Introducción al uso de bases de datos digitales: Plataforma Symbiota

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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
  - Base de datos
  - Publicación de datos en línea

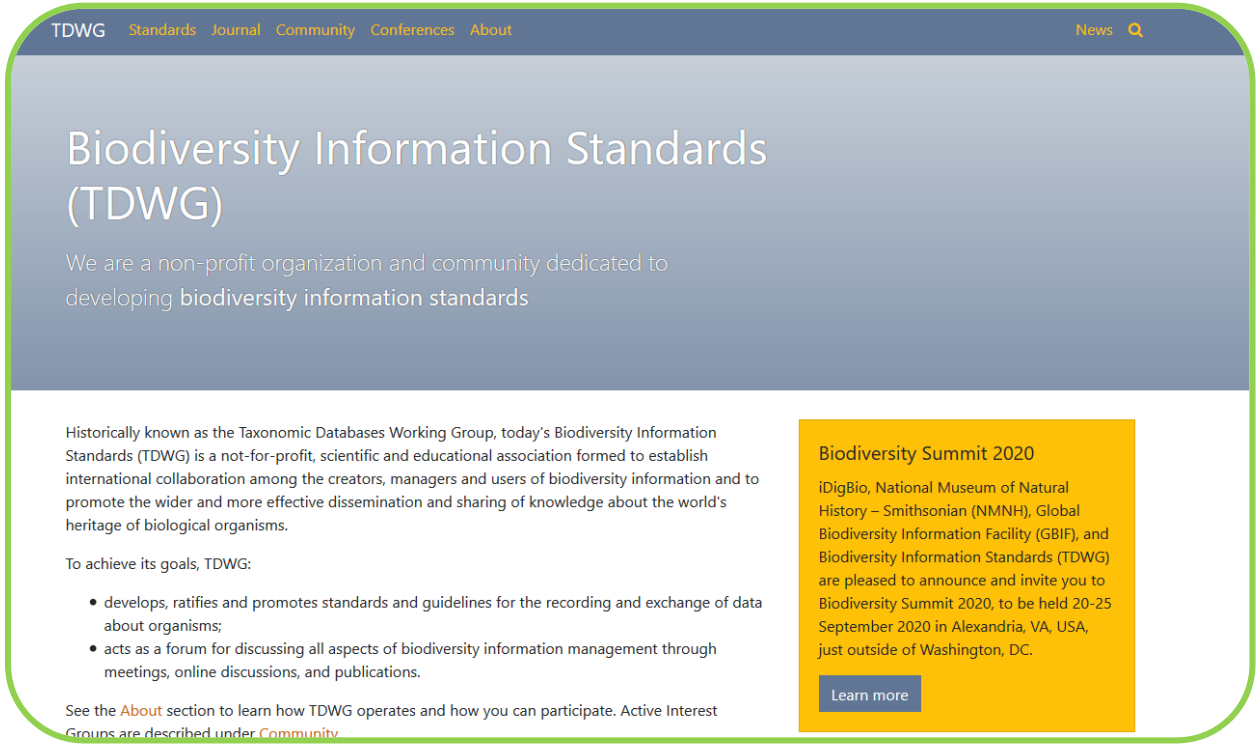
Colecciones Científicas- Datos

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



- 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

OPEN ACCESS Freely available online

PLoS one

Darwin Core: An Evolving Community-Developed Biodiversity Data Standard

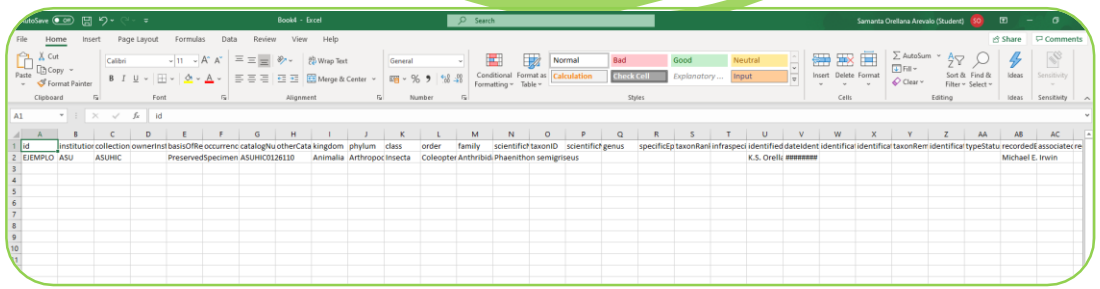
John Wieczorek[1], David Bloom[1]*, Robert Guralnick[2], Stan Blum[3], Markus Döring[4], Renato Giovanni[5], Tim Robertson[4], David Vieglais[6]

