

Introducción al uso de bases de datos digitales: Plataforma Symbiota

Samanta Orellana, M.Sc.

Estudiante de PhD-Asistente de Investigación
Biocollections, Arizona State University

ASU Biodiversity Knowledge
Integration Center
Arizona State University



Fotografía: Julio Ayala 2020

Colecciones e investigación

- Niveles de calidad de una colección
- Estado de los especímenes
- **Accesibilidad**
 - Organización
 - Bases de datos
 - Publicación de datos en línea



Colecciones Científicas- Datos



swbiodiversity.org/seinet/collections/individual/index.php?occid=21113053&clid=0

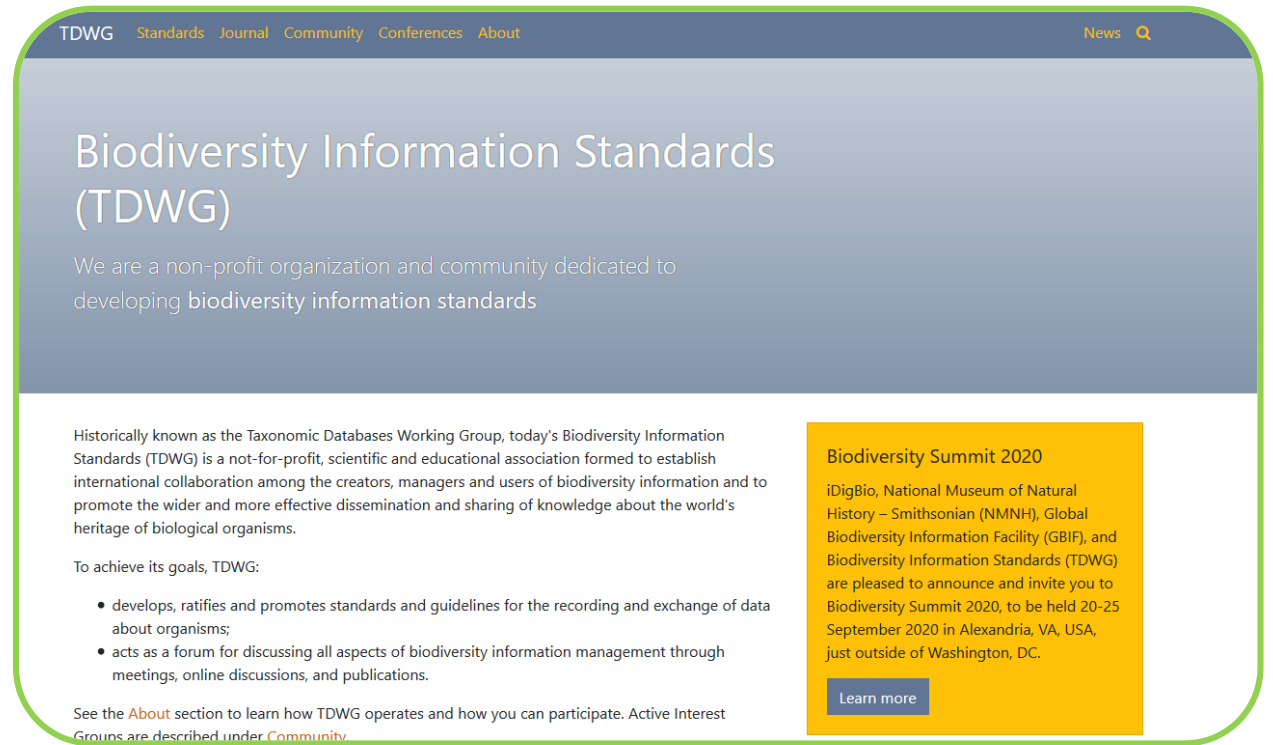


invertebase.org/portal/collections/individual/index.php?occid=869836&clid=0



<https://scan-bugs.org/portal/collections/individual/index.php?occid=13900737&clid=0>

Estandarización de datos



The screenshot shows the homepage of the Biodiversity Information Standards (TDWG) website. The header includes navigation links: TDWG, Standards, Journal, Community, Conferences, About, and News. The main heading is "Biodiversity Information Standards (TDWG)". Below it, a tagline states: "We are a non-profit organization and community dedicated to developing biodiversity information standards". The main content area is divided into two columns. The left column contains a paragraph about the organization's history and goals, followed by a list of its objectives. The right column features a yellow box titled "Biodiversity Summit 2020" with details about the event and a "Learn more" button.

