



# How quickly can new accessions generate citations of a collection?

A collection manager's perspective

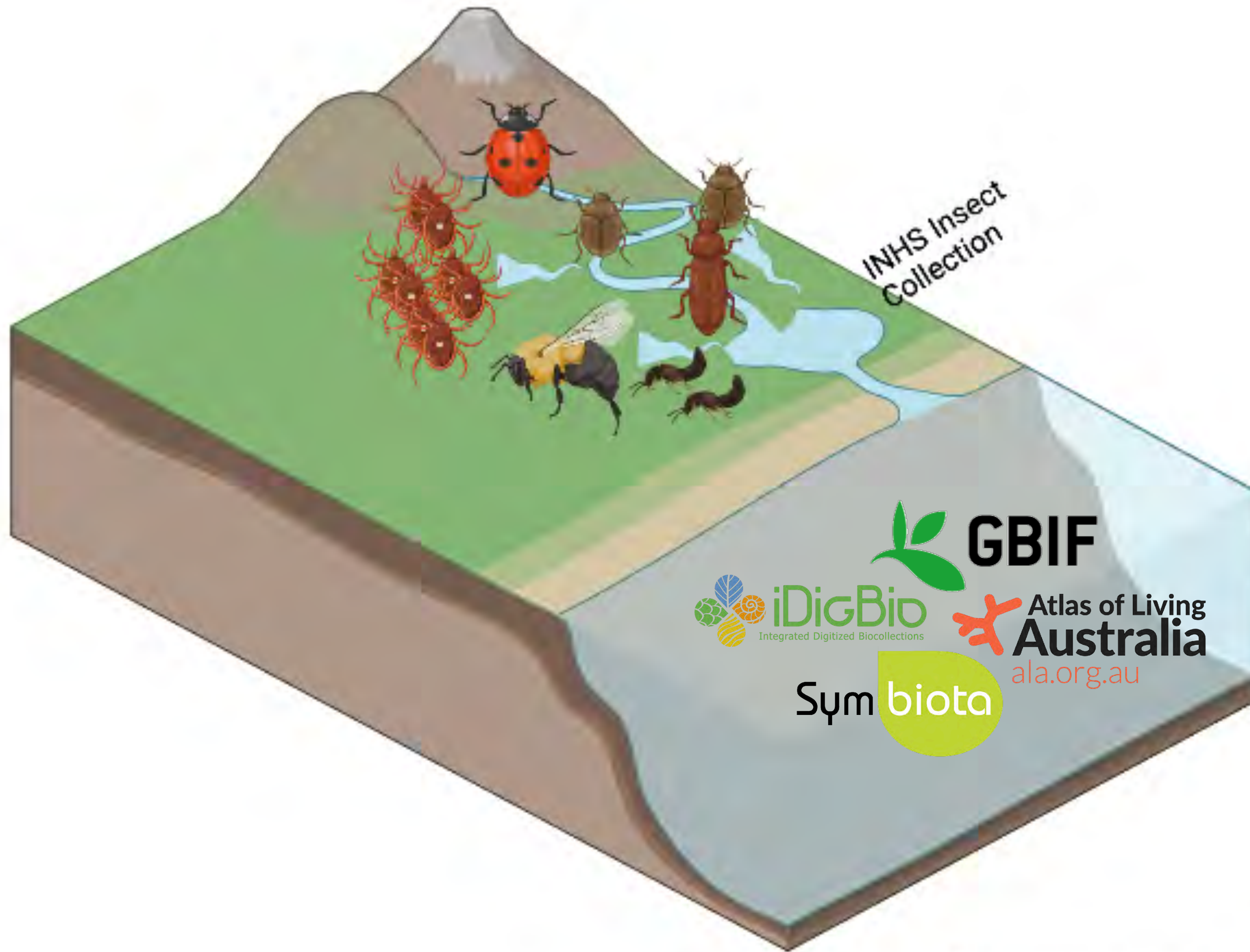
Tommy McElrath, Illinois Natural History Survey, Champaign IL, 61820, USA

  @INHSInsects  @monotomidae

ORCID 0000-0003-0390-4227



**Before I try to answer that question ...**



INHS Insect  
Collection

 **GBIF**

 **iDigBio**  
Integrated Digitized Biocollections

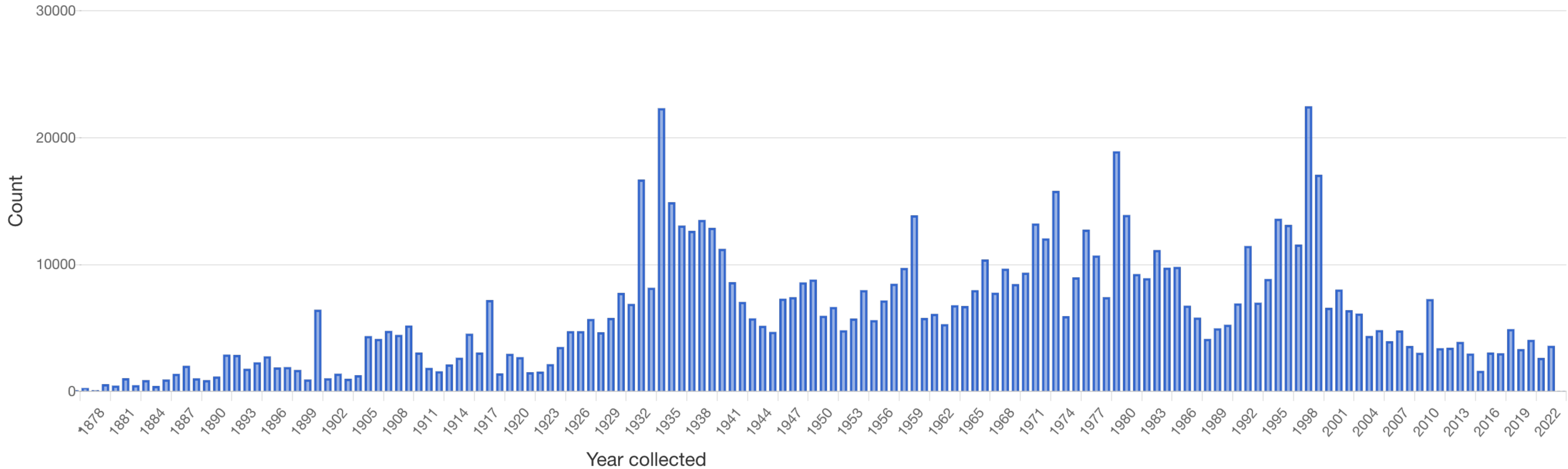
 **Atlas of Living  
Australia**  
ala.org.au

 **Symbiota**

# INHS Insect Collection - our watershed

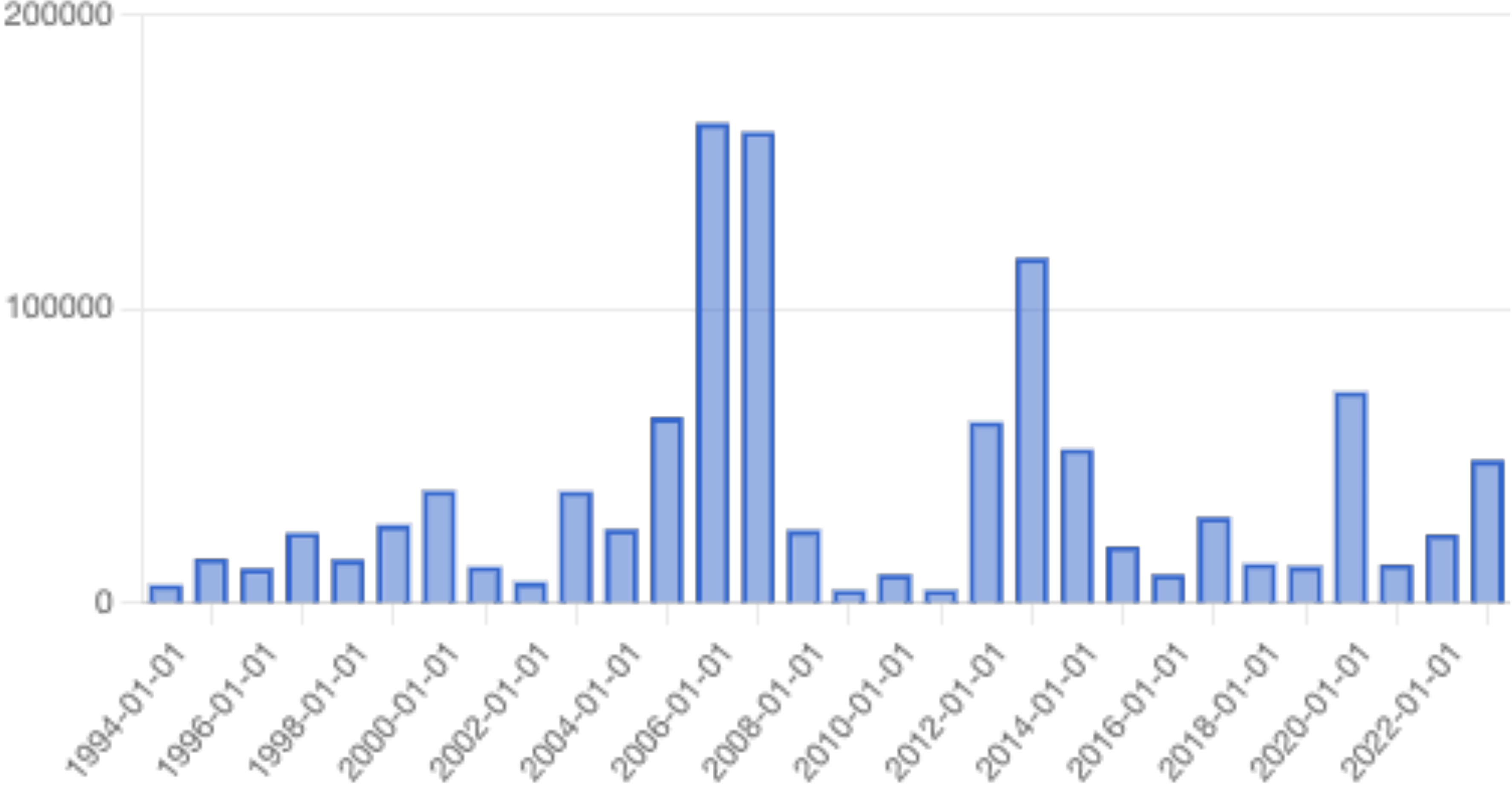
1,133,456 collection objects (digitized)

2,756,380 specimens (digitized)



