

Bi-Monthly Progress Reports To iDigBio Submitted By Active Thematic Collections Networks (TCNs)

June 2017

Reports included from the following active TCNs:

☐ InvertNet	□ LBCC	⊠ NEVP
□ Paleoniches	⊠ SCAN	☐ FIC
□ VACS	□ МНС	⊠ GLI
	⊠ SERNEC	⊠ MiCC
		∠ LepNet
⊠ MAM		

Reports no longer included from the following Retired TCNs:

TTD MaCC











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Submission #1003

Submission information

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by psweney

Thursday, June 29, 2017 - 09:26

130.132.173.200

TCN Name:

Mobilizing New England Vascular Plant Specimen Data to Track Environmental Change

Person completing the report:

patrick.sweeney@yale.edu

Progress in Digitization Efforts:

In support of digitization activities in Year 5 primary digitization was conducted at six digitizing institutions: Brown (BRU), The New York Botanical Garden (NYBG), University of Maine (MAINE), University of Massachusetts (MASS), University of Vermont (VT), and Yale (YU). Harvard and the University of New Hampshire (NHA) finished digitization in Year 4. In year 5, 250,952 specimenlevel records were generated [89,666 skeletal (at least barcode & scientific name) & 161,286 full specimen-level records (all target label data)] and 220,510 specimen images were captured. During the overall project period (Years 1 through 5), 901,419 specimen-level records have been generated [144,954 skeletal & 756,465 full specimen-level records], and 950,761 specimen images have been captured. Town-level georeferences have been applied to records of most participating institutions resulting in over 481,302 georeferenced records. What follows is an institutional breakdown of digitization activities, with an emphasis on results over the past year.

Share and Identify Best Practices and Standards (including Lessons Learned): nothing to report

Identify Gaps in Digitization Areas and Technology: nothing to report

Share and Identify Opportunities to Enhance Training Efforts:

Project wide many opportunities have been provided for training and professional development. Across all institutions, more than 45 undergraduate or graduate student herbarium assistants or herbarium staff conducted digitization tasks. These individuals received training in herbarium curation, biodiversity informatics, and specimen digitization. During the course of their activities, digitizers were exposed to hundreds or thousands of herbarium specimens, which provided some botanical education. Following is a breakdown for each budgeted institution.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations: We continue to collaborate with, CyVerse, the Symbiota team, and iDigBio. We are also collaborating with Notes from Nature to score reproductive phenology using citizen scientists.

Share and Identify Opportunities and Strategies for Sustainability: nothing to report

Share and Identify Education and Outreach (E&O) Activities: nothing to report

Other Progress (that doesn't fit into the above categories): nothing to report

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1003



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Submission #996

Submission information –

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by neilscobb

Monday, June 26, 2017 - 09:41

134.114.107.77

TCN Name:

Southwest Collections of Arthropods Network (SCAN): A Model for Collections Digitization to Promote Taxonomic and Ecological Research

Person completing the report:

neilscobb@gmail.com

Progress in Digitization Efforts:

see attached

Share and Identify Best Practices and Standards (including Lessons Learned):

see attached

Identify Gaps in Digitization Areas and Technology:

see attached

Share and Identify Opportunities to Enhance Training Efforts:

see attached

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

see attached

Share and Identify Opportunities and Strategies for Sustainability:

see attached

Share and Identify Education and Outreach (E&O) Activities:

see attached

Other Progress (that doesn't fit into the above categories):

see attached

Attachment 1

LepNet SCAN June 2017.docx

Attachment 2

Lepidoptera of North America Network & Symbiota Collections of Arthropods Network (SCAN)

July 7, 2017 Neil Cobb

Progress in Digitization Efforts:

Beginning with the April 2017 report, the bi-monthly reporting will be a combined report covering LepNet and SCAN productivity because there is so much cross-over activity between the two networks. Many museums are involved in both SCAN and LepNet, including collections that have received funding from both TCNs, collections that are unfunded for one TCN and funded by the other, and some collections that are providing data to both and are unfunded by the ADBC program. Both TCNs share the same database http://symbiota4.acis.ufl.edu/scan/portal/index.php, which depending on the context we refer to as the SCAN-LepNet database or the LepNet-SCAN database.

The SCAN network started in 2012 and the TCN funding has ended, but SCAN continues to support PEN projects. The LepNet grant was initiated on July 1, 2016 and there are currently 26 ADBC funded museums and one non-funded museum (Oklahoma State University). Twenty-six museums comprise the NSF-ADBC LepNet and all have established a collection on the LepNet Portal and are serving data directly to iDgiBio via IPT or through DwC archives on the LepNet-SCAN portal. Twenty museums are serving DwC archives to iDigBio and six museums are still establishing connections with the LepNet portal.

Table 1. Records in SCAN/LepNet database, "all data" reflects all arthropod taxa, "Non-Lep" includes all non-Lepidoptera arthropod data, and Lepidoptera includes only Lepidoptera taxa.

		Non-Lep	
	All data	SCAN	LepNet
			1,637,0
	13,520,408	11,883,397	11
Specimen Records			
	10 755 265		1,181,3
	10,755,365	9,574,030	35
# Georeferenced			
	1 101 (2)		212,28
	1,181,636	969,350	6

Imaged

Table 1 shows the distribution of records for all data served on the portal, for both SCAN and LepNet.

LepNet - The LepNet ADBC-funded museums have produced 464,574 records (120% of expected to date) by June 1, 2017, with 88% of records identified at the species or subspecies level, and 52% of the records georeferenced. An additional 32 collaborators (non-ADBC funded museums that use our data portal to serve their data) have provided an additional

257,314 records. There are 26 collections (referred to as added-value) that have allowed us to harvest their data via IPT to serve 915,123 more representing species and 93% of the records are from North America.



We are on target to meet our digitization (i.e., transcribing, georeferencing, and imaging) goals despite having to address unexpected challenges in refining protocols, implementing workflows, and for several museums organizing physical collections in preparation for digitization. **Table 2** shows the top 10

Table 2. The number of occurrence records for the top 10 families of Lepidoptera that have been digitized.

