

# Tutorial outline

[Find the NEON Biorepository Data Portal](#)

[View the homepage](#)

[Conduct a Sample Search](#)

[Conduct a Map Search](#)

---

## 1. Find the NEON Biorepository Data Portal

To explore the NEON Biorepository data portal click “Biorepository” on the upper right hand corner of any page on the [main NEON website](#) or go to [biorepo.neonscience.org](https://biorepo.neonscience.org).

The screenshot shows the NEON website homepage. The top navigation bar is blue with white text for 'NEON SCIENCE', 'DATA PORTAL', and 'BIOREPOSITORY'. Below this is a secondary navigation bar with icons and text for 'ABOUT', 'DATA COLLECTION', 'FIELD SITES', 'DATA', 'RESOURCES', 'COMMUNITY', and 'OPPORTUNITIES'. The main banner features a landscape image with the text: 'The National Ecological Observatory Network: Open data to understand how our aquatic and terrestrial ecosystems are changing.' A blue button labeled 'EXPLORE OUR FIELD SITES' is centered on the banner. Below the banner, there are sections for 'NEON Updates' and 'UPCOMING EVENTS'. The 'UPCOMING EVENTS' section highlights a deadline for the '2020 NEON Postdoctoral Program | Application Deadline' on 'MAY 08 2020'.

## 2. View the homepage

On the NEON Biorepository data portal homepage, you can view periodically updated summary statistics for our collections and find links to more information about NEON and the NEON Biorepository.



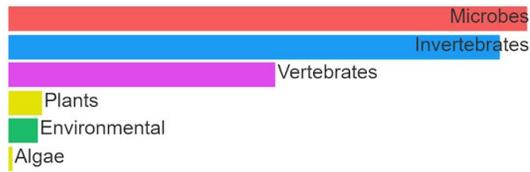
[Login](#) [New Account](#) [Sitemap](#)

## Discover and access sample-based data



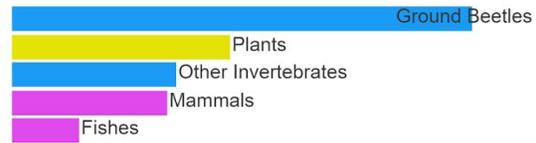
On our homepage, you will also find contact information for the NEON Biorepository. Always feel free to email us at [biorepo@asu.edu](mailto:biorepo@asu.edu) with any inquiries.

&gt; 103,000 samples



Distribution of samples by collection type.

&gt; 700 taxa



Distribution of samples by top 5 determined taxa.

### Data

Visit the [Data Usage Policy](#) page for information on how to cite data obtained from the NEON Biorepository Data Portal.

### Specimens

Please consult the [Archival Sample Request information page](#) to initiate inquiries about sample accessibility and loans.

### Contact

Join the portal as a regular visitor or contributor, and send direct feedback or inquiries to [BioRepo@asu.edu](mailto:BioRepo@asu.edu).

### Services

### Learn more

<mailto:BioRepo@asu.edu>

## 3. Conduct a Sample Search

Use the Sample Search feature of the NEON Biorepository data portal to search for, download, and map available NEON samples based on collection, taxon, location, and more. To do so:

- Navigate to "[Sample Search](#)" under "Search" in the main menu.

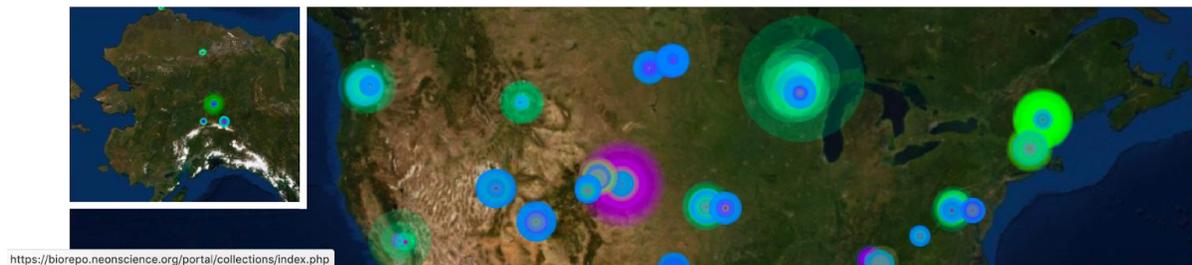


[SAMPLE SEARCH](#)  
[MAP SEARCH](#)  
[DYNAMIC CHECKLIST](#)  
[TAXONOMY EXPLORER](#)

[Home](#) [SEARCH](#) [IMAGES](#) [CHECKLISTS](#) [SAMPLE USE](#) [ADDITIONAL INFORMATION](#)

[Login](#) [New Account](#) [Sitemap](#)

## Discover and access sample-based data



b. Note the disclaimer at the top of the search form:



**Please note:** this search integrates NEON samples with voucher specimens from the same sites in other natural history collections, allowing for research on biodiversity at NEON sites over a broader taxonomic and temporal extent. **Scroll towards the end of the page to activate or deactivate the search in the external collections.**

Additionally, not all collections are currently available. If you would like to be notified via email when a collection becomes available, please sign up [here](#).

Specimens

Select/Deselect All  
 **Algae (NEON-AL)**

 **Aquatic Macroalgae Collection (Chemical Preservation [Clip Harvests]) (NEON-AMAC-CPCH)** [more info...](#)

[SEARCH >](#)

External Collections are of two types

- Collections of NEON samples not held at the NEON Biorepository (e.g. Essig and the Museum of Southwestern Biology). These samples are generally legacy samples collected before the initiation of the NEON Biorepository in late-2018.

- Collections of non-NEON samples that were collected at what are now NEON sites. These samples are not part of the NEON Biorepository and are generally not held at Arizona State University. Search these collections to better understand background measures of diversity at NEON sites.

Make sure to deselect these collections at the bottom of the page if you only wish to explore NEON Biorepository samples.

The screenshot shows the NEON Science Data Portal interface. At the top, there are three tabs: "NEON SCIENCE", "DATA PORTAL", and "BIOREPOSITORY". Below the tabs, there are three checked items under the "NEON SCIENCE" tab:

- Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Trap Sorting]) (NEON-MAMC-VGBT) more info...
- Mammal Collection (Vouchers [Standard Sampling at Diversity Plots]) (NEON-MAMC-VDP) more info...
- Mammal Collection (Vouchers [Standard Sampling at Pathogen Plots]) (NEON-MAMC-VPP) more info...

Below these items, there is a section titled "External Collections" with a yellow border. This section contains five unchecked items:

- Consortium of Small Vertebrate Collections (CSVColl-Vertebrates) more info...
- Essig Museum of Entomology (EMEC-EMEC) more info...
- Museum of Southwestern Biology - Mammal specimens (MSB-MAMM) more info...
- SCAN Portal Network Arthropod Specimens (SCAN) more info...
- SEINet Portal Network Botanical Specimens (SEINet-Plants) more info...



The National Ecological Observatory Network is a major facility fully funded by the National Science Foundation. Any opinions, findings and conclusions or recommendations expressed in this material do not necessarily reflect the views of the National Science Foundation.

**ASU** Biodiversity Knowledge  
Integration Center  
Arizona State University

- c. Also, note that not all sample types are available for research use at this time.



Home >> Collections

Login New Account Sitemap

**Please note:** this search integrates NEON samples with voucher specimens from the same sites in other natural history collections, allowing for research on biodiversity at NEON sites over a broader taxonomic and temporal extent. **Scroll towards the end of the page to activate or deactivate the search in the external collections.**

Additionally, not all collections are currently available. If you would like to be notified via email when a collection becomes available, please sign up [here](#).

To be notified of when collections of interest are updated, fill out the linked [Google Form](#).

- d. To begin a sample search, select the collections that are of interest. Collections are broken down into five categories: Algae, Environmental, Invertebrate, Plant, Vertebrate, and External. For illustration, we will search for samples relevant to deer mouse physiology in the western continental United States. Therefore, we will begin by finding the small mammal fecal and hair samples under Vertebrates.
- e. Note that you can read more about any collection by clicking the “more info...” link at the end of the collection name. To see an example navigate to [this page for the fecal sample collection](#).

