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Presentations

Title

Extended Thoughts about the Extended Specimen

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Author

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Supplemental Material

<https://escholarship.org/uc/item/0g99h7kf#supplemental>

Big-Bee



Extended Thoughts about the Extended Specimen

Katja C. Seltmann

Vernon and Mary Cheadle Center for
Biodiversity and Ecological Restoration,
University of California, Santa Barbara
BioDigiCon, September 28, 2022
seltmann@ucsb.edu



Terrestrial
Parasite
Tracker



UC SANTA BARBARA

Cheadle Center for Biodiversity
& Ecological Restoration



big-bee.net

NSF:DBI:2102006



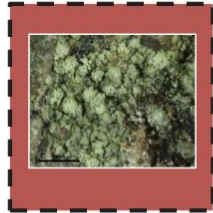
Extended Specimens In Action: Appalachian Lichens



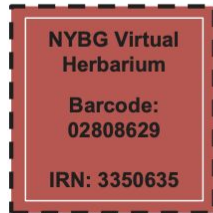
Field Collection



Physical Specimen

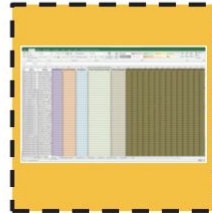


Digital Specimen Image



Digital Specimen Record

Primary Extensions



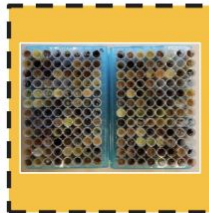
Morphological Data



Ecological Data



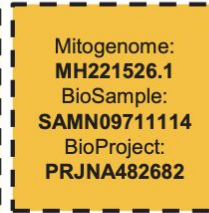
Environmental Samples



Tissue Samples

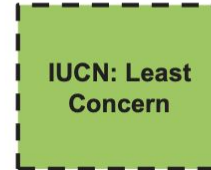


Field Images



Molecular Data

Secondary Extensions



Conservation Status



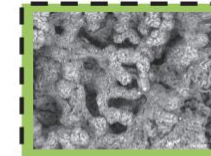
Species Distribution



Evolutionary Inferences



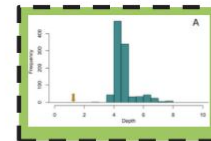
Species Description



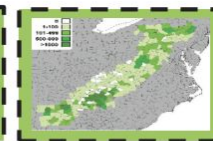
Functional Traits



Biotic Interactions



Microbial Communities



Migration Scenarios

Tertiary Extensions

resampling

What Extends a Specimen

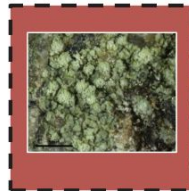
Extended Specimens In Action: Appalachian Lichens



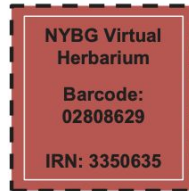
Field Collection



Physical Specimen

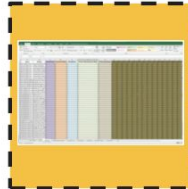


Digital Specimen Image



Digital Specimen Record

Primary Extensions



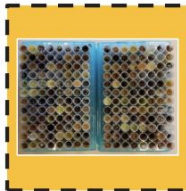
Morphological Data



Ecological Data



Environmental Samples



Tissue Samples



Field Images

Mitogenome: MH221526.1
BioSample: SAMN09711114
BioProject: PRJNA482682

Molecular Data

Secondary Extensions

IUCN: Least Concern

Conservation Status

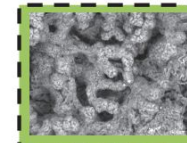


Species Distribution



Evolutionary Inferences

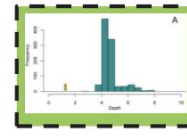
Species Description



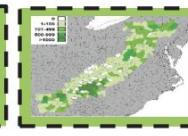
Functional Traits



Biotic Interactions



Microbial Communities



Migration Scenarios

Tertiary Extensions

Global Bee Interaction Data
124 files, 22 downloads
GitHub

Big Bee indexed biotic interactions and review summary
193 files, 83 downloads

UC Santa Barbara Invertebrate Zoology Collection (UCSB-IZC) Data Archive and Biodiversity Dataset Graph
151 files, 2,022 downloads
OpenAIRE

