

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.



NEON Updates

We're
Hired.

Observatory Status

All activities across NEON that involve in-person or on-

UPCOMING EVENTS

MAY
08
2020

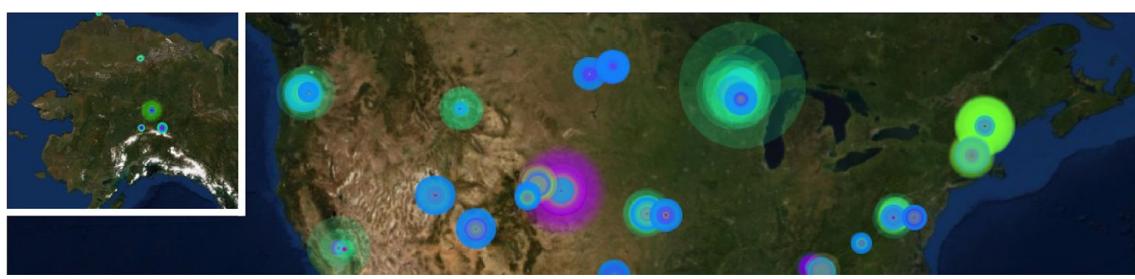
DEADLINE
2020 NEON Postdoctoral
Program | Application Deadline
MAY 08, 2020

2. View the homepage

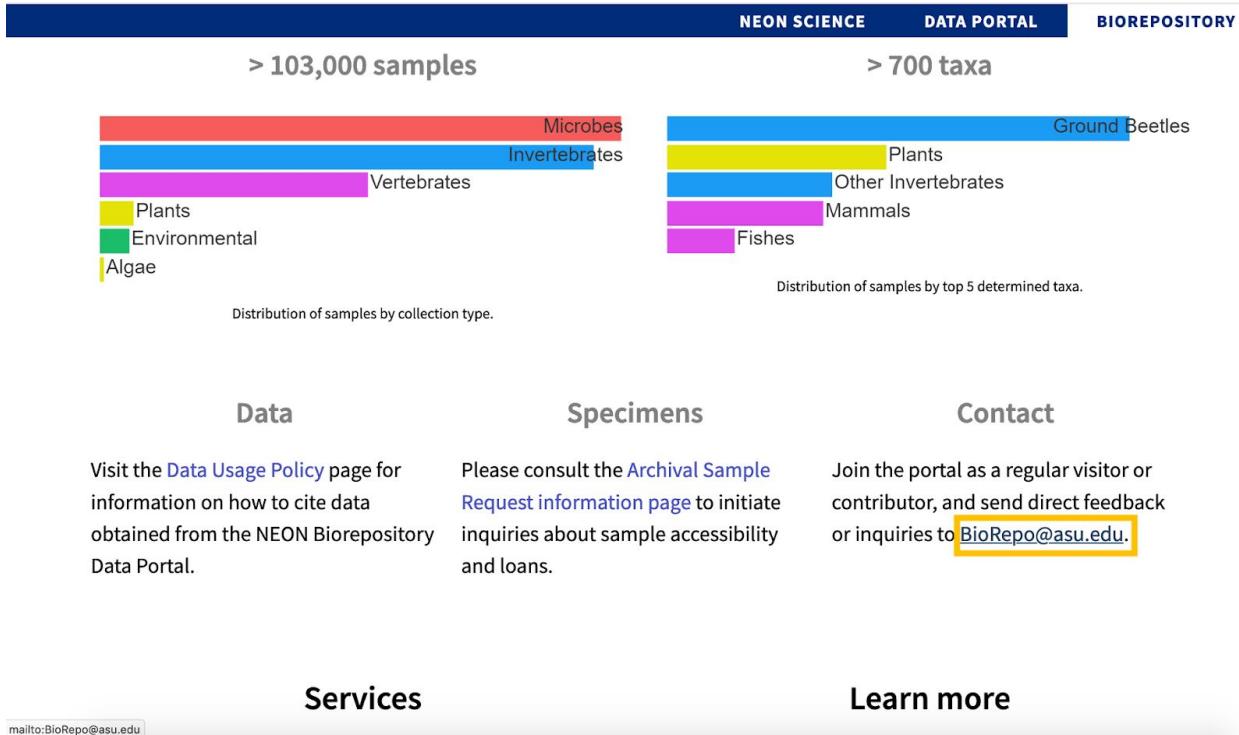
On the NEON Biorepository data portal homepage, you can view periodically updated summary statistics for our collections and find links to more information about NEON and the NEON Biorepository.



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 with any inquiries.



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:

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

NEON SCIENCE DATA PORTAL BIOREPOSITORY

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

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](#).

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. The BIOREPOSITORY tab is active. Below the tabs, there is a search bar and a sidebar with three blue circular icons labeled 'neon' and a 'BIOREPOSITORY' link. The main content area is divided into two sections: 'NEON Mammal Collection Vouchers' and 'External Collections'. Under 'NEON Mammal Collection Vouchers', three checkboxes are checked, each corresponding to a different sampling method: 'Mammal Collection (Vouchers [Ground Beetle Sampling Bycatch Trap Sorting]) (NEON-MAMC-VGBT)', 'Mammal Collection (Vouchers [Standard Sampling at Diversity Plots]) (NEON-MAMC-VDP)', and 'Mammal Collection (Vouchers [Standard Sampling at Pathogen Plots]) (NEON-MAMC-VPP)'. Under 'External Collections', one checkbox is unchecked, and it lists five external collections: 'Consortium of Small Vertebrate Collections (CSVColl-Vertebrates)', 'Essig Museum of Entomology (EMEC-EMEC)', 'Museum of Southwestern Biology - Mammal specimens (MSB-MAMM)', 'SCAN Portal Network Arthropod Specimens (SCAN)', and 'SEINet Portal Network Botanical Specimens (SEINet-Plants)'. A yellow box highlights the 'External Collections' section.