**Vertebrates (NEON-VE)**

- Fish Collection (DNA Extracts)** (NEON-FISC-DNA) [more info...](#)
- Fish Collection (Vouchers)** (NEON-FISC-V) [more info...](#)
- Herptile Voucher Collection (Ground Beetle Sampling Bycatch Archive Pooling)** (NEON-HEVC-GBAP) [more info...](#)
- Herptile Voucher Collection (Ground Beetle Sampling Bycatch Trap Sorting)** (NEON-HEVC-GBTS) [more info...](#)
- Herptile Voucher Collection (Small Mammal Sampling Bycatch)** (NEON-HEVC-SMMB) [more info...](#)
- Mammal Collection (Blood Samples)** (NEON-MAMC-BL) [more info...](#)
- Mammal Collection (DNA Extracts)** (NEON-MAMC-DNA) [more info...](#)
- Mammal Collection (Ear Tissue)** (NEON-MAMC-EA) [more info...](#)
- Mammal Collection (Fecal Samples)** (NEON-MAMC-FE) [more info...](#)
- Mammal Collection (Hair Samples)** (NEON-MAMC-HA) [more info...](#)
- Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Archive Pooling])** (NEON-MAMC-VGBA) [more info...](#)
- Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Trap Sorting])** (NEON-MAMC-VGBT) [more info...](#)
- Mammal Collection (Vouchers [Standard Sampling at Diversity Plots])** (NEON-MAMC-VDP) [more info...](#)
- Mammal Collection (Vouchers [Standard Sampling at Pathogen Plots])** (NEON-MAMC-VPPP) [more info...](#)

 **External Collections**

<https://biorepo.neonscience.org/porta/collections/misc/collprofiles.php?collid=26>

Here, we can read a description and see the metadata for that collection.

## Mammal Collection (Fecal Samples) (NEON-MAMC-FE)

This collection contains fecal samples collected from small mammals during small mammal sampling (NEON sample class: mam\_pertrapnight\_in.fecalSampleID). Small mammal sampling is based on the lunar calendar, with timing of sampling constrained to occur within 10 days before or after the new moon. Typically, core sites are sampled 6 times per year, and relocatable sites 4 times per year. Small mammals are sampled using box traps (models LFA, XLK, H.B. Sherman Traps, Inc., Tallahassee, FL, USA) and, at sites in Puerto Rico, larger wire traps suitable for catching *Rattus* spp. (model 201, Tomahawk Live Trap, Hazlehurst, WI, USA). Box traps are arrayed in three to eight (depending on the size of the site) 10 x 10 grids with 10m spacing between traps at all sites. Where used, wire traps are used only in alternate bouts of trapping and placed at every other trap station in the 10 x 10 grid, such that a total of 50 wire traps are set. Small mammal trapping bouts are comprised of one or three nights of trapping, depending on whether a grid is designated for pathogen sample collection (3 nights) or not (1 night). Fresh, uncontaminated feces are collected from an animal using either forceps or scooping the sample directly with the cryovial. Fecal samples are archived in the NEON Biorepository at -80 degrees Celsius. See related links below for protocols and NEON related data products.

**Contact:** NEON Biorepository ([biorepo@asu.edu](mailto:biorepo@asu.edu))

**Related link:** <https://data.neonscience.org/data-products/DP1.10072.001>

**Collection Type:** Preserved Specimens

**Management:** Live Data managed directly within data portal

**Global Unique Identifier:** faa8a6e6-b2cd-4cda-9f17-a23972cabaec

**Digital Metadata:** [EML File](#)

**Usage Rights:** [CC0 1.0 \(Public-domain\)](#)

**Collection Statistics**

Note that this information includes a link to a related NEON data product for small mammal captures using the “[Related Link](#).”

At the bottom of the page, we can see some summary statistics for the collection. We can click on “Show Geographic Distribution” and “Show Family Distribution” to explore the number of samples at different geographic and taxonomic scales.

**NEON SCIENCE** **DATA PORTAL** **BIOREPOSITORY**

**Management:** Live Data managed directly within data portal  
**Global Unique Identifier:** faa8a6e6-b2cd-4cda-9f17-a23972cabaec  
**Digital Metadata:** [EML File](#)  
**Usage Rights:** [CC0 1.0 \(Public-domain\)](#)

**Collection Statistics**

- 8,222 specimen records
- 8,222 (100%) georeferenced
- 8,146 (99%) identified to species
- 5 families
- 27 genera
- 81 species
- 81 total taxa (including subsp. and var.)

**Extra Statistics**

[Show Geographic Distribution](#)  
[Show Family Distribution](#)



The National Ecological Observatory Network is a major facility fully funded by the National Science Foundation. Any opinions, findings and conclusions or recommendations expressed in this material do not necessarily reflect the views of the National Science Foundation.

**ASU** Biodiversity Knowledge Integration Center  
Arizona State University

f. Returning to the “Sample Search” page, we select the mammal fecal and hair collections.

**NEON SCIENCE** **DATA PORTAL** **BIOREPOSITORY**

**Vertebrates (NEON-VE)**

- Fish Collection (DNA Extracts)** (NEON-FISC-DNA) [more info...](#)
- Fish Collection (Vouchers)** (NEON-FISC-V) [more info...](#)
- Herptile Voucher Collection (Ground Beetle Sampling Bycatch Archive Pooling)** (NEON-HEVC-GBAP) [more info...](#)
- Herptile Voucher Collection (Ground Beetle Sampling Bycatch Trap Sorting)** (NEON-HEVC-GBTS) [more info...](#)
- Herptile Voucher Collection (Small Mammal Sampling Bycatch)** (NEON-HEVC-SMMB) [more info...](#)
- Mammal Collection (Blood Samples)** (NEON-MAMC-BL) [more info...](#)
- Mammal Collection (DNA Extracts)** (NEON-MAMC-DNA) [more info...](#)
- Mammal Collection (Ear Tissue)** (NEON-MAMC-EA) [more info...](#)
- Mammal Collection (Fecal Samples)** (NEON-MAMC-FE) [more info...](#)
- Mammal Collection (Hair Samples)** (NEON-MAMC-HA) [more info...](#)
- Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Archive Pooling])** (NEON-MAMC-VGBA) [more info...](#)
- Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Trap Sorting])** (NEON-MAMC-VGBT) [more info...](#)
- Mammal Collection (Vouchers [Standard Sampling at Diversity Plots])** (NEON-MAMC-VDP) [more info...](#)
- Mammal Collection (Vouchers [Standard Sampling at Pathogen Plots])** (NEON-MAMC-VPP) [more info...](#)

**External Collections**

- Conservation of Small Vertebrate Collections (CSVColl-Vertebrates)** [more info...](#)

Then, we will scroll back to the top of the page and click “Search.”

NEON SCIENCE DATA PORTAL BIOREPOSITORY

**Please note:** this search integrates NEON samples with voucher specimens from the same sites in other natural history collections, allowing for research on biodiversity at NEON sites over a broader taxonomic and temporal extent. **Scroll towards the end of the page to activate or deactivate the search in the external collections.**

Additionally, not all collections are currently available. If you would like to be notified via email when a collection becomes available, please sign up [here](#).

Specimens

Select/Deselect All

**Algae (NEON-AL)**

- Aquatic Macroalgae Collection (Chemical Preservation [Clip Harvests]) (NEON-AMAC-CPCH) more info...
- Aquatic Macroalgae Collection (Chemical Preservation [Point Counts]) (NEON-AMAC-CPCC) more info...
- Aquatic Microalgae Collection (Chemical Preservation) (NEON-AMIC-CP) more info...
- Aquatic Microalgae Collection (Freeze-dried) (NEON-AMIC-FD) more info...
- Aquatic Microalgae Collection (Microscope Slides) (NEON-AMIC-MS) more info...
- Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Clip Harvests]) (NEON-APLC-HVCH) more info...
- Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Point Counts]) (NEON-APLC-HVPC) more info...
- Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Standard Sampling]) (NEON-APLC-HVSS) more info...

Environmental (NEON-ENV)

SEARCH >

g. The next page brings us to a search form with several optional criteria. Only one criterion must be applied to conduct your search, but many criteria can be used to produce a narrower set of results.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

NSF | neon | Operated by Battelle | BIOREPOSITORY DATA PORTAL

SEARCH IMAGES CHECKLISTS SAMPLE USE ADDITIONAL INFORMATION

Home >> Collections >> Search Criteria Login New Account Sitemap

**Taxonomic Criteria**

Include Synonyms

Scientific Name

LIST DISPLAY

TABLE DISPLAY

RESET FORM

**Locality Criteria**

Country:

State/Province:

County:

Locality:

Some commonly used criteria are explained below.

- i. Taxonomic Criteria can be applied. When searching based on a taxon loaded into the portal's taxonomic tree, suggested criteria will help you populate the text. For illustration, we will search for deer mice (*Peromyscus*) specimens. With "include Synonyms" checked, we will see all specimens identified as being from within that genus. Otherwise we would see only those specimens identified as *Peromyscus* but not to species.