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

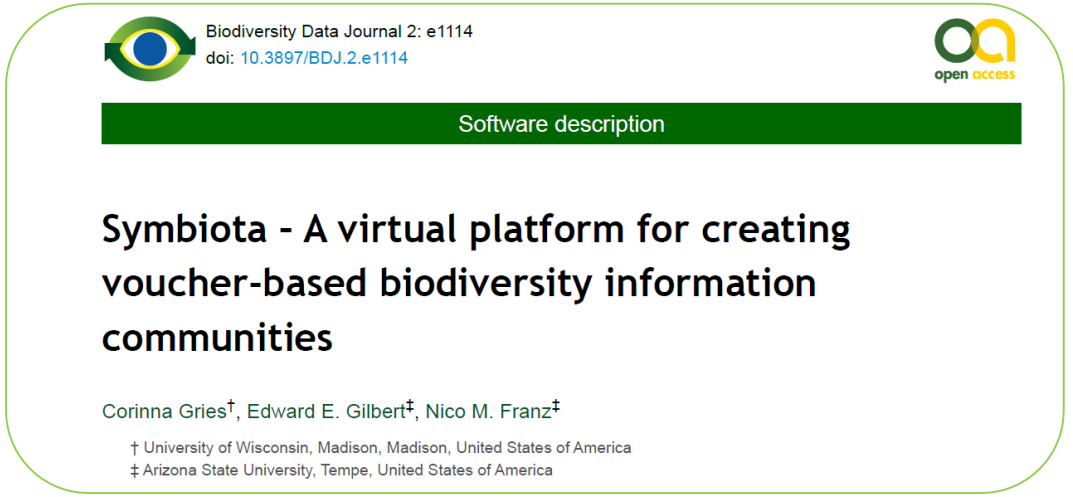
Darwin Core



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

Specify COLLECTIONS CONSORTIUM



Biodiversity Data Journal 2: e1114
doi: 10.3897/BDJ.2.e1114
open access

Software description

