

Public & Private Collections • 153

ALASKA	[No known collection of insects in Alaska.]
ARIZONA	Flagstaff COLLECTION OF INSECTS, BOX 5640, BIOLOGY, NORTHERN ARIZONA UNIVERSITY, FLAGSTAFF, AZ 86011. [NAUF] Director: Dr. C. Dan Johnson. Phone: (602) 523-2506. Professional staff: Dr. R. S. Beal, Dr. C. N. Siskindshoeff. About 1.2 million specimens are housed in 110 cabinets with 1,320 drawers. Coleoptera are best represented with excellent ecological supporting data for the Bruchidae. Insects are especially well represented from the Southwest, Mexico, Central and South America. [1986]
	Grand Canyon SCIENTIFIC STUDY COLLECTION, GRAND CANYON NATIONAL PARK, GRAND CANYON, AZ 89025. [GCNP] Curator: Carolyn Richard. Phone (602) 638-7769. There are approximately 6,000 insects in the collection, including numerous butterflies, moths, and beetles. There are a few type specimens from Grand Canyon subspecies. [1992]
	Portal SOUTHWESTERN RESEARCH STATION OF THE AMERICAN MUSEUM OF NATURAL HISTORY, PORTAL, AZ 85632. [SWRS] Director: Dr. Wade C. Sgerbrooke. Phone: (602) 558-2396. The collection consists of about 14,000 specimens (no long series) of the insects of the Chiricahua Mountains and surrounding valleys. It is housed in drawers in cabinets. Most of the material is identified at least to genus. There is a good collection of arachnids from the area, all identified to species [1982].



Mission

To create a resource that makes publicly available as much information as possible concerning the non-marine arthropods of Alaska.

Using specimens + literature + 'grey' literature

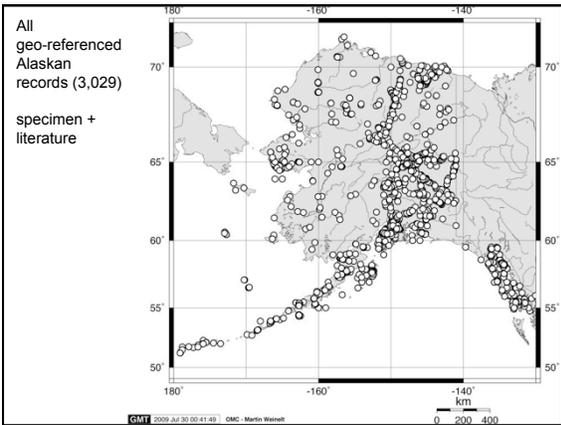
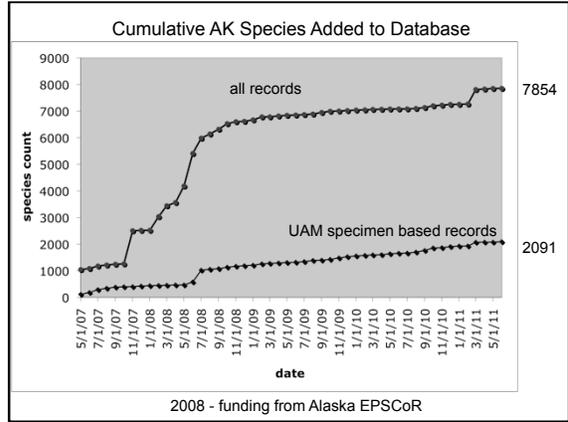
- What species occur in Alaska?
- Where do these species occur?
- What do they do?

Do we really need to know...

- All the arthropod species that occur in Alaska?
- Where all the species occur?
- What all these species do?

Yes:

- research, conservation, natural resource use
- the public constantly has issues with arthropods (in their homes, food, eating them, biting / stinging, transmission of disease)
- arthropods are the largest consumers of vegetation in Alaska (30 million Alaskan spruce trees killed by these animals during the 1990s)
- ecosystem services (decomposition, pollination, food base for large but unknown % of vertebrates)
- climate change - local species ranges may shrink or expand, non-native species may invade
- forensic entomology - insect species and their natural history data can be used to solve crimes