Home >> Collections >> Search Criteria

[Login](#) [New Account](#) [Sitemap](#)

**Taxonomic Criteria**

Include Synonyms

Scientific Name	Peromyscu
	Peromyscus
	Peromyscus attwateri
	Peromyscus boylii
Country:	Peromyscus californicus
State/Province:	Peromyscus crinitus
County:	Peromyscus eremicus
Locality:	Peromyscus fraterculus
	Peromyscus gossypinus
	Peromyscus gossypinus allapaticola

**Locality Criteria**

Country:

State/Province:

County:

Locality:

LIST DISPLAY

TABLE DISPLAY

RESET FORM

- ii. We can also search by Locality criteria. For this example, we will leave this blank, but we could narrow our search by state, county, or elevational range.

**Taxonomic Criteria** Include SynonymsScientific Name 

LIST DISPLAY

TABLE DISPLAY

RESET FORM

**Locality Criteria**Country: State/Province: County: Locality: Elevation (in meters):  to **Latitude and Longitude****Bounding box**Northern Latitude:  N Southern Latitude:  N Western Longitude:  W Eastern Longitude:  W **Polygon (WKT footprint)****Point-Radius**Latitude:  N Longitude:  W Radius:  Kilometers 

Microsoft PowerPoint

- iii. Latitude and Longitude criteria can also be applied using a bounding box, spatial polygon, or point-radius area. Here, we will limit our search to within a bounding box drawn in the Google Earth pop-up window to correspond roughly with the western half of the continental United States

County: Locality: Elevation (in meters):  to **Latitude and Longitude****Bounding box**Northern Latitude:  N Southern Latitude:  N Western Longitude:  W Eastern Longitude:  W **Collector Criteria**Collector's Last Name: Collector's Number: Collection Date:  - **Specimen Criteria**Catalog Number:  Include other catalog numbers and GUIDs

LIST DISPLAY

TABLE DISPLAY

Close mapping tool to transfer shape definition to search form.



- iv. Other Collector and Specimen Criteria can be used to limit the search. Of interest for a select number of NEON collections is the ability to “Limit to Specimens with Genetic Data.” This search will limit results to those linked to sequences available in the [Barcode of Life Database \(BOLD\)](#).

NEON SCIENCE DATA PORTAL BIOREPOSITORY

---

Western Longitude:

Eastern Longitude:

Radius:

---

**Collector Criteria**

Collector's Last Name:

Collector's Number:

Collection Date:  -

---

**Specimen Criteria**

Catalog Number:   Include other catalog numbers and GUIDs

Limit to Type Specimens

Limit to Specimens with Images

Limit to Specimens with Genetic Data

Include cultivated/captive occurrences



The National Ecological Observatory Network is a major facility fully funded by the National Science Foundation. Any opinions, findings and conclusions or recommendations expressed in this material do not necessarily reflect the views of the National Science Foundation.

**ASU** Biodiversity Knowledge  
Integration Center  
Arizona State University

- h. When all search criteria of interest have been applied, we will click “List Display” either at the top or the bottom of the search form.

**Taxonomic Criteria**

Include Synonyms

Scientific Name

LIST DISPLAY

TABLE DISPLAY

RESET FORM

**Locality Criteria**

Country:

State/Province:

County:

Locality:

- i. This brings us to the "Occurrence Records" tab of the [search results](#). At the top of that page, you see the search criteria used to generate the results. We can see that as of April 23, 2020, 3379 samples from the NEON-MAMC-FE (fecal) and NEON-MAMC-HA (hair) collections met our criteria.

Species List Occurrence Records Maps

**Dataset:** NEON-MAMC-FE; NEON-MAMC-HA

**Taxa:** Peromyscus

**Search Criteria:** Lat: 23.42108 - 49.15165 Long: -126.20996 - -93.64648; excluding cultivated/captive occurrences

1 2 3 4 5 6 7 8 9 10 11 >> Last Page 1, records 1-100 of 3379

**Mammal Collection (Fecal Samples)**

*Peromyscus leucopus* (Rafinesque, 1818)

- j. Note that you can click the link button on the upper right corner of the page to copy a URL for these search results to your clipboard.

Home >> Collections >> Search Criteria >> Specimen Records

NEON SCIENCE DATA PORTAL BIOREPOSITORY

Species List Occurrence Records Maps

**Dataset:** NEON-MAMC-FE; NEON-MAMC-HA

**Taxa:** Peromyscus

**Search Criteria:** Lat: 23.42108 - 49.15165 Long: -126.20996 - -93.64648; excluding cultivated/captive occurrences

1 2 3 4 5 6 7 8 9 10 11 >> Last Page 1, records 1-100 of 3379

### Mammal Collection (Fecal Samples)

*Peromyscus leucopus* (Rafinesque, 1818)

NEON-MAMC-FE NEON017MG mpike@battelleecology.org 2018-08-15

United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m). 39.121218 -96.639897. 330m

- k. We can also click the download button on the upper right corner of the page to download the results.

Home >> Collections >> Search Criteria >> Specimen Records

NEON SCIENCE DATA PORTAL BIOREPOSITORY

Species List Occurrence Records Maps

**Dataset:** NEON-MAMC-FE; NEON-MAMC-HA

**Taxa:** Peromyscus

**Search Criteria:** Lat: 23.42108 - 49.15165 Long: -126.20996 - -93.64648; excluding cultivated/captive occurrences

1 2 3 4 5 6 7 8 9 10 11 >> Last Page 1, records 1-100 of 3379

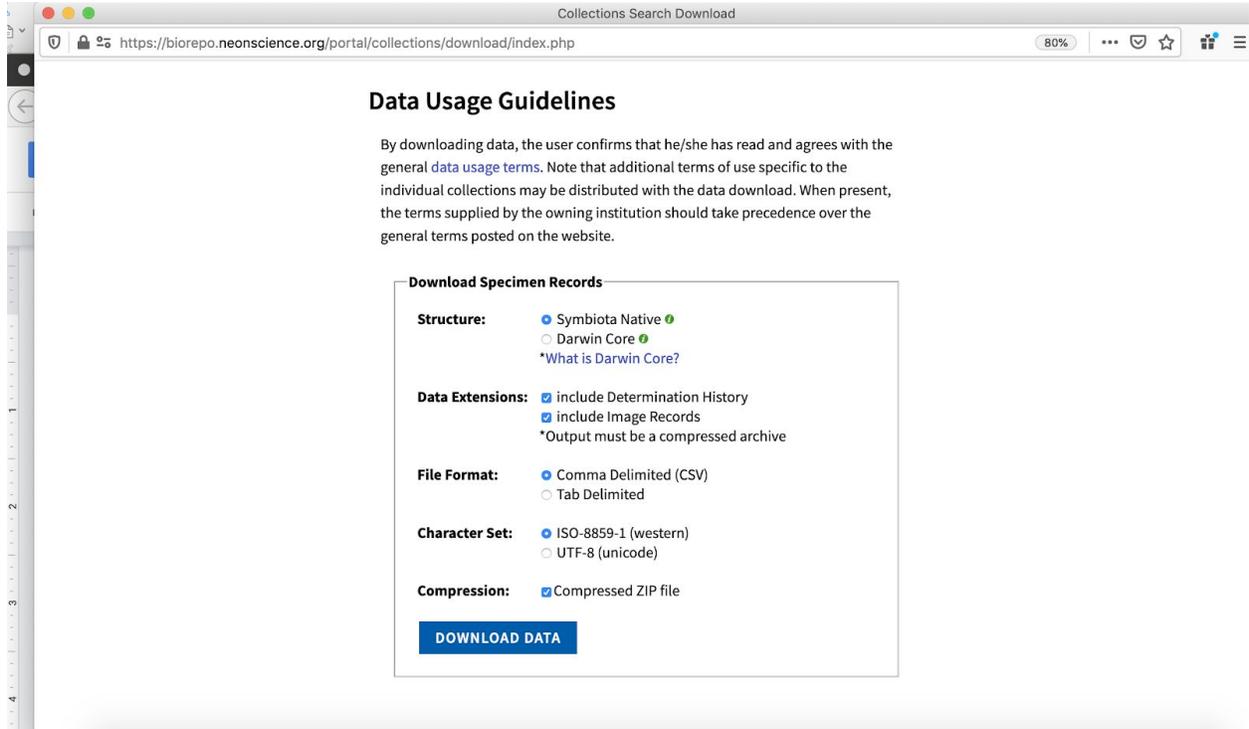
### Mammal Collection (Fecal Samples)

*Peromyscus leucopus* (Rafinesque, 1818)