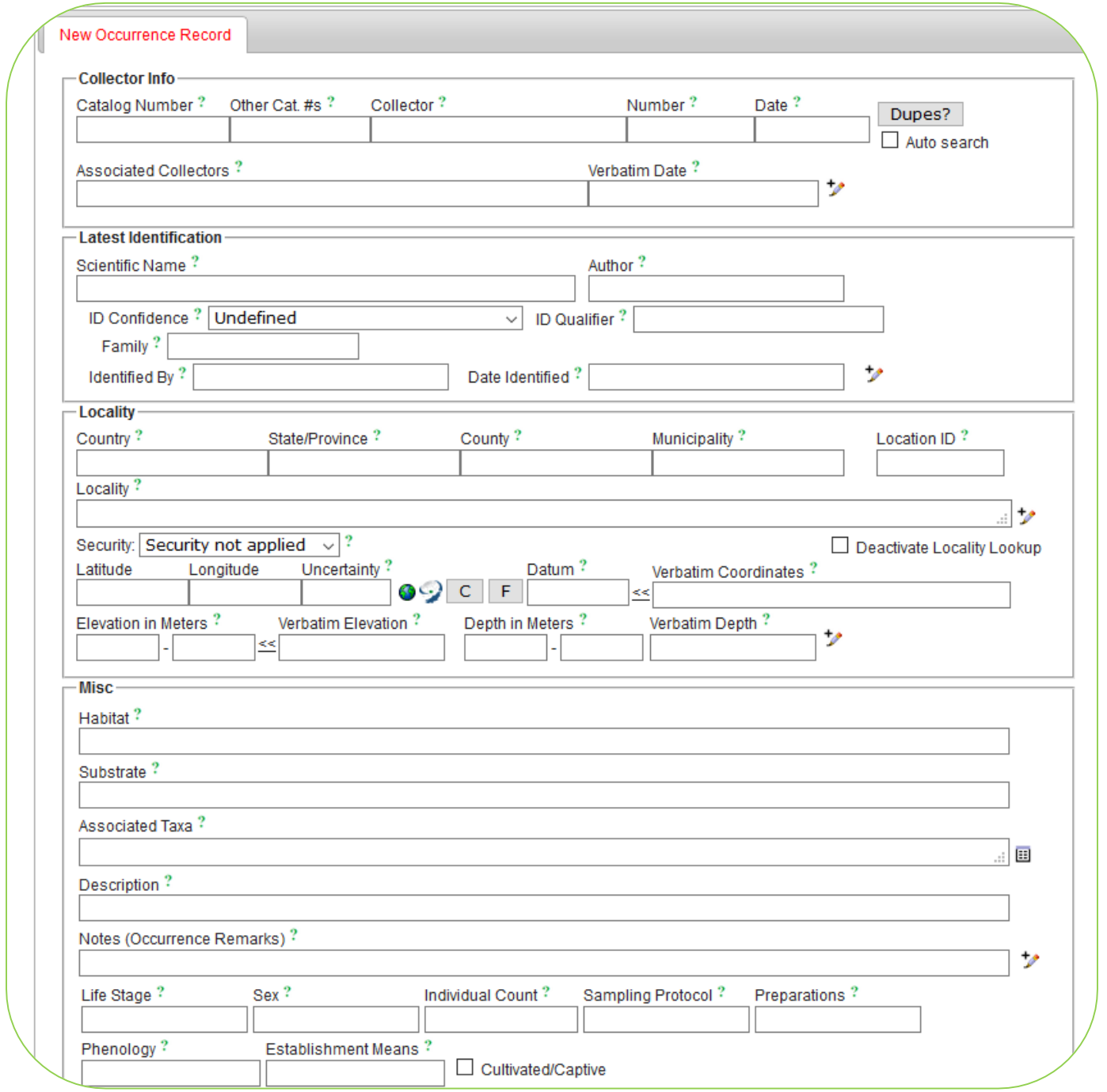
Symbiota - A virtual platform for creating voucher-based biodiversity information communities

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
Dupes?
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
C
F
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:ASUHIC)