				#
				Georeferenced
	# Specimen		# Ided to	and Ided to
Taxa	Records	# Georeferenced	species	Species
Nymphalidae	508,248	80%	42%	31%
Noctuidae	212,604	65%	88%	59%
Pieridae	210,187	79%	42%	30%
Lycaenidae	161,705	71%	59%	42%
Papilionidae	113,745	57%	57%	28%
Erebidae	101,429	66%	89%	58%
Geometridae	90,205	63%	74%	49%
Tortricidae	50,914	65%	82%	58%
Sphingidae	35,983	61%	84%	52%
Gelechiidae	28,798	72%	81%	58%

families of Lepidoptera in terms of total occurrences digitized.

What is most encouraging about the lepidopteran records is that 88% of the records are identified to species, which is higher than any of the other major orders. Thus, the primary factor limiting the production of "research-ready" data is due to georeferencing. For Lepidoptera 54% of the records are research-ready (i.e., identified to species and georeferenced) and by georeferencing existing records we should increase that percentage to 90% over the next three years. We realize that many records represent misidentified specimens and we also need to seek additional non-ADBC funding to review as many specimen identifications as possible. We are committed to developing stronger connections with Mexico and have added 15 Mexican recordsets, four of which are new collections using the SCAN portal.

LepNet ADBC-NSF funded collections have posted 47,214 images, which is 241% of expected. This higher-than expected result is primarily due to a few collections that used institutional funds (e.g., personal donations) to produce a large number of images. For most of the 19 museums that will have dedicated imaging workflows, expected production is still lagging. Unlike records, the imaging protocols have been more challenging and have ranged from purchasing and setting up imaging stations to developing a workflow that works at each museum. We serve an additional 222,551 lepidopteran images on the LepNet portal from other providers.



Symbiota Collections of Arthropods Network (SCAN) - We have surpassed our overall TCN/PEN goals for the network and have been very successful in supporting data mobilization for unfunded museums and cooperation by larger collections that have allowed there data to be used to help mobilize data from other museums. Table 4 shows data for the five major taxa we targeted in SCAN. All five groups have enough data to produce scores of papers.

Talala / Massalas	un af maaamda fam tha	fire food tores	arrang tomogeted by CCANI
Table 4 Number	er of records for the	: iive iocai iaxa gr	oups targeted by SCAN.
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		I	T	
	# Specimen	#	# Ided to	# Georeferenced and
	Records	Georeferenced	species	Ided to Species
Formicidae	887,388	84%	52%	43%
Carabidae	536,789	79%	63%	51%
Acrididae	159,060	79%	92%	73%
Tenebrionidae	150,900	84%	61%	52%
Spiders	194,516	77%	83%	60%
Total/Average	1,928,653	81%	70%	56%

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hance Training Efforts: We will develop resources on the WordPress site http://www.lep-net.org/. We will expand this to incorporate material from the SCAN drupal project website.

Share and Identify Best Practices and Standards (including Lessons Learned):

We are identifying best practices on a weekly basis and sharing those with respective people within LepNet http://www.lep-net.org/. Most of these are also relevant to SCAN.

<u>Standardization of Images for Research - We developed a consensus for criteria that would make images the most useful for research. We defined criteria that would make images good for computer vision identification (LepSnap) and for ImageJ, a software program designed to quantify pixel qualities http://www.lep-net.org/?p=383.</u>

Symbiota Programming - Ben Brandt developed six new API endpoints within Symbiota primarily for the facilitation of interactions with LepSnap, but the developments can also be used in several future apps. Two of these endpoints provide taxonomic and vernacular name resolution from a user-inputted string and allows for the auto-completion of scientific and vernacular names from the taxonomic thesaurus within LepSnap as users are typing the names of specimens. In order to facilitate the user login process and permission retrieval within LepSnap, two other endpoints were developed, one to generate user access tokens that can then be stored in the LepSnap app on the user's mobile device and used to automate future login requests in LepNet. The other feature provides the user's permissions and accessibility options within LepNet to the LepSnap app. Additionally, in the development of the token endpoint. We made significant modifications to the Symbiota login methods. Another endpoint delivers occurrence data from a given record identifier from either database primary key or catalog number. This endpoint allows LepSnap to retrieve pre-existing occurrence record data for processing images within the app and populate data fields within LepSnap with these data points.



The final endpoint developed facilitates the actual delivery of the processed image and associated data, including computer vision identifications, from the LepSnap app to the LepNet data portal. This allows for the quick delivery of images and new computer vision identifications from users' mobile devices directly to the data portal facilitating rapid generation of high-quality specimen images. In the development of these API endpoints several improvements were made to the login and batch taxonomic name upload processes within Symbiota to further support the work being done in LepNet and SCAN.

Identify Gaps in Digitization Areas and Technology: We need to produce exponentially more occurrence data to understand the biogeography of the focal SCAN taxa and Lepidoptera. For most groups there is not enough data to talk about gaps. We are meeting this need by incorporating additional collections into the SCAN-LepNet database, and harvesting observational records from iNaturalist and LepSoc inventories.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

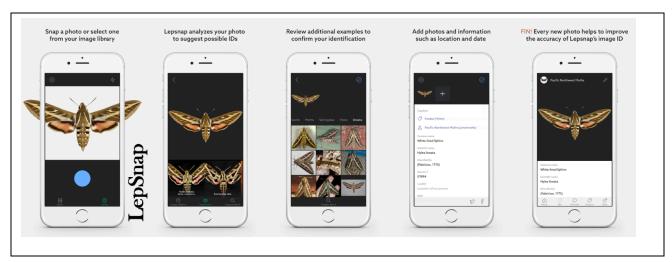
We are primarily working with other Symbiota TCNs and other Symbiota portals. We are also generally collaborating with a variety of individuals, projects and organizations to extend the ability to mobilize biodiversity data and promote the use of data in research.