UCSB-IZC0010219 - Bee Library - 73e389aa-5886-4e4b-8778-8a930211b77e
0 files, 0 downloads
OpenAIRE

Collections generate data and share via IPT or Darwin Core



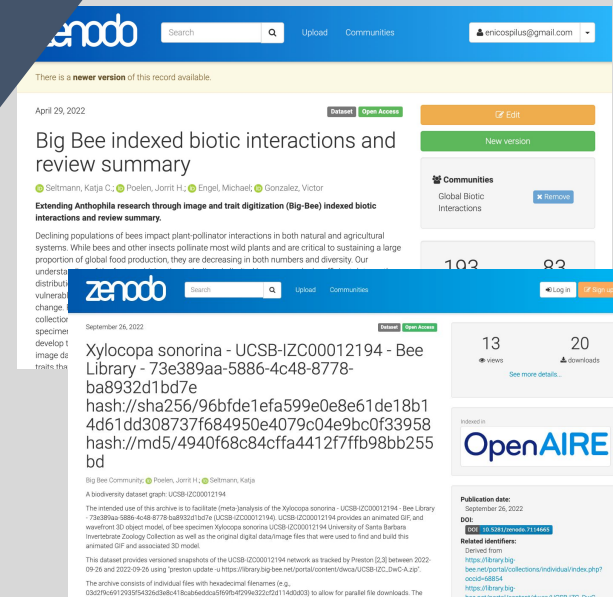
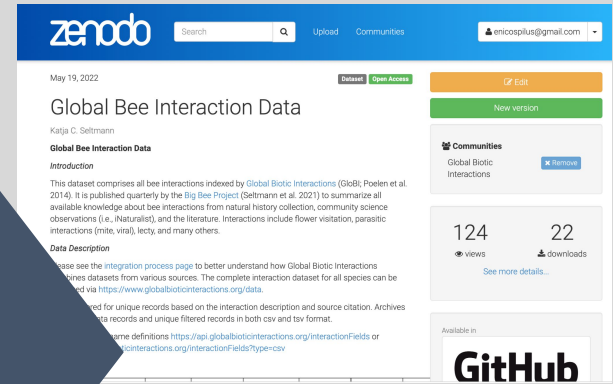
Data is shared and indexed

Data is indexed, including GloBI and Bee Library; Data indexers transform data



Datasets are created

Opinionated datasets are created: taxon name alignment, QC. Generate identifiers that then can be linked back to specimen



Link via DOI?

Jorrit Poelen, GloBI



Archives can provide links to original data

Images and models shared from a collection.

Preston software (Elliott et al, 2022) versions DwC archives and tracks provenance

Now, the citations to records, images and models can be signed.



Hashes created for images

Hashing algorithm



#



hash://s
ha256/9
6bfde1e
f

Hashes included in publication



Jorrit Poelen, GloBI

January 5, 2021

Working paper Open Access

Native and non-native bees (Anthophila) of Santa Cruz Island: An annotated checklist

Katja C. Seltmann; David Dewey; Evan Hobson; Lynn McLaren; Charlie Thrift; Zoe Wood

This checklist of Santa Cruz Island bees includes information from prior publications, a previous checklist, and recent collections. It includes information on specimens, and recent collections.

Checklists

guide=Apoidea_species.

This is version 0.01 and part of an ongoing survey to document the bee species of Santa Cruz Island. The reports are published in versions once a year. Questions and comments about the checklist should be emailed to Katja Seltmann (seltmann@ucsb.edu).

106

views

81

downloads

See more details...