NEON-MAMC-FE NEON017MG mpike@battelleecology.org 2018-08-15

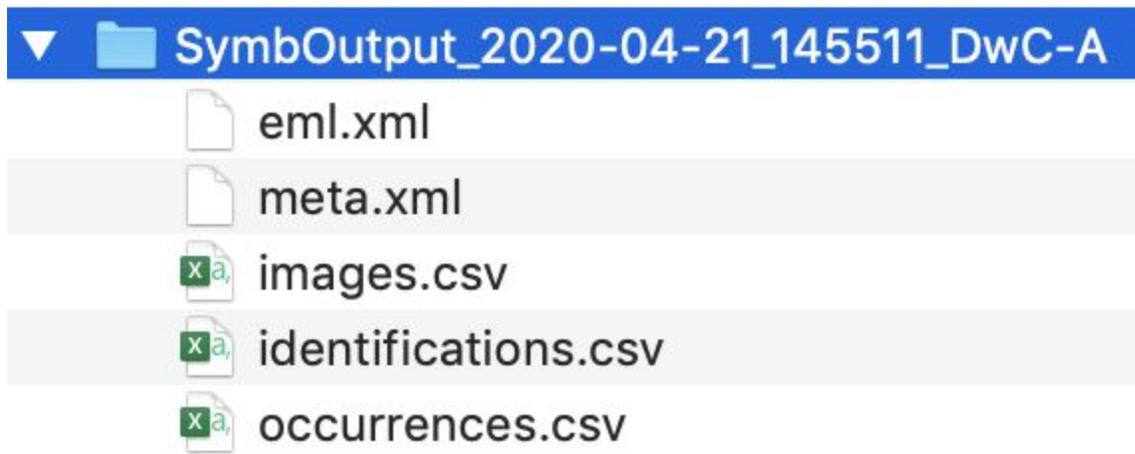
United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m). 39.121218 -96.639897. 330m

This will bring up a pop-up window where we can select whether we would like to download our results as a [Symbiota](#) Native or [Darwin Core](#) file. These formats are very similar, but Symbiota Native files supports more fields. Click the icon to the right of these names for brief descriptions of these file structures.



We can also choose the data extensions (determination history and/or images) that we would like to include in our download, the file format, and whether we would like the results as a zip file. We select “Download Data” when we have identified our preferences.

In a default download, we will see a folder like below in which the “occurrences.csv” file is the primary results file containing a table of all available sample-associated data.



- Returning to the portal results, we will navigate to the “Species List” tab to see a list of all taxa represented in the results.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

SEARCH IMAGES CHECKLISTS SAMPLE USE ADDITIONAL INFORMATION

Home >> Collections >> Search Criteria >> Specimen Records Login New Account Sitemap

Species List Occurrence Records Maps

Taxonomic Filter: Raw Data ⌵ 📄 ⬇

---

**Taxa Count: 8**

**CRICETIDAE**

- Peromyscus*
- Peromyscus attwateri*
- Peromyscus boylii*
- Peromyscus eremicus*
- Peromyscus keeni*
- Peromyscus leucopus*
- Peromyscus maniculatus*
- Peromyscus truei*

Note that you click on any of the taxon names to read more about that taxon. For some taxa, this page will include photos and/or detailed descriptions of the tax.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

***Peromyscus truei* (Shufeldt, 1885)** ↗

Family: Cricetidae  
Pion Deermouse



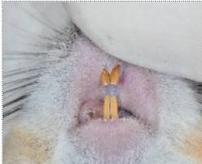
Flickr; Don Loarie

Web Links

- BOLD Systems - Barcode of Life Data Systems
- Encyclopedia of Life
- Google Images
- Google Search Engine
- NCBI - National Center for Biotechnology Information



Ken-ichi Ueda; Flickr



Flickr; Don Loarie



Ken-ichi Ueda; Flickr



Flickr; Don Loarie



Open Interactive Map

From there, you can click “Open Interactive Map” underneath the main text box on the Taxon Page to view the collection locations for samples from that taxon.



m. Back to the main Occurrence Records Tab, we can scroll through to explore the resulting records.

NEON SCIENCE		DATA PORTAL		BIOREPOSITORY	
	<i>Peromyscus leucopus</i> (Rafinesque, 1818)				
NEON:MAMC-FE	NEON017MG	mpike@battelleecology.org	2018-08-15	United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m	
	<b>Full Record Details</b>				
	<i>Peromyscus maniculatus</i> (Wagner, 1845)				
NEON:MAMC-FE	NEON017MH	mpike@battelleecology.org	2018-08-15	United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m	
	<b>Full Record Details</b>				
	<i>Peromyscus maniculatus</i> (Wagner, 1845)				
NEON:MAMC-FE	NEON017MI	mpike@battelleecology.org	2018-08-15	United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m	
	<b>Full Record Details</b>				
	<i>Peromyscus maniculatus</i> (Wagner, 1845)				
NEON:MAMC-FE	NEON017MJ	thillman@battelleecology.org	2018-08-15	United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA_013 (plot dimensions: 90m x 90m), 39.125776 -96.640728, 329m	
	<b>Full Record Details</b>				

Clicking on the species name to go to the Taxon Page and learn more about the identified taxon, as we could from the Species List tab.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

### Mammal Collection (Fecal Samples)

---

 [Peromyscus leucopus](#) (Rafinesque, 1818)

NEON:MAMC- NEON017MG mpike@battelleecology.org 2018-08-15  
FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m  
**Full Record Details**

---

 [Peromyscus maniculatus](#) (Wagner, 1845)

NEON:MAMC- NEON017MH mpike@battelleecology.org 2018-08-15  
FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m  
**Full Record Details**

---

 [Peromyscus maniculatus](#) (Wagner, 1845)

NEON:MAMC- NEON017MI mpike@battelleecology.org 2018-08-15  
FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m  
**Full Record Details**

---

 [Peromyscus maniculatus](#) (Wagner, 1845)

NEON:MAMC- NEON017M.I thillman@battelleecology.org 2018-08-15

<https://biorepo.neonscience.org/portal/taxa/index.php?tid=79479>

Clicking on “Full Record Details” opens a pop-up window that allows us to read more about an individual sample.

## Mammal Collection (Fecal Samples)

 *Peromyscus leucopus* (Rafinesque, 1818)  
 NEON:MAMC- NEON017MG mpike@battelleecology.org 2018-08-15  
 FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m

[Full Record Details](#)

 *Peromyscus maniculatus* (Wagner, 1845)  
 NEON:MAMC- NEON017MH mpike@battelleecology.org 2018-08-15  
 FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m

[Full Record Details](#)

 *Peromyscus maniculatus* (Wagner, 1845)  
 NEON:MAMC- NEON017MI mpike@battelleecology.org 2018-08-15  
 FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m), 39.121218 -96.639897, 330m

[Full Record Details](#)

 *Peromyscus maniculatus* (Wagner, 1845)  
 NEON:MAMC- NEON017M.I thillman@battelleecology.org 2018-08-15

<https://biorepo.neonscience.org/portal/collections/list.php#>

In that pop-up window, we will see much of the available data relevant to that individual samples.