Share and Identify Opportunities and Strategies for Sustainability: Two museums in SCAN have sustainability plans (CSU and UC-Boulder).

Other Progress (that doesn't fit into the above categories):

<u>Focus on North American Arthropods</u> We continue to provide North American data obtained from any credible sources to increase the quantity of data available to SCAN and LepNet users.

<u>Computer Vision</u> - We are making significant progress in developing the LepSnap app. Our collaborators (FieldGuide & Visepedia) are developing this app. This is initially targeting Lepidoptera but we fully expect it to extend to other arthropod groups within the next two years.



We have collaborated with Andre Poremski (Fieldguide) to develop the LepSnap smartphone app and computer vision capacity that will be built into LepNet. We initiated collaborations between Visipedia



and Fieldguide and also shared information with iNaturalist and the Cornell Lab of Ornithology, both of whom are also working with Visipedia to incorporate their computer vision algorithms. Fieldguide works with Visipedia directly to develop computer vision integration into LepNet projects. Thus, Fieldguide is taking the lead on three fronts, developing both iOS and Android apps (LepSnap), cv-**Batch** (an API service for batch-processing images), and **cv-Widget** (an embeddable image search tool). LepSnap will allow museum personnel to use their iPhone and Android smartphones to upload images of specimens and apply computer vision to obtain probability identifications. The cv-Batch workflow will be built into Symbiota (software that runs LepNet database) to process all images with the computer vision workflow, regardless of whether images are from IPT providers or have "live" collections that are managed directly on the LepNet portal. The cv-Widget tool will reside on the front page of the LepNet portal and will allow anyone to drag an image file into the dialog box and receive a set of probability identifications. This will be a broader impact feature in that the cv-Widget will be able to be used on any portal (e.g., Pacific Northwest Moths). The most important broader impact of this will be to reduce the load on taxonomists for identification requests. We hope to automate the categorization process enough so that individuals can focus on specific groups of interest and not have to spend time sorting through unclassified galleries of images.

We have held five LepNet meetings 1) LepNet Orientation Meeting July 21 2016 (virtual), 2) LepNet and ButterflyNet in-person Meeting August 11 2016; 3) the all-hands meeting at the November 6, 2017 iDigBio Summit; 4) three virtual joint LepNet/SCAN meeting January 25, 2017, March 2, 2017, March 29, 2017. The virtual meetings were all recorded and are available on the project website as well as the PowerPoint presentations given during the in-person meetings. We presented an additional webinar that covered imaging standards for LepNet http://www.lep-net.org/?p=383. This webinar represented the culmination of extensive email correspondence to resolve minimal standards for images posted on LepNet.

<u>Taxonomy Tables</u> - We added the complete taxon table provided by Pohl, Patterson, and Pelham (2016) into the LepNet taxonomy tables and shared a csv version with LepNet collaborators using other databases (Specify, Emu, Arctos).

We are collaborating with Matt Yoder (TaxonWorks), to obtain an updated taxonomy of worldwide Lepidoptera and APIs that will provide us with a much more efficient means of updating taxonomies. Despite the progress in developing taxonomy tables, we have an estimated 56,000 taxa that need to be resolved (i.e. added, synonymized, or corrected).

<u>Publications - We have published an overview of the LepNet project (Seltmann et al 2017)</u>, and we are planning for a short communication publication on developing standards for images used in research.

Seltmann, K.C. N.S. Cobb, L.F. Gall, C.R. Bartlett, A. Basham, I. Betancourt, C. Bills, B. Brandt, R.L. Brown, C. Bundy, M.S. Caterino, C. Chapman, A. Cognato, J. Colby, S. P. Cook, K.M. Daly, L. Dyer, N.M. Franz, J.K. Gelhaus, C.C. Grinter, C.E. Harp, R.L. Hawkins, S.L. Heydon, G.M. Hill, S. Huber, N. Johnson, A.Y. Kawahara, L.S. Kimsey, B.C. Kondratieff, F. Krell, L. Leblanc, S. Lee, C.J. Marshall, L.M. McCabe, J.V. McHugh, K.L. Menard, P.A. Opler, N. Palffy-Muhoray, N. Pardikes, M.A. Peterson, NE. Pierce, A. Poremski, D.S. Sikes, J.D. Weintraub, D. Wikle, J.M. Zaspel and G. Zolnerowich. (2017) LepNet: The Lepidoptera of North America Network. *Zootaxa*, 4247(1), pp.73-77.

Source URL: https://www.idigbio.org/node/564/submission/996



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Submission #1000

Submission information—

Form: TCN Bi-Monthly Progress Report to iDigBio Submitted by kmcameron Wednesday, June 28, 2017 - 18:36

128.104.98.114

TCN Name:

Great Lakes Invasives: Documenting the Occurrence through Space and Time of Aquatic Nonindigenous Fish, Mollusks, Algae, and Plants Threatening North America's Great Lakes

Person completing the report:

kmcameron@wisc.edu

Progress in Digitization Efforts:

See attached spreadsheet. We are now <1,000 records away from the 1 million mark!

Share and Identify Best Practices and Standards (including Lessons Learned):

Nothing to report

Identify Gaps in Digitization Areas and Technology:

Nothing to report

Share and Identify Opportunities to Enhance Training Efforts:

Nothing to report

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Share and Identify Opportunities and Strategies for Sustainability:

Share and Identify Education and Outreach (E&O) Activities:

Other Progress (that doesn't fit into the above categories):

Several TCN participants attended the Using Collections in Research meeting at the Univ of Michigan in June, 2017

Attachment 1

BimonthlyReport July2017.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1000

GREAT LAKES INVASIVES TCN – Bi-monthly report To Date: June 28, 2017

TARGETS: 637,000 plants + 102K fish lots + 44K mollusk lots = **783,000 "specimens"**

TOTALS FOR USA FUNDED MUSEUMS: 876,907 records,

of which 723,421 (82%) have been imaged

(+ Canadensys plant data increases the total to 999,102 records)