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.



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

NEON SCIENCE DATA PORTAL BIOREPOSITORY

neon Operated by Battelle BIOREPOSITORY DATA PORTAL

SEARCH IMAGES CHECKLISTS SAMPLE USE ADDITIONAL INFORMATION

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](#).

Specimens

Select/Deselect All

Algae (NEON-AL)

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

SEARCH >

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 \(Ground Beetle Sampling Bycatch Trap Sorting\) \(NEON-HEVC-GBT\)](#) 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

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

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)

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-a23972cabae

Digital Metadata: [EML File](#)

Usage Rights: [CCO 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-a23972cabae
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.



- 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

Powered by Vertabase [Connections of Small Vertebrate Collections \(CSVC\) \(Vertabase\)](#) [more info...](#)

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

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](#).

The screenshot shows a search interface for 'Specimens'. At the top left is a 'Select/Deselect All' checkbox. Below it is a section titled 'Algae (NEON-AL)' which contains eight items, each with a small blue circular icon and a checkbox. The items are: 'Aquatic Macroalgae Collection (Chemical Preservation [Clip Harvests]) (NEON-AMAC-CPCH)', 'Aquatic Macroalgae Collection (Chemical Preservation [Point Counts]) (NEON-AMAC-CPPC)', 'Aquatic Microalgae Collection (Chemical Preservation) (NEON-AMIC-CP)', 'Aquatic Microalgae Collection (Freeze-dried) (NEON-AMIC-FD)', 'Aquatic Microalgae Collection (Microscope Slides) (NEON-AMIC-MS)', 'Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Clip Harvests]) (NEON-APLC-HVCH)', 'Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Point Counts]) (NEON-APLC-HVPC)', and 'Aquatic Plant, Bryophyte, and Lichen Collection (Herbarium Vouchers [Standard Sampling]) (NEON-APLC-HVSS)'. To the right of the list is a large blue button labeled 'SEARCH >'. A yellow rectangular box surrounds this button.

- 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.

The screenshot shows the 'BIOREPOSITORY DATA PORTAL' search interface. At the top is a banner with the NSF logo and the text 'BIOREPOSITORY DATA PORTAL'. Below the banner is a blue navigation bar with links for 'SEARCH', 'IMAGES', 'CHECKLISTS', 'SAMPLE USE', and 'ADDITIONAL INFORMATION'. The main content area has sections for 'Taxonomic Criteria' and 'Locality Criteria'. In the 'Taxonomic Criteria' section, there is a checked checkbox for 'Include Synonyms' and a 'Scientific Name' input field. To the right of these fields are three blue buttons: 'LIST DISPLAY', 'TABLE DISPLAY', and 'RESET FORM'. In the 'Locality Criteria' section, there are four input fields for 'Country', 'State/Province', 'County', and 'Locality'. At the bottom of the page, there is a link to 'Some commonly used criteria are explained below.'

The screenshot shows the 'BIOREPOSITORY DATA PORTAL' search interface. It features two main sections: 'Taxonomic Criteria' and 'Locality Criteria'. In the 'Taxonomic Criteria' section, there is a checked checkbox for 'Include Synonyms' and a 'Scientific Name' input field. To the right of these fields are three blue buttons: 'LIST DISPLAY', 'TABLE DISPLAY', and 'RESET FORM'. In the 'Locality Criteria' section, there are four input fields for 'Country', 'State/Province', 'County', and 'Locality'. At the bottom of the page, there is a link to 'Some commonly used criteria are explained below.'

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	<input type="text" value="Peromyscu"/> <input type="text" value="Peromyscus"/>
Locality Criteria	
Country:	Peromyscus attwateri Peromyscus boylii
State/Province:	Peromyscus californicus
County:	Peromyscus crinitus Peromyscus eremicus
Locality:	Peromyscus fraterculus Peromyscus gossypinus Peromyscus gossypinus allapaticola

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 Peromyscus**LIST DISPLAY****TABLE DISPLAY****RESET FORM****Locality Criteria**Country: State/Province: County: Locality: Elevation (in meters): to **Latitude and Longitude****Bounding box**Northern Latitude: Southern Latitude: Western Longitude: Eastern Longitude: **Polygon (WKT footprint)****Point-Radius**Latitude: Longitude: 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: 49.151652

Southern Latitude: 23.421079

Western Longitude: 126.209961

Eastern Longitude: 93.646484

**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**

- 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: 126.209961 w ↴ Radius: [] Kilometers ↴

Eastern Longitude: 93.646484 w ↴

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

LIST DISPLAY
TABLE DISPLAY



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.



- 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.

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:

- 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.

NEON SCIENCE DATA PORTAL BIOREPOSITORY

NSF | neon Operated by Battelle BIOREPOSITORY DATA PORTAL

SEARCH IMAGES CHECKLISTS SAMPLE USE ADDITIONAL INFORMATION MANAGEMENT TOOLS

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

Welcome Kelsey! My Profile Logout Sitemap

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** Login | New Account | Sitemap

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

1234567891011 >> Last Page 1, records 1-100 of 3379

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

- 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** Login | New Account | Sitemap

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

1234567891011 >> Last Page 1, records 1-100 of 3379

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

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.