TDWG Standards Journal Community Conferences About News

Biodiversity Information Standards (TDWG)

We are a non-profit organization and community dedicated to developing biodiversity information standards

Historically known as the Taxonomic Databases Working Group, today's Biodiversity Information Standards (TDWG) is a not-for-profit, scientific and educational association formed to establish international collaboration among the creators, managers and users of biodiversity information and to promote the wider and more effective dissemination and sharing of knowledge about the world's heritage of biological organisms.

To achieve its goals, TDWG:

- develops, ratifies and promotes standards and guidelines for the recording and exchange of data about organisms;
- acts as a forum for discussing all aspects of biodiversity information management through meetings, online discussions, and publications.

See the [About](#) section to learn how TDWG operates and how you can participate. Active Interest Groups are described under [Community](#).

Biodiversity Summit 2020

iDigBio, National Museum of Natural History – Smithsonian (NMNH), Global Biodiversity Information Facility (GBIF), and Biodiversity Information Standards (TDWG) are pleased to announce and invite you to Biodiversity Summit 2020, to be held 20-25 September 2020 in Alexandria, VA, USA, just outside of Washington, DC.

[Learn more](#)

- Estándares para la Información de Biodiversidad (TDWG)
- Colaboración internacional –creadores, administradores y usuarios
- Distribución efectiva de la información
- Darwin Core

Darwin Core

- Formato estandarizado de datos

Darwin Core: An Evolving Community-Developed Biodiversity Data Standard

John Wieczorek¹, David Bloom^{1*}, Robert Guralnick², Stan Blum³, Markus Döring⁴, Renato Giovanni⁵, Tim Robertson⁴, David Vieglais⁶

¹ University of California, Berkeley, California, United States of America, ² University of Colorado, Boulder, Colorado, United States of America, ³ California Academy of Sciences, San Francisco, California, United States of America, ⁴ Global Biodiversity Information Facility, Copenhagen, Denmark, ⁵ Centro de Referência em Informação Ambiental, Campinas, São Paulo, Brasil, ⁶ University of Kansas, Lawrence, Kansas, United States of America

Record-level Terms	Dublin Core terms, institutions, collections, nature of data record	Simple Darwin Core (flat)
Occurrence	evidence of species in nature, observers, behavior, associated media, references.	
Event	sampling protocols and methods, date, time, field notes	
Location	geography, locality descriptions, spatial data	
Identification	linkage between Taxon and Occurrence	
Taxon	scientific names, vernacular names, names usages, taxon concepts, and the relationships between them	
GeologicalContext	geologic time, chrono-stratigraphy, biostratigraphy, lithostratigraphy	
ResourceRelationship	explicit relationships between identified resources (e.g., one organism to another, taxon to location, etc.)	Generic Darwin Core (relational)
MeasurementOrFact	measurements, facts, characteristics, assertions, references	

Figure 2. Darwin Core Categories: Simple Darwin Core is comprised of seven categories of terms (green). This subset of Darwin Core terms represents descriptive data about organisms that can be represented in one file with one row per record and one column per term. Two additional categories (orange) expand Darwin Core with concepts that require a more complex data structure, such as multiple measurements from a single specimen, and cannot be represented easily in Simple Darwin Core.
doi:10.1371/journal.pone.0029715.g002

