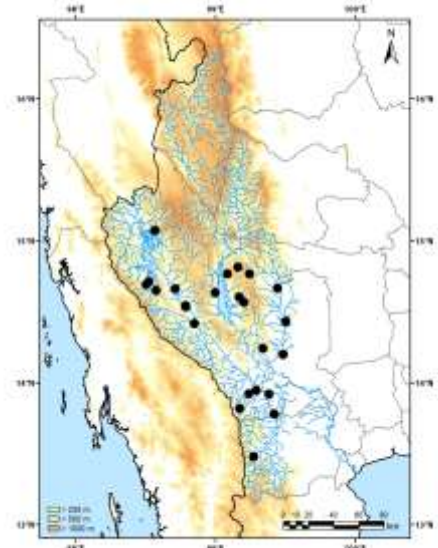
This summit -- and other recent activities --
have increasingly concentrated on data use





Natural History Collections are fundamental to understanding biodiversity and to address “Big Science” questions:

- How many species are there?
- How are species distributed on the planet, and why?
- How do species vary, and what factors are responsible?



Specimens of extinct species

- only information on those species
- paleoenvironments



Where are iDigBio & ADBC headed?

- Digitized data from **ALL** biodiversity collections
- Improve **data access & discoverability**
- Promote/improve **data quality & standards**
- Promote **broad use of biodiversity data**
- Facilitate **public participation** in digitization

e.g., **WeDigBio**





Status: iDigBio & ADBC

Currently 1,464 [*last year 1,386*] collections in iDigBio's
Catalog of U.S. Collections

iDigBio is working with 750 [561] of these collections = 51%
[41%]

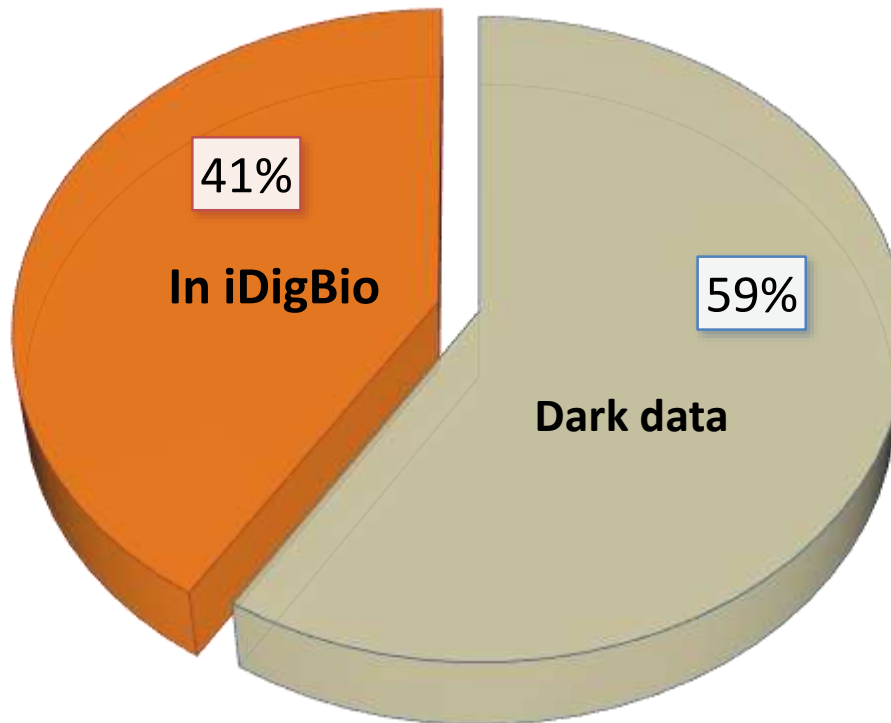
Of the 750 collections, 641 have published data to iDigBio
(others digitizing, processing, etc.)

Remaining institutions in U.S. are mostly small
Many remaining collections in U.S. are not!