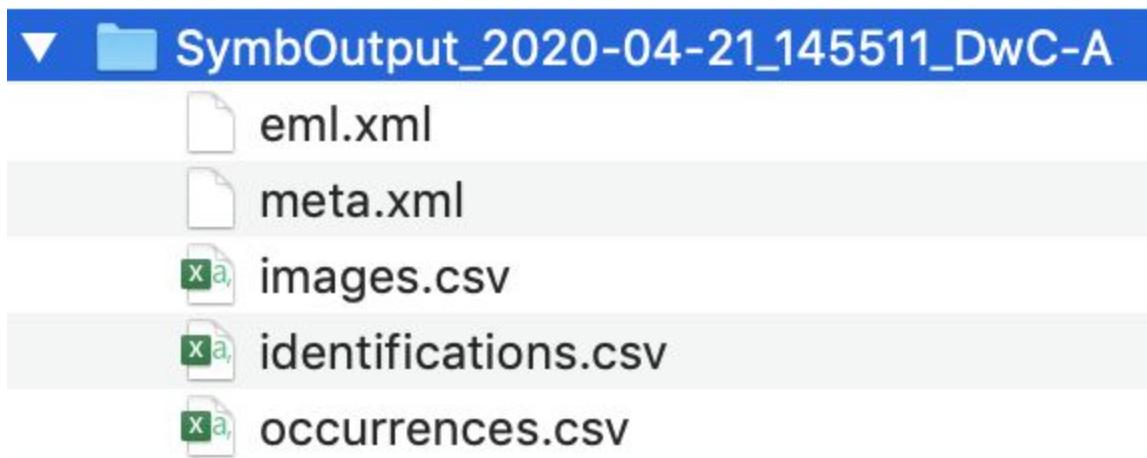
The screenshot shows a web browser window with the URL <https://biorepo.neonscience.org/portal/collections/download/index.php>. The title bar says "Collections Search Download". The main content area has a heading "Data Usage Guidelines" followed by a paragraph about data usage terms. Below this is a form titled "Download Specimen Records" with the following settings:

- Structure:** Symbiota Native ⓘ
 Darwin Core ⓘ
*What is Darwin Core?
- Data Extensions:** include Determination History
 include Image Records
*Output must be a compressed archive
- File Format:** Comma Delimited (CSV)
 Tab Delimited
- Character Set:** ISO-8859-1 (western)
 UTF-8 (unicode)
- Compression:** Compressed ZIP file

A blue "DOWNLOAD DATA" button is at the bottom of the form.

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.



- I. 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
- Encyclopædia of Life
- Google Images
- Google Search Engine
- NCBI - National Center for Biotechnology Information

Ken-ichi Ueda; Flickr

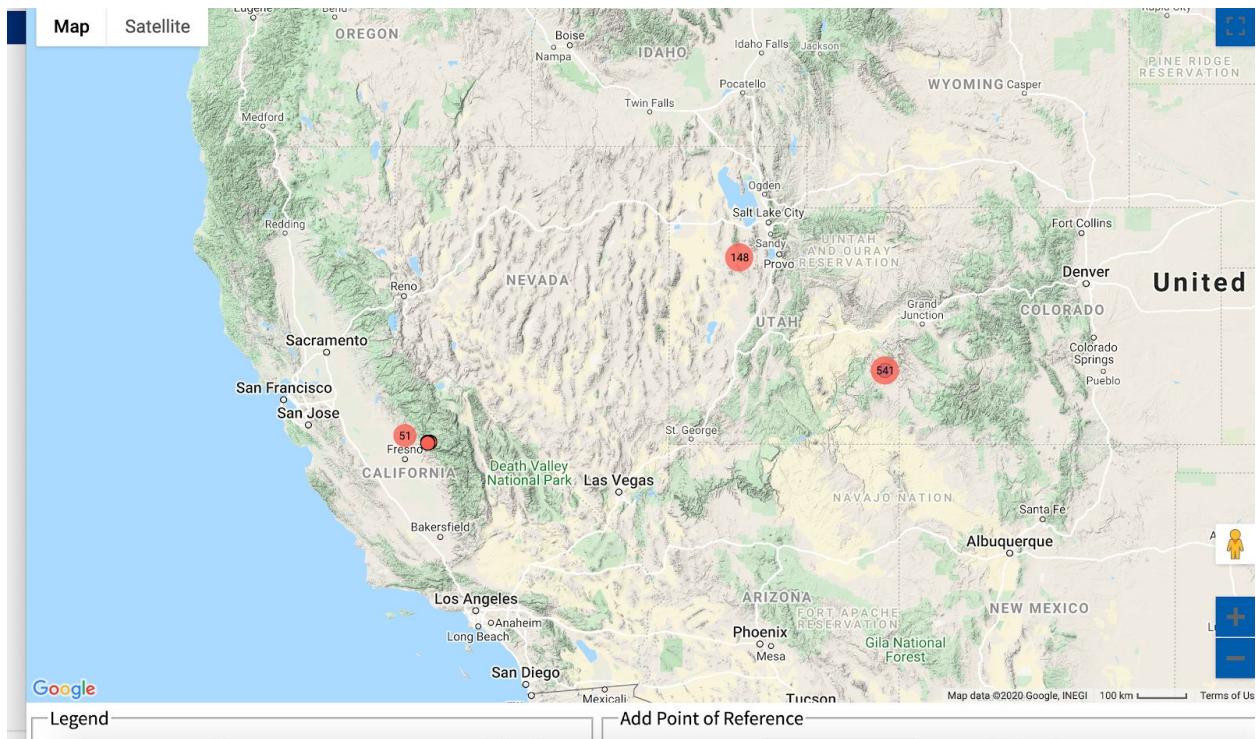
Flickr; Don Loarie

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**

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- NEON017MJ thillman@battelleecology.org 2018-08-15
FE United States, Kansas, Riley, Konza Prairie Biological Station - Relocatable, Plot KONA_013 (plot dimensions: 90m x 90m), 39.125776 -96.640728, 329m
Full Record Details

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.