Details
Map
Comments
Linked Resources

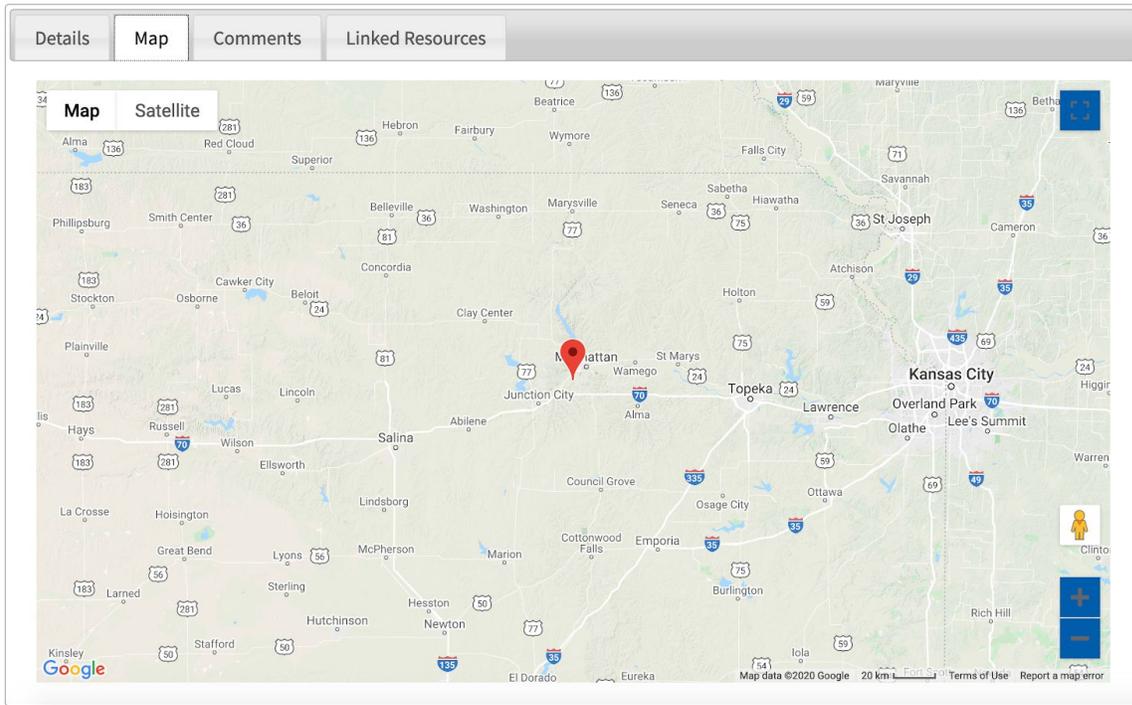
Share 0
Tweet



**Mammal Collection (Fecal Samples) (NEON:MAMC-FE)**

**Catalog #:** NEON017MG  
**Occurrence ID (GUID):** NEON017MG  
**Secondary Catalog #:** KONA.20180815.R4020.F  
**Taxon:** *Peromyscus leucopus* (Rafinesque, 1818)  
**Identification Qualifier:** cf. species  
**Family:** Cricetidae  
**Determiner:** fschroyer@battelleecology.org (2018-08-15)  
**Collector:** mpike@battelleecology.org  
**Date:** 2018-08-15  
**Verbatim Date:** 2018-8-15  
**Locality:** United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA\_016 (plot dimensions: 90m x 90m)  
 39.121218 -96.639897 +-64m. WGS84  
**Elevation:** 330 meters (1082ft)  
**Habitat:** cultivatedCrops; slope aspect: 74.72; slope gradient: 1.23; soil type order: Mollisols  
**Description:** Fecal sample collected from a small mammal  
**Reproductive Condition:** Scrotal  
**Life Stage:** adult  
**Sex:** Male  
**Preservation:** liquid nitrogen

We can elect the “Map” tab to visualize where the sample was collected.



Some samples will have other information available, such as links to publications and online datasets using the sample.

- n. Back to the main search results page, we can navigate to the “Maps” tab to map of search results.

NEON SCIENCE
DATA PORTAL
BIOREPOSITORY

Species List
Occurrence Records
Maps

### Google Map

DISPLAY COORDINATES IN GOOGLE MAP

Google Maps is a web mapping service provided by Google that features a map that users can pan (by dragging the mouse) and zoom (by using the mouse wheel). Collection points are displayed as colored markers that when clicked on, displays the full information for that collection. When multiple species are queried (separated by semi-colons), different colored markers denote each individual species.

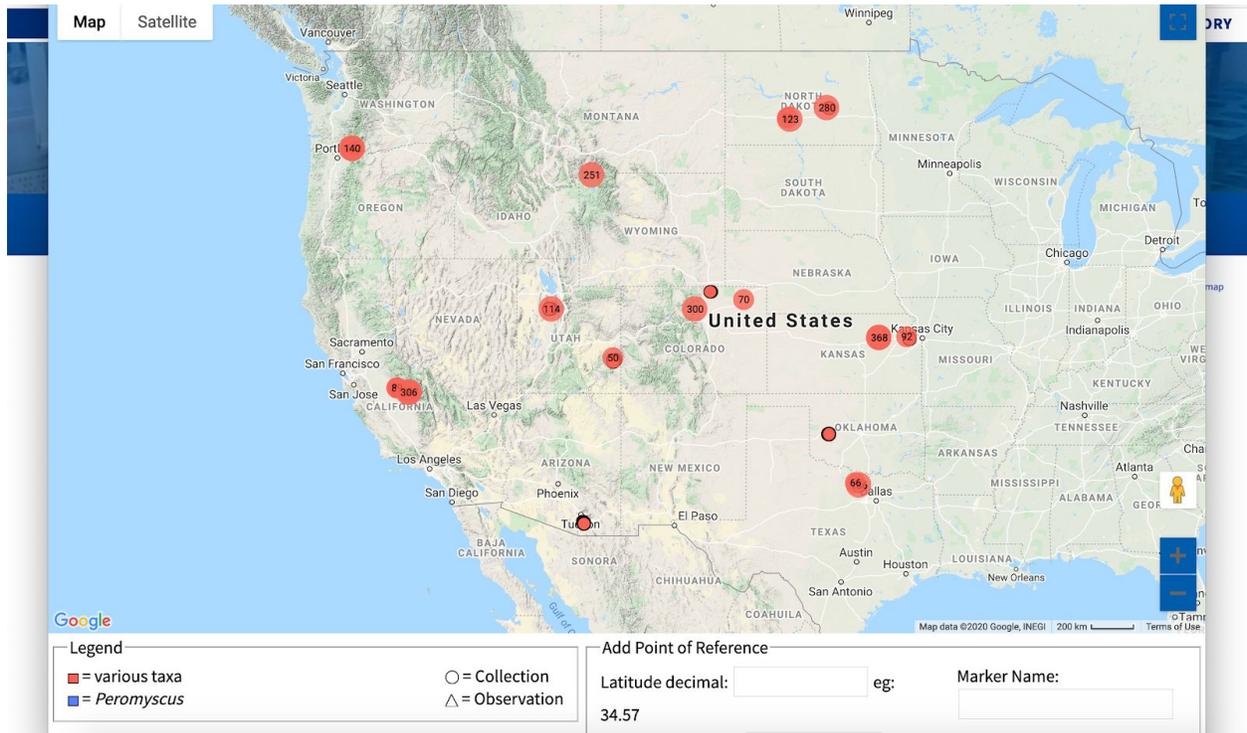
### Google Earth (KML)

This creates a KML file that can be opened in the Google Earth mapping application. Note that you must have Google Earth installed on your computer to make use of this option.

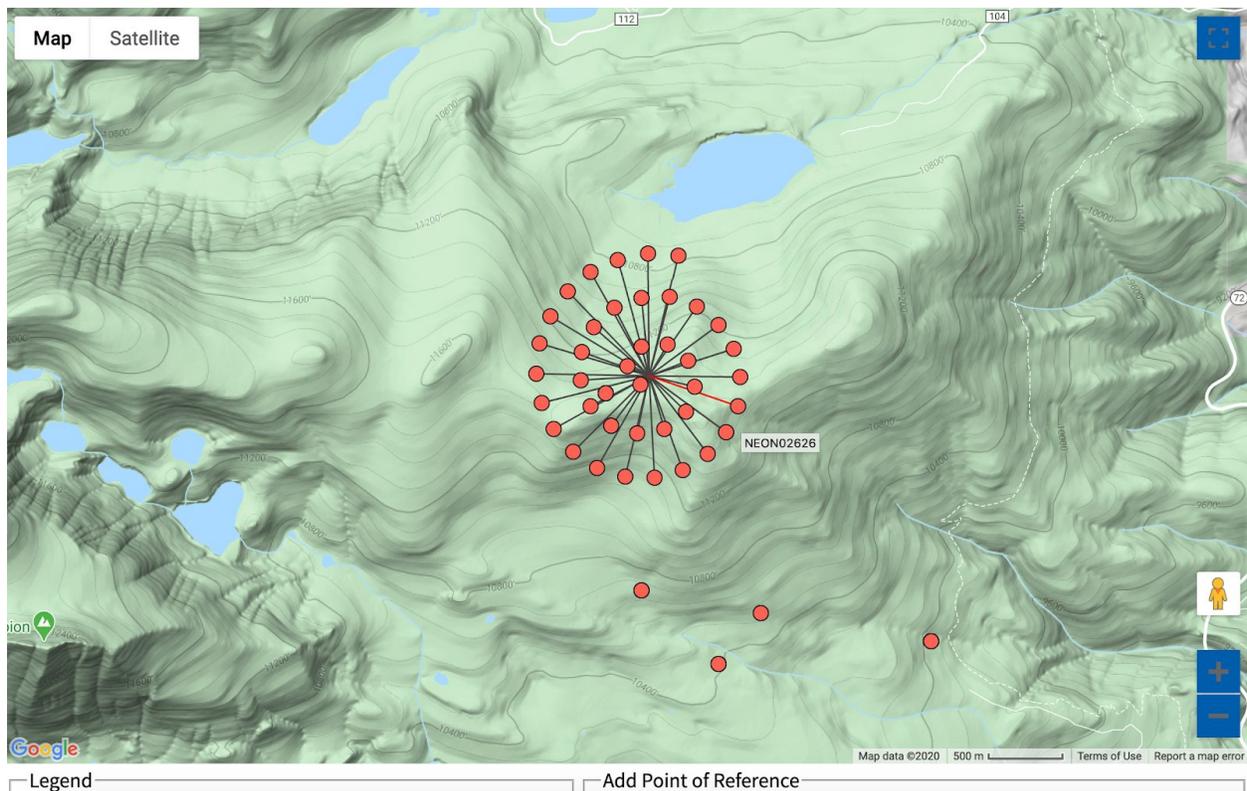
CREATE KML

Add Extra Fields

We can click “Display Coordinates in Google Map” to visualize the collection locations of the samples in a pop-up Google Maps window.