US Plant Collection	Specimens	Georeferenced	Imaged
Albion College	1224	16	1215
Butler University, Friesner Herbarium	13846	7	10515
Calvin College	731	0	696
Central Michigan University	3741	288	3710
Eastern Michigan University Herbarium	2469	620	2345
Field Museum of Natural History	66104	60916	64835
Grand Valley State University	365	10	359
Hillsdale College Herbarium	343	15	341
Hope College	594	3	583
Illinois Natural History Survey	48776	5489	35638
J. F. Bell Museum of Natural History Herbarium	74086	20649	58374
Miami University, Willard Sherman Turrell Herbarium	18188	3	18152
Michigan State University	35565	194	35327
Morton Aboretum	21396	2278	19977
New York Botanical Garden	165813	59824	156769
Ohio State University Herbarium - Plants	30395	25663	29772
Ohio University, Bartley Herbarium	4925	0	4904
Seney National Wildlife Refuge	207	0	207
University of Illinois Herbarium	21893	0	21795
University of Michigan Herbarium	99200	9766	90411
University of Notre Dame, Greene/Nieuwland Herbarium	0	0	
University of Wisconsin-LaCrosse	7860	7308	7844
University of Wisconsin-Madison, Wisconsin State			
Herbarium	94413	20281	92703
University of Wisconsin-Milwaukee	7796	2060	7570
University of Wisconsin-Stevens Point, Robert W.	42226	10047	4627
Freckmann Herbarium	12336	10847	1627
Western Michigan University	1023	0	1005
Totals	733289	226237	666674

Canadensys Collection	Specimens	Georeferenced	Imaged
Green Plant Herbarium	18882	9819	0
Herbarium, Biodiversity Centre of Ontario	10103	0	10026
Herbier du Quebec (QUE) Collection de plantes			
vasculaires	504	504	0
Herbier Louis-Marie (QFA) - Collection de plantes			_
vasculaires	13321	9895	0
Jardin Botanique de Montreal	1265	37	0
Marie-Victorin Herbarium	35355	13490	394
University of British Columbia Herbarium	26159	14030	3526
University of Manitoba Vascular Plant Herbarium	5686	5507	0
University of Toronto at Mississauga Herbarium	10920	4014	0
Totals	122195	57296	13946
Fish Collection	Specimens	Georeferenced	Imaged
Field Museum of Natural History - Fish	5557	374	4485
Illinois Natural History Survey - Fish	30403	8325	19231
J. F. Bell Museum of Natural History - Fish	15733	13788	5724
Ohio State University Museum of Biological Diversity -			
Fish Division	9033	0	9005
University of Michigan Museum of Zoology - Fish	35046	31816	1016
University of Wisconsin-Madison Zoological Museum -			
Fish	4601	446	4298
Totals	100373	54749	43759
Mollusk Collection	Specimens	Georeferenced	Imaged
Field Museum of Natural History - Mollusks	6438	159	0
Illinois Natural History Survey - Mollusks	8191	7672	2964
J. F. Bell Museum of Natural History - Mollusks	1731	311	0
Ohio State University Museum of Biological Diversity -	1,31	311	Ö
Mollusc Division	2376	0	2350
University of Michigan Museum of Zoology - Mollusks	23978	3	7214
University of Wisconsin-Madison Zoological Museum -			· ·
Mollusks	531	425	460
Totals	43245	8570	12988
Grand totals	999102	346852	737367



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Submission #1002

Submission information -

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by mwdenslow

Thursday, June 29, 2017 - 08:21

76.120.67.210

TCN Name:

SERNEC: The Key to the Cabinets: Building and Sustaining a Research Database for a Global Biodiversity Hotspot

Person completing the report:

michael.denslow@gmail.com

Progress in Digitization Efforts:

There are 97 collections serving data through the SERNEC portal. There are currently 2,985,640 specimens records and 213,831 (7%) of those records are georeferenced. There are currently 2,320,811 imaged specimen images available. There are currently 33 collections publishing to iDigBio.

Georgia:

GA imaged 680 specimens during this time period (188,480 to date). Skeletal data (species name, state, county) for 7,002 non-Georgia specimens entered into Specify (13,917 to date). COLG imaged 1,205 specimens (6,115 specimens to date), 3,332 images were uploaded/linked to the SERNEC portal. GSW uploaded 972 images uploaded/linked to the SERNEC portal and linked to records. GAS imaged 9,979 specimens during this time period (17,634 imaged to date), 4311 images were associated with their existing Specify record and 699 images and data uploaded/linked to the SERNEC portal.

Kentucky:

EKY imaged 2,364 specimens. MUR hired one part-time undergraduate student to add barcodes and image specimens this summer. Approximately 1,000 specimens were imaged.

Mississippi:

One graduate student georeferenced records from the Mississippi State University (~360 records) and University of Mississippi (~1700 records) herbaria using the collaborative GeoLocate function during May 16-31.

South Carolina:

In early May we hired and trained one undergraduate student at CLEMS to capture images and skeletal data. In April and May we were able to capture images and enter skeletal data for 4,851 specimens. We also dismantled the mobile imaging unit at USC Upstate (USCS) in Spartanburg and relocated it to Francis Marion University (FMUH) in Florence. There we reassembled it and trained the FMUH curator, two student workers, and two student volunteers. Through the end of May they

have imaged approximately 1,500 specimens. We also delivered labels and a barcode scanner to Newberry College (NBYC) in Newberry and trained the curator in the process of applying barcodes to images and entering skeletal data. This is a new pre-processing step we have introduced to speed the workflow. To date, NBYC has applied barcodes and entered skeletal data for over 10,680 specimens, in preparation for when they receive the imaging unit in mid-July. At USCH 4 student technicians captured 5,227 specimen images which are linked to full metadata records. An additional student technician and a volunteer, entered label metadata for 526 specimen records.

Share and Identify Best Practices and Standards (including Lessons Learned):

All SERNEC:

The SERNEC – TCN protocols continue to be updated as needed and are posted on the SERNEC resources site (http://sernec.appstate.edu/resources).