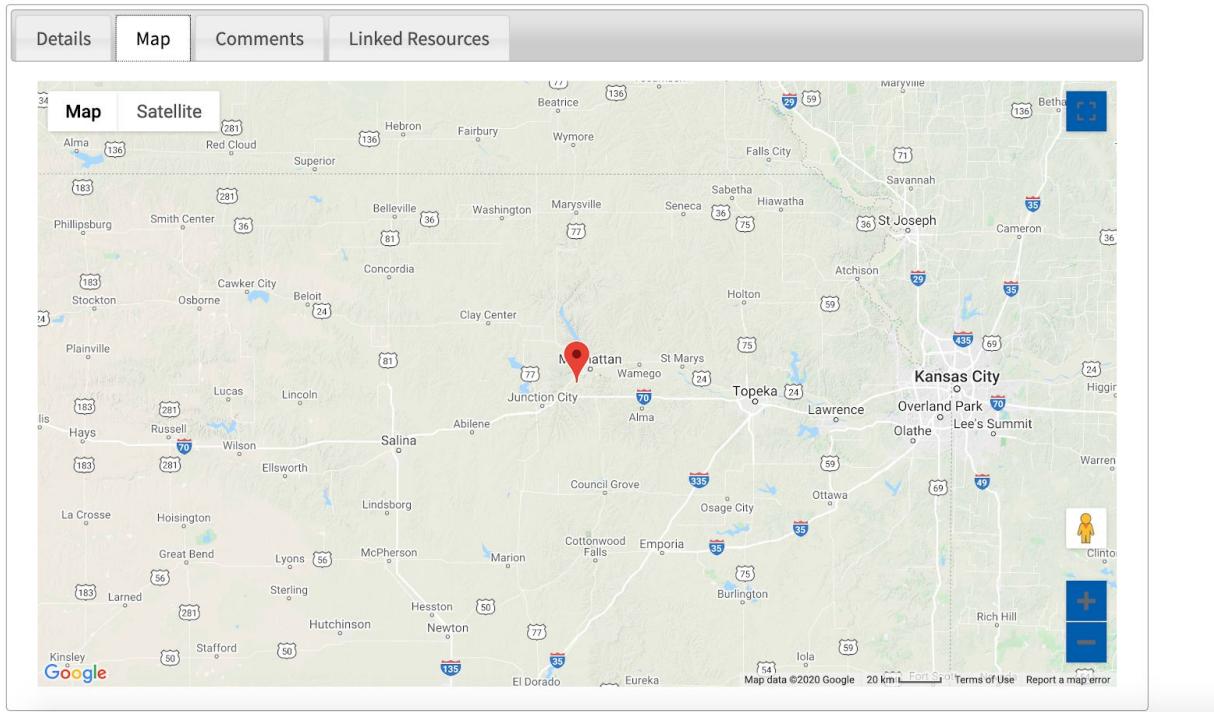
Details Map Comments Linked Resources

[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.

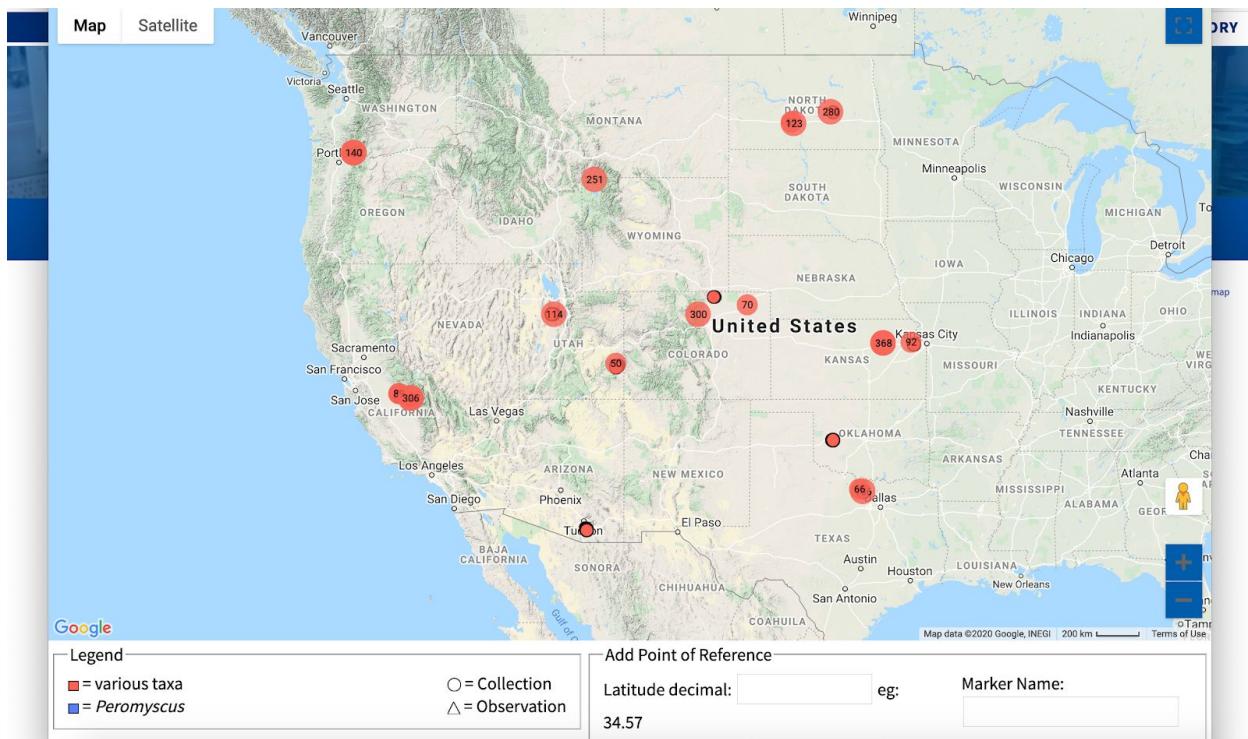
Google Earth (KML)

This creates 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.