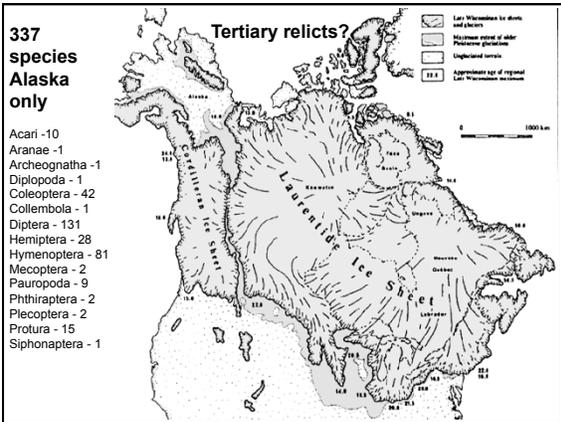


Alaska Natural Heritage Program
Environment and Natural Resources Institute, University of Alaska Anchorage

Globally rare "endemics"?

Alaska Natural Heritage Program

4 insect species listed G1 "critically imperiled" because they are known only from Alaska
25 invert species listed "Species of Greatest Conservation Need (SGCN)" by state ADFG
= Data Deficient ?



Noon, Revue Ent. (N.S.) T. 3 (Fasc. 2) p. 171-187 Paris, août-juin 1986

Chionotiphys alaskensis n.g., n.sp., a Tertiary relict from unglaciated interior Alaska (Coleoptera, Staphylinidae) (*)

A. SMETANA
Biometrics Research Institute, Agriculture Canada, Ottawa K1A 0C6, Canada.

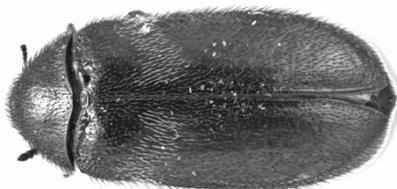
3 sites
Chena Ridge
Chatanika
Nenana

(*) 33rd contribution to the knowledge of Staphylinidae.

1019 species new *records* for Alaska
(315 new genus, 19 new family, 2 new orders)

13% of total list so far is "new"

32 species new to science



Reesa vespulae - no males known, virgin birth

1019 species new *records* for Alaska
(315 new genus, 19 new family, 2 new orders)

13% of total list so far is "new"

32 species new to science



Green Alder Sawfly – *Monosoma pulveratum*
First AK record 2004 – spreading since, Kruse et al. 2010

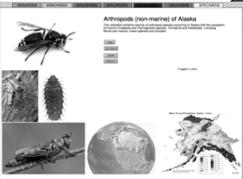
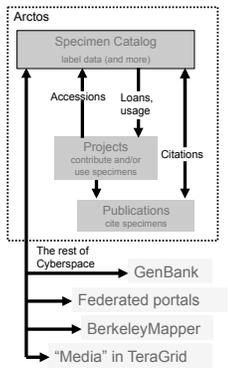
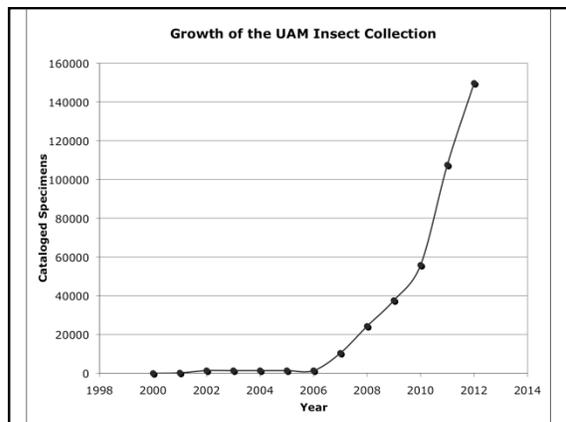
*Preservation of specimens
and their associated data
for perpetuity*

NSF will help us get our data online but ensuring they stay online forever is a problem that hasn't been solved