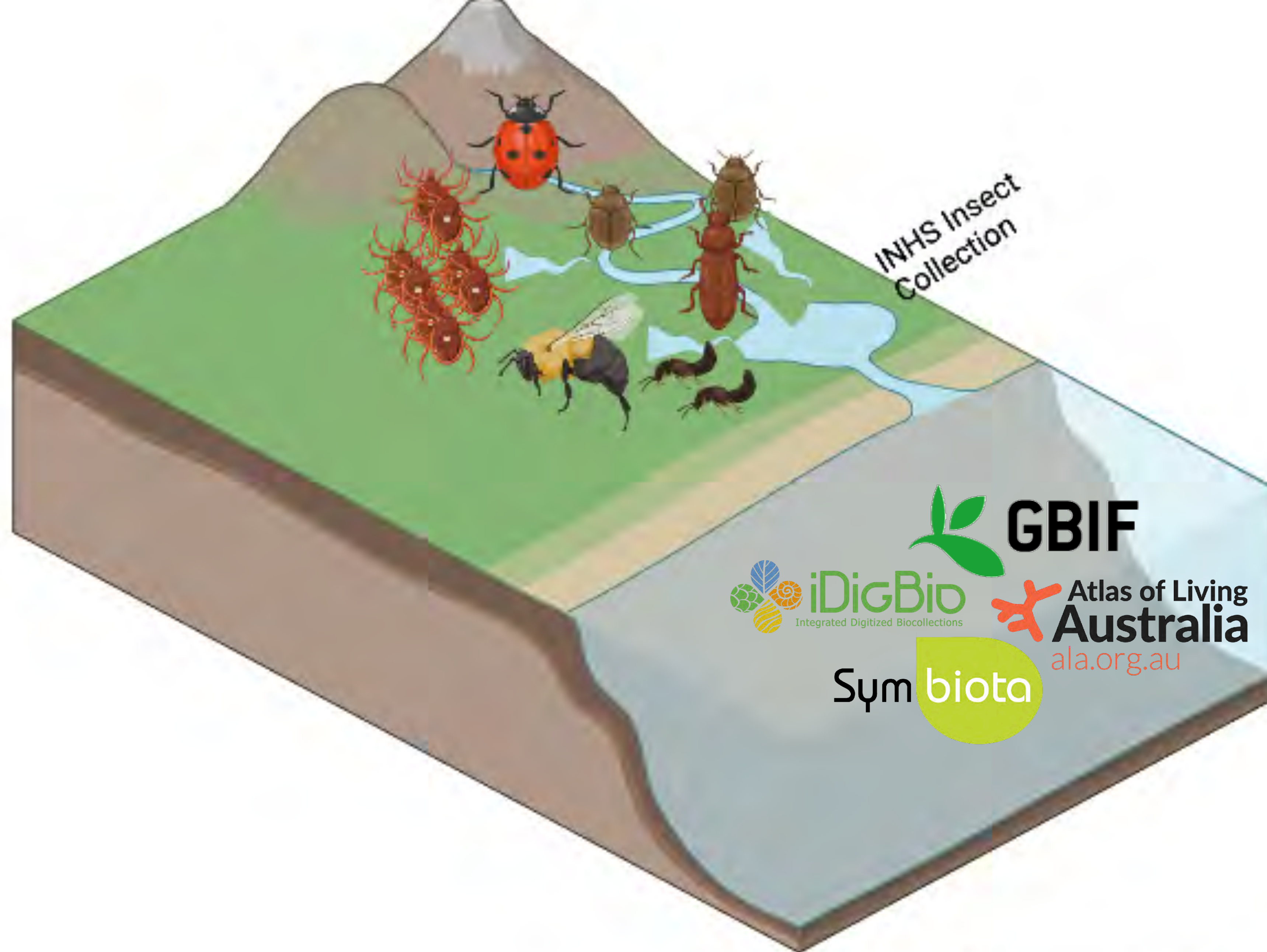
# INHS Insect Collection - the streams

Collection objects created by all project members



# Big picture





# Dams/bottlenecks - Part 1

Original Paper | [Published: 19 August 2019](#)

# Growing or dormant season burns: the effects of burn season on bee and plant communities

[Brenna L. Decker](#)  & [Alexandra N. Harmon-Threatt](#)

[Biodiversity and Conservation](#) **28**, 3621–3631 (2019) | [Cite this article](#)

**1316** Accesses | **16** Citations | **14** Altmetric | [Metrics](#)

# Dams/bottlenecks - Part 1



# TaxonWorks

What tools do we have right now?



# TaxonWorks: Tools - removing stream debris

## Digitizing specimens faster (what collections people think about)



TaxonWorks v0.32.3 Issues Project Account Sign out Tommy McElrath

INHS Insect Collection

### Grid digitizer

Load image: 9874 Previous Next

Assign Overview metadata Review

#### Existing data

| Radial annotator | Quick forms | Edit | Total | Family          | Genus     | Scientific name                    | Identifier                    |
|------------------|-------------|------|-------|-----------------|-----------|------------------------------------|-------------------------------|
|                  |             |      | 1     | Phlaeothripidae | Allotrips | Allotrips mexicanus Stannard, 1955 | INHS Insect Collection 539813 |
|                  |             |      | 1     | Phlaeothripidae | Allotrips | Allotrips mexicanus Stannard, 1955 | INHS Insect Collection 539814 |
|                  |             |      | 1     | Phlaeothripidae | Allotrips | Allotrips mexicanus Stannard, 1955 | INHS Insect Collection 539815 |
|                  |             |      | 1     | Phlaeothripidae | Allotrips | Allotrips mexicanus Stannard, 1955 | INHS Insect Collection 539816 |
|                  |             |      | 1     | Phlaeothripidae | Allotrips | Allotrips mexicanus Stannard, 1955 | INHS Insect Collection 539817 |

# TaxonWorks: Tools - removing stream debris

Digitizing specimens faster (what collections people think about)

TaxonWorks v0.32.3 Issues

INHS Insect Collection

### Filter staged images

Filter  Append  History

Back Next 1689 1690 1691 1692 1693 1694 ... « First Last » 84600 - 84650 of 84663 records. 50

**Housekeeping**  
-none-

**Target**  
 Both  
 Created at  
 Updated at

**Date range**  
Start date: mm/dd/yyyy End date: mm/dd/yyyy

**Local Identifiers**  
 Both  With  Without

**Global Identifiers**  
 Both  With  Without

**Collecting Event**  
 Both  With  Without

**Taxon Determinations**

**Legend**

- Local identifier(s)
- Buffered collecting event
- Buffered determination
- Buffered other labels
- Collecting event
- Taxon determination(s)



# TaxonWorks: Tools - removing stream debris

## Import data faster

### Created imports

#### montelongo g...

DwC-A Occurrences  
Status: **Ready**

Download original

|             |    |
|-------------|----|
| Imported    | 16 |
| Ready       | 0  |
| NotReady    | 0  |
| Errored     | 0  |
| Failed      | 0  |
| Unsupported | 0  |

#### ticks

DwC-A Occurrences  
Status: **Ready**

Download original

|             |    |
|-------------|----|
| Imported    | 43 |
| Ready       | 0  |
| NotReady    | 0  |
| Errored     | 2  |
| Failed      | 0  |
| Unsupported | 0  |

#### morgan bees ...

DwC-A Occurrences  
Status: **Ready**

Download original

|             |     |
|-------------|-----|
| Imported    | 317 |
| Ready       | 0   |
| NotReady    | 0   |
| Errored     | 0   |
| Failed      | 0   |
| Unsupported | 0   |

#### Decker Burn ...

DwC-A Occurrences  
Status: **Ready**

Download original

|             |      |
|-------------|------|
| Imported    | 2134 |
| Ready       | 0    |
| NotReady    | 0    |
| Errored     | 29   |
| Failed      | 0    |
| Unsupported | 0    |

### TaxonWorks v0.32.3 Issues

Project Account Sign out

#### INHS Insect Collection

### DwC-A Workbench

Decker Burn Dataset  
2163 records.

Reset filters

Imported: 2134 Ready: 0 NotReady: 0 Errored: 29 Failed: 0 Unsupported: 0

Download table Settings

Back Next > 1

| Options                | Status   | occurrenceID                  | institutionID                           | institutionCode | collectionCode    | catalogNumber | datasetName    | basisOfRecord     | nomenclature |
|------------------------|----------|-------------------------------|---|-----------------|-------------------|---------------|----------------|-------------------|--------------|
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825401 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825401        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 826096 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 826096        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 826097 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 826097        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 826099 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 826099        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 826100 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 826100        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825910 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825910        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825911 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825911        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825912 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825912        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825913 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825913        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 826145 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 826145        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 827345 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 827345        | DeckerBurnData | PreservedSpecimen | ICZN         |
| <a href="#">Browse</a> | Imported | INHS Insect Collection 825496 | http://grbio.org/institution/illinoi... | INHS            | Insect Collection | 825496        | DeckerBurnData | PreservedSpecimen | ICZN         |

# TaxonWorks: Tools - increasing river size to the delta

## Export data faster

TaxonWorks v0.32.3 Issues Project Account Sign out Tommy McElrath

INHS Insect Collection

### DwC Dashboard

#### Download Darwin Core Archive

*Includes only records stored as DwC occurrences.*

All (1115731)

Past

Day (537) Week (3961) Month (18075) Year (1093158)

Create DwC Archive by filtered collection object result

#### DwC occurrence record freshness

| Category           | Never | One day | One week | One month | One year   | Greater than one year |
|--------------------|-------|---------|----------|-----------|------------|-----------------------|
| Index              | 0     | 0       | 0        | 0         | ~1,100,000 | 0                     |
| Collection objects | 0     | 0       | 0        | 0         | ~1,100,000 | 0                     |

#### DwC occurrence record version

| Date       | Total collection objects |
|------------|--------------------------|
| 2021-10-12 | 0                        |
| 2021-10-15 | 0                        |
| 2021-11-04 | 0                        |
| 2021-11-08 | 0                        |
| 2021-11-30 | 0                        |
| 2022-01-21 | 0                        |
| 2022-03-31 | 0                        |
| 2022-04-28 | 0                        |
| 2022-09-28 | 0                        |
| 2023-04-03 | ~1,100,000               |
| 2023-05-12 | 0                        |

#### Recently created DwC Archives

| Created at               | Expires                  | Total records | Times downloaded | Is public                |                          |
|--------------------------|--------------------------|---------------|------------------|--------------------------|--------------------------|
| 2023-05-11T15:08:41.620Z | 2023-05-13T15:08:41.588Z | 127           | 0                | <input type="checkbox"/> | <a href="#">Download</a> |
| 2023-05-10T17:18:29.501Z | 2023-05-12T17:18:29.471Z | 10            | 0                | <input type="checkbox"/> | <a href="#">Download</a> |

#### Health

|  |                                     |
|--|-------------------------------------|
| Kingdom rank present   | <input checked="" type="checkbox"/> |
| DwcOccurrence records without occurrenceID (on collection objects) | 0                                   |
| Total collection objects   | 1111733                             |
| Collection objects without Uuids                                   | 1                                   |
| Collection objects without DwcOccurrence records                   | 0                                   |

#### Collector global ids

With Without

Collector

- Alrutz, Robert William
- A Philips, Christopher
- Ashmead, William Harris
- Balduf, Walter Valentine
- Beatty, Joseph A.
- Bequaert, Joseph Charles

# TaxonWorks: Tools - trace elements

## Linkages —> DarwinCore

TaxonWorks v0.32.3 Issues Project Account Sign out Tommy McElrath

INHS Insect Collection

### DwC Dashboard

#### Download Darwin Core Archive

Includes only records stored as DwC occurrences.