Darwin Core

File Home Insert Page Layout Formulas Data Review View Help																	Santiana Ordiana Arevalo (Student)																
Paste Cut Copy Format Painter Clipboard Font Alignment Number																	Share Comments																
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id																																	
institution collection ownerInstitution basisOfRecord occurrence catalogNumber otherCatalogNumber kingdom phylum class order family scientificTaxonID scientificGenus scientificSpecies specificEpithet taxonRank infraspecificEpithet identifiedDate identifiedBy identifiedByInstitution identifiedByTaxon identifiedByTaxonRank identifiedByTaxonID identifiedByTaxonRank identifiedByTaxonID identifiedByTaxonRank recordedDate recorder associatedName																	Michael E. Irwin																
EJEMPLO ASU ASUHC PreservedSpecimen ASUHC00126130 Animalia Arthropoda Insecta Coleoptera Anthribus Phaenithon semigriseus																	K.S. Orelli																

occurrenceID	basisOfRecord	institutionCode	collectionCode	catalogNumber	type	modified
language	license	rightsHolder	accessRights	bibliographicCitation	references	institutionID
collectionID	datasetID	datasetName	ownerInstitutionCode	informationWithheld	dataGeneralizations	dynamicProperties
occurrenceRemarks	recordNumber	recordedBy	organismID	individualCount	organismQuantity	
organismQuantityType	organismName	organismScope	associatedOrganisms	organismRemarks	sex	lifeStage
reproductiveCondition	behavior	establishmentMeans	occurrenceStatus	preparations	disposition	
otherCatalogNumbers	previousIdentifications	associatedMedia	associatedReferences	associatedOccurrences	associatedSequences	associatedTaxa
materialSampleID	parentEventID	eventID	samplingProtocol	sampleSizeValue	sampleSizeUnit	samplingEffort
eventDate	eventTime	startDayOfYear	endDayOfYear	year	month	day
verbatimEventDate	habitat	fieldNumber	fieldNotes	eventRemarks	locationID	higherGeographyID
higherGeography	continent	waterBody	islandGroup	island	country	countryCode
stateProvince	county	municipality	locality	verbatimLocality	verbatimElevation	
minimumElevationInMeters		maximumElevationInMeters		verbatimDepth	minimumDepthInMeters	
maximumDepthInMeters		minimumDistanceAboveSurfaceInMeters		maximumDistanceAboveSurfaceInMeters		locationAccordingTo
locationRemarks	verbatimCoordinates	verbatimLatitude	verbatimLongitude	verbatimCoordinateSystem		verbatimSRS
decimalLatitude	decimalLongitude	geodeticDatum	coordinateUncertaintyInMeters		coordinatePrecision	pointRadiusSpatialFit
footprintWKT	footprintSRS	footprintSpatialFit	georeferencedBy	georeferencedDate	georeferenceProtocol	
georeferenceSources	georeferenceVerificationStatus		georeferenceRemarks	geologicalContextID	earliestEonOrLowestEonothem	
latestEonOrHighestEonothem		earliestEraOrLowestErathem		latestEraOrHighestErathem		
earliestPeriodOrLowestSystem		latestPeriodOrHighestSystem		earliestEpochOrLowestSeries		
latestEpochOrHighestSeries		earliestAgeOrLowestStage		latestAgeOrHighestStage		
lowestBiostratigraphicZone		highestBiostratigraphicZone		lithostratigraphicTerms	group	formation
member	bed	identificationID	identifiedBy	dateIdentified	identificationReferences	
identificationVerificationStatus		identificationRemarks	identificationQualifier	typeStatus	taxonID	scientificNameID
acceptedNameUsageID	parentNameUsageID	originalNameUsageID	nameAccordingToID	namePublishedInID	taxonConceptID	scientificName
			acceptedNameUsage	parentNameUsage	originalNameUsage	nameAccordingTo
namePublishedIn	namePublishedInYear	higherClassification	kingdom	phylum	class	order
family	genus	subgenus	specificEpithet	infraspecificEpithet	taxonRank	verbatimTaxonRank
scientificNameAuthorship		vernacularName	nomenclaturalCode	taxonomicStatus	nomenclaturalStatus	taxonRemarks

Bases de datos de colecciones



Biodiversity Data Journal 2: e1114
doi: [10.3897/BDJ.2.e1114](https://doi.org/10.3897/BDJ.2.e1114)



Software description

Symbiota - A virtual platform for creating voucher-based biodiversity information communities

Corinna Gries[†], Edward E. Gilbert[‡], Nico M. Franz[‡]

[†] University of Wisconsin, Madison, Madison, United States of America

[‡] Arizona State University, Tempe, United States of America

- Plataformas virtuales
- Formato estandarizado de campos (DC)
- Privadas (locales) y de libre acceso

Symbiota


New Occurrence Record

Collector Info



Catalog Number ? Other Cat. #s ? Collector ? Number ? Date ? ☐ Auto search

Associated Collectors ? Verbatim Date ? 