We can zoom in and click on individual markers to see the “Full Record Details” pop-up window for the corresponding sample like that we saw above from the “Occurrence Records” tab.



Back on the “Maps” tab in the search results, we can download a KML file of occurrences suitable for mapping in Google Earth.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

Species List Occurrence Records **Maps**

### Google Map

[DISPLAY COORDINATES IN GOOGLE MAP](#)

Google Maps is a web mapping service provided by Google that features a map that users can pan (by dragging the mouse) and zoom (by using the mouse wheel). Collection points are displayed as colored markers that when clicked on, displays the full information for that collection. When multiple species are queried (separated by semi-colons), different colored markers denote each individual species.

### Google Earth (KML)

This creates an KML file that can be opened in the Google Earth mapping application. Note that you must have Google Earth installed on your computer to make use of this option.

[CREATE KML](#)

Add Extra Fields

Note that you can click “Add Extra Fields” to select additional Symbiota fields to include in the KML download.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

and zoom (by using the mouse wheel). Collection points are displayed as colored markers that when clicked on, displays the full information for that collection. When multiple species are queried (separated by semi-colons), different colored markers denote each individual species.

### Google Earth (KML)

This creates an KML file that can be opened in the Google Earth mapping application. Note that you must have Google Earth installed on your computer to make use of this option.

[CREATE KML](#)

Add Extra Fields

occurrenceid  identifiedby  dateidentified  identificationreferences  identificationremarks  taxonremarks  
 recordedby  recordnumber  associatedcollectors  eventdate  year  month  day  verbatimeventdate  
 habitat  substrate  occurrenceremarks  associatedtaxa  verbatimattributes  reproductivecondition  
 cultivationstatus  establishmentmeans  lifestage  sex  individualcount  samplingprotocol  preparations  
 country  stateprovince  county  municipality  locality  locationremarks  coordinateuncertaintyinmeters  
 verbatimcoordinates  georeferencedby  georeferenceprotocol  georeferencesources  
 georeferenceverificationstatus  georeferenceremarks  minimelevationinmeters  maximelevationinmeters  
 verbatimelevation

## 4. Conduct a Map Search

We can use the “Map Search” feature of the NEON Biorepository data portal to visualize and download available NEON samples based on collection, taxon, location, and more. To do so we will:

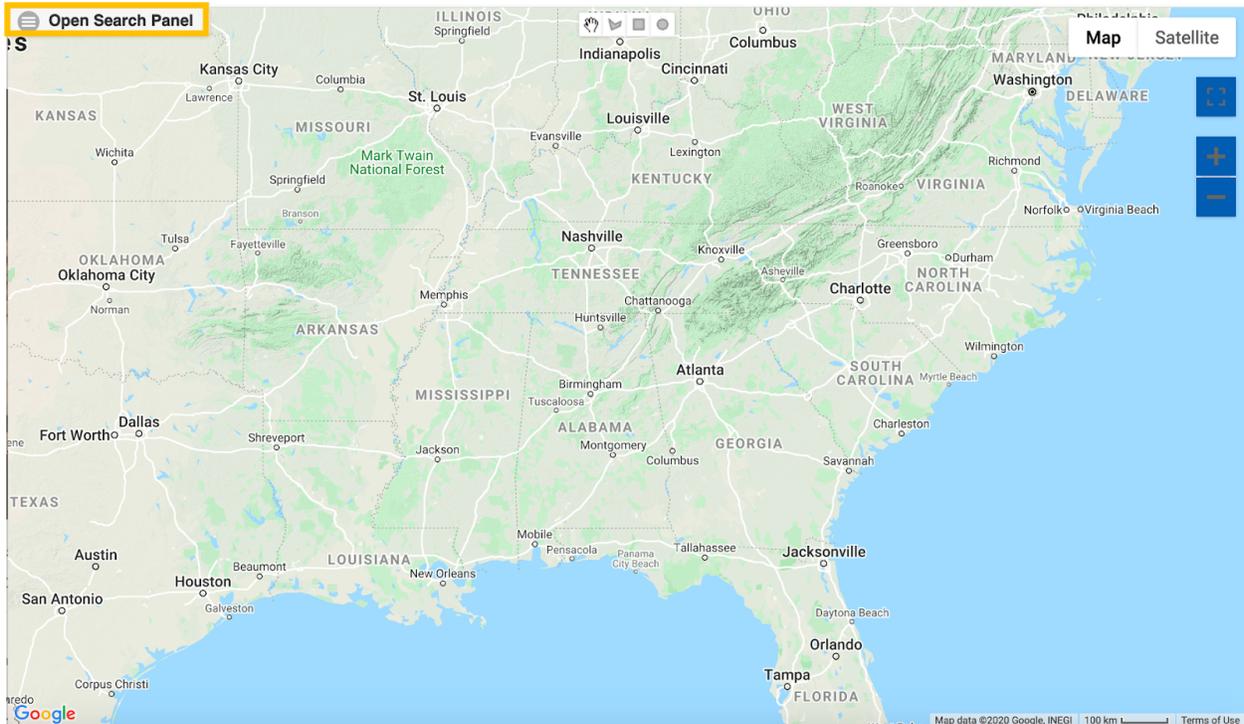
- a. We navigate to “[Map Search](#)” under “Search” in the main menu. This opens a new Google Maps tab.