All (1115731)

Past

Day (537) Week (3961) Month (18075) Year (1093158)

Create DwC Archive by filtered collection object result

#### DwC occurrence record freshness

| Category           | Never | One day | One week | One month | One year   | Greater than one year |
|--------------------|-------|---------|----------|-----------|------------|-----------------------|
| Index              | 0     | 0       | 0        | 0         | ~1,100,000 | 0                     |
| Collection objects | 0     | 0       | 0        | 0         | ~1,100,000 | 0                     |

#### DwC occurrence record version

| Date       | Total collection objects |
|------------|--------------------------|
| 2021-10-12 | 0                        |
| 2021-10-15 | 0                        |
| 2021-11-04 | 0                        |
| 2021-11-08 | 0                        |
| 2021-11-30 | 0                        |
| 2022-01-21 | 0                        |
| 2022-03-31 | 0                        |
| 2022-04-28 | 0                        |
| 2022-09-28 | 0                        |
| 2023-04-03 | ~1,100,000               |
| 2023-05-12 | 0                        |

#### Recently created DwC Archives

| Created at               | Expires                  | Total records | Times downloaded | Is public                |                          |
|--------------------------|--------------------------|---------------|------------------|--------------------------|--------------------------|
| 2023-05-11T15:08:41.620Z | 2023-05-13T15:08:41.588Z | 127           | 0                | <input type="checkbox"/> | <a href="#">Download</a> |
| 2023-05-10T17:18:29.501Z | 2023-05-12T17:18:29.471Z | 10            | 0                | <input type="checkbox"/> | <a href="#">Download</a> |

#### Health

|  |                                     |
|--|-------------------------------------|
| Kingdom rank present   | <input checked="" type="checkbox"/> |
| DwcOccurrence records without occurrenceID (on collection objects) | 0                                   |
| Total collection objects   | 1111733                             |
| Collection objects without Uuids                                   | 1                                   |
| Collection objects without DwcOccurrence records                   | 0                                   |

#### Collector global ids

With Without


Collector

- Alrutz, Robert William
- A Philips, Christopher
- Ashmead, William Harris
- Balduf, Walter Valentine
- Beatty, Joseph A.
- Bequaert, Joseph Charles

# TaxonWorks: Tools - trace elements



## Linkages —> Global Identifiers

INHS Insect Collection 906388 det. *Cercyon praetextatus* (Say, 1825) ✓ by Archangelsky [Lot] CollectionObject



**Identifiers**

- Global
- Local
- Unknown

| Identifier                         | Type  |   |
|------------------------------------|---|---|
| INHS Insect Collection 906388      | Identifier::Local::CatalogNumber                  |  |
| bfbf3ea-fe84-4073-be43-beab71a9ae3 | Identifier::Global::Uuid::TaxonworksDwcOccurrence |  |

# TaxonWorks: Tools - trace elements

## Linkages —> Global Identifiers

| Darwin core                   |   |   |  |          |
|-------------------------------|---|---|--|----------|
| Term                          | Source (TaxonWorks)   | Original (GBIF)   | Interpreted (GBIF)   | Remarks  |
| associatedMedia               | <a href="https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f">https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f</a> | <a href="https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f">https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f</a> |  | Excluded |
| basisOfRecord                 | PreservedSpecimen   | PreservedSpecimen   | PRESERVED_SPECIMEN   | Altered  |
| catalogNumber                 | INHS Insect Collection 868734   | INHS Insect Collection 868734   | INHS Insect Collection 868734  |          |
| class                         |   | Arachnida   | Arachnida  |          |
| coordinateUncertaintyInMeters | 10.0  | 10.0  | 10   |          |
| country                       | United States   | United States   | United States of America   | Altered  |
| county                        | Piatt   | Piatt   | Piatt  |          |
| dateIdentified                | 2018  | 2018  | 2018-01-01T00:00:00  | Altered  |
| day                           | 11  | 11  | 11   |          |
| decimalLatitude               | 39.998473   | 39.998473   | 39.998473  |          |
| decimalLongitude              | -88.636857  | -88.636857  | -88.636857   |          |
| dwcClass                      | Arachnida   |   |  |          |
| endDayOfYear                  | 131   | 131   | 131  |          |
| eventDate                     | 2018-05-11/2018-05-11   | 2018-05-11/2018-05-11   | 2018-05-11T00:00:00  | Altered  |
| family                        | Ixodidae  | Ixodidae  | Ixodidae   |          |
| footprintWKT                  |   | POINT Z (-88.636857 39.998473 0)  | POINT Z (-88.636857 39.998473 0)   |          |
| genus                         | Ixodes  | Ixodes  | Ixodes   |          |
| georeferenceProtocol          | A geospatial point translated from verbatim values recorded on human-readable media (e.g. paper specimen label, field notebook).                                  | A geospatial point translated from verbatim values recorded on human-readable media (e.g. paper specimen label, field notebook).                                  | A geospatial point translated from verbatim values recorded on human-readable media (e.g. paper specimen label, field notebook). |          |



# TaxonWorks: Tools - making more clouds

## Linkages —> GBIFFERENCE

| Original (GBIF)   | Interpreted (GBIF)            | Remarks  |
|---|-------------------------------|----------|
| <a href="https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f">https://sfg.taxonworks.org/api/v1/images/7eda965762fa28b0ed3a0f7ec24dd10f</a> |                               | Excluded |
| PreservedSpecimen   | PRESERVED_SPECIMEN            | Altered  |
| INHS Insect Collection 868734   | INHS Insect Collection 868734 |          |
| Arachnida   | Arachnida                     |          |
| 10.0  | 10                            |          |
| United States   | United States of America      | Altered  |
| Piatt   | Piatt                         |          |
| 2018  | 2018-01-01T00:00:00           | Altered  |
| 11  | 11                            |          |

# TaxonWorks: Tools - making more clouds

## Linkages —> Global Identifiers

### Identifiers

- Q26494089
- <https://orcid.org/0000-0003-0390-4227>

### Data attributes

- Email: [tcm@illinois.edu](mailto:tcm@illinois.edu)
- Address: Illinois Natural History Survey; Prairie Research Institute; 1816 South Oak Street, MC 652; Champaign, IL 61820
- Honorific: Dr.
- PeopleID: 1672
- Country: U.S.A.

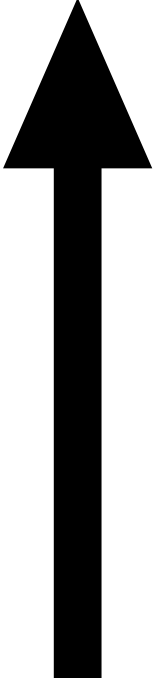
### Alternate values

- "T." alternate spelling of "Thomas Christian"
- "Thomas C." alternate spelling of "Thomas Christian"
- "Thomas" alternate spelling of "Thomas Christian"
- "TC" abbreviation of "Thomas Christian"
- "T.C." abbreviation of "Thomas Christian"
- "Tommy" alternate spelling of "Thomas Christian"
- "T.C." alternate spelling of "Thomas Christian"

# Small picture

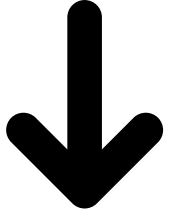


GUID: 2396f952-69ab-4bea-9a4b-22e96fecad4f



USA:IL:Piatt Co:Willow Branch:Allerton Park:  
nr.Sangamon Rv.:39.998473° -88.636857° ±15m;  
ex. pant leg; 11MAY2018 TC McElrath/DA Hennen

*Ixodes*  
*scapularis* 1♂  
det ED Struckhoff 2020



### Emily Struckhoff

ED Struckhoff; Emily Dolores Struckhoff; E Struckhoff

<https://orcid.org/0000-0002-3806-9770>

Help Attribute Refresh stats Refresh



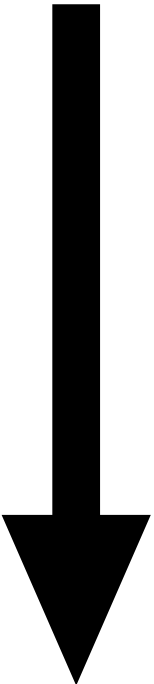
### Thomas McElrath

Thomas C. McElrath; Tommy McElrath; TC McElrath; T McElrath;  
Thomas McElrath  
*Taxonomist*

<https://orcid.org/0000-0003-0390-4227>

Illinois Natural History Survey, Champaign, IL, US

United States



### Derek Hennen

Derek Alan Hennen; D. A. Hennen; Derek A Hennen; D. Hennen  
*Diplopoda, Chilopoda, Millipedes, Centipedes, Entomology*

<https://orcid.org/0000-0001-7005-1151>

United States

GUID: 2396f952-69ab-4bea-9a4b-22e96fecad4f

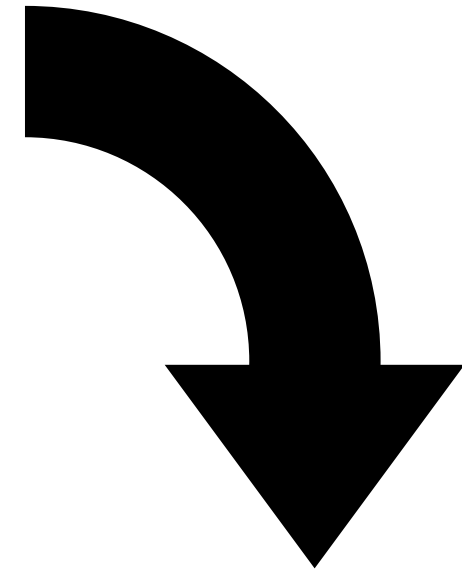
USA:IL:Piatt Co:Willow Branch:Allerton Park:  
nr.Sangamon Rv.:39.998473° -88.636857° ±15m;  
ex. pant leg; 11MAY2018 TC McElrath/DA Hennen

*Ixodes*  
*scapularis* 1♂  
det ED Struckhoff 2020

**TNHS**  
Insect Collection  
**868,734**



TaxonWorks  
Image Importer &  
Transcriber Tool



TaxonWorks  
DWC Exporter

OCCURRENCE | 11 MAY 2018

# *Ixodes scapularis* Say, 1821

**Black Legged Tick** In English    Collected in United States of America

Animalia › Arthropoda › Arachnida › Ixodida › Ixodidae › *Ixodes*

**Collected By**

Thomas McElrath  <https://orcid.org/0000-0003-0390-4227>

Derek Hennen  <https://orcid.org/0000-0001-7005-1151>



GUID: 2396f952-69ab-4bea-9a4b-22e96fecad4f

USA:IL:Piatt Co:Willow Branch:Allerton Park:  
nr.Sangamon Rv.:39.998473° -88.636857° ±15m;  
ex. pant leg; 11MAY2018 TC McElrath/DA Hennen