Latest Identification

Scientific Name ? Author ?
ID Confidence ? Undefined ID Qualifier ?
Family ?
Identified By ? Date Identified ? 

Locality

Country ? State/Province ? County ? Municipality ? Location ID ?
Locality ? 
Security: Security not applied ? ☐ Deactivate Locality Lookup
Latitude Longitude Uncertainty ? Datum ? Verbatim Coordinates ?
Elevation in Meters ? Verbatim Elevation ? Depth in Meters ? Verbatim Depth ? 

Misc

Habitat ?
Substrate ?
Associated Taxa ? 
Description ?
Notes (Occurrence Remarks) ? 
Life Stage ? Sex ? Individual Count ? Sampling Protocol ? Preparations ?
Phenology ? Establishment Means ? ☐ Cultivated/Captive

Symbiota

tails

Map

Comments

Linked Resources

Edit History

Share 0 Tweet



Arizona State University Hasbrouck Insect Collection (ASU:ASUHC)

Catalog #: ASUHC0079285

Occurrence ID (GUID): eff7c653-c1ba-4954-ae14-b09e5fcb6fa3

Taxon: *Euparius polius* Jordan, 1904

Family: Anthribidae

Determiner: Charles W. O'Brien (2013)

Collector: H. Wolda

Date: 1977-07-06

Locality: Panama, Panama, La Chorrera District, Barro Colorado Island
9.152089 -79.846484 WGS84

Specimen Images



[Open Medium Image](#)
[Open Large Image](#)

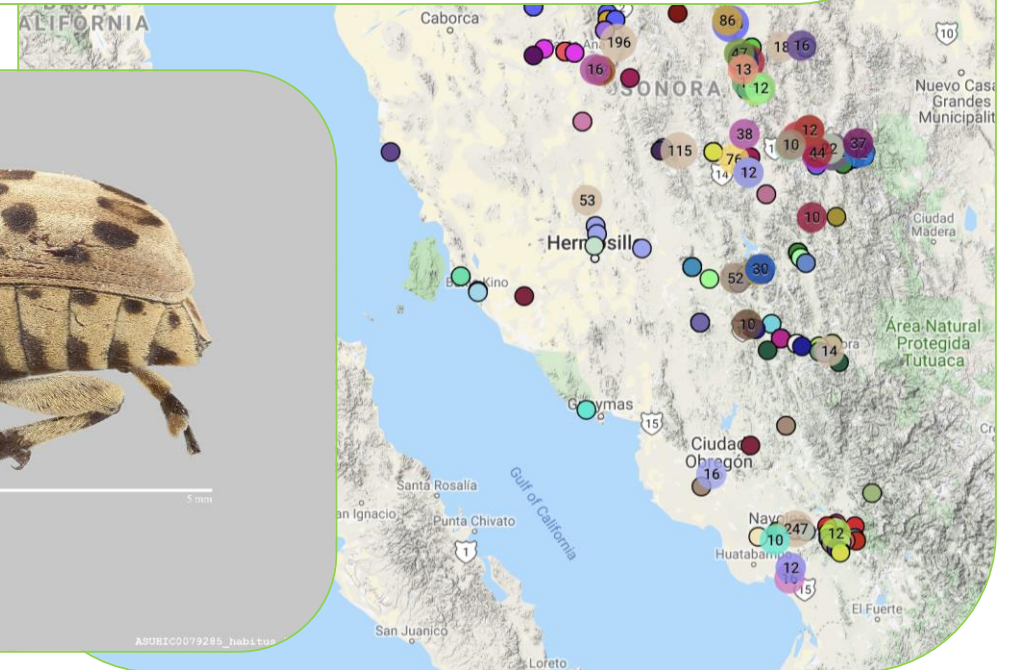


[Open Medium Image](#)
[Open Large Image](#)

Usage Rights: CC0 1.0 (Public-domain)

Record ID: 4af5cae2-4328-459b-8263-4a6004cc041c

For additional information on this specimen, please contact: Nico Franz (nico.franz@asu.edu)
Do you see an error? If so, errors can be fixed using the Occurrence Editor.