South Carolina:

We are experimenting with changes to the workflow in order to speed the process. We purchased two relatively inexpensive barcode scanners and delivered them to the next two herbaria scheduled to receive the imaging equipment (FMUH and NBYC). In the weeks before they receive the equipment they (curators and volunteers) are able to apply barcode labels and enter skeletal data for thousands of specimens. This will make the actual imaging process go much more quickly when the photographic equipment arrives.

Identify Gaps in Digitization Areas and Technology:

All SERNEC:

Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts:

All SERNEC:

Nothing to report.

Kentucky:

MUR: We took screen shots of the data entry screens and used them in PowerPoint with added overlaying text boxes to explain details of how each field should be completed, using a contrasting font color. Information pertained to both content and format to be used. These were printed and utilized at the computers, which helped new workers considerably, as they did not have to stop and look up details for various fields. It also improved specimen label consistency from one worker to the next.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Nothing to report.

Share and Identify Opportunities and Strategies for Sustainability:

Nothing to report.

Share and Identify Education and Outreach (E&O) Activities:

Nothing to report.

Other Progress (that doesn't fit into the above categories):

All SERNEC:

Nothing to report.

Mississippi: Gary Ervin will take over as PI of the Mississippi project beginning July 1.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1002



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Submission #999

Submission information -

Form: TCN Bi-Monthly Progress Report to iDigBio Submitted by rhbaldree Wednesday, June 28, 2017 - 16:14 192.17.34.169

TCN Name:

The Microfungi Collections Consortium: A Networked Approach to Digitizing Small Fungi with Large Impacts on the Function and Health of Ecosystems

Person completing the report:

rnb@illinois.edu

Progress in Digitization Efforts:

- MyCoPortal now has 3.253,921 records and 190,750 observations from 80 institutions.
- Natural History Museum of Utah Fungarium (UT) collection added to MyCoPortal (1May2017)
- ARIZ began imaging their collection (June2017)

Share and Identify Best Practices and Standards (including Lessons Learned):

• Workflow guide created to instruct participants in making a checklist on the MyCoPortal (15May2017). Both English and Spanish translation were added to the resources section: http://www.microfungi.org/index.php/resources/

Identify Gaps in Digitization Areas and Technology:

Nothing to report

Share and Identify Opportunities to Enhance Training Efforts:

 Teresa Iturriaga met with participants at Harvard University (FH) to train them in georeferencing (June2017)

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Observations from iNaturalist and Mushroom Observer have been added to the MyCoPortal.

Share and Identify Opportunities and Strategies for Sustainability:

- TENN and OSC have switched from a Snapshot collection to a Live collection.
- CFMR and WSP are considering switching from a Snapshot collection to a Live collection.

Share and Identify Education and Outreach (E&O) Activities:

• Poem, "Bering Land Bridge and the MyCoPortal," written and featured in May 2017 iDigBio Spotlight (https://www.idigbio.org/content/bering-land-bridge-and-mycoportal - overlay-context=)

Other Progress (that doesn't fit into the above categories):

Attachment 1 Checklists.pdf

Attachment 2

Checklists Español.pdf

Source URL: https://www.idigbio.org/node/564/submission/999

Checklists: What they are, what they are for, and how to make them

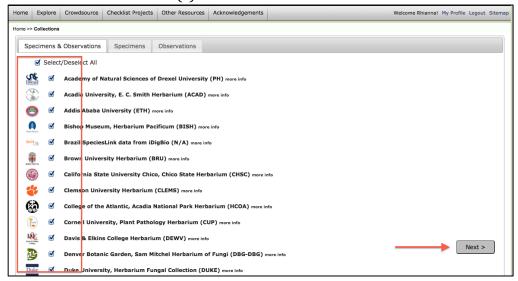
Dynamic Checklist:

This checklist will be the most up to date. It is created when you search for a specific institution, location, collector, time period, etc. The list will contain all vouchered specimens within the search parameters.

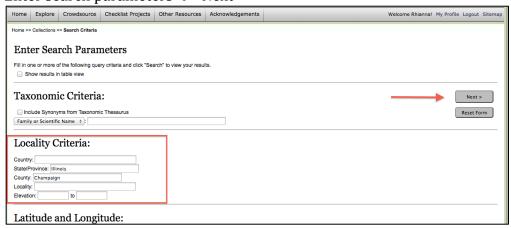
1. "Explore" → "Search Collections"



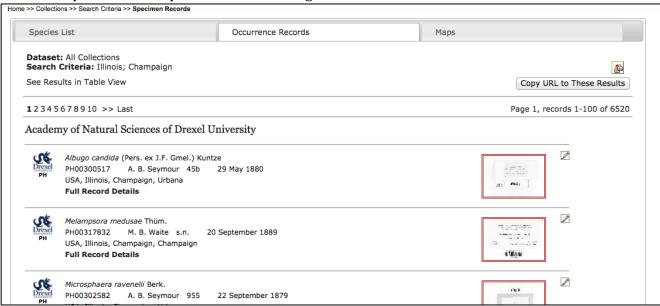
2. Select desired institution(s) \rightarrow "Next"



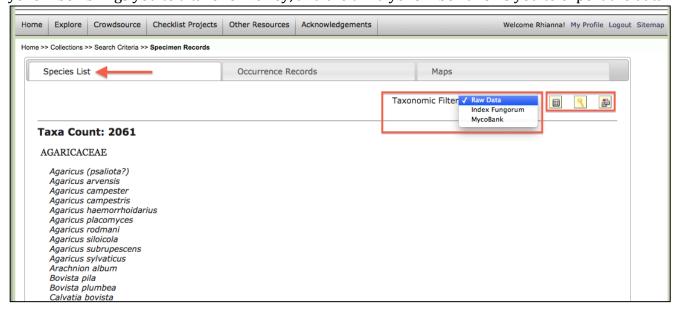
3. Enter search parameters → "Next"



4. The resulting list will contain all current vouchered specimens that are within the given search parameters. You can view a list of the species or occurrence records, as well as a map that will show data points for all specimens that have geocoordinates associated with their records.