*Ixodes*  
*scapularis* 1♂  
det ED Struckhoff 2020

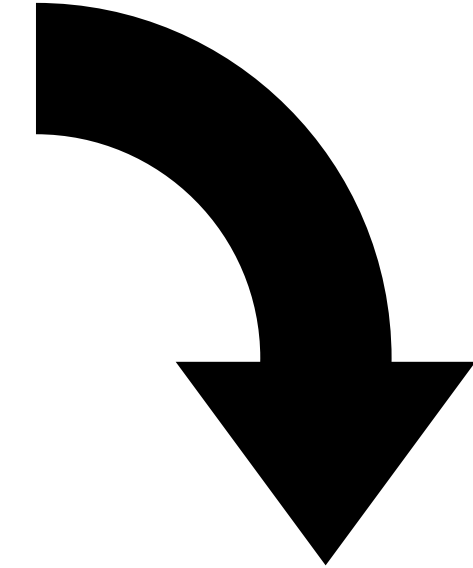
**TNHS**  
Insect Collection  
868,734



TaxonWorks  
Image Importer &  
Transcriber Tool



TaxonWorks  
DWC Exporter



OCCURRENCE | 11 MAY 2018

# *Ixodes scapularis* Say, 1821

Black Legged Tick In English Collected in United States of America

Animalia > Arthropoda > Arachnida > Ixodida > Ixodidae > *Ixodes*

Collected By

Thomas McElrath  <https://orcid.org/0000-0003-0390-4227>

Derek Hennen  <https://orcid.org/0000-0001-7005-1151>

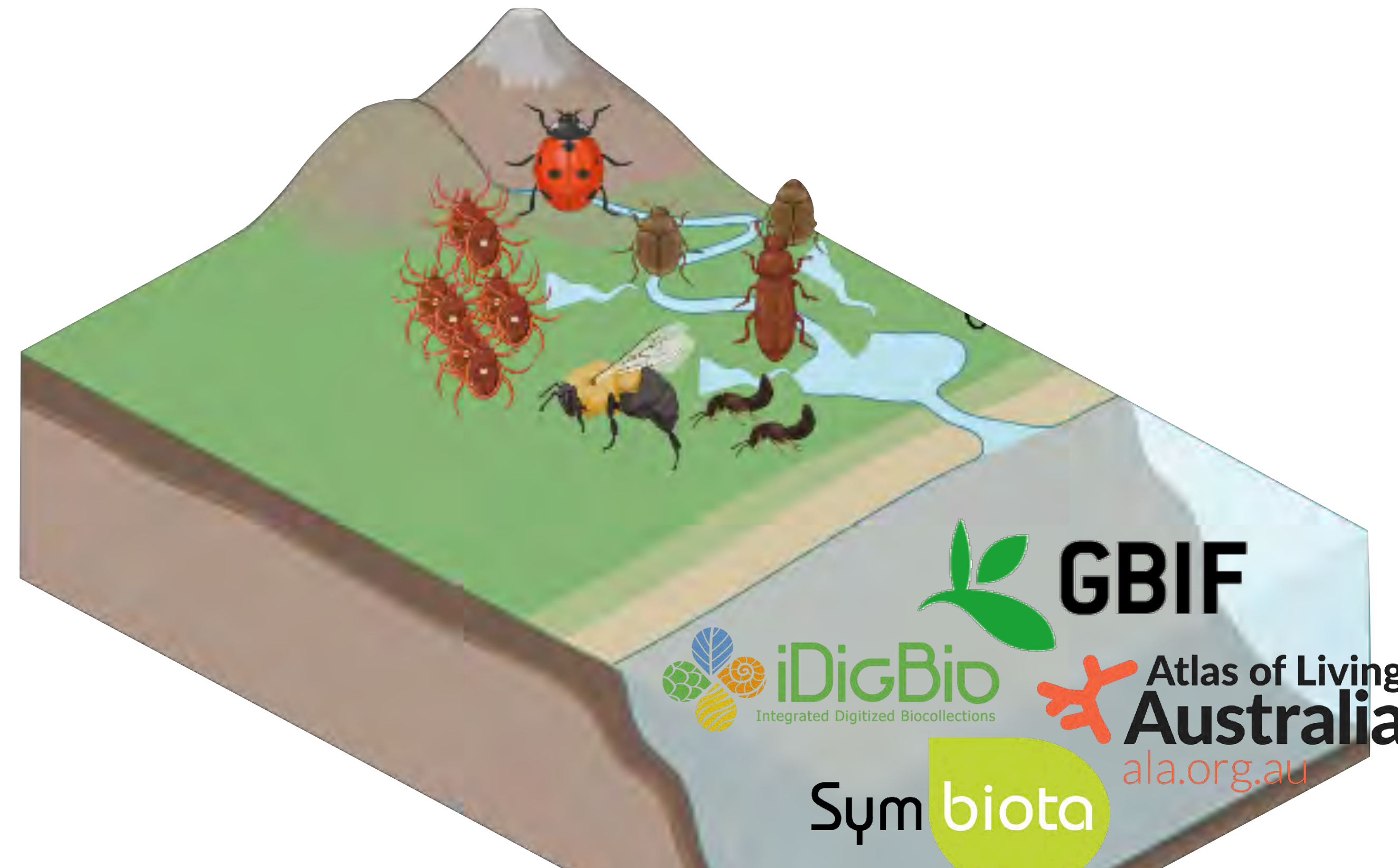
# As far as collections boat travels



# Cleaning the river

## Getting to the ocean

- Importers, importers, importers
- Integrate GUID management & creation into software
- More tools to link persistent identifiers with objects
  - 50-100 people w/GUIDS
  - 1000s without
- Make dataset -> aggregator workflow more seamless (1 button, not multiple)
- Data Validation & Cleaning tools



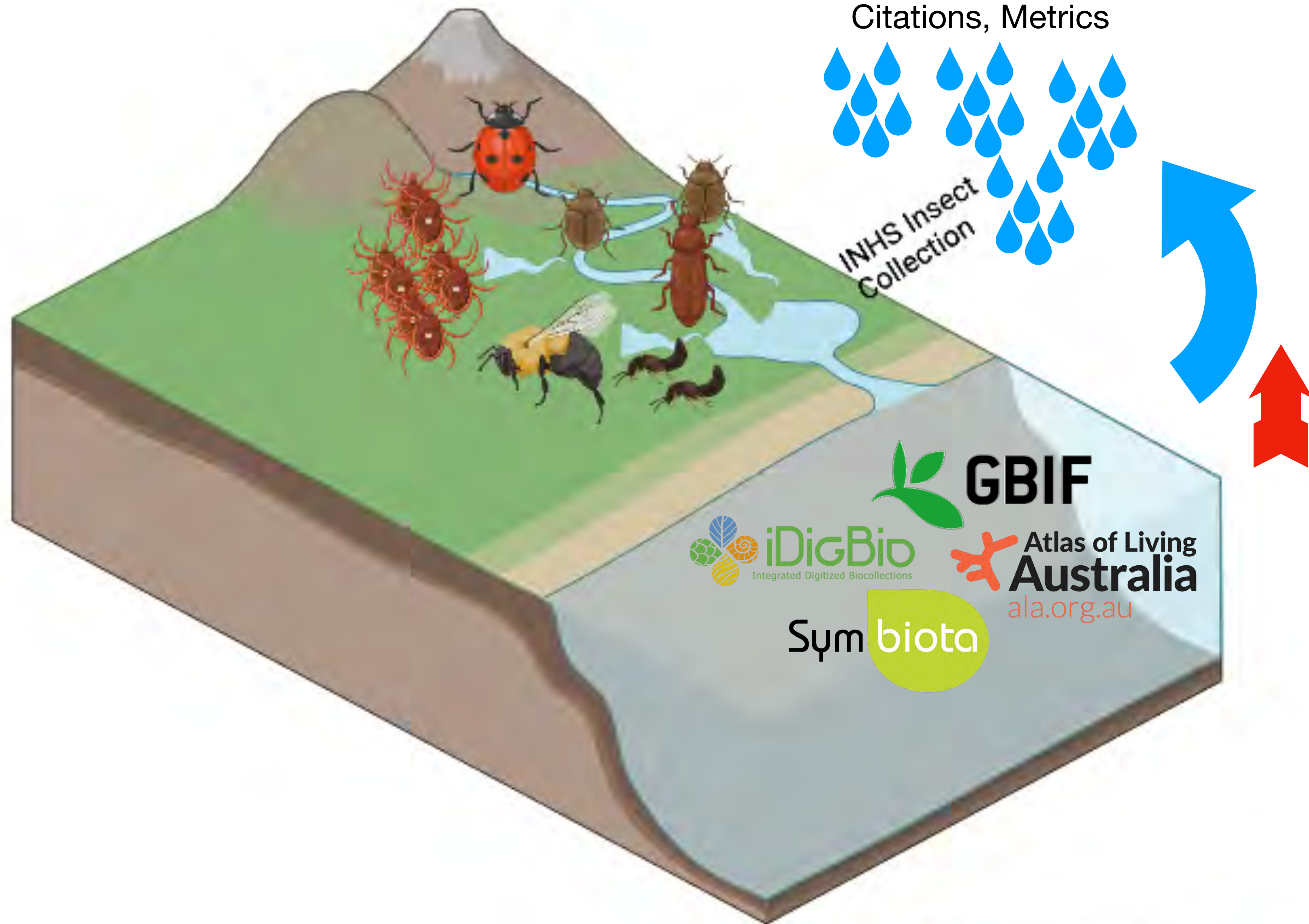
Original Paper | [Published: 19 August 2019](#)

Growing or dormant season burns: the effects of burn season on bee and plant communities

[Brenna L. Decker](#) & [Alexandra N. Harmon-Threatt](#)

[Biodiversity and Conservation](#) **28**, 3621–3631 (2019) | [Cite this article](#)

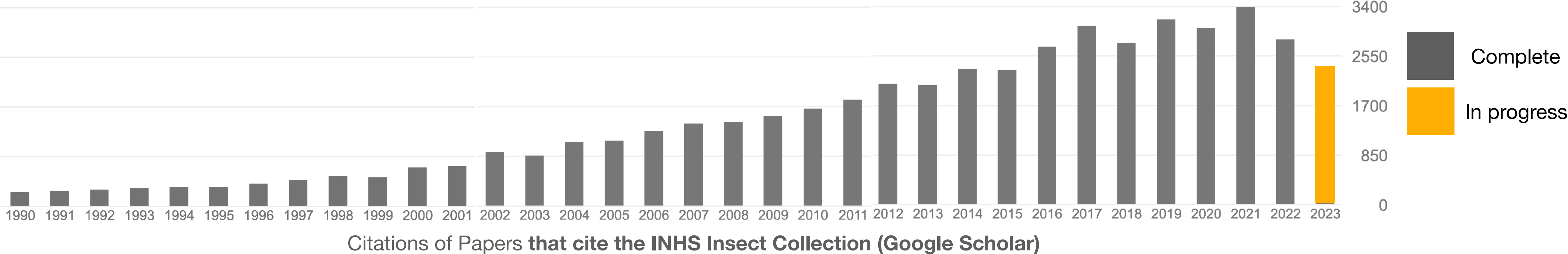
1316 Accesses | 16 Citations | 14 Altmetric | [Metrics](#)