Cabinets
antiquated
wooden
damaged
= unsafe




Database
home-made
weak security
mine alone
not online
= unsafe

Nov 2011 – March 2012
 Transfer of UAM Insect data to Arctos

Major repositories using the Arctos database:
 (54 collections of specimens or observations, 1.7M records)

in partnership with

which is a member of

TeraGrid – A nationwide network of 11 supercomputing facilities

which is sponsored by

U. S. National Science Foundation's Office of Cyberinfrastructure

Arctos: A 15 year history

- MVZ: 1995 - Hired Stan Blum to develop relational data model (following modeling by Assoc. Systematic Collections).
- MVZ: 1997 - Hired John Wieczorek to implement model (*desktop application*) using Sybase and Versata. Partial implementation (e.g., no loans).
- UAM: 1998-2000 - John W. migrated mammal data to Oracle, set up Versata.
- UAM: 2002 - Dusty McDonald replaced Versata with ColdFusion, implemented full model (*first web-based instance, aka Arctos*).
- MSB: 2003 – Joined Arctos at UAM (*first multi-hosting instance*).
- MVZ and MCZ: 2005-2007 - Implemented *separate instances* of Arctos at Berkeley and Harvard (MVZ: first Postgres, then Oracle).
- MVZ: 2009 - Moved hosting of data to Alaska (*Virtual Private Database version*).
- MVZ/UAM: 2012 – Moved hosting to Texas Advanced Computing Center

ARCTOS

- Specimens (objects) - body parts, tissues, containers, etc.
- Images, media (stored at TACC)
- Projects, permits, publications
- Accessions, loans, usage
- Labels, as PDF files
- Agents, agent activity

ARCTOS

- Arctos treats taxonomic data more or less as "label data"
- Many entomologists need a solid taxonomy database unto itself...
- More on this later

Insect Collection
University of Alaska Museum of the North

Search My Stuff

Access to 10992 records

Search Clear Form Use Last Values See results as: Specimen Records

Include Observations? Require Tissues? Require Media

Identifiers
Collection: Number:

Identification and Taxonomy
Any Taxonomic Element:

Locality
Any Geographic Element: Select on Google Map

Date/Collector
Year Collected: Copy

Biological Individual
Part Name: Define Add = for exact match

Usage
Basis of Citation: Define

Search Clear Form Use Last Values See results as: Specimen Records

- Data Providers
- Report Errors
- Contact Us

Locality Any Geographic Element: Hide Google Map

Click [on the map by the pan tool] to open spatial query tool. Click it again to cancel. More info
Click the Action Search button (at the top or bottom of the page), NOT the Google Search button on the map, to run your query.
[62.3805359729426, -151.015625] [57.3265212321798, -155.1173875]

Map Satellite Hybrid Terrain

Google search the map Search

Geology Attribute:
Geology Attribute Value:
Traverse Geology Hierarchies:
Continent/Ocean:
Sea:
Country:
State/Province:
USGS Quad Map: [Pick An Quad] [NELL]
County: [NELL]

Specimen Results

9 of these 9 records have coordinates and can be displayed with [BerkeleyMapper](#) [BerkeleyMapper+Rangemap](#) [Where's that Google Earth/Maps](#)

Cat Num	Identification	Specific Locality	Verbatim Date	Dec.	Lat.	Dec.	Long.
UAM Insects 11649	<i>Vespula acadica</i>	Palmer [USDA Research Station]	7/11/1975	61.566029	-149.250493		
UAM Insects 11531	<i>Dolichovespula norvegicoidea</i>	Palmer [USDA Research Station]	6/23/1975	61.566029	-149.250493		
UAM Insects 11543	<i>Vespula vulgaris</i>	Wills Canon Lake, 4 miles from Palmer	8/21/1975	61.59	-148.11		
UAM Insects 11638	<i>Vespula rufa</i>	Palmer [USDA Research Station]	6/23/1975	61.566029	-149.250493		
UAM Insects 11663	<i>Dolichovespula norvegica</i>	Palmer [USDA Research Station]	6/23/1975	61.566029	-149.250493		
UAM Insects 22914	<i>Vespula austriaca</i>	Kanai NWR (National Wildlife Refuge), point #12 27154, Chitina ALN0, point #12	22 VI 2006	66.45	-151.68		
UAM Insects 11534	<i>Acicacus vicarius</i>	Fairbanks, 1235 Kensington Ave.	1/10/2007	64.83	-147.74		
UAM Insects 11511	<i>Dolichovespula arenaria</i>	Palmer [USDA Research Station]	6/23/1975	61.566029	-149.250493		
UAM Insects 21876	<i>Dolichovespula maculata</i>	Sheep Cr. Rd. + Goldstream - 11mi NW of Fairbanks	24 July 1968	64.91	-147.93		