Catalog #: ASUHIC0079285
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

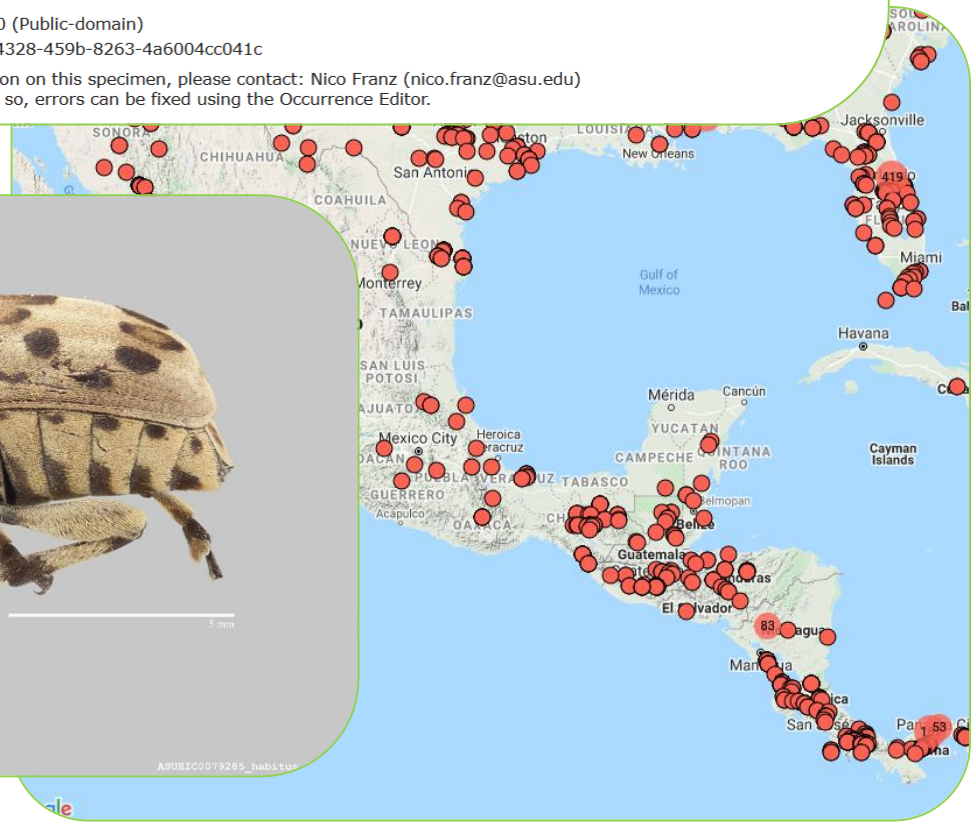
Specimen Images


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

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 Livshult

SEINet Arizona - New Mexico Chapter

me Specimen Search Images Flora Projects Agency Floras Dynamic Floras Additional Websites Resourc

me >> 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
Dichaea maculata

Symbiota

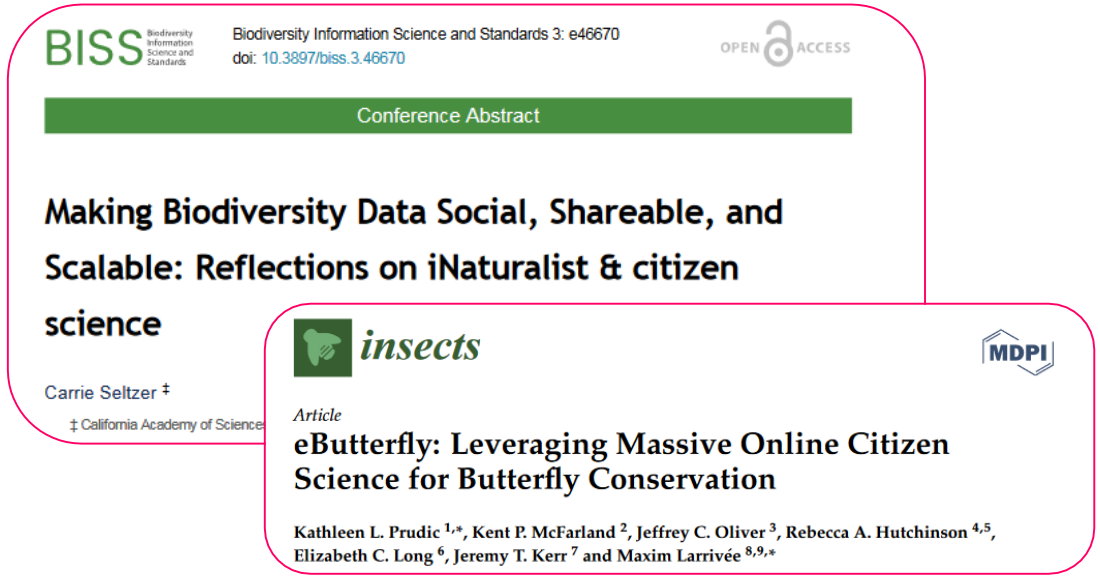
Alphabetical Quick Index

- 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

iNaturalist eButterfly eBird

Bases de datos de observaciones



BISS Biodiversity Information Science and Standards

Biodiversity Information Science and Standards 3: e46670
doi: 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

insects

MDPI

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 Larrivée [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