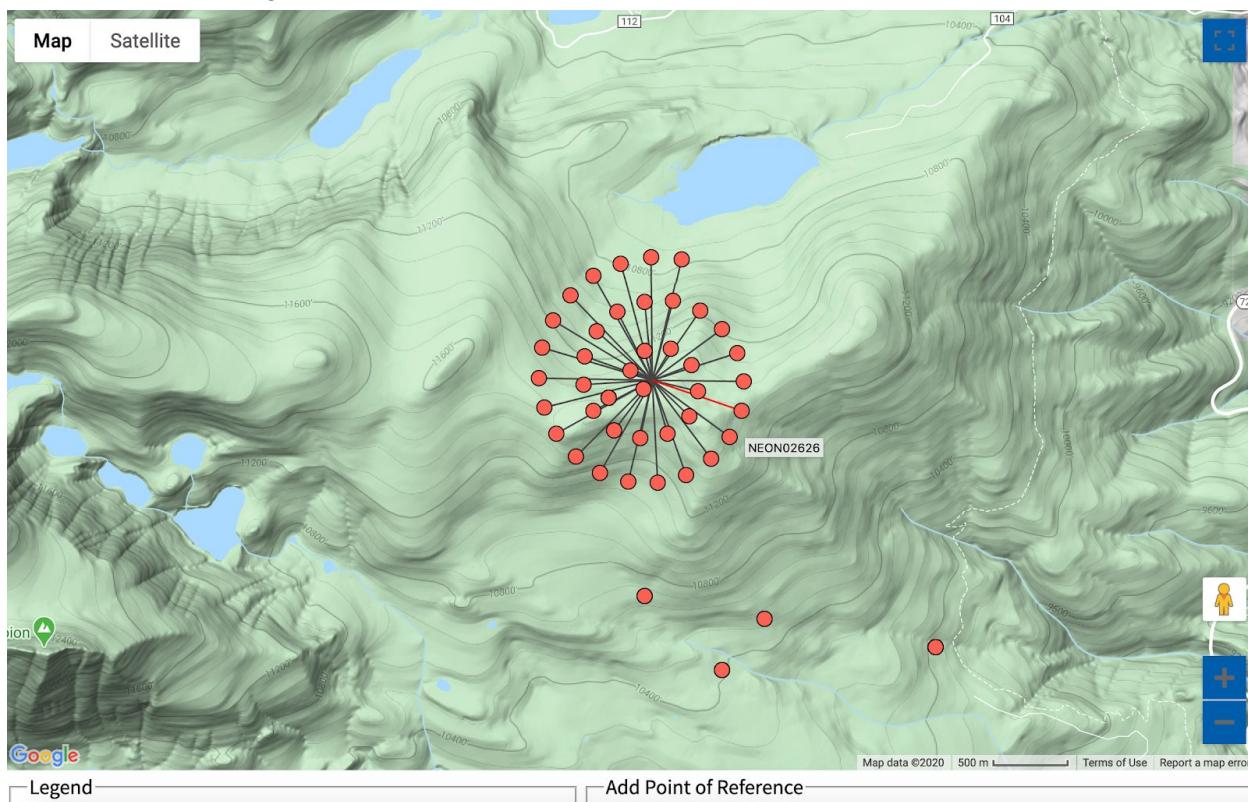
[CREATE KML](#)

Add Extra Fields

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.