UAM Insects 11649 [Palmer \[USDA Research Station\]](#) whole organism (pinned) [Login or Create Account](#)
[Return to results](#)

Vespula acadica North America, United States, Alaska
11 Jul 1975

Vespula acadica (Sladen)
Anthropoda Insecta Hymenoptera Apoidea Vespidae Vespinae Vespula acadica
identified by Thomas S. Woolf on 09 Jul 2007
Nature of ID: student
Remarks: Akre et al. (1981)

sex: female
Date: 6. June, 20 Jul 2007
age class: adult
unknown, 20 Jul 2007

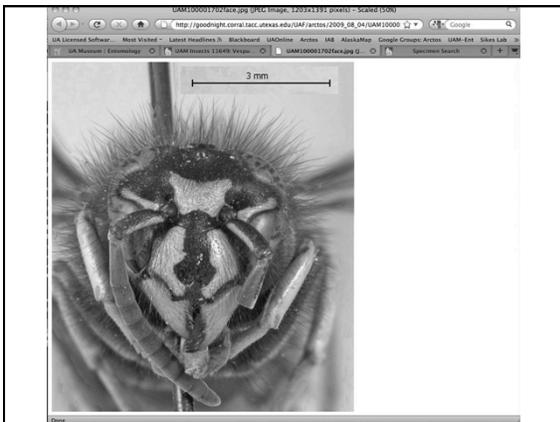
Continent/Ocean: North America
Country: United States
State/Province: Alaska
Specific Locality: Palmer [USDA Research Station]
Microhabitat: Cotoneaster acutifolia

Collecting Source: wild caught
Coordinates: 61.566029° -149.250493° (World Geodetic System 1984) , Error: 1000 m
Date: 6. June, 20 Jul 2007, Google Earth: +4.2414 0 (Use OS)
Coordinate Remarks: In Alaska there were many records (mostly a Palmer locality that was erroneous - the lat/longs were 61.0554°N 148.020°W lat/long set by Don Goffin)

Collecting Date: 11 Jul 1975

Part Name	Condition	Disposition #	Label	Remarks
whole organism (pinned)	unchecked	collection	1100001702	

Media
Image (image/png) Media Details
Image (image/png) Media Preview Image
Image (image/png) Media Details
Image (image/png) Media Preview Image



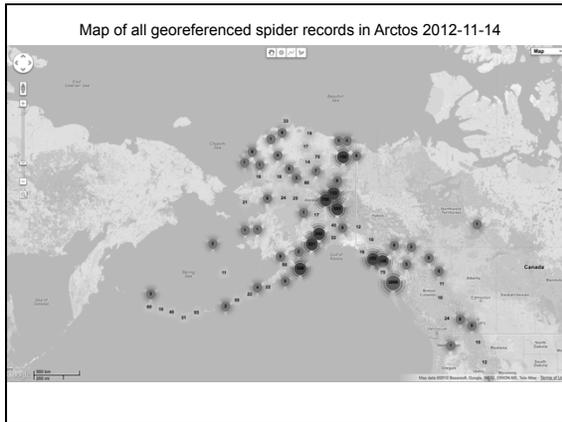
BerkeleyMapper & Google Maps, with error circles

Map Satellite Hybrid Terrain Photo Type

Legend Options Help Tools

Color By:
Label By:
Map Control: Show Precision Symbols
 Markers On/Off
Map Window Size: 800 x 600
Download records (including spatial subjects)
Annotate/Email Comments
Google Earth View (Beta)
Services and Analytical Functions
 [Login by US County]
 Use Spatial Subject in Web Service

Show Point Records



USFWS – Alaskan Arthropod DNA Barcode Library ~ 2,000 species

JAM Insects 117067 Adak, Paliades Lakes, North America, United States, Alaska
Acathelus advena
 15 July 2009

crystal leg; pinned whole organism; crystal leg

Identified by: Derek S. Sikes on 2012-03-29
 BOLD Barcode ID: UAM015-12-M

Part Name	Condition	Disposition	Label	Remarks
crystal leg	unchecked	on loan		CCO8 Sample UAM007-CCO8-10724 C08
crystal leg	unchecked	on loan		SI-plate1 C08
spined whole organism	intact	being processed		UAM10020179