Indexed in

OpenAIRE

Publication date:

January 5, 2021

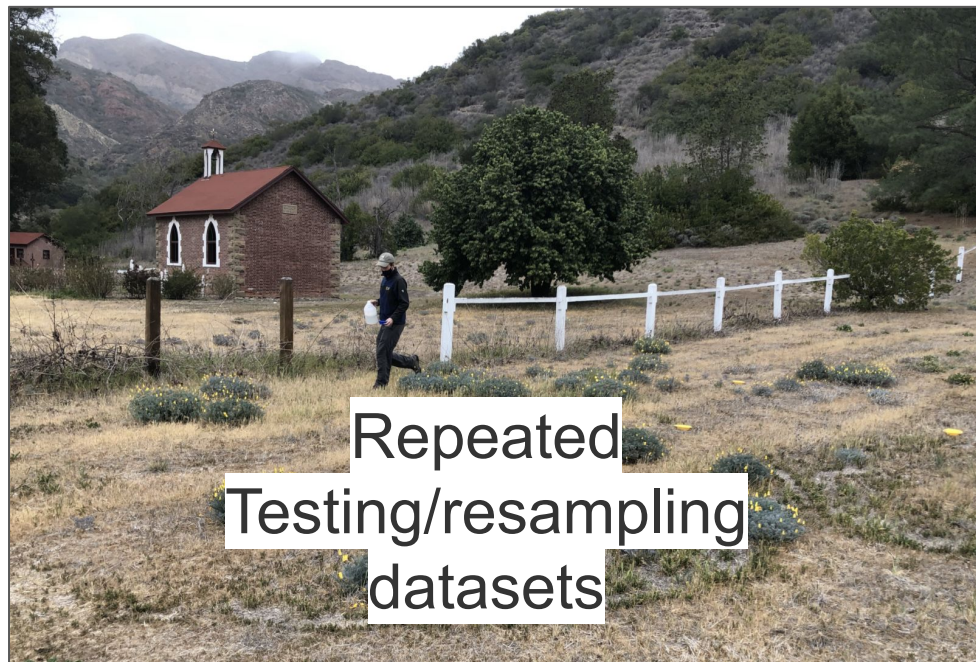
DOI:

DOI: 10.5281/zenodo.5558840

Bee Library

An online resource connecting images, specimen records, and natural history information about bees.

The screenshot shows the Bee Library website interface. At the top, there's a navigation bar with 'Home', 'Search', 'Images', 'Global Biotic Interactions', and 'Big Bee News'. Below that, the main content area is titled 'Santa Cruz Island Bees' and lists authors: Katja C. Seltmann, David Dewey, Lynn McLaren & Charlie Thrift. It includes a citation: 'Katja C. Seltmann, David Dewey, Lynn McLaren & Charlie Thrift. (2022) Native and non-native bees (Anthophila) of Santa Cruz Island: An annotated checklist. (0.02) Locality: Santa Cruz Island, California, USA'. There's an abstract and a list of references. On the right, there's a sidebar with 'Options' (Search, Common Names, Synonyms) and 'Taxonomic Filter' (Original Checklists, Display Synonyms, Common Names, Display as Images, Notes & Vouchers, Taxon Authors, Show Taxa Alphabetically, Build List). Below the sidebar is a map of Santa Cruz Island with red pins indicating collection sites. The map is labeled 'Santa Cruz Island National Park'.



May 19, 2022

Dataset Open Access

Edit

Global Bee Interaction Data

Katja C. Seltmann

Global Bee Interaction Data

Introduction

This dataset comprises all bee interactions indexed by [Global Biotic Interactions](#) (GloBI; Poelen et al. 2014). It is published quarterly by the [Big Bee Project](#) (Seltmann et al. 2021) to summarize all available knowledge about bee interactions from natural history collection, community science observations (i.e., iNaturalist), and the literature. Interactions include flower visitation, parasitic interactions (mite, viral), lecty, and many others.