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

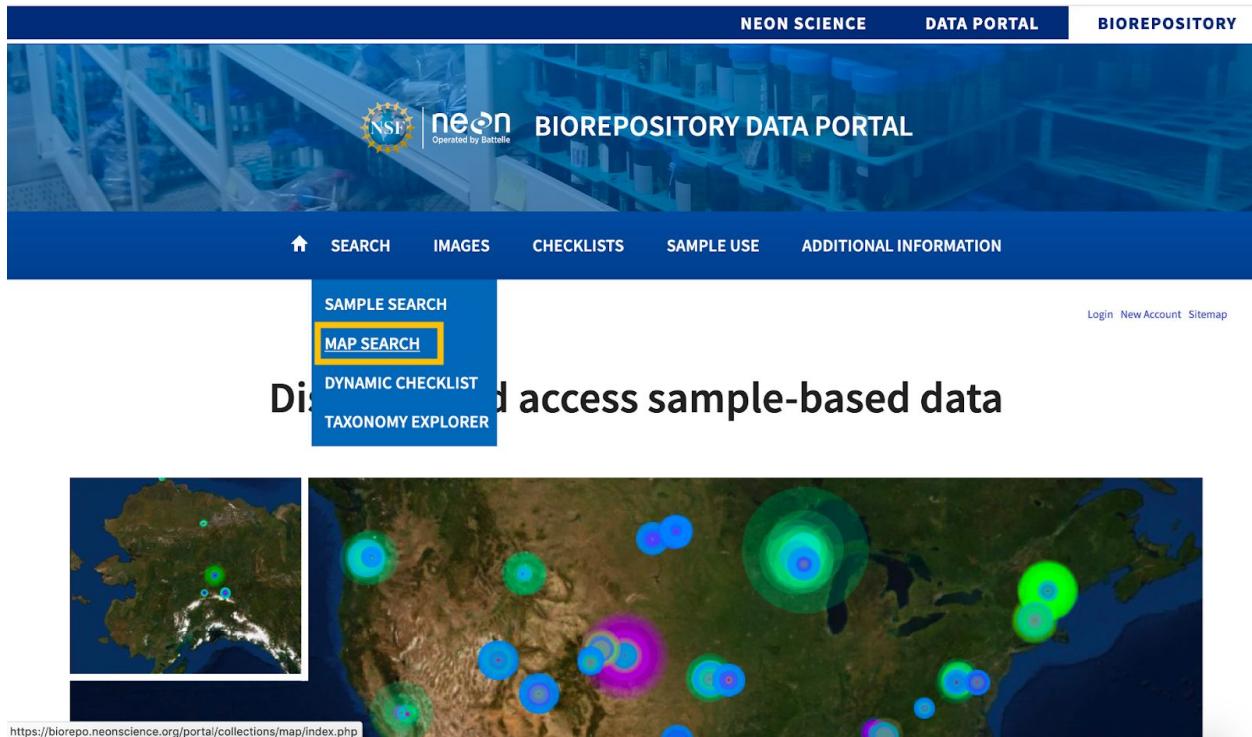
Add Extra Fields

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 minimumelevationinmeters maximumelevationinmeters
 verbatimelevation

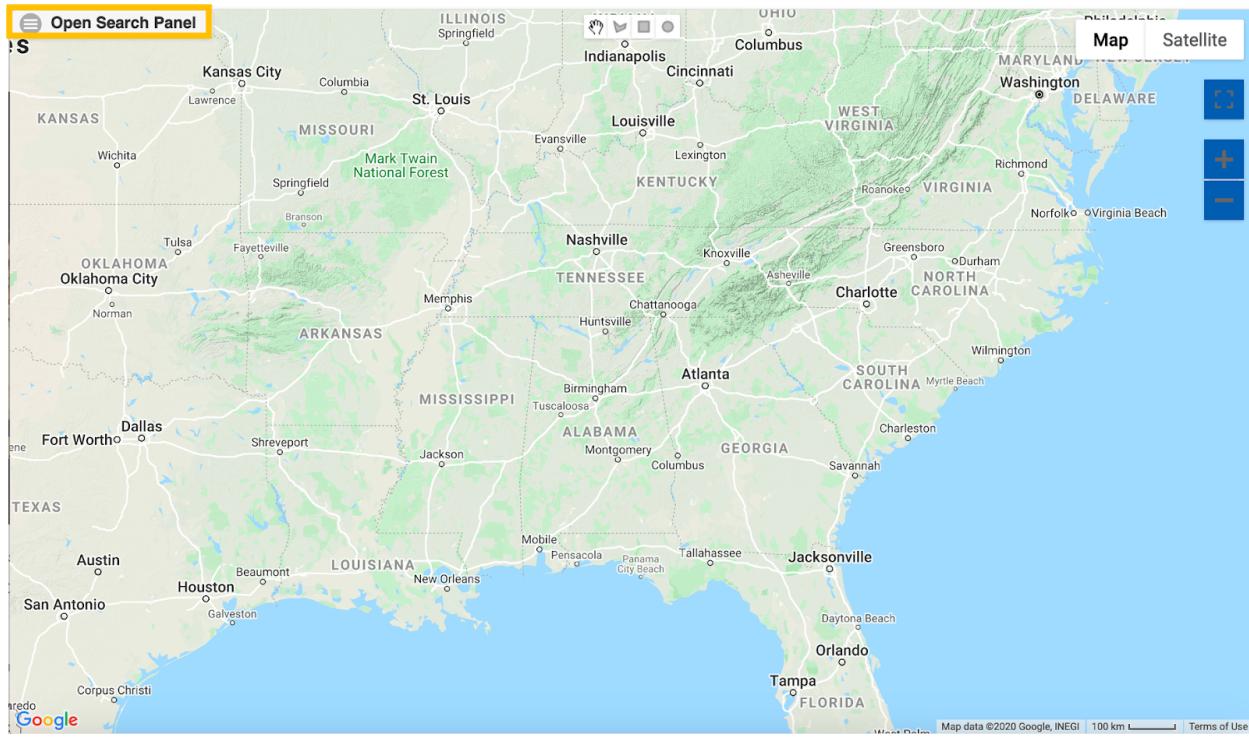
4. Conduct a Map Search

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.



- 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.

Search Criteria and Options

Collections **Criteria** **Map Options**

Select/Deselect All

Algae (NEON-AL)

- Aquatic Macroalgae Collection (Chemical Preservation [Clip Harvests]) (NEON-AMAC-CPPC) [more info...](#)
- Aquatic Macroalgae Collection (Chemical Preservation [Point Counts]) (NEON-AMAC-CPPC) [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-EN)**

 - Particulate Mass Filter Collection (NEON-PMFC) [more info...](#)
 - Soil Collection (NEON-SOIC) [more info...](#)
 - Wet Deposition Collection (NEON-WDC) [more info...](#)

- Invertebrates (NEON-IV)**

Map data ©2020 Google, INEGI | 100 km | Terms of Use

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

Search Criteria and Options

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 Trap Sorting]) (NEON-MAMC-VGBT) [more info...](#)

Mammal 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

- Consortium of Small Vertebrate Collections [more info...](#) (CSVColl-Vertebrates)
- Essig Museum of Entomology (EMEC-EMEC) [more info...](#)