Determination Type: accepted place of collection
 Higher Geography: North America, United States, Alaska
 Specific Locality: Adak, Paliades Lakes
 Locality Remarks: (Alaskan)
 Habitat: under bones
 Collecting Source: wild caught
 Event Date: 15 July 2009
 Verification Status: checked by collector
 Elevation: 58 to 58 m
 Original Coordinate System: decimal degrees
 Original Coordinate Format: decimal degrees
 Georeference Source: Garmin GPS unit
 Georeference Protocol: not recorded

Accession: UAM-2008-19-Aleutians-Enso
 Loan History: Click for loan list

Media:

Collectors: Derek S. Sikes

BOLDSYSTEMS Database | Taxonomy | Identification | Workbench | Resources

Public Data Portal - Specimen Record

Public Data Portal - Specimen Record

Recent Results For UAM015-12-M

Search: [Public Data] Search

Specimen Record

Search ID: UAM Insects 117067
 Barcode ID: UAM Insects 117067
 Field ID: University of Alaska Museum
 Description ID: University of Alaska Museum

Specimen Images:

Specimen Details:

- Species: Acathelus advena
- Order: Araneae
- Suborder: Araneae
- Genus: Acathelus
- Species: advena
- Authority: Simon, 1894
- World Geodetic System: WGS 1984
- Original Coordinate System: decimal degrees
- Original Coordinate Format: decimal degrees
- Elevation: 58 to 58 m
- Error: 8 m
- Georeference Source: Garmin GPS unit
- Georeference Protocol: not recorded

Collector: Derek S. Sikes

Event Date: 2009-07-15

Locality: Adak, Paliades Lakes

Accession: UAM-2008-19-Aleutians-Enso

Loan History: Click for loan list

Media:

- ### Arctos - Dislikes
- Learning curve fairly steep -> back to kindergarten
 - Can't customize to my heart's content, each change must be voted on & prioritized by other users
 - Web access generally slower than I like (we are all more critical of others than ourselves)
 - Only available when networked. Field work in remote areas requires special solutions if data are to be accessed.
 - User interface is ~ garish, clunky, industrial (but works)
 - Many tasks take longer

- ### Arctos - Likes
- Rock – solid security, the data will outlive me (hopefully)
 - Web-published
 - Cutting-edge web integration (mapping, GenBank, BOLD, etc)
 - No responsibility on my part to maintain backups, software updates, etc. Need only a networked computer
 - Arctos programmers & designers are biologists / users who really care about “doing it right”

An example of a paper that resulted from a database search

While reviewing Wyant, K.A., Draney, M.L., and Moore, J.C. 2011. Epigeal spider (Araneae) communities in moist acidic and dry heath tundra at Toolik Lake, Alaska.

Searched Arctos for my own spider samples from Toolik Lake

Toolik Lake, Arctic Alaska, 2008

GBIF

Not accepting Arctos UAM Insect data

Only 10,893 records from prior to March 2012 ploaed of 170,000

Problem due to strange characters in uploaded data

Data cleaning of Jan 15, 2013 will hopefully fix

UAM Insect Observation Collection – "literature" records

Run live demo of USDA BigBug search

Arctos is an ongoing effort to integrate access to specimen data, collection-management tools, and external resources on the internet. Read more about Arctos at our Documentation Site, explore some recent contacts, or use the links in the header to search for specimens, media, taxonomy, projects and publications, and more. Sign in or create an account to save preferences and searches.

Arctos is currently 1712971 specimens and observations in 54 collections. Following the search links below will set your preferences to filter a specific collection or portal. You may click [search all collections] at any time to re-set your preferences.

Top Collections	Search	Specimens	Collection Home Page	Loan Policy
UAM Insect Collection	Search 7068 Specimens	Collection Home Page	no loan policy	
UAM MSB	Search 6417 Specimens	Collection Home Page	Collection Loan Policy	
UAM MVZ	Search 29497 Specimens	Collection Home Page	Collection Loan Policy	
UAM DMS	Search 0 Specimens	no home page	no loan policy	
UAM MLZ	Search 4632 Specimens	Collection Home Page	no loan policy	
UAM WMM	Search 19346 Specimens	Collection Home Page	Collection Loan Policy	
UAM KNM	Search 27471 Specimens	home page	no loan policy	
UAM other	Search 8072 Specimens	no home page	no loan policy	
UAM Herbarium Collection	Search 149 Specimens	Collection Home Page	no loan policy	
UAM Herpetology Collection	Search 114832 Specimens	Collection Home Page	no loan policy	

MUSEUM OF THE NORTH

Arctos

UAM Insect Collection

Overview

The UAM Insect Collection is the largest-most facility of its kind in the world. It is the largest insect collection in the world. Over 20,000 different species of insects are kept in the collection. Over 100,000 specimens of insects are kept in the collection. Over 100,000 specimens of insects are kept in the collection. Over 100,000 specimens of insects are kept in the collection.