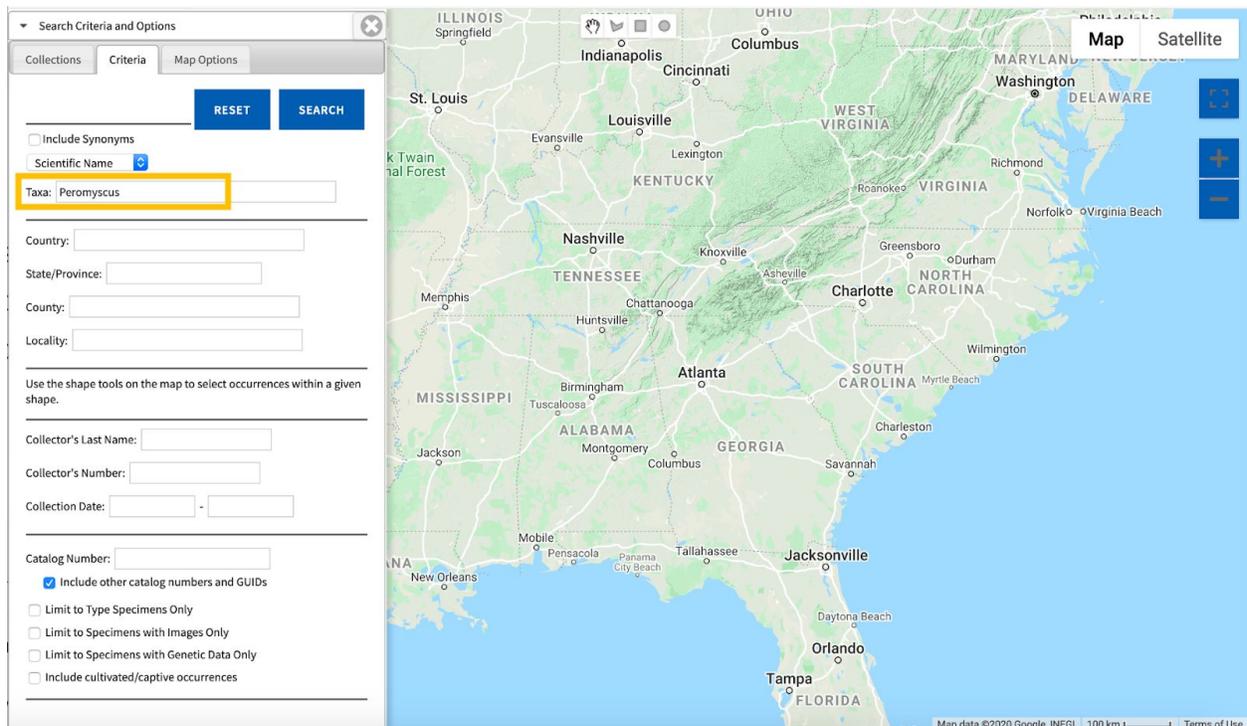
Discover and access sample-based data



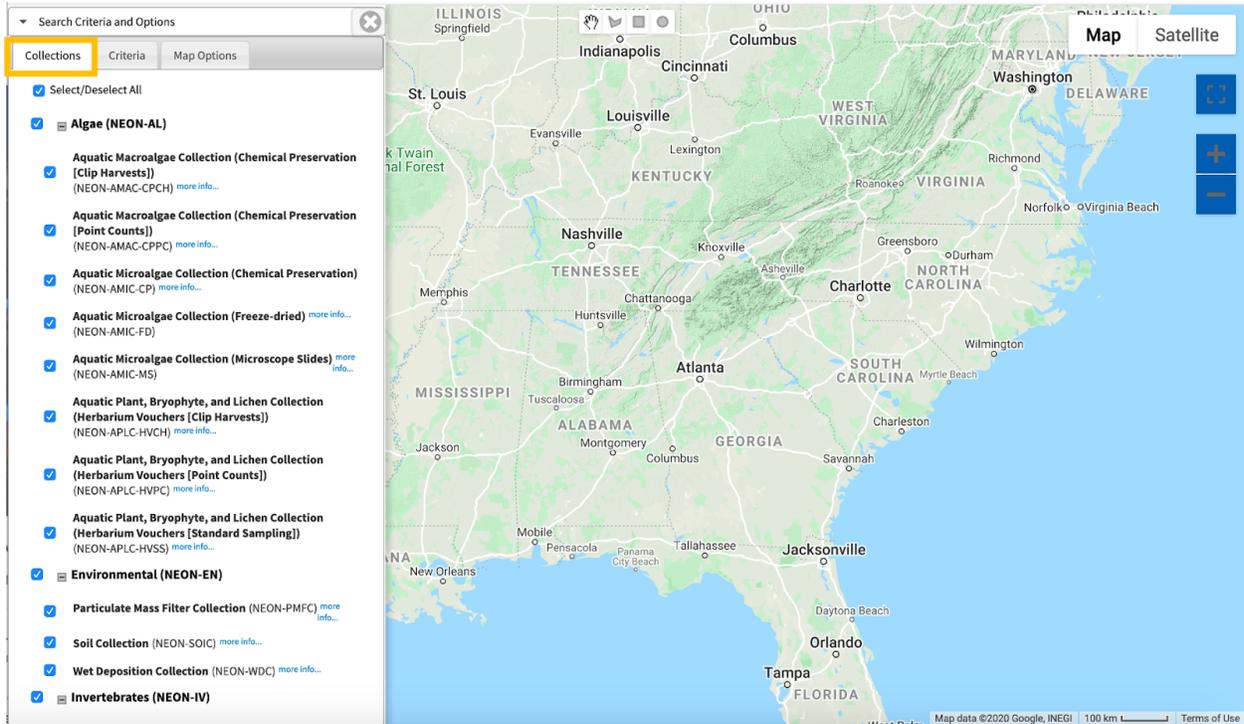
- b. We can click “Open Search Panel” in the upper left hand corner to expand a panel to input search terms.



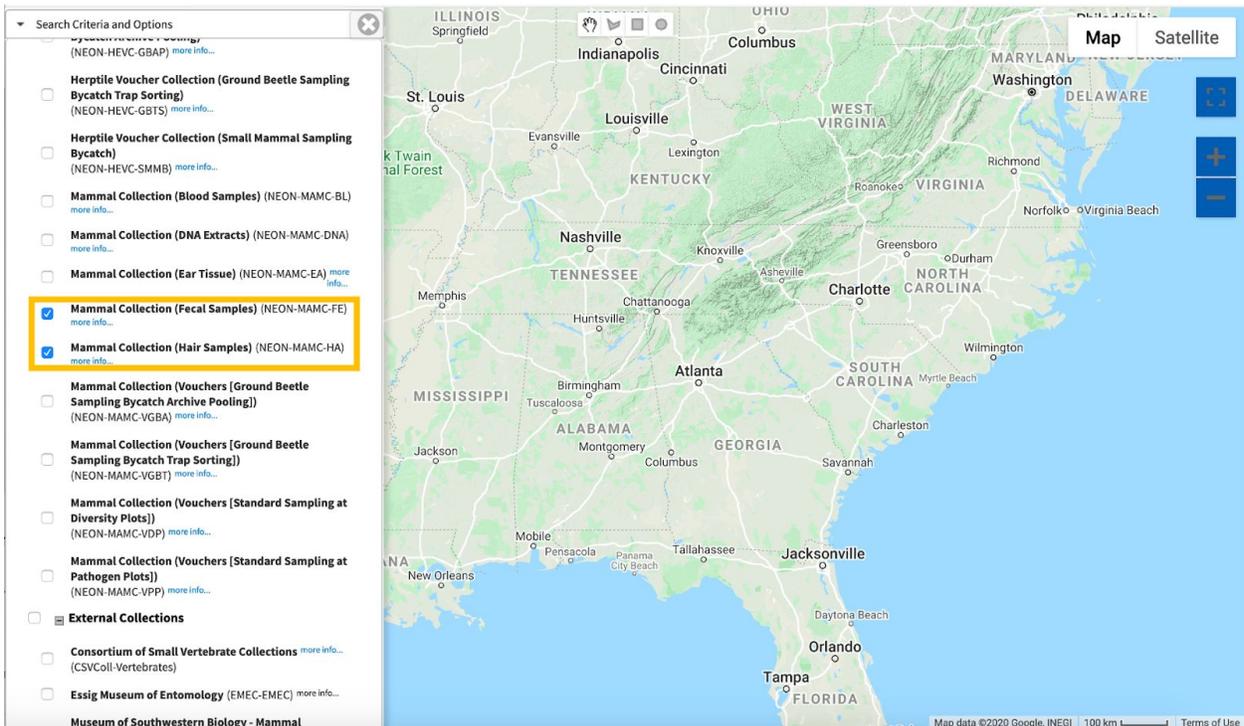
- c. In the now visible search panel, entering search criteria is done in the same way as in the “Sample Search” described above. We will again search for *Peromyscus*.



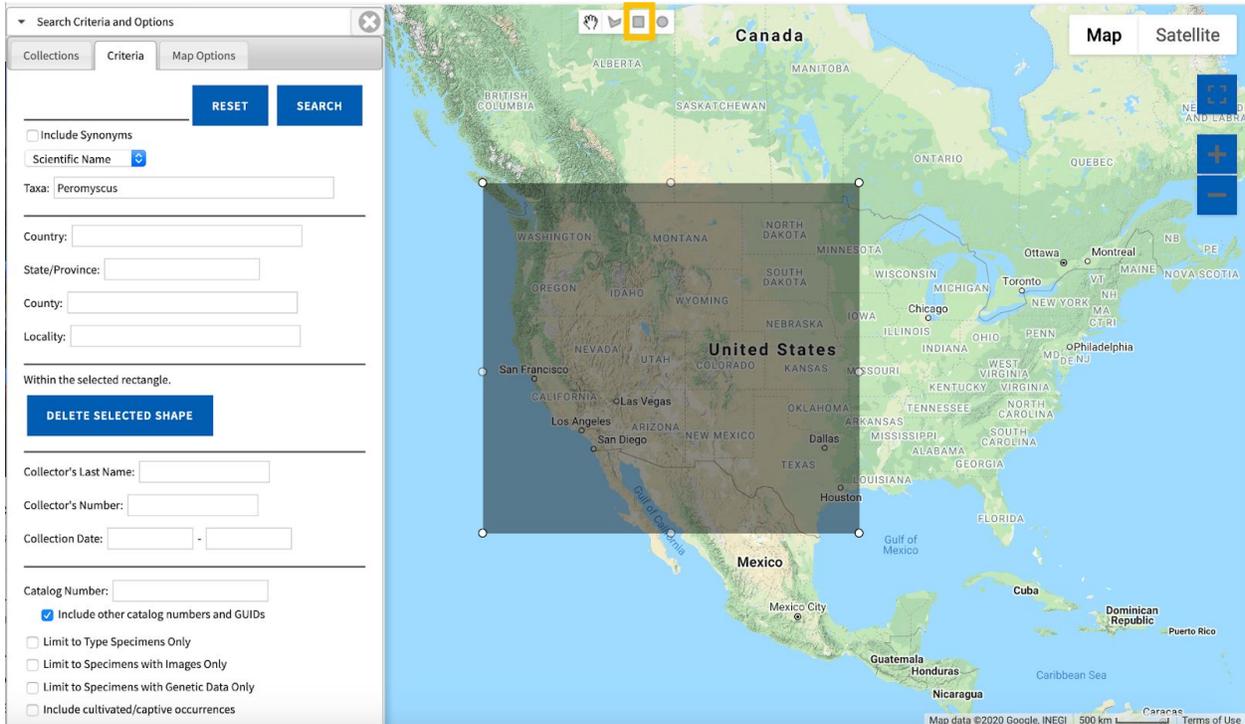
- d. Then, we then click the “Collections” tab to select the collections of interest.