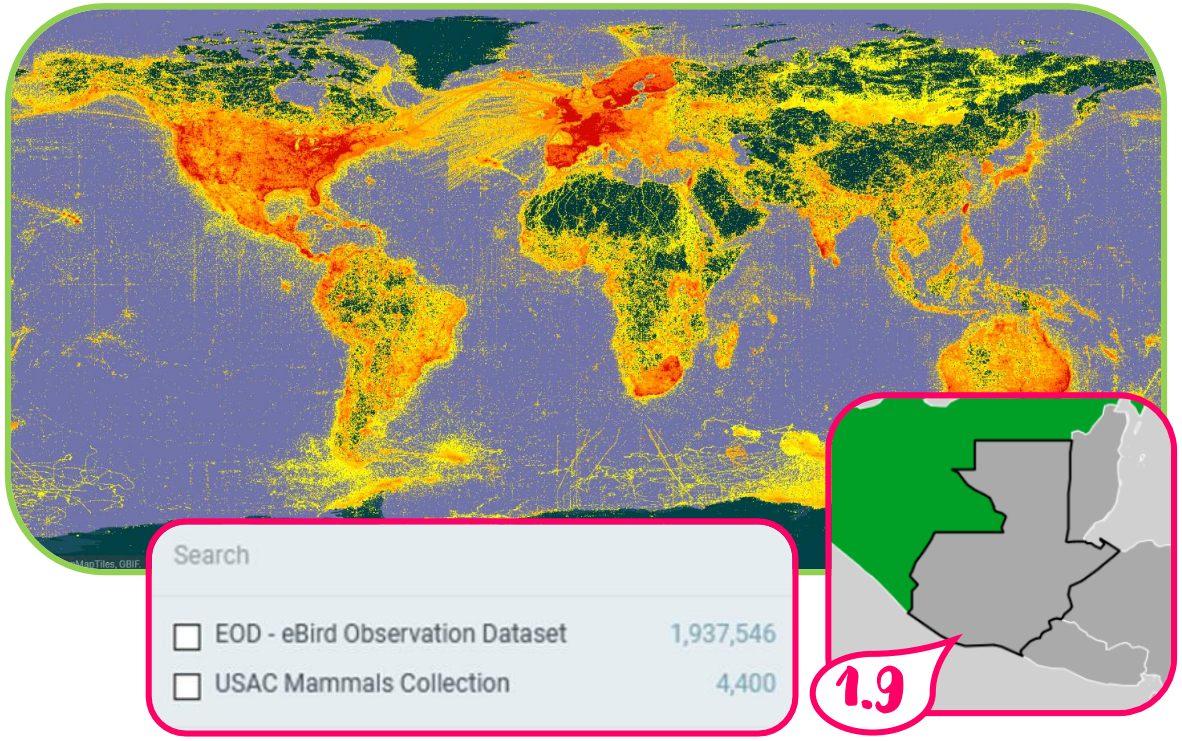
Registros a partir de especímenes de colecciones

Registros a partir de información molecular

Registros a partir de observaciones

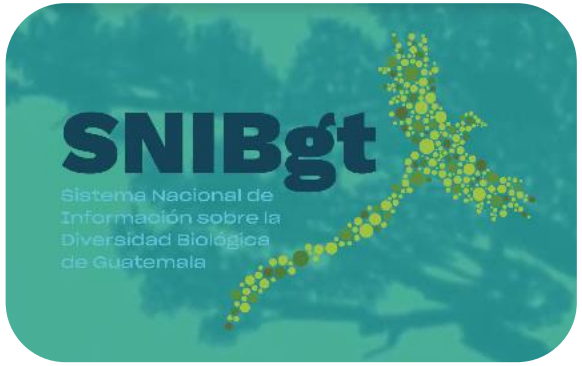
GBIF
Global Biodiversity Information Facility