Symbiota



ASUHIC0079285_habitus

Details

Map

Comments

Linked Resources

Edit History

Share 0

Tweet



Arizona State University Hasbrouck Insect Collection (ASU:ASUHC)

Catalog #: ASUHIC0079285

Occurrence ID (GUID): eff7c653-c1ba-4954-ae14-b09e5fcb6fa3

Taxon: *Euparius polius* Jordan, 1904

Family: Anthribidae

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Collector: H. Wolda

Date: 1977-07-06

Locality: Panama, Panama, La Chorrera District, Barro Colorado Island
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Specimen Images



[Open Medium Image](#)
[Open Large Image](#)

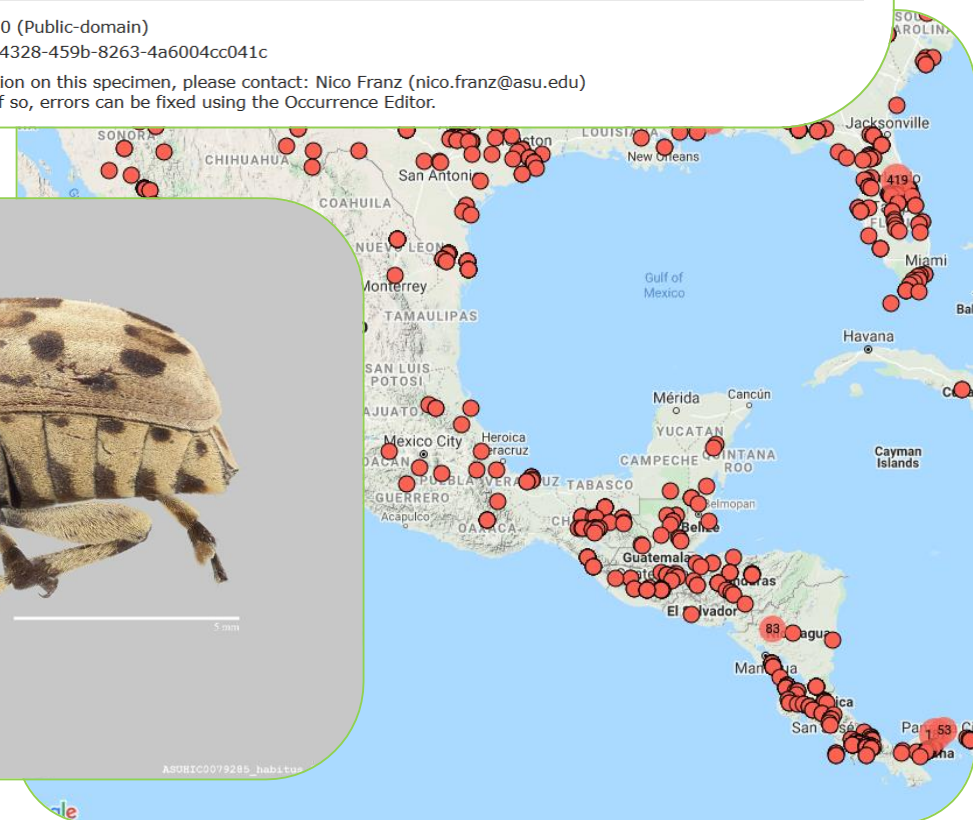


[Open Medium Image](#)
[Open Large Image](#)

Usage Rights: CC0 1.0 (Public-domain)

Record ID: 4af5cae2-4328-459b-8263-4a6004cc041c

For additional information on this specimen, please contact: Nico Franz (nico.franz@asu.edu)
Do you see an error? If so, errors can be fixed using the Occurrence Editor.