5. Selecting the "Species List" tab will bring up the list of species – the Taxonomic Filter allows you to choose how the data will be displayed, the first yellow box will pull up the checklist, the second yellow box brings you to a taxonomic key, and the third yellow box allows you to export the data.

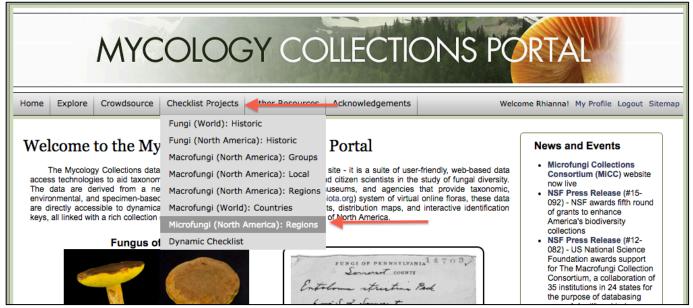


Static Checklist:

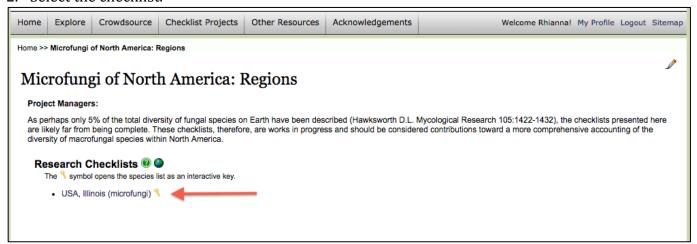
Static checklists, on the other hand, are created manually and may or may not be backed up by current vouchered specimens on the portal. It can be a useful tool if you want to always have a list readily available at all times (and with a specific URL), if you want species notes that are always available, etc.

How to view Public Checklists:

1. From the Home page, hover over "Checklist Projects," then select the category most closely related to the checklist you are interested in viewing.



Select the checklist.

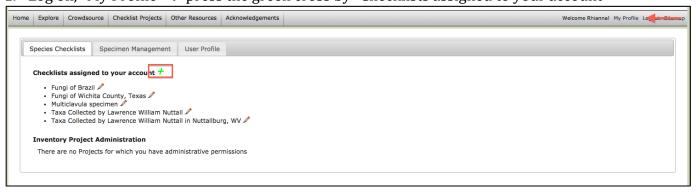


- 3. View the checklist.
 - a. In the Options box on the right side, you can search the list as well as choose how to view the list:
 - i. Selecting "Notes and Vouchers" will allow you to distinguish which species have been associated with vouchered specimens on MyCoPortal
 - ii. The search feature allows you to narrow your list down (letting you search by taxon, for example)
 - iii. "Filter" allows you to choose the taxonomic filter
 - iv. Select "Display as images" and then "Rebuild list" to display the images associated with each species.
 - b. By selecting the key icon, you can view the interactive key associated with the specimens in that checklist.

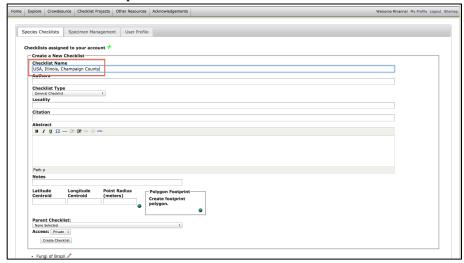


How to create a Static Checklist:

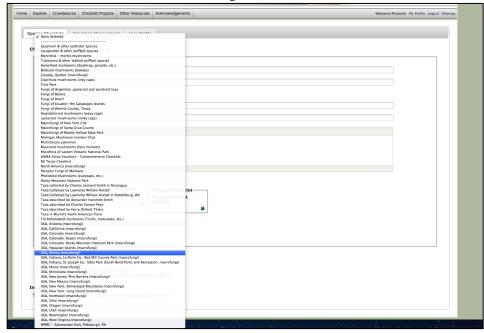
1. Log on, "My Profile" → press the green cross by "Checklists assigned to your account"



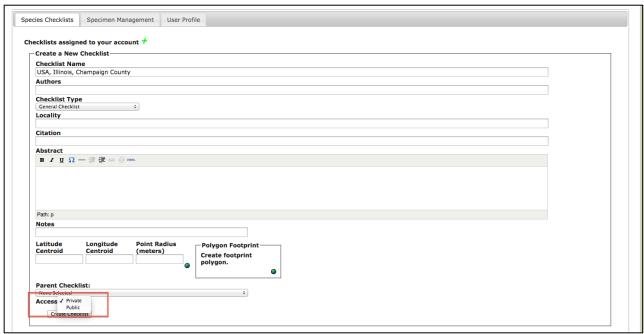
- 2. Input as much information as you have about the checklist you are creating.
 - a. Checklists for specific localities should be named uniformly from least specific (country) to most specific (in this case, Champaign County). It is important to add this extra, broad information about the checklists to give other people an idea of where the location is. For example, if my checklist is "Meadowbrook Park," only I would know what park that refers to. However, the name "USA, Illinois, Champaign County, Urbana, Meadowbrook Park" is much more explicit.



b. Most of this information can be edited after the checklist is done – one important exception is "Parent Checklist." This dropdown list allows you to associate your checklist with existing checklists. In this case, it may be helpful to associate my new Champaign County list with an older list including the whole state of Illinois.