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



Atlas of Living Australia
ala.org.au

GBIF
Global Biodiversity Information Facility

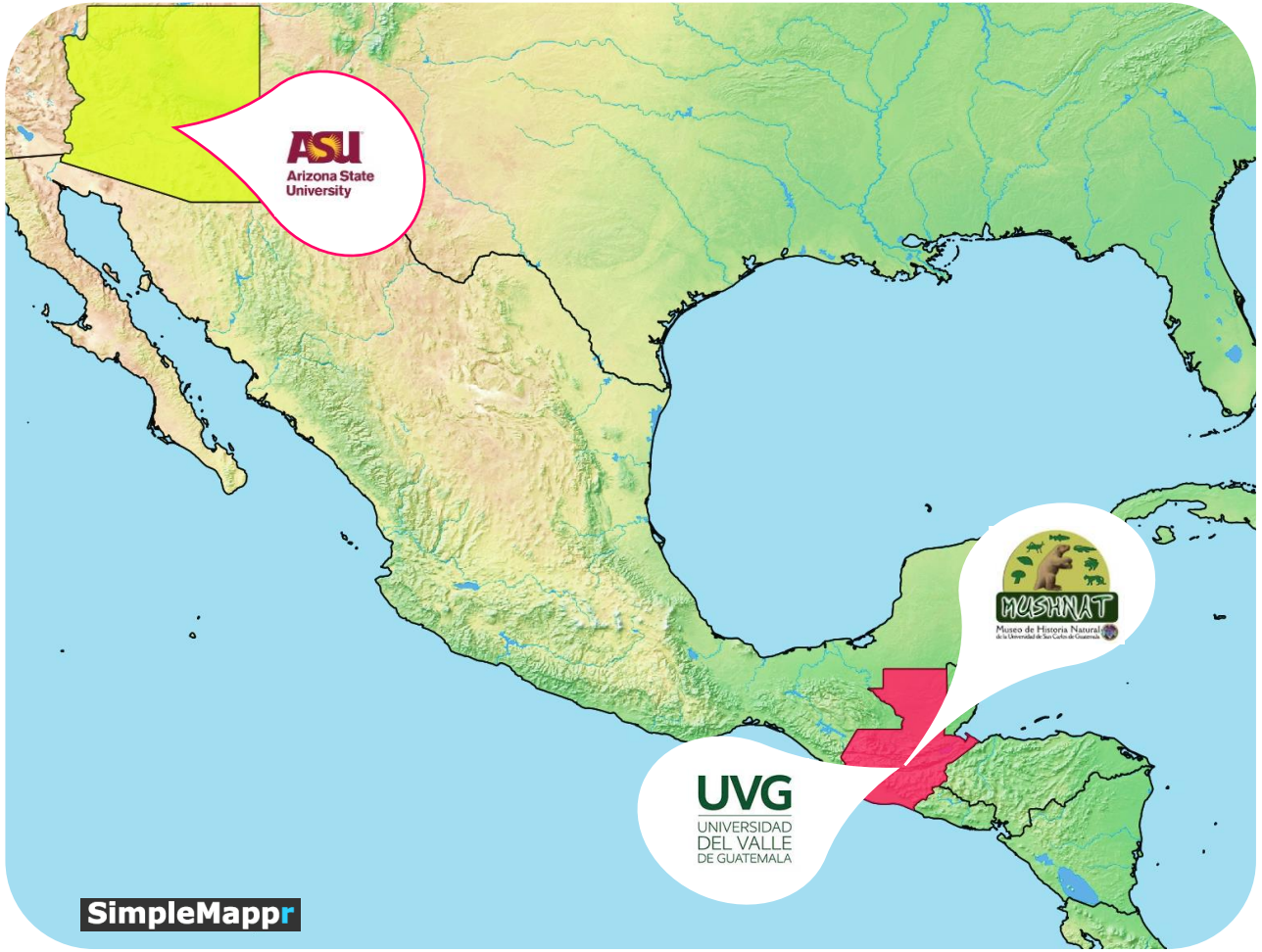
iNaturalist

- 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?

Biodiversity Knowledge Integration Center
Arizona State University

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@coleopterasam