Symbiota



Academy of Natural Sciences of Drexel University (PH)

Catalog #: PH00598217

Occurrence ID (GUID): 84e12c16-f417-45a3-ae85-8d4b8ae95d9b

Taxon: *Stenotyla*

Family: Orchidaceae

ID Remarks: PH filed-as name

Collector: M. Perez 1373

Date: 2006-09-20

Verbatim Date: 20 Septiembre 2006

Locality: Guatemala, Huehuetenango, San Jose Maxbal- Barillas (camino) Barillas

Elevation: 1437 meters (4713ft)

Specimen Images



[Open Large Image](#)

Usage Rights: CC BY-NC (Attribution-Non-Commercial)

Record ID: 84e12c16-f417-45a3-ae85-8d4b8ae95d9b

For additional information on this specimen, please contact: Tatyana Livshul

SEINet

Arizona - New Mexico Chapter

[Home](#) [Specimen Search](#) [Images](#) [Flora Projects](#) [Agency Floras](#) [Dynamic Floras](#) [Additional Websites](#) [Resources](#)

[Home](#) >> [Collections](#) >> [Search Criteria](#) >> **Specimen Records**

Species List

Occurrence Records

Taxa Count: 179

ORCHIDACEAE

Arpophyllum giganteum
Arpophyllum spicatum
Beadlea elata
Beloglottis costaricensis
Bletia
Bletia campanulata
Bletia purpurea
Bletia reflexa
Bletia roezlii
Brassavola cucullata
Brassia maculata
Brassia verrucosa
Camaridium pulchrum
Campylocentrum micranthum
Cohniella ascendens
Cohniella cebolleta
Comparettia falcata
Psychiza maculata



Symbiota

Alphabetical Quick Index

- [Channel Islands Biodiversity Information System](#)
- [Consortium of North American Bryophyte Herbaria \(CNABH\)](#)
- [Consortium of North American Lichen Herbaria \(CNALH\)](#)
- [Consortium of Pacific Herbaria \(CPH\)](#)
- [Consortium of Northeastern Herbaria Portal \(CNH\)](#)
- [Consortium of Small Vertebrate Collections \(CSVColl\)](#)
- [Cooperative Taxonomic Resource for American Myrtaceae \(CoTRAM\)](#)
- [Documenting Ethnobiology in Mexico and Central America \(DEMCA\)](#)
- [Herbario Virtual Austral Americano \(HVAA\)](#)
- [Macroalgal Herbarium Consortium Portal](#)
- [Mycology Collections Data Portal \(MycoPortal\)](#)
- [Madrean Discovery & Madrean Archipelago Biodiversity Assessment Project](#)
- [InvertEBase Data Portal](#)
- [Great Lakes Invasives Network](#)
- [Minnesota Biodiversity Atlas](#)
- [Monarch](#)
- [Neotropical Arthropod Portal \(NAP\)](#)
- [Neotropical Flora Portal](#)
- [Open Herbarium](#)
- [SEINet Network of North American Plant Portals](#)
- [Smithsonian Tropical Research Institute \(STRI\)](#)
- [Symbiota Collections of Arthropods Network \(SCAN\) and LepNet](#)
- [Virtual Flora of Wisconsin](#)
- [University of Colorado Herbarium](#)



Callosamia promethea (Drury, 1773) Photo courtesy of Arizona State University Hasbrouck Insect Collection (ASU). Catalog #ASUHIC0001263

Bases de datos de observaciones

BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 3: e46670
doi: [10.3897/biss.3.46670](https://doi.org/10.3897/biss.3.46670)

OPEN  ACCESS

Conference Abstract

Making Biodiversity Data Social, Shareable, and Scalable: Reflections on iNaturalist & citizen science

Carrie Seltzer [‡]

[‡] California Academy of Science



Article

eButterfly: Leveraging Massive Online Citizen Science for Butterfly Conservation

Kathleen L. Prudic ^{1,*}, Kent P. McFarland ², Jeffrey C. Oliver ³, Rebecca A. Hutchinson ^{4,5}, Elizabeth C. Long ⁶, Jeremy T. Kerr ⁷ and Maxim Larrivé ^{8,9,*}