Museum of Southwestern Biology - Mammal

Map data ©2020 Google, INEGI | 100 km | Terms of Use

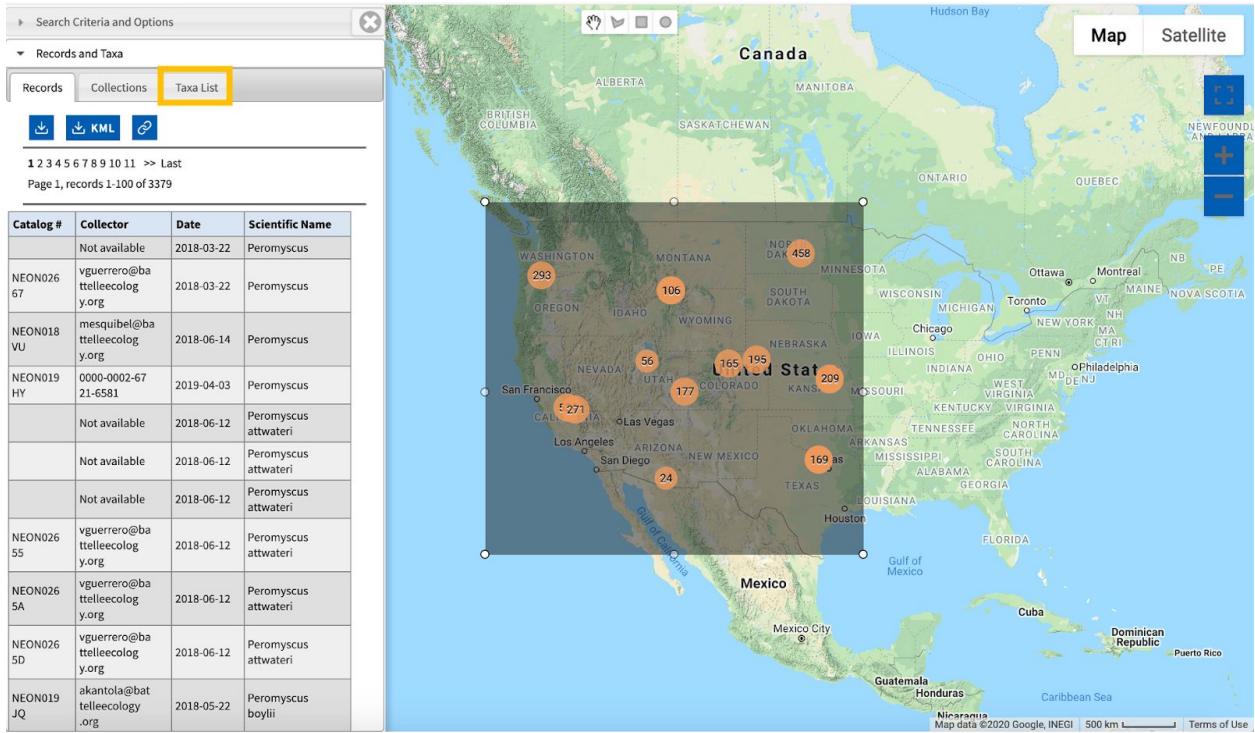
- e. We can use the map area selection tools at the center top area of the screen. We will again focus on the western half of the continental US.

The screenshot shows the iNaturalist search interface. On the left, a search criteria panel contains fields for 'Scientific Name' (set to 'Peromyscus'), 'Country', 'State/Province', 'County', and 'Locality'. Below these are fields for 'Collector's Last Name', 'Collector's Number', 'Collection Date', and 'Catalog Number'. There are also several search filters: 'Include Synonyms' (unchecked), 'Include other catalog numbers and GUIDs' (checked), and options for 'Limit to Type Specimens Only', 'Limit to Specimens with Images Only', 'Limit to Specimens with Genetic Data Only', and 'Include cultivated/captive occurrences'. At the bottom of the panel are 'RESET' and 'SEARCH' buttons, with 'SEARCH' highlighted in yellow. On the right is a map of North America with a rectangle drawn over the United States. The map includes labels for countries and states/provinces. A legend at the top right indicates 'Map' and 'Satellite' view options.

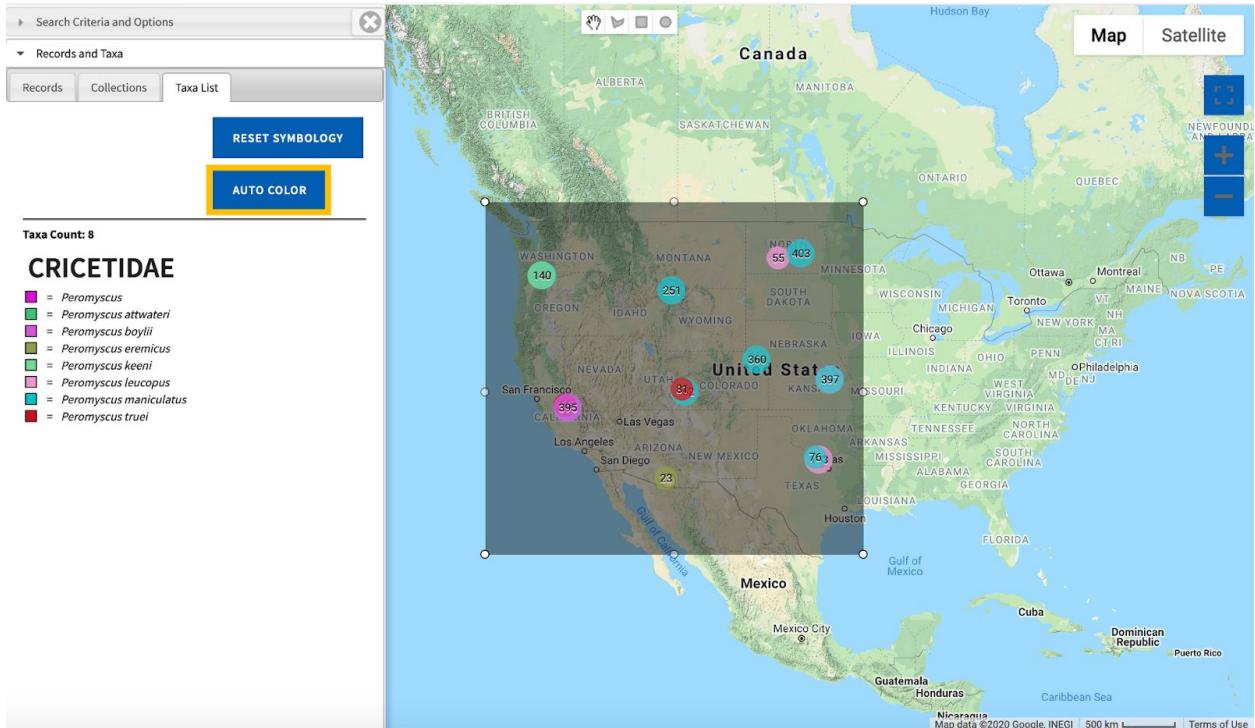
f. We click “Search” in the “Criteria” tab of the search panel to see the collection locations for the samples.