Data Description

Please see the [integration process page](#) to better understand how Global Biotic Interactions combines datasets from various sources. The complete interaction dataset for all species can be accessed via <https://www.globalbioticinteractions.org/data>.

Data

cor

Data

http

Me

citation. Archives

inFields or

Available in

GitHub

Opportunistic Data

124

views

22

downloads

See more details...

New version

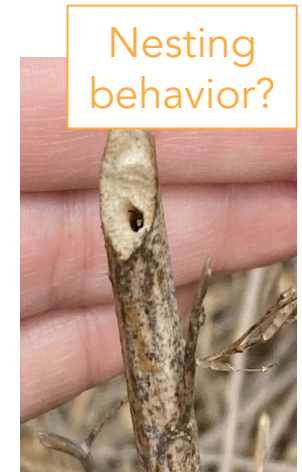
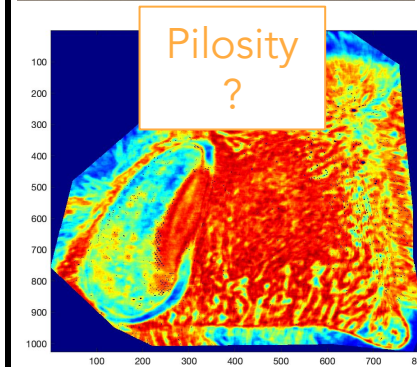
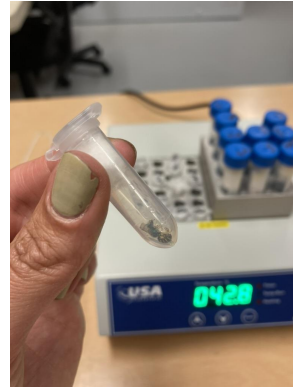
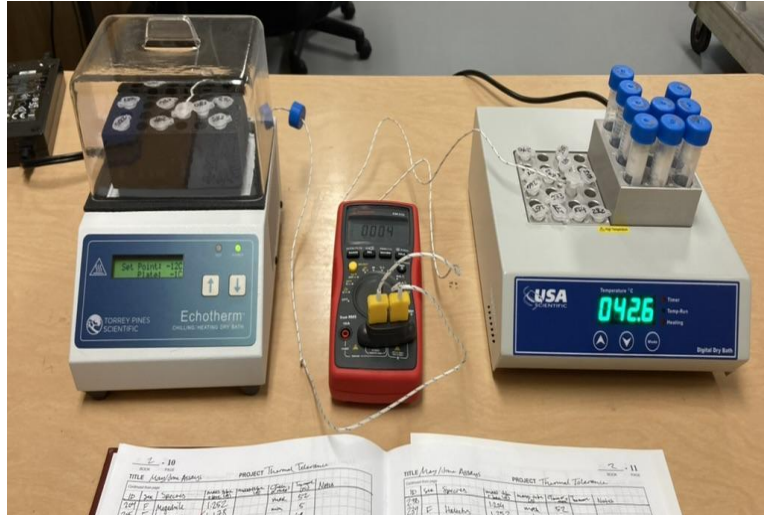
Communities