**How to follow the  
rain?**

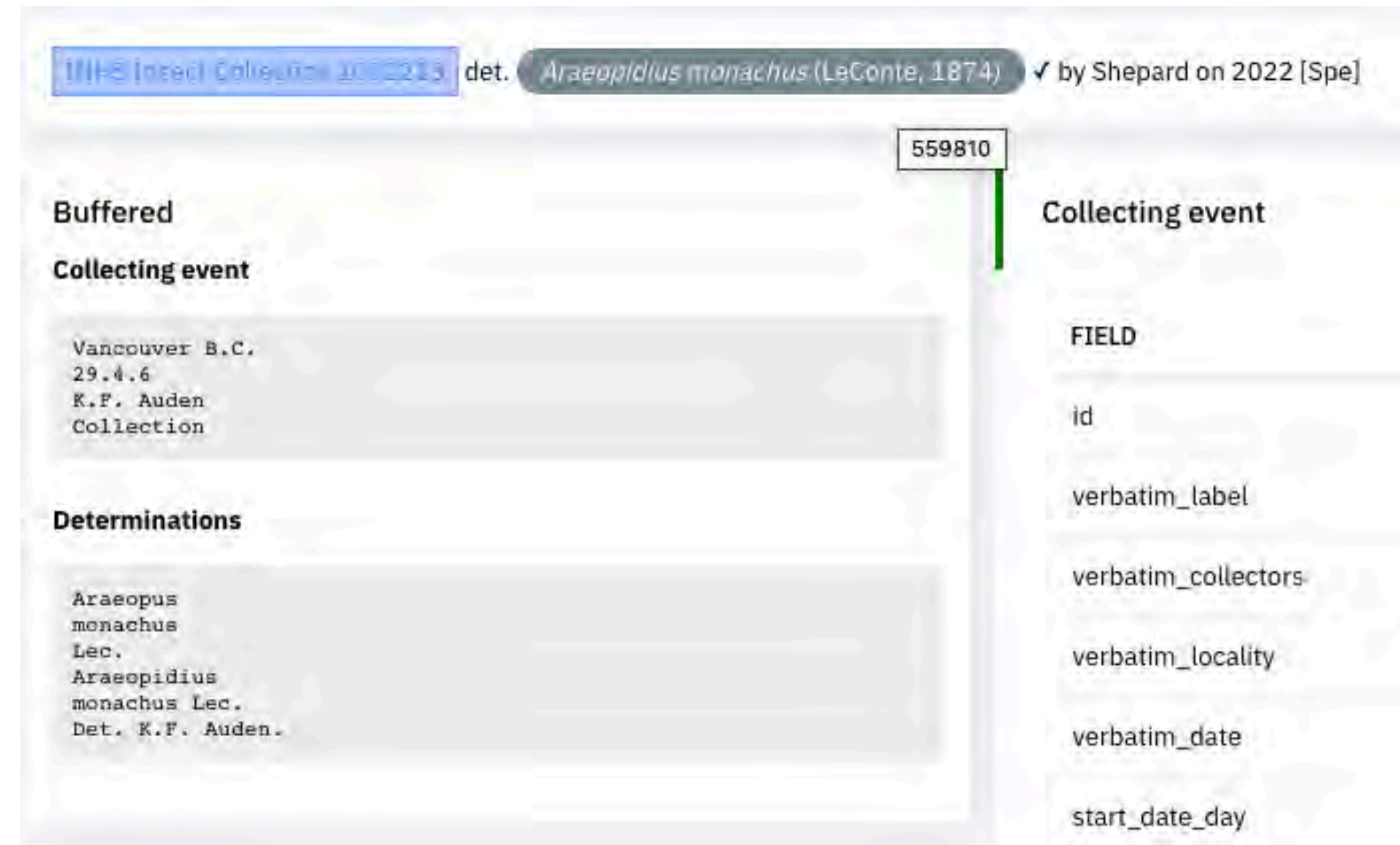
# INHS Insect Collection - the rain



Collected



Databased/  
sent for loan



Returned/reidentified,  
Updated on GBIF



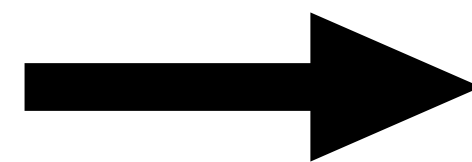
25MAR2022

Image % Univ. of Alaska Museum

29APR1906

10NOV2021

Author emails  
copy/published



24JAN2023

Citations, Metrics



Article  
**A Review of *Araeopidius monachus* (LeConte, 1874) (Coleoptera: Dryopoidea: Ptilodactylidae), with Main Emphasis on Its Biology and Ecology**

William D. Shepard <sup>1,\*</sup> and Robin Kundrata <sup>2,\*</sup>

# INHS Insect Collection - the rain

- Time from digitization to citation
  - 1 year, 2 months!
  - Required physical loan
  - Ignored local identifiers, GBIF DOI
- Specimen used previously?
- Can't track individual specimens
- Limited by loan process/researcher time
- 9 such papers in 2022
  - Citations will increase, but indirectly
- Could be improved if researchers cite general dataset GBIF DOI directly

Collected



Image % Univ. of Alaska Museum

29APR1906



Article

**A Review of *Araeopidius monachus* (LeConte, 1874) (Coleoptera: Dryopoidea: Ptilodactylidae), with Main Emphasis on Its Biology and Ecology**

William D. Shepard <sup>1,\*</sup> and Robin Kundrata <sup>2,\*</sup>

# INHS Insect Collection - the rain



Query: dataset ID

1 Record  
(already found  
by GBIF)



Query:  
INHS [https://  
biocoll.inhs.illinois.edu/portal](https://biocoll.inhs.illinois.edu/portal)

9 records, only 1  
insect collection  
record

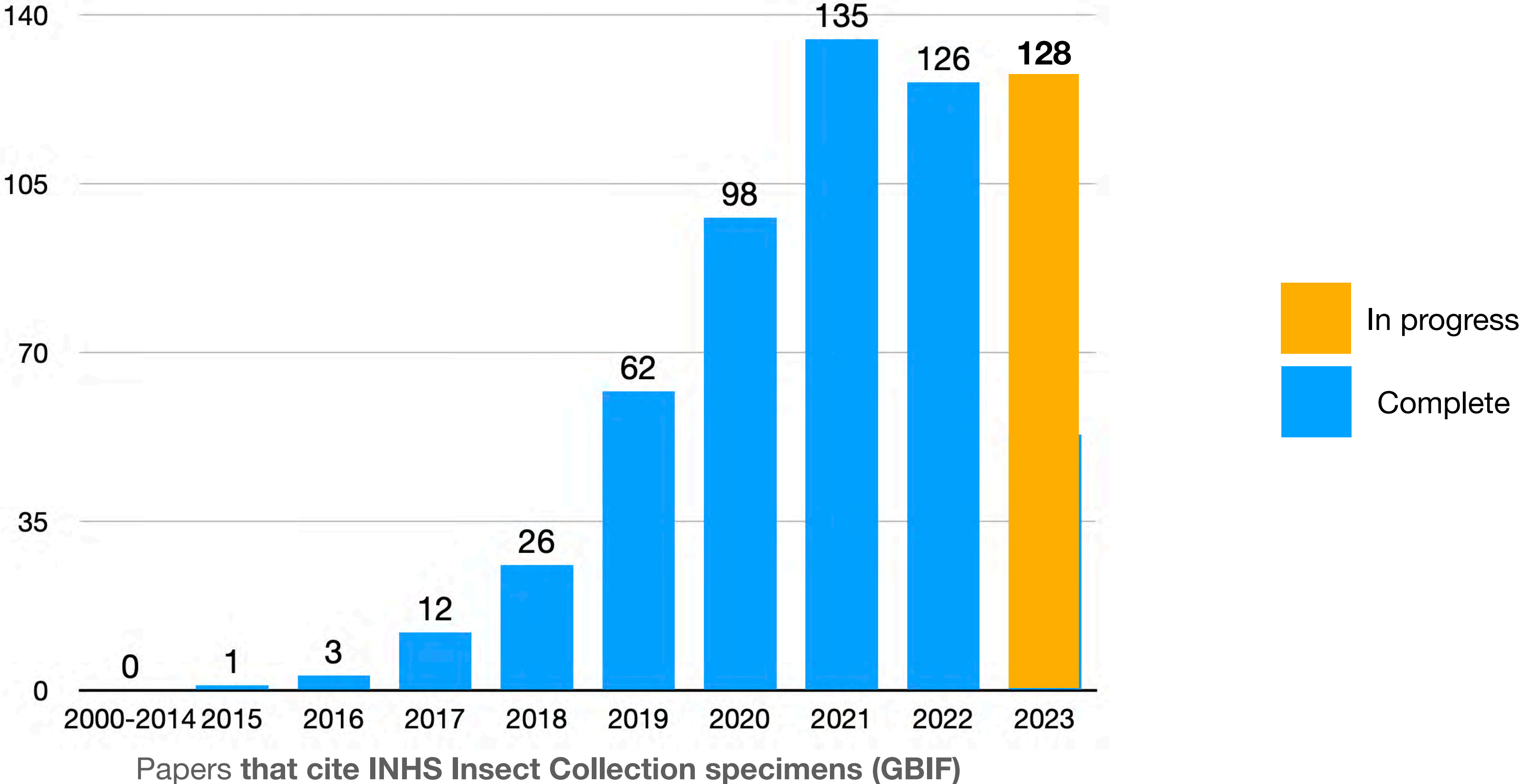


Query: [scan-bugs.org](https://scan-bugs.org) INHS

2 non-GBIF  
tracked insect  
collection records

## Manual or Google Scholar tracked

# INHS Insect Collection - the rain







## Thomas McElrath

Thomas C. McElrath; Tommy McElrath; TC McElrath; T McElrath;  
Thomas McElrath


*Taxonomist*

 <https://orcid.org/0000-0003-0390-4227>

 Illinois Natural History Survey, Champaign, IL, US

 United States

-  Public Profile
-  Refresh stats
-  Refresh 
-  Settings & Integrations

 Overview

 Specimens 8

 People Helped

 Science Enabled

3,841 specimens collected from at least 2 countries  
10,822 specimens identified from at least 60 countries  
43,326 specimens attributed to 23 people  
37 specimens used in 9 works