- Diseñadas para usuarios de todo tipo
- Fáciles de usar
- Promueven y facilitan la educación
- Proveen datos útiles para investigación
 - Usan Darwin Core

Agregadores de información

Bases de Datos

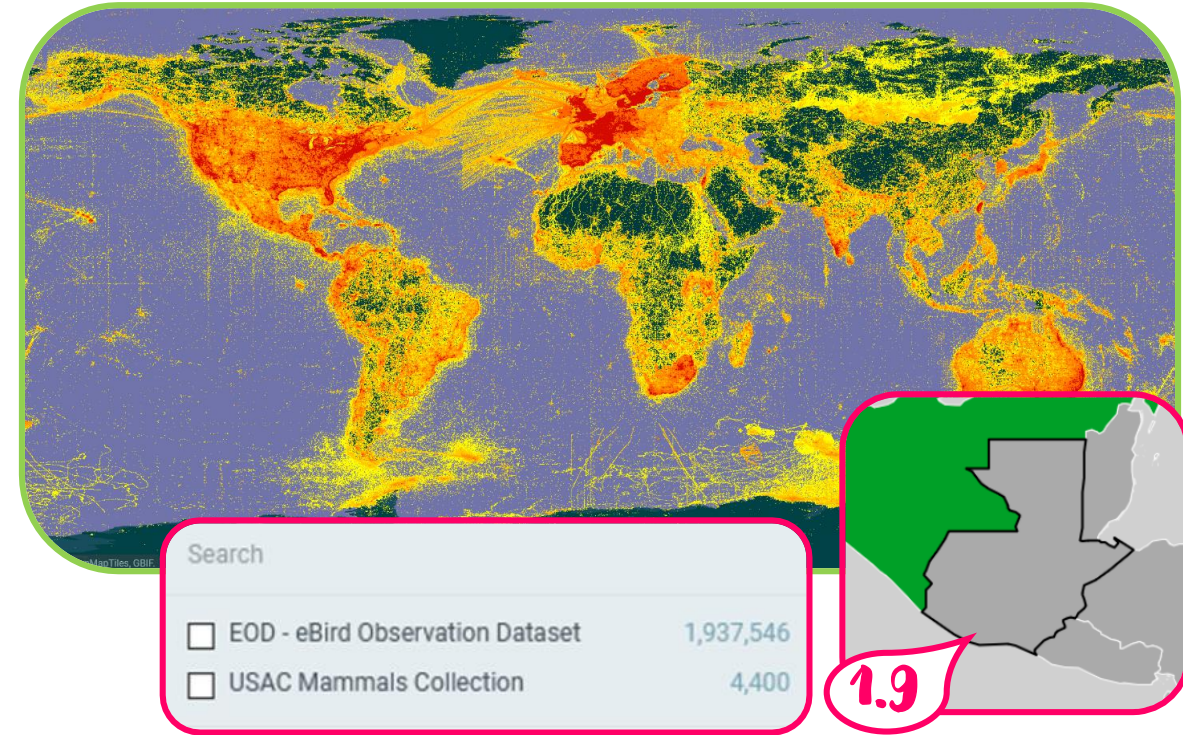
Darwin Core

Registros a partir de
especímenes de colecciones

Registros a partir de
información molecular

Registros a partir de
observaciones

Agregadores de información



- Instalación Global de Información sobre Biodiversidad
- Promueve y facilita el acceso gratis y abierto a **datos de biodiversidad**
- Uso en investigación y política
 - Metas del desarrollo sostenible (ONU)