UAM Insect Collection

University of Alaska Museum of the North

429 of these 842 records have coordinates and can be displayed with Google Earth/Map

Remove	Call Num	Identification	Identified By	Order	Family	Other Identifiers	Max IPI	Country State	Habitat	Min Elevation (meters)	Max Elevation (meters)
<input type="checkbox"/>	UAM Ento Observation 17324	Arctopsylla	Unknown	Hymenoptera	Ichneumonidae	original identifier=USNM no. 5597 USNM	10000	United States		100	700
<input type="checkbox"/>	UAM Ento Observation 6734	Arctopsylla	Unknown	Hymenoptera	Ichneumonidae	original identifier=USNM no. 5599	10000	United States			
<input type="checkbox"/>	UAM Ento Observation 17326	Arctopsylla	Unknown	Hymenoptera	Ichneumonidae	original identifier=USNM no. 5598	10000	United States			
<input type="checkbox"/>	UAM Ento Observation 6736	Arctopsylla	Unknown	Hymenoptera	Ichneumonidae	original identifier=USNM no. 5598	10000	United States			
<input type="checkbox"/>	UAM Ento Observation 17781	Arctopsylla	Unknown	Hymenoptera	Diapriidae	original identifier=USNM no. 5519 USNM	10000	United States			
<input type="checkbox"/>	UAM Ento Observation 17781	Arctopsylla	Unknown	Hymenoptera	Diapriidae	original identifier=USNM no. 5519 USNM	10000	United States			
<input type="checkbox"/>	UAM Ento Observation 6762	Arctopsylla	Unknown	Hymenoptera	Diapriidae	original identifier=USNM no. 5519 USNM	10000	United States			
<input type="checkbox"/>	UAM Insects 111231	Argemone	Boomer	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 111232	Argemone	Boomer	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 111233	Argemone	Boomer	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 111234	Argemone	Boomer	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 112381	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Ento Observation 3630	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Ento Observation 7750	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Ento Observation 9420	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Ento Observation 11124	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	200
<input type="checkbox"/>	UAM Ento Observation 7750	Argemone	Unknown	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	200
<input type="checkbox"/>	UAM Insects 89461	Argemone	V. I.	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 89465	Argemone	V. I.	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 89466	Argemone	V. I.	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20
<input type="checkbox"/>	UAM Insects 89467	Argemone	V. I.	Malvaceae	Salpiglossaceae	original identifier=701	300	United States	Alaska: peaks 1st above high tide	10	20