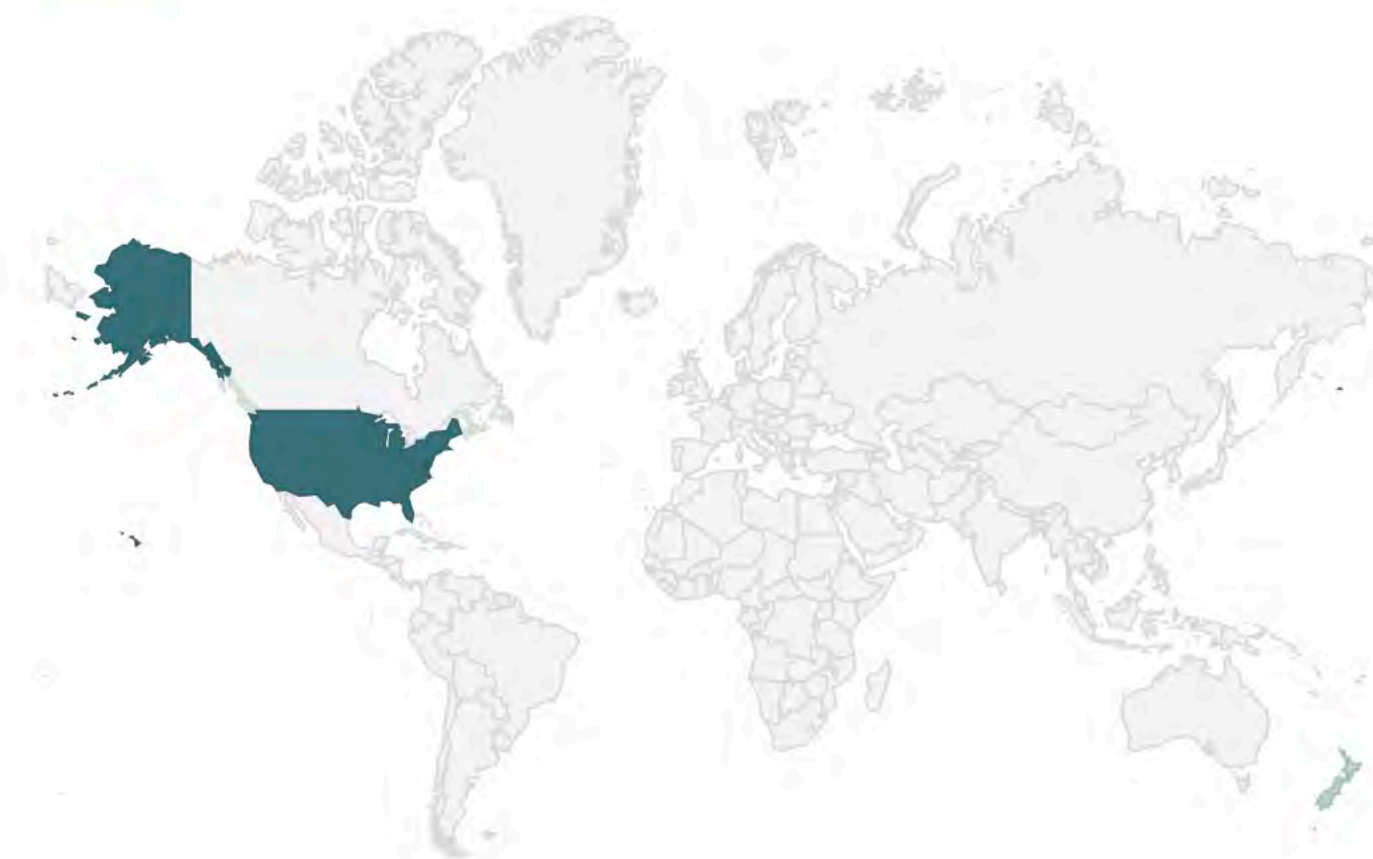
Progress

99%

### Collected From

Map

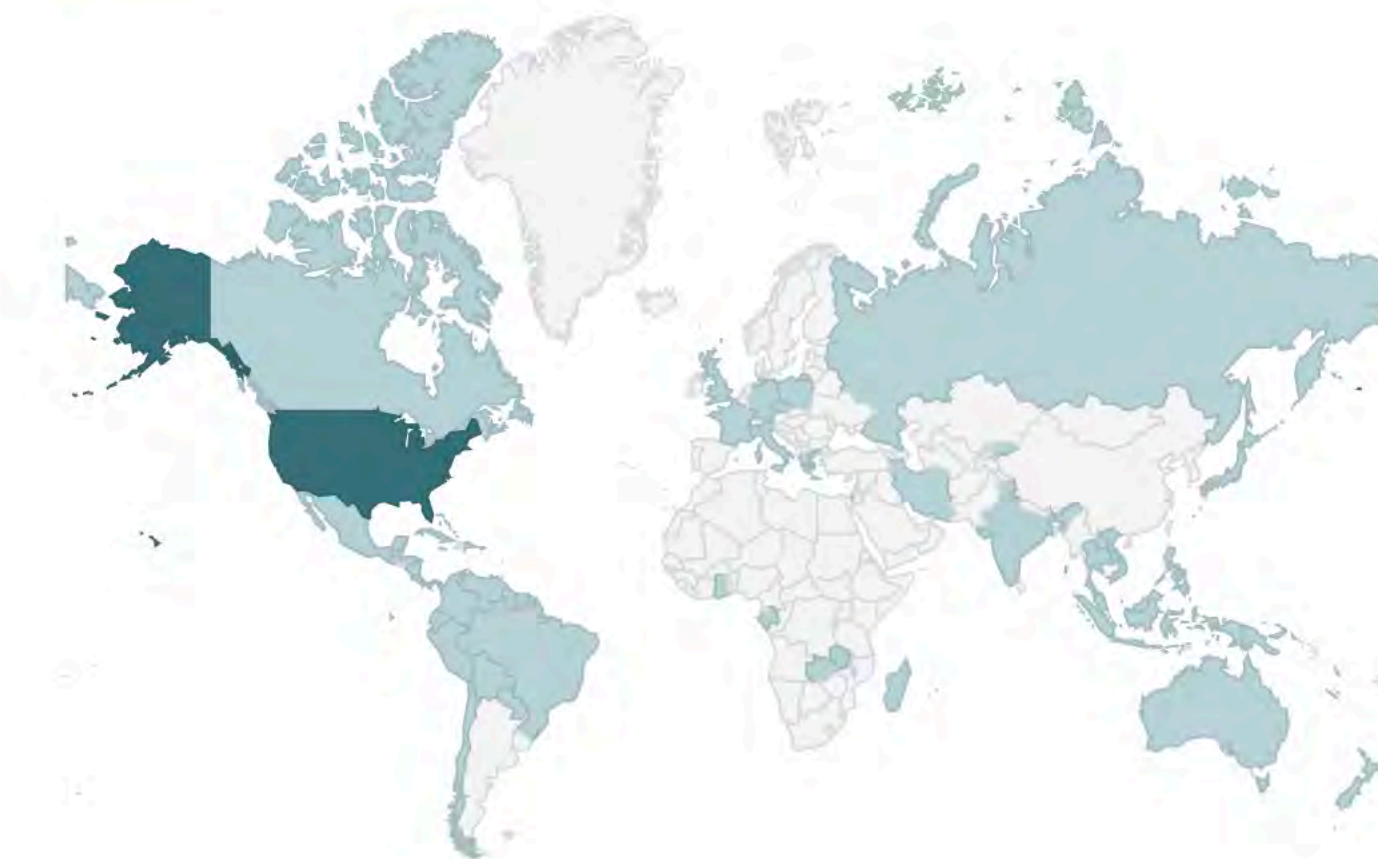
List



### Identified From

Map

List







## Thomas McElrath

Thomas C. McElrath; Tommy McElrath; TC McElrath; T McElrath;  
Thomas McElrath

*Taxonomist*

<https://orcid.org/0000-0003-0390-4227>

Illinois Natural History Survey, Champaign, IL, US

United States

- Public Profile
- Refresh stats
- Refresh
- Settings & Integrations

Overview

Specimens 8

People Helped

Science Enabled

3,841 specimens collected from at least 2 countries  
 10,822 specimens identified from at least 60 countries  
 43,326 specimens attributed to 23 people  
 37 specimens used in 9 works

Progress

99%

### Collected From

Map

List



### Identified From

Map

List



## Thomas McElrath

Overview

Specimens

People Helped

Science Enabled

Choose collected, identified, or Both.

CSV

### Specimens Used In

Kopsco, H. L., P. Gronemeyer, N. Mateus-Pinilla, and R. L. Smith. 2023. Current and Future Habitat Suitability Models for Four Ticks of Medical Concern in Illinois, USA. *Insects* 14: 213. <https://doi.org/10.3390/insects14030213>

Bulk Assignment

Both

Scientific Name

Collected By

Identified By

Date Collected

Date Identified

Institution

Catalog Number

Type Status

Basis Of Record

Both

[Ixodes scapularis Say, 1821](#)

McElrath, Thomas Christian | Hennen, Derek

2018-05-11/2018-05-11 2018

INHS

INHS Insect Collection 868734




PRESERVED\_SPECIMEN

Not me

Open Access

Article

# Current and Future Habitat Suitability Models for Four Ticks of Medical Concern in Illinois, USA

by  Heather L. Kopsco <sup>1,\*</sup>  ,  Peg Gronemeyer <sup>2</sup>,  Nohra Mateus-Pinilla <sup>1,2</sup>  and  Rebecca L. Smith <sup>1,3</sup> 

<sup>1</sup> Department of Pathobiology, College of Veterinary Medicine, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

<sup>2</sup> Illinois Natural History Survey, Prairie Research Institute, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

<sup>3</sup> Institute for Genomic Biology, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

\* Author to whom correspondence should be addressed.

*Insects* **2023**, *14*(3), 213; <https://doi.org/10.3390/insects14030213>

**Received: 23 November 2022 / Revised: 11 February 2023 / Accepted: 13 February 2023 /**

**Published: 21 February 2023**

(This article belongs to the Special Issue **Surveillance and Control of Vectors of Zoonotic Agents**)

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44. Global Biodiversity Information Facility (GBIF). [gbif.org](https://doi.org/10.15468/dl.dva6ha). GBIF Occurrence Download. Available online: <https://doi.org/10.15468/dl.dva6ha> (accessed on 9 June 2022).

DOWNLOAD | 9 JUNE 2022

# 391 occurrences included in download

DOI 10.15468/dl.dva6ha

DOWNLOAD 2 CITATIONS

| INCLUDES RECORDS FROM 7 DATASETS   | DOWNLOAD AS TSV |
|--|-----------------|
| Harold W. Manter Laboratory of Parasitology Collection (HWML) Parasite Collection (Arctos) | 4               |
| New Mexico State Collection of Arthropods  | 2               |
| Canadian Museum of Nature Parasite Collection  | 1               |
| CHAS Entomology Collection (Arctos)  | 2               |
| iNaturalist Research-grade Observations  | 262             |
| INSDC Host Organism Sequences  | 7               |
| Illinois Natural History Survey Insect Collection  | 113             |

GUID: 2396f952-69ab-4bea-9a4b-22e96fecad4f

USA:IL:Piatt Co:Willow Branch:Allerton Park:  
nr.Sangamon Rv.:39.998473° -88.636857° ±15m;  
ex. pant leg; 11MAY2018 TC McElrath/DA Hennen

*Ixodes*  
*scapularis* 1♂  
det ED Struckhoff 2020

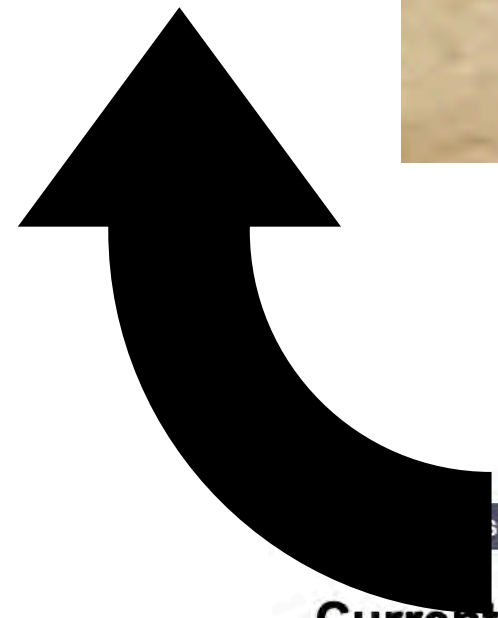
INHS  
Insect Collection  
868,734



TaxonWorks  
Image Importer &  
Transcriber Tool



TaxonWorks  
DWC Exporter



Article  
**Current and Future Habitat Suitability Models for Four Ticks of Medical Concern in Illinois, USA**

by Heather L. Kopsco<sup>1,\*</sup>, Peg Gronemeyer<sup>2</sup>, Nohra Mateus-Pinilla<sup>1,2</sup> and Rebecca L. Smith<sup>1,3</sup>

<sup>1</sup> Department of Pathobiology, College of Veterinary Medicine, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

<sup>2</sup> Illinois Natural History Survey, Prairie Research Institute, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

<sup>3</sup> Institute for Genomic Biology, University of Illinois Urbana-Champaign, Urbana, IL 61802, USA

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DOI

OCCURRENCE | 11 MAY 2018

# *Ixodes scapularis* Say, 1821

Black Legged Tick In English Collected in United States of America

Animalia > Arthropoda > Arachnida > Ixodida > Ixodidae > *Ixodes*

Collected By

Thomas McElrath [id](https://orcid.org/0000-0003-0390-4227) <https://orcid.org/0000-0003-0390-4227>

Derek Hennen [id](https://orcid.org/0000-0001-7005-1151) <https://orcid.org/0000-0001-7005-1151>