Global Biotic Interactions

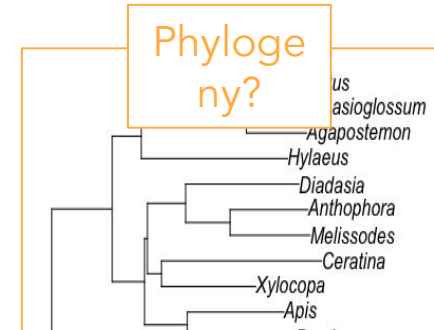
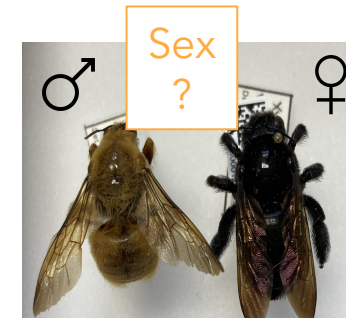
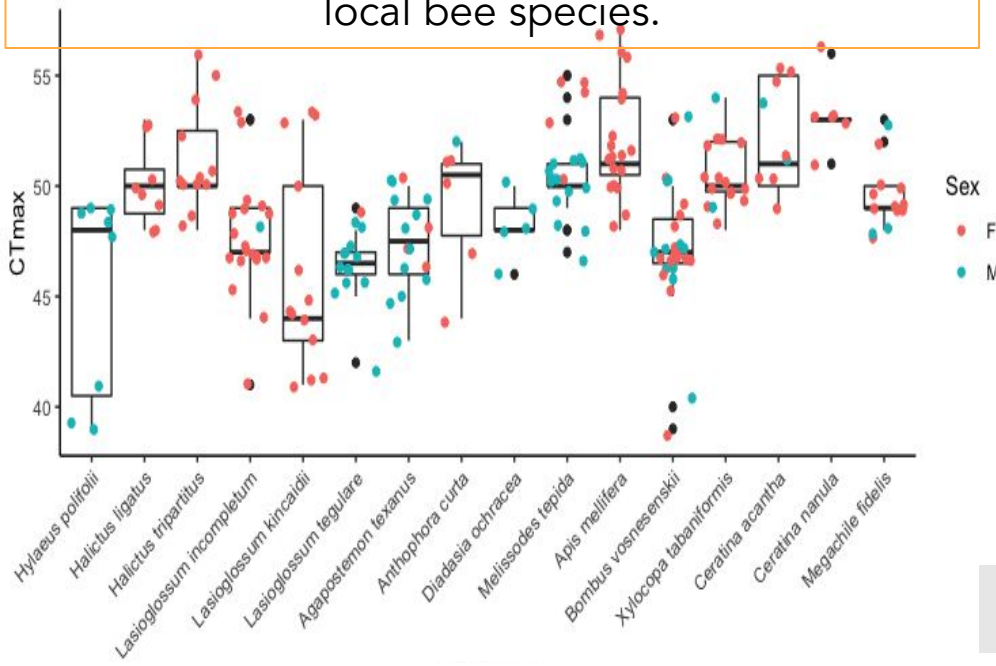
Remove

Lead investigators: Grace DiRenzo (USGS) & Michelle Lee (UCSB)

What drives intraspecific variation in native bee thermal tolerance?



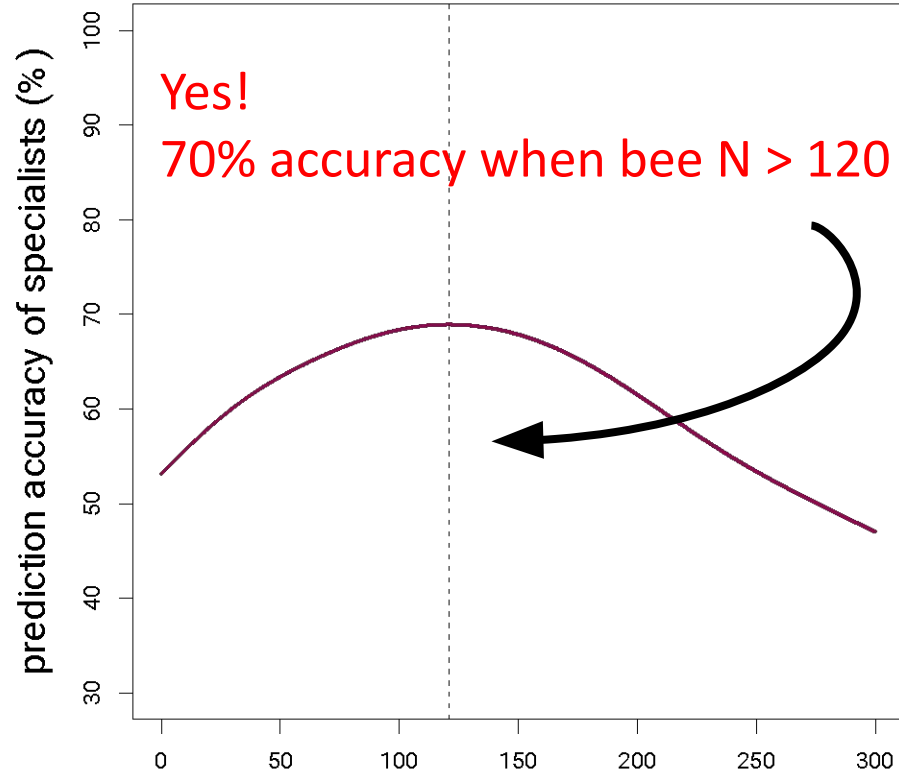
Thermal tolerance is highly variable across 16 local bee species.