Alaska Endemics

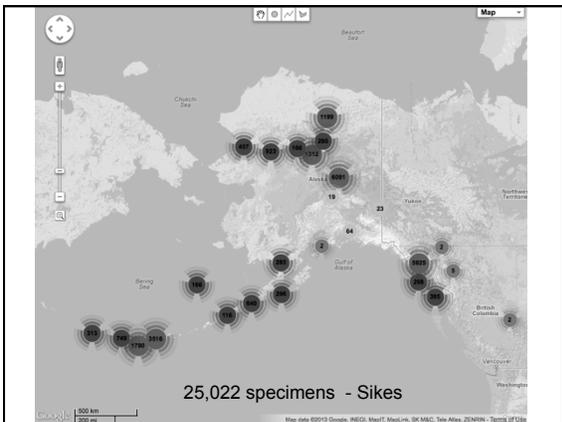
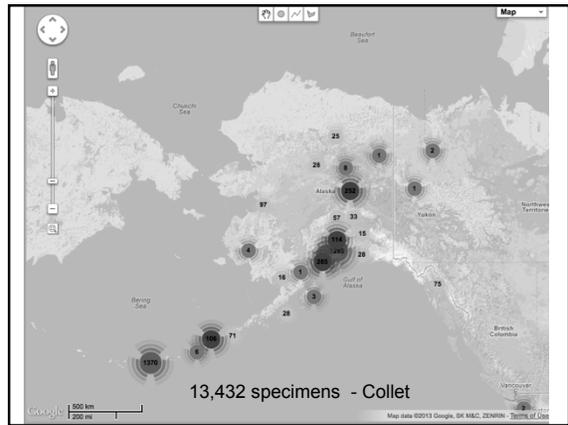
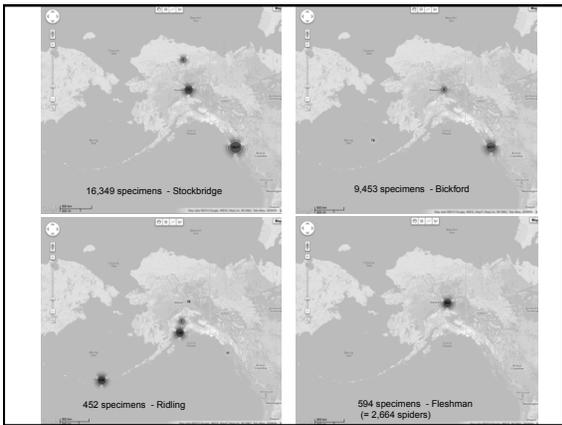
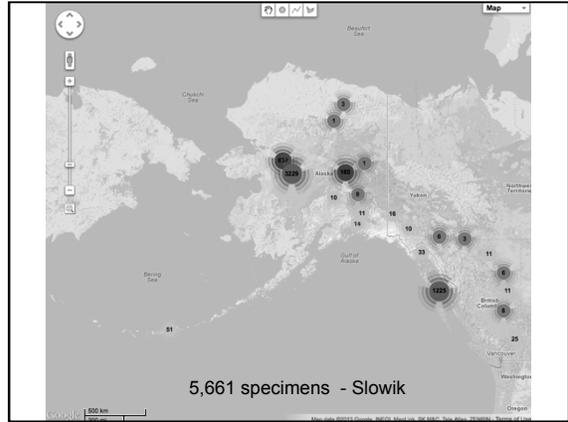
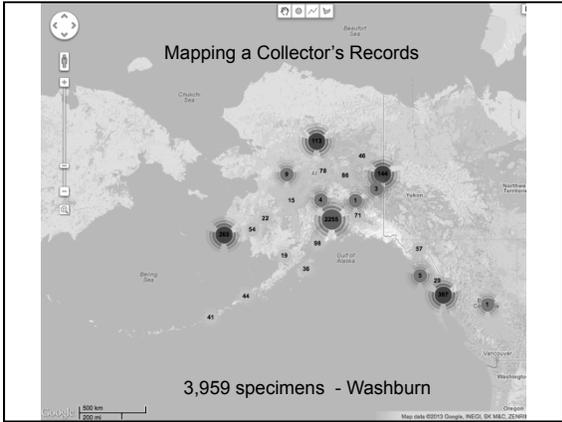
Download All Data defined with the following criteria

Record ID	Species Name	Collector	Date	Locality	Count	Number of Observations	Number of Collections
UAM Insects 17140	Alouatta palliata	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17156	Delphinus delphis	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17157	Trachycheilus	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17158	Alouatta palliata	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17159	Delphinus delphis	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17160	Alouatta palliata	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17161	Delphinus delphis	Boomer	June 14, 1914	St. George Is.	100	100	100
UAM Insects 17162	Alouatta palliata	Boomer	June 14, 1914	St. George Is.	100	100	100

Alaska Endemics

Download All Data defined with the following criteria

Click on Marker/Cutters or draw a polygon to query points



Acknowledgments

- Graduate Curatorial Assistants
 - Casey Bickford
 - Jill Stockbridge
 - Joey Slowik
 - Brandi Fleshman
- Current lab techs:
 - Sayde Ridling
 - Elizabeth Lofton
 - Sarah Meierotto
 - Trista Crass
- Volunteers:
 - Steve Peek (Diptera)
 - Mary Wyatt
- National Science Foundation
- USDAARS / FHP
- USFWS
- NPS
- ADFG
- AK Div of Ag
- USGS