Collected

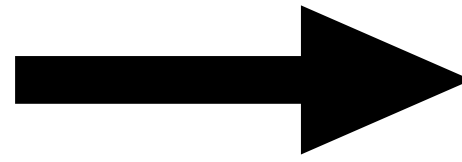
Determined/Imaged

Uploaded

Downloaded



11MAY2018



Ixodes  
scapularis 1♂  
det ED  
Struckhoff 2020

13MAR2020



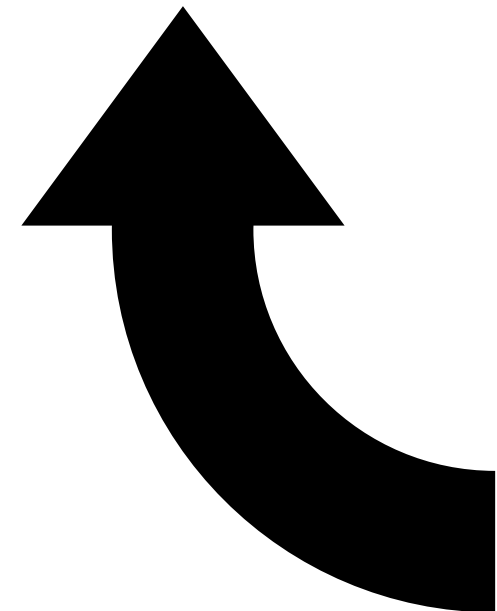
07JAN2021



9JUN2022



Total time from collection to citation:  
**~4 years, 10 months**



Discovered/linked via Bionomia/GBIF



~01MAR2023

Paper Published



21FEB2023

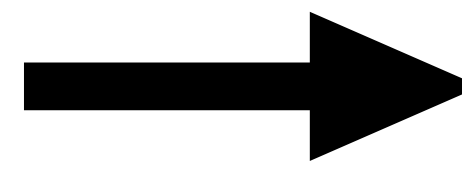


Collected



11MAY2018

Determined/Imaged



Ixodes  
scapularis 1♂  
det ED  
Struckhoff 2020

13MAR2020

**Bottleneck: Taxonomic impediment & Digitization Funds  
+ 1 year, 10 months**

Determined/Imaged

Uploaded

Ixodes  
scapularis 1♂  
det ED  
Struckhoff 2020



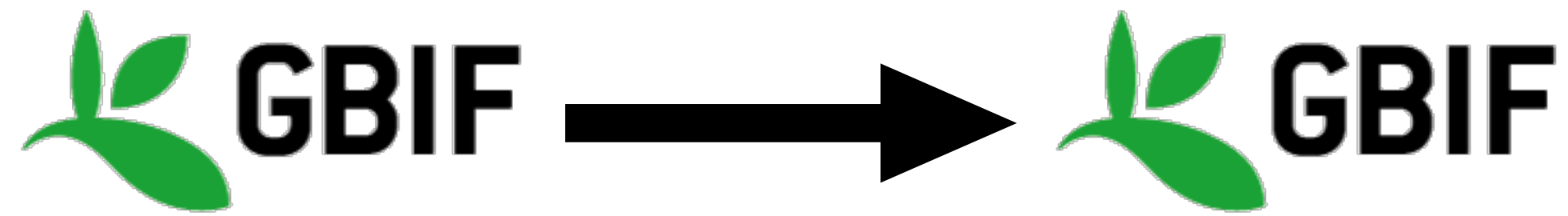
13MAR2020

07JAN2021

**Bottleneck: TaxonWorks Development of DWC Exporter  
Fixed!  
- 8 months**

Uploaded

Downloaded



07JAN2021

9JUN2022

Bottleneck: none! hypothetically <1 day  
- 1 year six months



Downloaded



9JUN2022



Paper Published



21FEB2023

Bottleneck: publishing  
Not within purview of this talk

Collected



11MAY2023

Determined/Imaged  
Databased



Phyconomus  
marinus  
det TC McElrath  
12MAY2023

12MAY2023

Uploaded



GBIF

13MAY2023

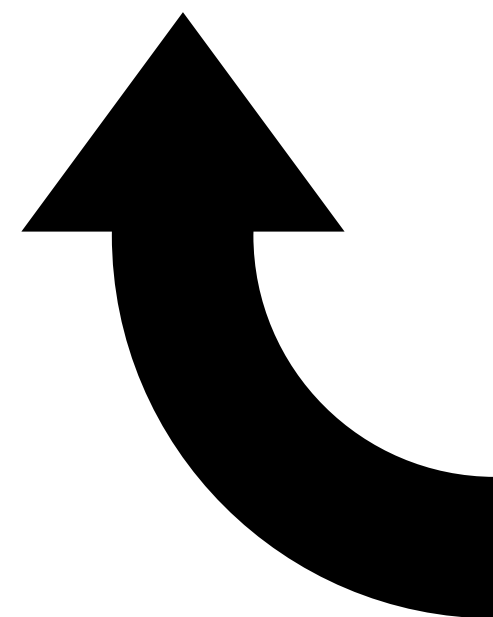
Downloaded



GBIF

14MAY2023

Total hypothetical time from collection  
to citation:  
**~6.5 months**



Discovered/linked via Bionomia/GBIF



~14DEC2023

Paper Published

Open Access Article

Current and Future Habitat Suitability Models for Four Ticks of Medical Concern in Illinois, USA

by Heather L. Kopsco<sup>1,\*</sup>, Peg Gronemeyer<sup>2</sup>, Nohra Mateus-Pinilla<sup>1,2</sup> and Rebecca L. Smith<sup>1,3</sup>



01DEC2023

Total hypothetical time from collection  
to citation:

**~6.5 months**

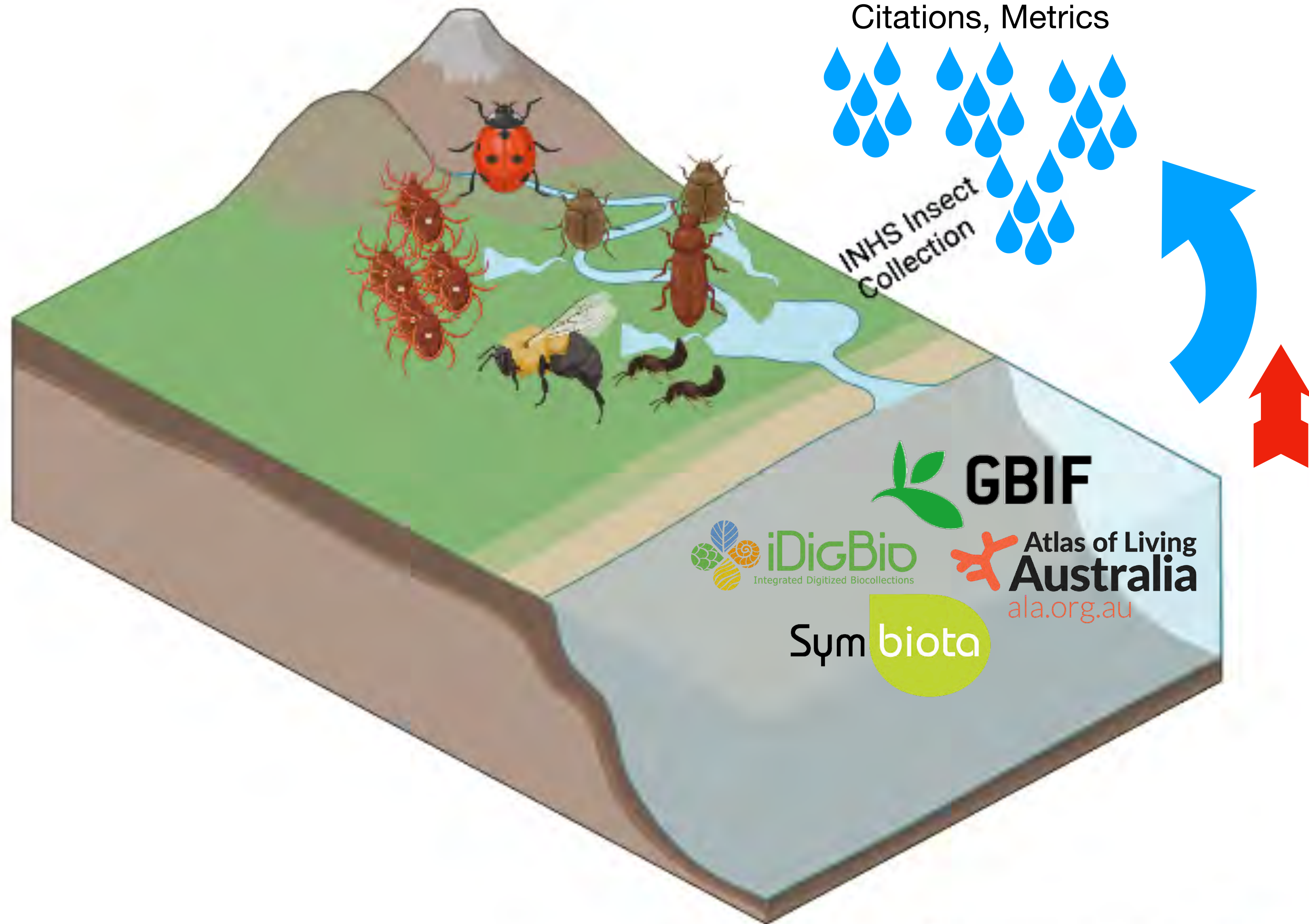
And all it took was:

- solving the taxonomic impediment
- writing & publishing a paper in <6 months
- persistent identifiers with frictionless data

# INHS Insect Collection - the rain

- Exponential growth of use of specimens
- Specimen used previously can be tracked
- Individual specimen can be tracked
- Not limited by collection manager time - only researcher
- 53(54) papers in 2023 so far
  - On track to exceed 2022 by 15 papers
- Collection Managers do NOTHING to get citations of specimens





Collected



11MAY2023

Determined/Imaged



Phyconomus  
marinus  
det TC McElrath  
12MAY2023

12MAY2023

Uploaded

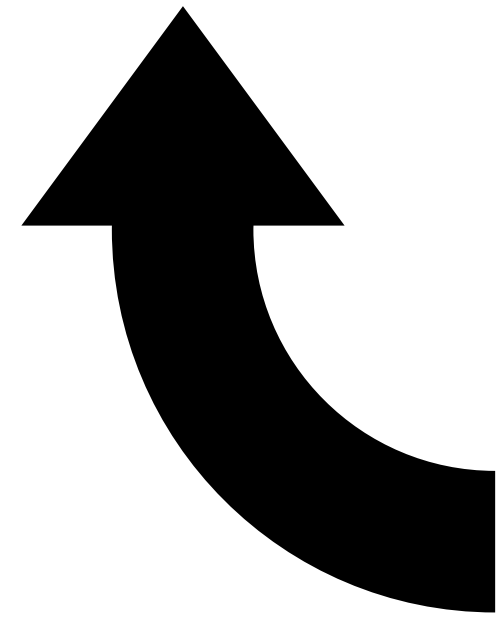
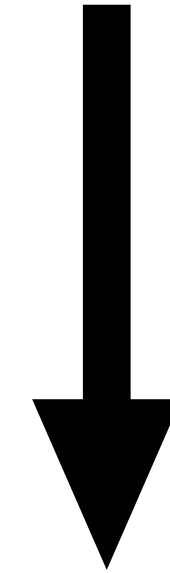


13MAY2023

Downloaded



14MAY2023



Discovered/linked via Bionomia/GBIF



~14DEC2023

Paper Published



01DEC2023

Collected



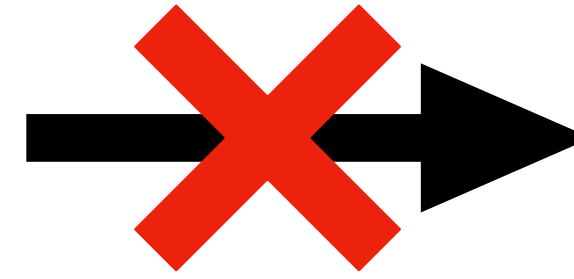
11MAY2023

Determined/Imaged



Phyconomus  
marinus  
det TC McElrath  
12MAY2023

12MAY2023



Uploaded

OTHER  
AGGREGATOR

13MAY2023

Downloaded



OTHER  
AGGREGATOR

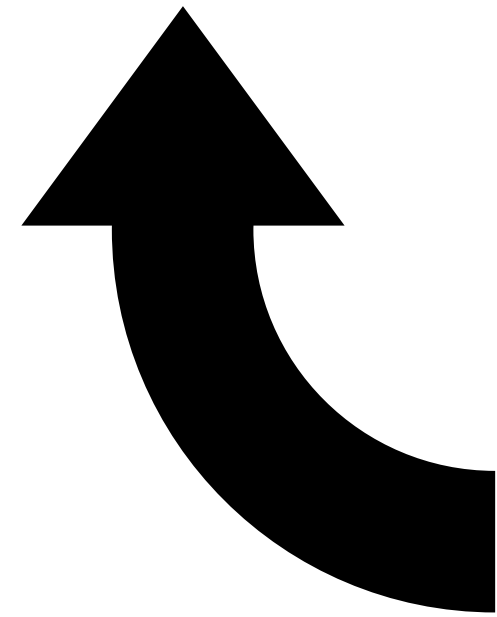
14MAY2023



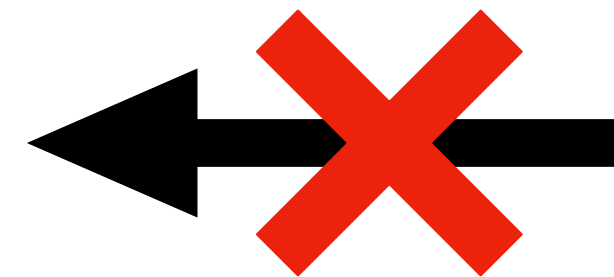
Paper Published



01DEC2023



No DOI to connect specimens to  
paper  
Manual tracking  
Time to discovery? 1 day - years  
Back to old system