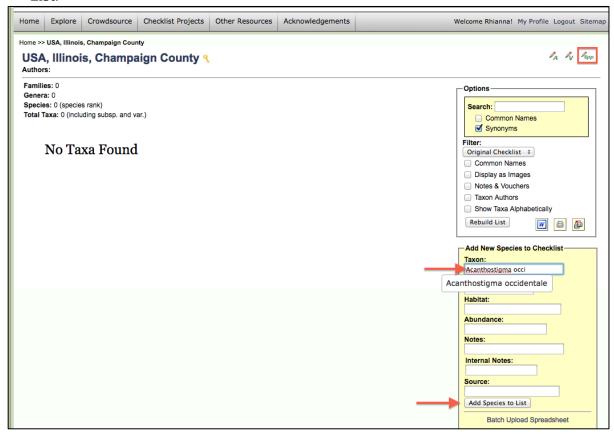
c. "Access" can be set to Private or Public. It's advisable to keep it Private until completed, and then set it to Public if desired



d. Press "Create Checklist." Now, whenever you are editing the checklist, you can press the pencil icon with the "A" beside it (upper right hand corner) to edit the checklist description.



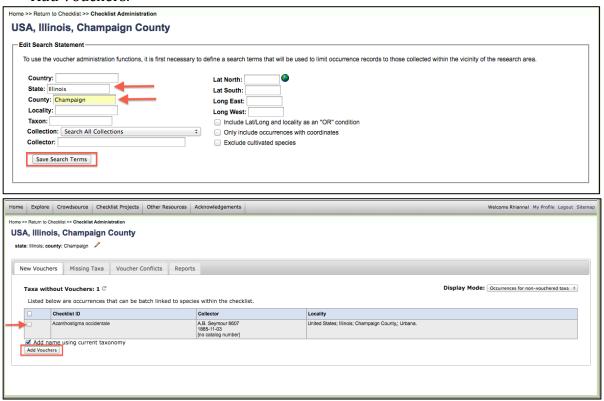
- 3. Add species to your checklist. This can be done in a couple of different ways. If you want to individually add a specific list of specimen to your checklist:
 - a. Press the pencil icon with "spp" beside it. This will bring up the box that says "Add New Species to Checklist"- input the desired taxon/other information and select "Add Species to List."



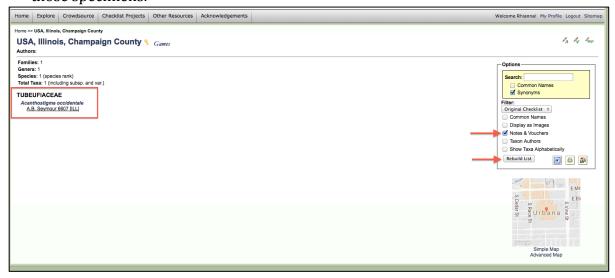
b. Now, to check for vouchered specimens, press the pencil with the "V"



c. From here, type your search parameters (in this case, Illinois and Champaign County) and press "Save Search Terms." This will pull up a list of vouchered specimens of the species in your checklist that match the search criteria. Check the box next to each name and select "Add Vouchers."

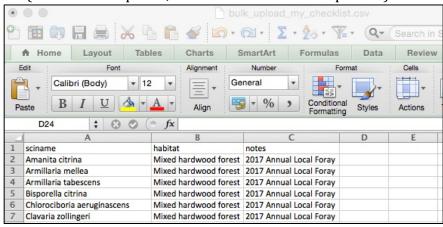


d. Now you are back at your checklist. Under "Options" → "Filter," press "Notes & Vouchers" then "Rebuild List," and the checklist will list the specimens and vouchers associated with those specimens.



If you want to batch upload a list of species names:

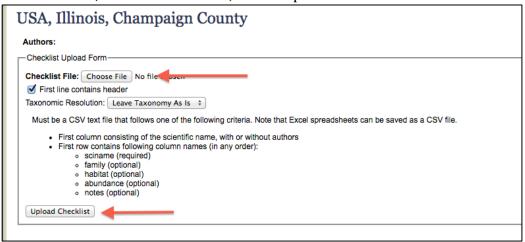
a. create a .csv file with the columns "sciname," "family," "habitat," "abundance," and "notes" (sciname is required, the other columns are optional)



b. In the "Add New Species to Checklist" box, select "Batch Upload Spreadsheet"



c. From here, select "Choose File," then "Upload Checklist."

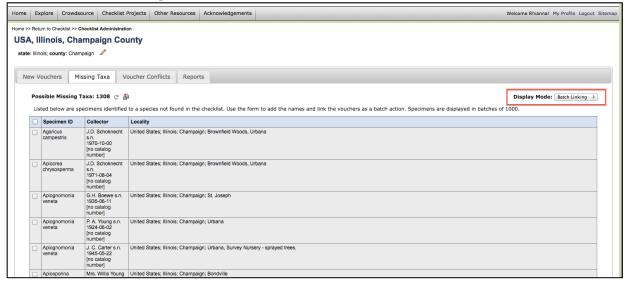


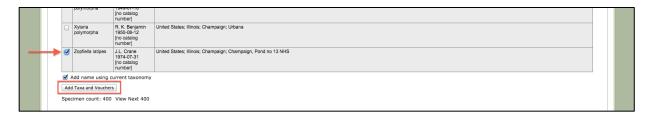
If, on the other hand, you are populating your checklist based on certain criteria:

a. Press the pencil with the "V" and add the search parameters, but now go to the "Missing Taxa" tab. This will show you all of the vouchered specimens that match those search parameters (similar to the Dynamic Checklist).



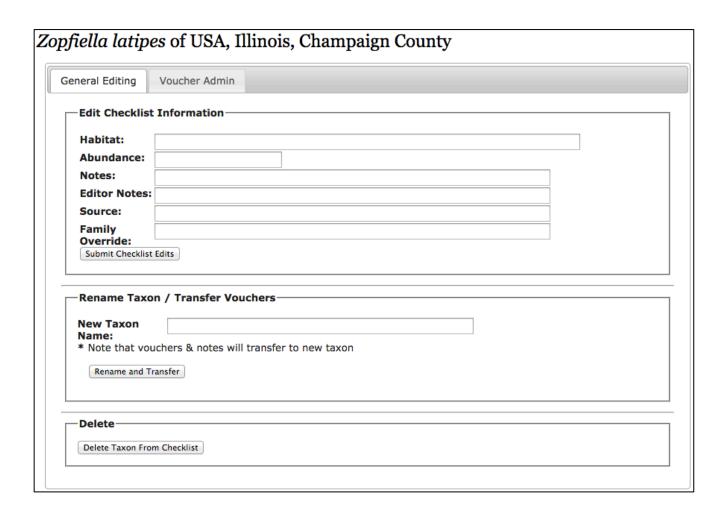
b. Changing the "Display Mode" from "Species List" to "Batch Linking" will allow you to easily add as many or as few of these vouchered specimens to your checklist. Check the box next to the record, then press "Add Taxa and Vouchers" at the bottom.