This screenshot shows the results of the search. The map on the right is now populated with numerous small red dots, each representing a collection location for the species 'Peromyscus' within the specified area. The search criteria panel on the left remains the same as in the previous screenshot, with the 'SEARCH' button highlighted.

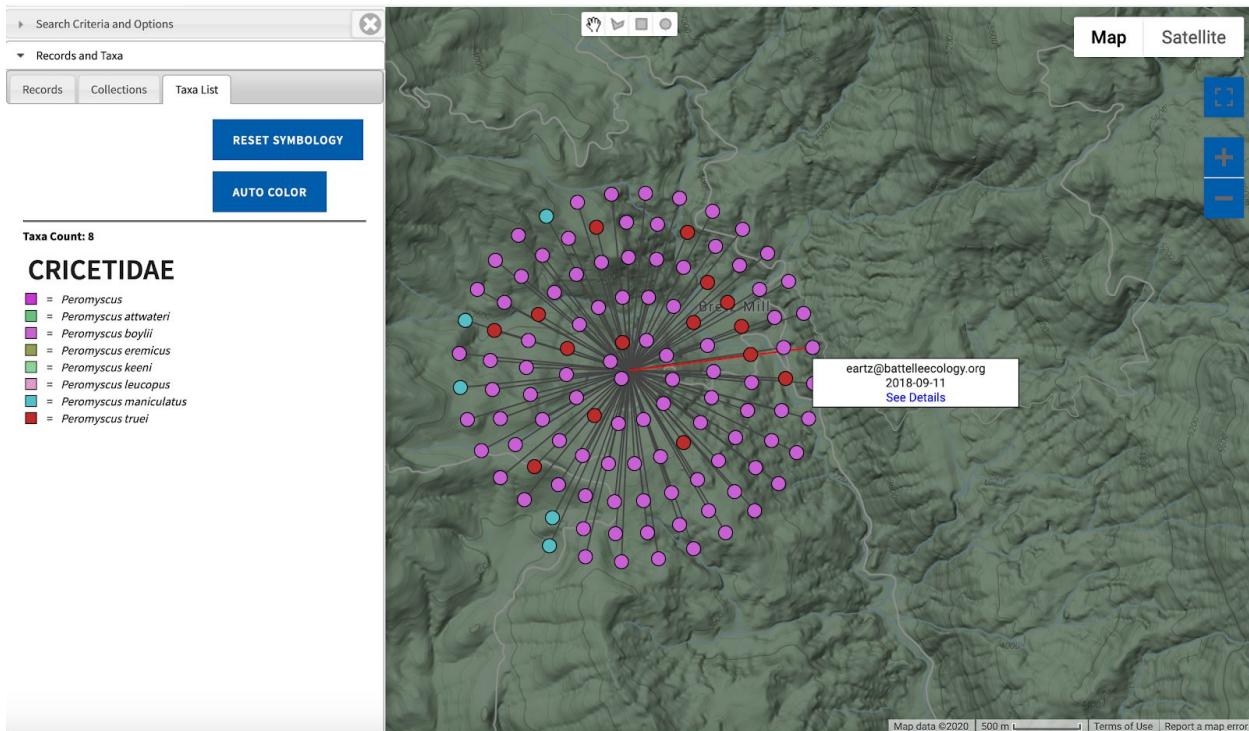
g. When the results appear, we will open the search panel again to see the records and taxa. To color the points by taxa, we switch to the “Taxa List” tab.



- 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.



- 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
X

Records and Taxa
▼

Records
Collections
Taxa List

Download Options
More

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@ba ttelleecolog y.org	2018-03-22	Peromyscus
NEON018 VU	mesquibel@ba ttelleecolog y.org	2018-06-14	Peromyscus
NEON019 HY	0000-0002-67 21-6581	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@ba ttelleecolog y.org	2018-06-12	Peromyscus attwateri
NEON026 5A	vguerrero@ba ttelleecolog y.org	2018-06-12	Peromyscus attwateri
NEON026 5D	vguerrero@ba ttelleecolog y.org	2018-06-12	Peromyscus attwateri
NEON019 JQ	akantola@bat tellecology. org	2018-05-22	Peromyscus boylii

Map

Satellite

Map
More

Satellite
More

Topographic
More

Aerial
More

Street View
More

3D
More

Hybrid
More

Terrain
More

Bathymetry
More

Astronomy
More

Geological
More

Demographic
More

Political
More

Cadastral
More

Historical
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

Cultural
More

Infrastructure
More

Natural Resources
More

Environmental
More

Economic
More

Social
More

Political
More

<div style="border: 1px solid #ccc; padding: 5