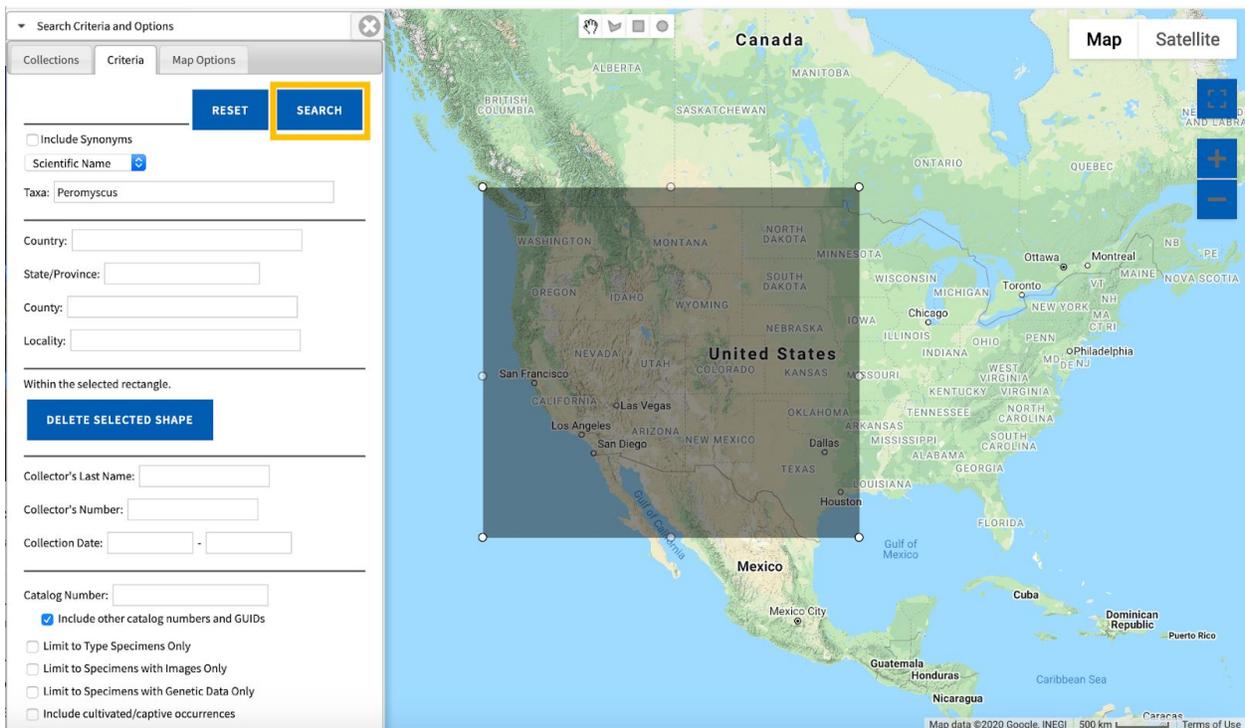
We will again focus only on the mammal fecal and hair samples.



e. We can use the map area selection tools at the center top area of the screen. We will again focus on the western half of the continental US.



f. We click “Search” in the “Criteria” tab of the search panel to see the collection locations for the samples.



g. When the results appear, we will open the search panel again to see the records and taxa. To color the points by taxa, we switch to the “Taxa List” tab.

Search Criteria and Options

Records and Taxa

Records Collections **Taxa List**

1 2 3 4 5 6 7 8 9 10 11 >> Last  
Page 1, records 1-100 of 3379

Catalog #	Collector	Date	Scientific Name
	Not available	2018-03-22	Peromyscus
NEON026 67	vguerrero@battelleecology.org	2018-03-22	Peromyscus
NEON018 VU	mesquibel@battelleecology.org	2018-06-14	Peromyscus
NEON019 HY	0000-0002-6721-6581	2019-04-03	Peromyscus
	Not available	2018-06-12	Peromyscus attwateri
	Not available	2018-06-12	Peromyscus attwateri
	Not available	2018-06-12	Peromyscus attwateri
NEON026 55	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON026 5A	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON026 5D	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON019 JQ	akantola@battelleecology.org	2018-05-22	Peromyscus boylii

h. We select “Auto Color” to color the points by taxon. There we also see a list of taxa. Each name links to the Taxon Page like those described in the above section on the “Sample Search” feature.

Search Criteria and Options

Records and Taxa

Records Collections Taxa List

RESET SYMBOLOGY

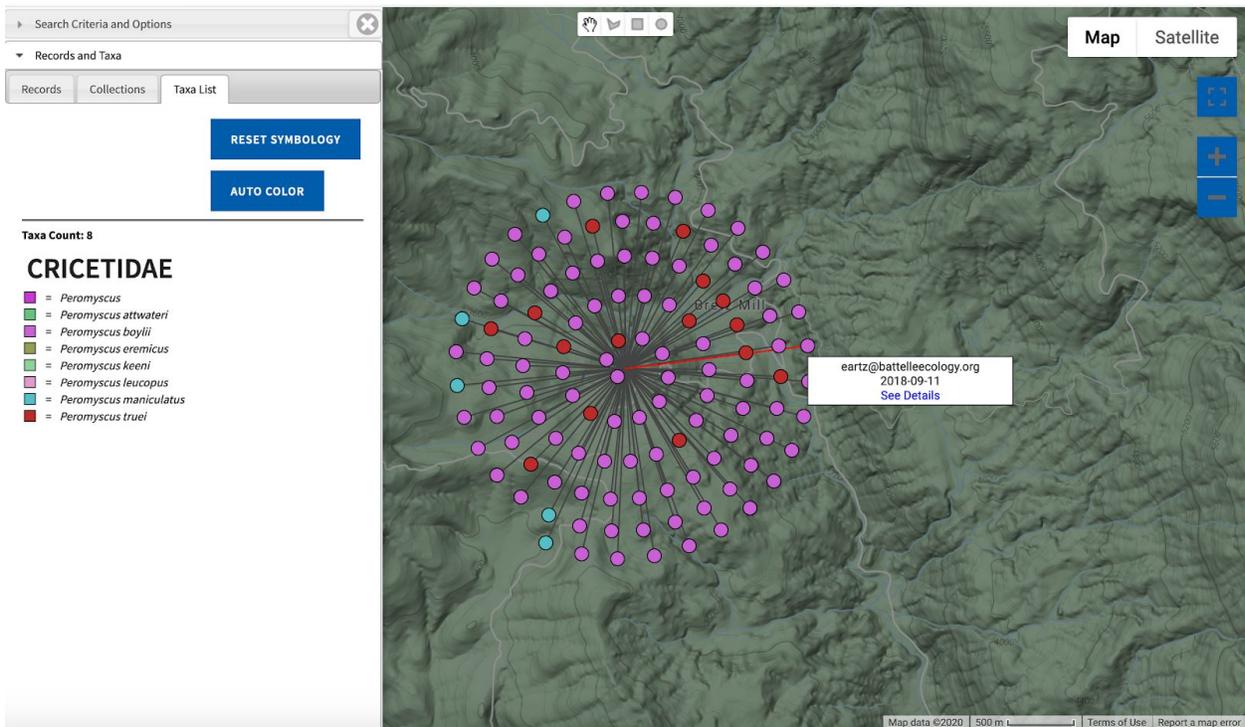
**AUTO COLOR**

Taxa Count: 8

**CRICETIDAE**

- = *Peromyscus*
- = *Peromyscus attwateri*
- = *Peromyscus boylii*
- = *Peromyscus eremicus*
- = *Peromyscus keeni*
- = *Peromyscus leucopus*
- = *Peromyscus maniculatus*
- = *Peromyscus truei*

- i. As when the results of the “Sample Search” feature are mapped, we can zoom and select individual record. Clicking on “See Details” will bring us to the “Full Record Details” page.



- j. We can return to the “Records and Taxa” tab to download the Symbiota or Darwin Core records resulting from the search (download button), download the KML file (KML download button), and copy a link to the search results to the clipboard (link button).

Search Criteria and Options

Records and Taxa

Records Collections Taxa List

Download KML Share

1 2 3 4 5 6 7 8 9 10 11 >> Last  
Page 1, records 1-100 of 3379

Catalog #	Collector	Date	Scientific Name
	Not available	2018-03-22	Peromyscus
NEON02667	vguerrero@battelleecology.org	2018-03-22	Peromyscus
NEON018VU	mesquibel@battelleecology.org	2018-06-14	Peromyscus
NEON019HY	0000-0002-6721-6581	2019-04-03	Peromyscus
	Not available	2018-06-12	Peromyscus attwateri
	Not available	2018-06-12	Peromyscus attwateri
	Not available	2018-06-12	Peromyscus attwateri
NEON02655	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON0265A	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON0265D	vguerrero@battelleecology.org	2018-06-12	Peromyscus attwateri
NEON019JQ	akantola@battelleecology.org	2018-05-22	Peromyscus boylii