SNIB



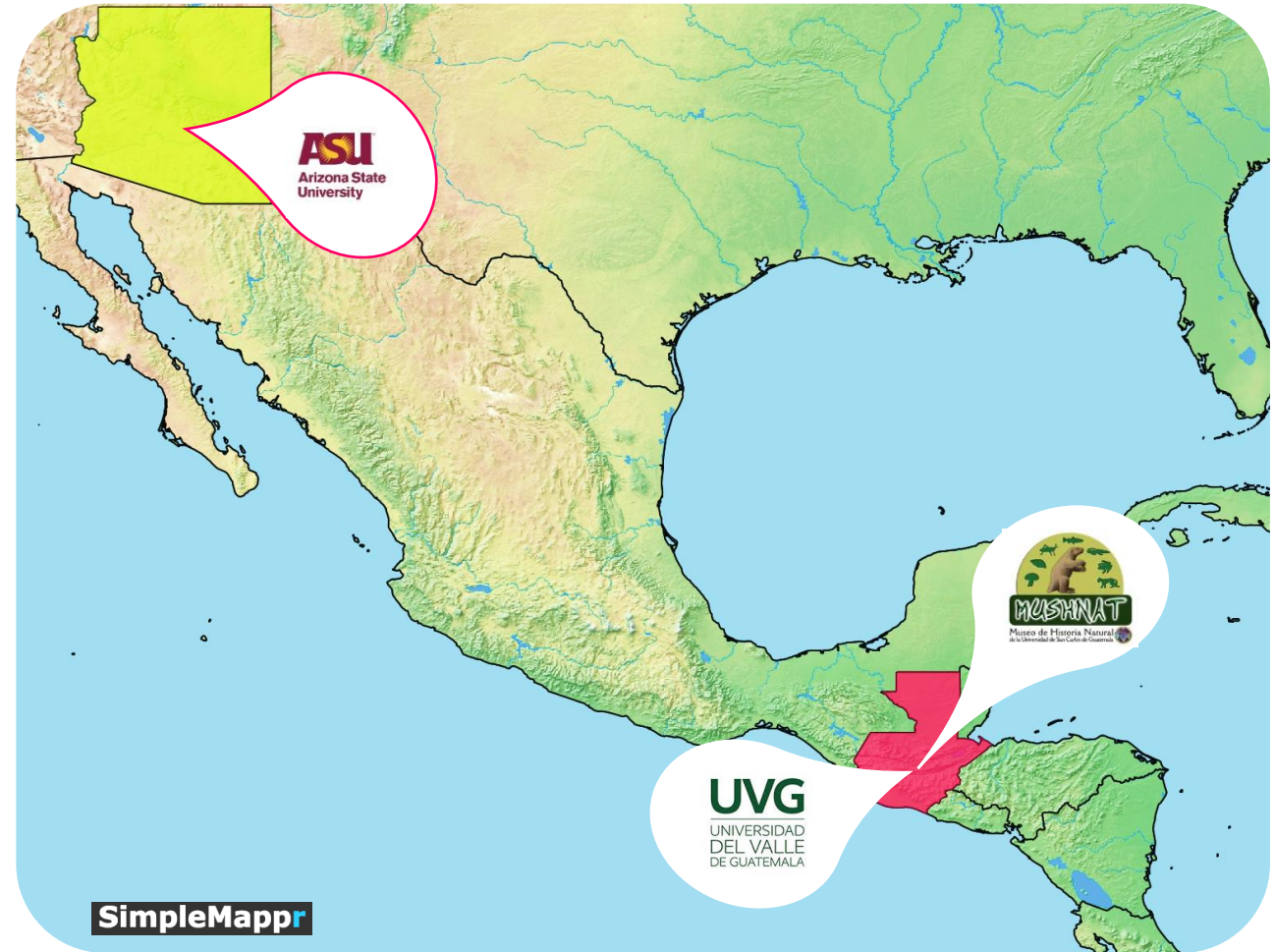
- Sistema Nacional de Información sobre Diversidad Biológica de Guatemala
- Se alimenta de agregadores de información y bases de datos extranjeras
- Actualmente una colección guatemalteca provee datos vía GBIF

Bionomía



- Reúne los datos de especímenes colectados e identificados
- Se alimenta exclusivamente de registros publicados en GBIF
 - Actualmente una colección guatemalteca provee datos vía GBIF
- El trabajo curatorial realizado en Guatemala es invisible

Oportunidades en el país



¿Preguntas?

ASU Biodiversity Knowledge
Integration Center
Arizona State University

Samanta Orellana

sorellana@asu.edu

 @coleopterasam