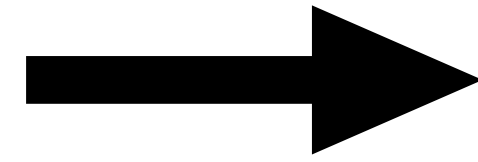


Collected



11MAY2023

Determined/Imaged



Phyconomus  
marinus  
det TC McElrath  
12MAY2023

12MAY2023

Uploaded

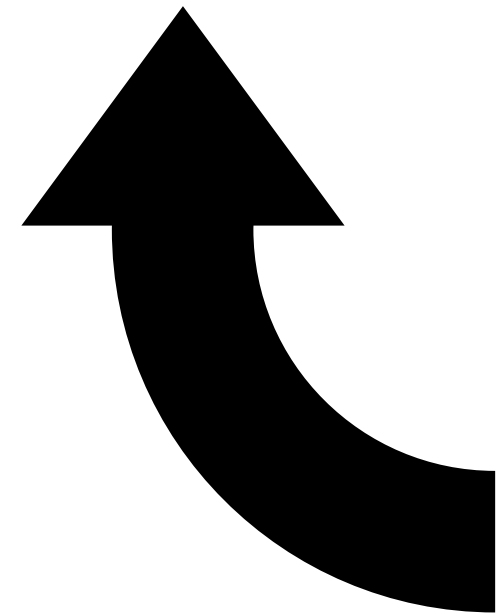
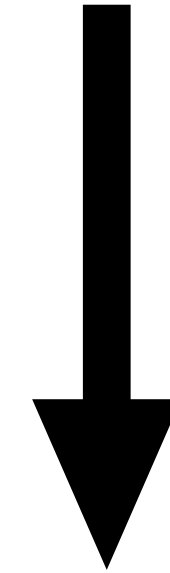


13MAY2023

Downloaded



14MAY2023



Discovered/linked via Bionomia/GBIF



~14DEC2023

Paper Published



01DEC2023

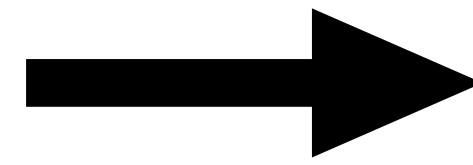


Collected



11MAY2023

Determined/Imaged



Phyconomus  
marinus  
det TC McElrath  
12MAY2023

12MAY2023

Uploaded



13MAY2023

Downloaded

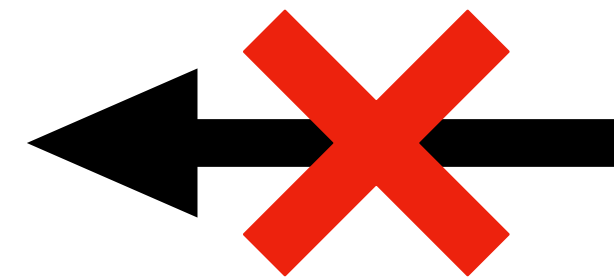


14MAY2023



Paper Published

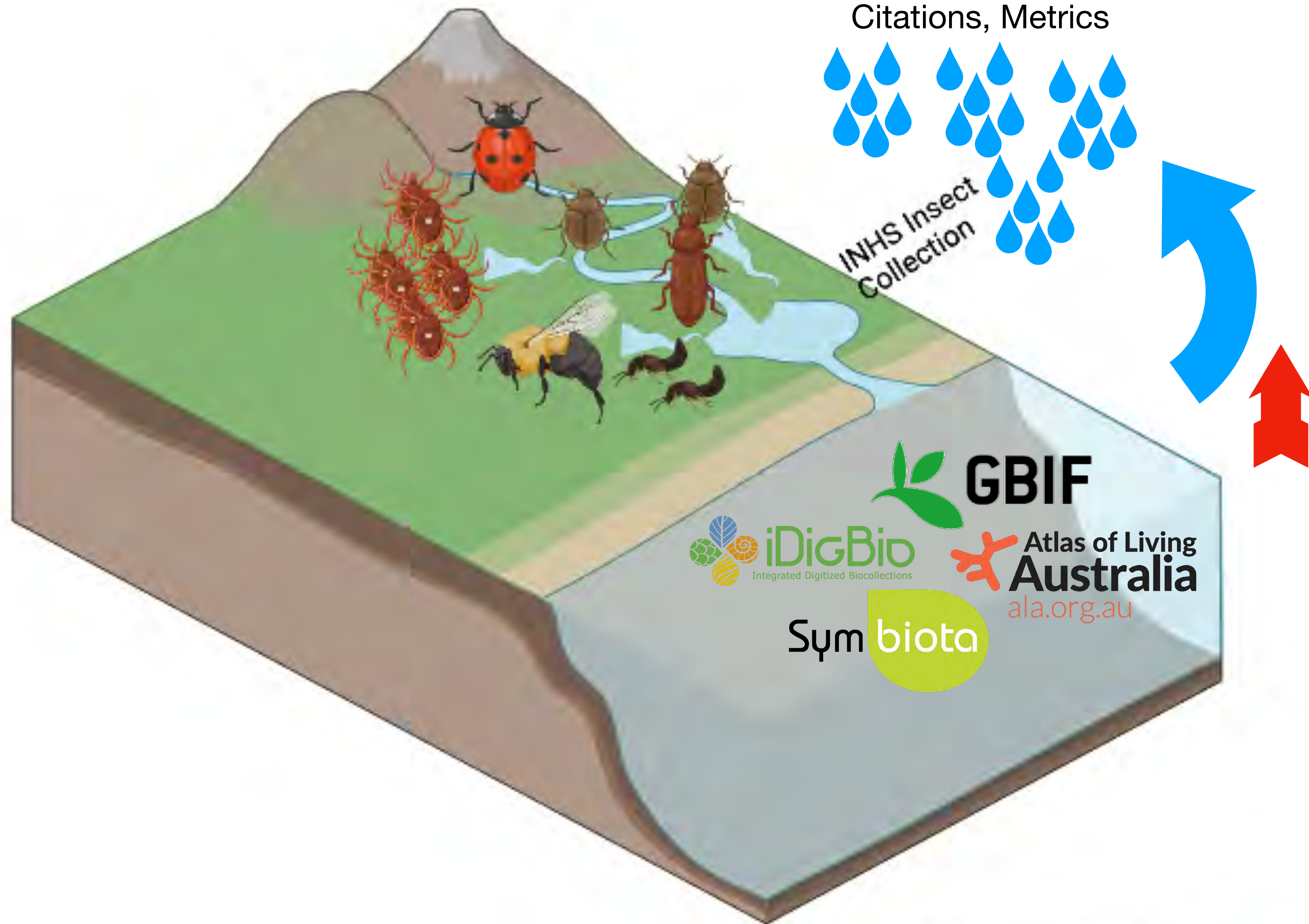
NO GBIF DOI Cited



01DEC2023

Collections/Datasets buried in:

- Materials/Methods (okay, but not great)
- Acknowledgments (worse, but still in main paper)
- Supplemental files (groan)
- Completely stripped (inexcusable)





**GBIF**



Atlas of Living  
**Australia**  
ala.org.au



**iDigBio**  
Integrated Digitized Biocollections



|                                 |               |              |                     |              |
|---------------------------------|---------------|--------------|---------------------|--------------|
| <b>DOI Tracking?</b>            | <b>Yes</b>    | <b>Yes</b>   | <b>No</b>           | <b>No</b>    |
| <b>Global vs. local</b>         | <b>Global</b> | <b>Local</b> | <b>Global/Local</b> | <b>Local</b> |
| <b>Specimen level tracking?</b> | <b>Yes</b>    | <b>Yes</b>   | <b>No</b>           | <b>No</b>    |

# Replenish the water table

## Keep the cycle going

- CMs provide citation link alongside loaned specimens
- Publishers REQUIRE data management plan
- Grounds for Rejection/Revision
  - “data on request from the authors”
  - ONLY aggregator cited, not individual datasets
  - No verbatim data anywhere (not repeatable!)
  - Identifiers stripped from primary data everywhere

Data is not available upon request

Ian Hussey

Many journals now require data sharing and require articles to include a Data Availability Statement. However, several studies over the past two decades have shown that promissory notes about data sharing are rarely abided by, and that data is generally not available upon request. This has negative consequences for many essential aspects of scientific knowledge production, including independent verification of results, efficient secondary use of data, and knowledge synthesis. Here, I assessed the prevalence of data sharing upon request in articles employing the Implicit Relational Assessment Procedure published within the last 5 years. Of 52 articles, 42% contained a Data Availability Statement, most of which stated that data was available upon request. This rose from 0% in 2018 to 100% in 2022. Only 25% of articles' authors actually shared data upon request. Among articles stating that data was available upon request, only 17% shared data upon request. The presence of Data Availability Statements was not associated with higher rates of data sharing ( $p = .80$ ). Results replicate those found elsewhere: data is generally not available upon request, and promissory Data Availability Statements are typically not adhered to. Issues, causes, and implications are considered.



<https://psyarxiv.com/jbu9r/>



# Replenish the water table

## Keep the cycle going

ECOLOGICAL  
MONOGRAPHS  
ECOLOGICAL SOCIETY OF AMERICA

ARTICLE | [Open Access](#) |  

### Do Nearctic hover flies (Diptera: Syrphidae) engage in long-distance migration? An assessment of evidence and mechanisms

C. Scott Clem , Keith A. Hobson, Alexandra N. Harmon-Threatt

First published: 19 July 2022 | <https://doi.org/10.1002/ecm.1542> | Citations: 2

### A century of Illinois hover flies (Diptera: Syrphidae): museum and citizen science data reveal recent range expansions, contractions, and species of potential conservation significance

C. Scott Clem , Lily V Hart, Thomas C McElrath

*Journal of Insect Science*, Volume 23, Issue 4, July 2023, 13,

<https://doi.org/10.1093/jisesa/iead051>

Published: 03 August 2023 [Article history](#) ▼



# Replenish the water table

## Caveats

- Building infrastructure costs \$\$
  - GBIF DOI registry
  - Server time/space costs \$\$
  - Data infrastructure development
- Data infrastructure not perfect
  - still not seeing my paper that cited three different GBIF DOIs on GBIF website
- More aggregators = more exposure

# Acknowledgements

- Species File Group
  - Matt Yoder
  - Debbie Paul
  - Hernán Lucas Pereira
  - José Luis Pereira
  - Debbie Paul
- Funding:
  - Species File Group
  - Ed DeWalt
- TaxonWorks community
  - Michelle Kohler
  - Lily Hart
  - Brian Fisher
  - Kojun Kanda
  - Gareth Powell
- Matt Gimmel
- Heidi Hopkins
- Chris Grinter
- Student workers
- Volunteers
- Symbiota Community
  - Katie Pearson
  - Jenn Yost

# Provide & Cite DOIs

Let the water flow



**SCAN ME**