Lead investigator: Madeleine Ostwald, PhD

Can we predict which bee species are pollen specialists by counting the plant taxa they visit?

The screenshot shows the Zenodo interface for the 'Global Bee Interaction Data' dataset. It includes a search bar, user information (enicospilus@gmail.com), and dataset details. The dataset is by Katja C. Seltmann and is described as a comprehensive index of bee interactions from natural history collections and literature. It features 124 views and 22 downloads. The dataset is available on GitHub and is linked to the Global Biotic Interactions (GloBI) project.



sample size required for inclusion
(common is better because rare generalists get misclassified)

Pollen Specialist Bees of the Western United States

Jarrod Fowler (2020)



Introduction

This website compiles associations among native pollen specialist bees and native host plants from the Western United States. First, pollen specialist bees are defined and methods are described. Next, a table composed of pollen specialist bees and associated host plants is presented. Last, advice about conserving native pollen specialist bees is provided. Please note that this compilation is incomplete and in progress. Researchers are invited to add information to this website. Email records to: jf@jarrodfowler.com

Visit:

Fowler, J. (2020). *Pollen Specialist Bees of the Central United States*
Fowler, J. & Droege, S. (2020). *Pollen Specialist Bees of the Eastern United States*

Pollen Specialist Bees

Roughly 35% of the ~3,000 species of bees native to the Western United States are pollen specialists. Pollen specialist bees evolved a *continuum* of facultative or obligate associations with flowering host plants (Cane & Sipes 2006; Danforth *et al.* 2019; Hard *et al.* 1980; Larkin, Neff, & Simpson 2008; Robertson 1925; Wright 2018). *Oligolectic bees* or *oligoleges* specifically associate with one host plant

expert lists

Lead investigator: Colleen Smith, PhD



Thank you!



big-bee.net

seltmann@ucsb.edu



References:

Michael Elliot, Jorrit H. Poelen, & José Fortes. (2022, August 29). Signed Citations: Making Persistent and Verifiable Citations of Digital Scientific Content.

<https://doi.org/10.31222/osf.io/wycjn>

Big Bee Community, Jorrit H. Poelen, & Katja C. Seltmann. (2022). *Xylocopa sonorina* - UCSB-IZC00012194 - Bee Library - 73e389aa-5886-4c48-8778-ba8932d1bd7e hash://sha256/96bfde1efa599e0e8e61de18b14d61dd308737f684950e4079c04e9bc0f33958 hash://md5/4940f68c84cffa4412f7ffb98bb255bd (0.0.3) [Data set]. Zenodo.

<https://doi.org/10.5281/zenodo.7114665>

Katja C. Seltmann. (2022). Global Bee Interaction Data (v1.0.1) [Data set]. Zenodo.

<https://doi.org/10.5281/zenodo.6564738>

Katja C. Seltmann, David Dewey, Evan Hobson, Lynn McLaren, Charlie Thrift, & Zoe Wood. (2021). Native and non-native bees (*Anthophila*) of Santa Cruz Island: An annotated checklist (0.02).

Zenodo. <https://doi.org/10.5281/zenodo.5558840>