1,464 KNOWN U.S. COLLECTIONS

1 yr ago

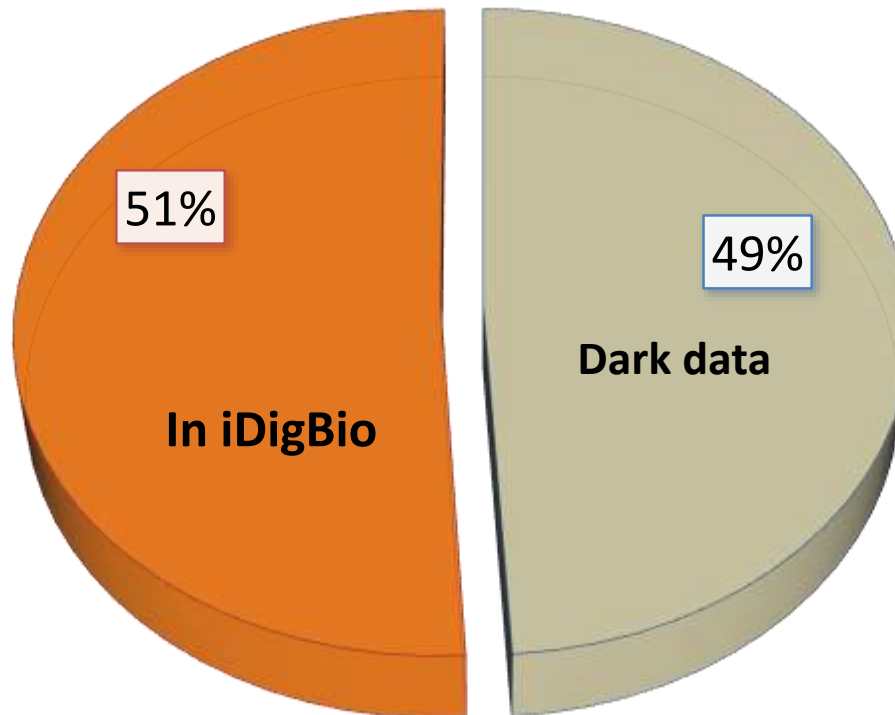


Progress in National Digitization Effort



1,464 KNOWN U.S. COLLECTIONS

Today

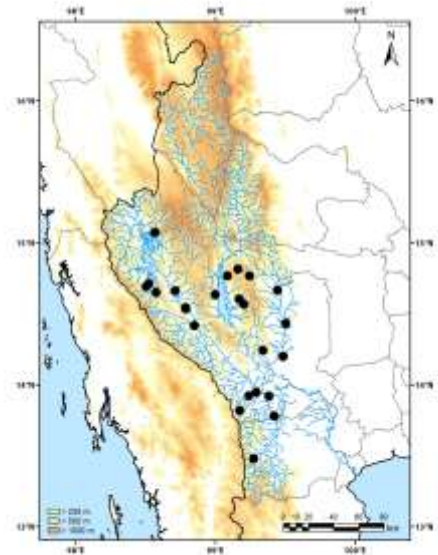


Progress in National Digitization Effort



Substantial progress has been made toward the goal of ADBC: Increasing accessibility of data associated with natural history collections

- **Increases the availability for all potential uses of collections data,**
which increases the value of natural history collections,
leading to greater support for institutions
housing natural history collections

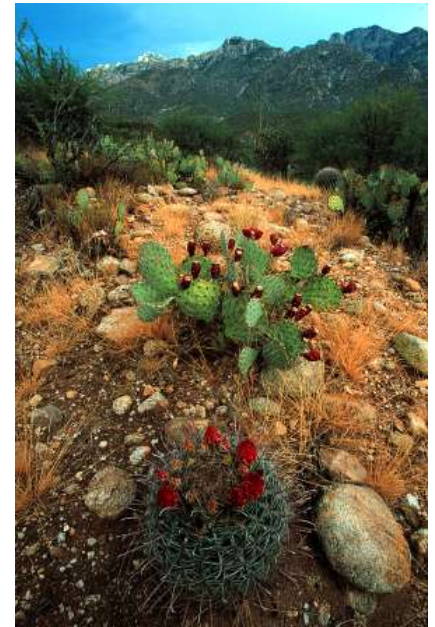




Substantial progress has been made toward the goal of ADBC: Increasing accessibility of data associated with natural history collections

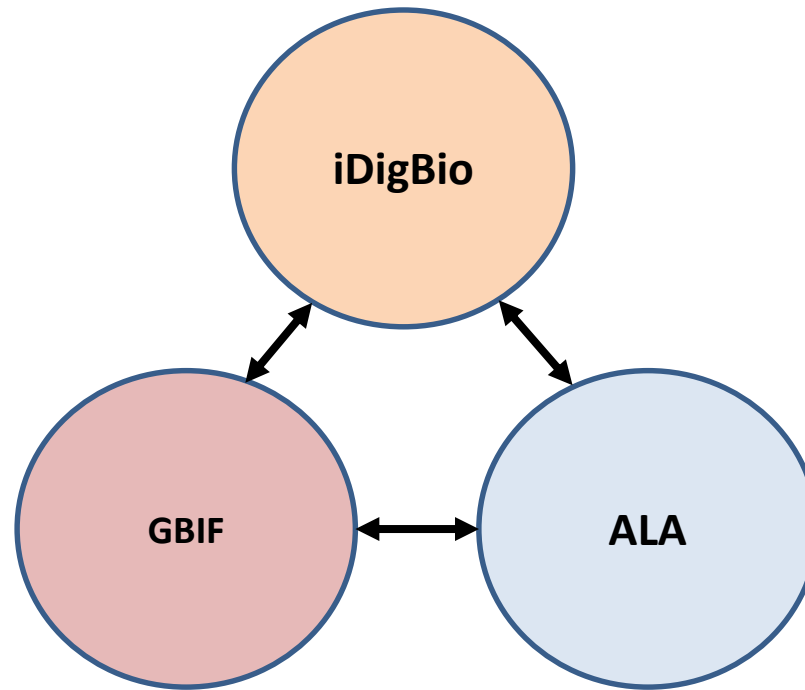
Increased understanding of biodiversity

leading to greater appreciation of the environmental and economic value of biodiversity, and protection of natural environments





Planning long-term sustainability of national digitization effort → international in scope and involvement





Photos by Zach Randall

ENJOY THE SUMMIT!



Photos by M. Jeffords & G. Paulay