4. Once you have added species to the checklist, you can also add notes to those species. By selecting the pencil icon with "SPP," more pencil icons will pop up next to each species name. Press those to bring up a dialogue box in which you can type in notes that will appear next to the vouchered specimen.





5. Repeat as many times until your checklist is complete! Once you are confident in the list, you can request for the MyCoPortal team to add it to one of the Checklist Projects so that it is easily accessible. Without being added to a specific project, you (and other editors of the list) will have access and can share a URL for the list, but other users will not be able to find the checklist by browsing the portal. [Note: you will continue to be able to edit the list as necessary even after it is added to a Checklist Project].



Checklists: What they are, what they are for, and how to make them

[Listados de especies: qué son, para qué sirven, como hacerlas]

Términos y sus traducciones Inglés / Español

Checklists = listas Voucher = record

Dynamic Checklist:

Listas Dinámicas:

This checklist will be the most up to date. It is created when you search for a specific institution, location, collector, time period, etc. The list will contain all vouchered specimens within the search parameters. [Estas listas son las más actualizadas. Se crean cuando se analizan los siguientes parámetros :nombre de la institución (herbario o colección de hongos), localidad, nombre del colector, fecha de colección o periodo (rango de tiempo), etc. La lista incluirá todos los ejemplares que se encuentran dentro de los parámetros de búsqueda mencionados.]

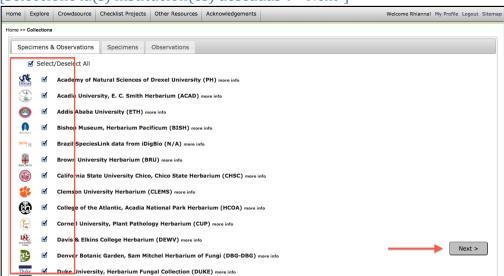
1. "Explore" → "Search Collections"

[Presionar pestañas (flechas rojas)]



2. Select desired institution(s) \rightarrow "Next"

[Seleccione la(s) institución(es) deseadas→ "Next"]

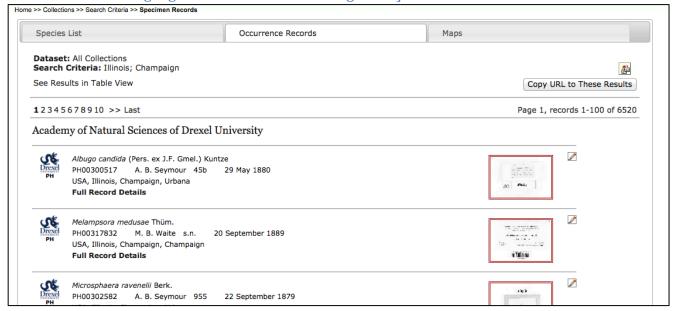


3. Enter search parameters → "Next"

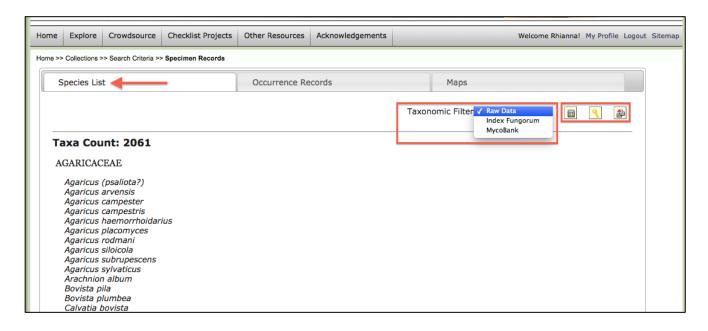
Home Explore Crowdsource Checklist Projects Other Resources Acknowledgements Welcome Rhianna! My Profile Logout Sitemap **Enter Search Parameters** Fill in one or more of the following query criteria and click "Search" to view your results Show results in table view Taxonomic Criteria: Next > Reset Form ☐ Include Synonyms from Taxonomic Thesaurus Family or Scientific Name : Locality Criteria: Country: State/Province: Illinois County: Champaign Locality: Latitude and Longitude:

[Introduzca los parámetros de búsqueda "Enter Search Parameters" → "Next"]

4. The resulting list will contain all current vouchered specimens that are within the given search parameters. You can view a list of the species or occurrence records, as well as a map that will show data points for all specimens that have geocoordinates associated with their records. [La lista resultante incluirá todos los ejemplares que se encuentren dentro de los parámetros de búsqueda seleccionados. Podrá observar una lista de las especies o récords existentes, así como un mapa que mostrará puntos para cada una de las localidades de cada uno de los especímenes que tienen coordenadas geográficas asociadas a sus registros.]



5. Selecting the "Species List" tab will bring up the list of species – the Taxonomic Filter allows you to choose how the data will be displayed, the first yellow box will pull up the checklist, the second yellow box brings you to a taxonomic key, and the third yellow box allows you to export the data. [Al seleccionar la pestaña "Species List" (Lista de Especies) se mostrará la mencionada lista de especias. – El "Taxonomic Filter" (Filtro Taxonómico) le permitirá elegir el formato en que se mostraran los datos; la primera casilla amarilla subirá el listado de especies, la segunda casilla amarilla le llevará a una clave taxonómica, y la tercera casilla amarilla le permitirá exportar los datosl



Static Checklist:

[Listas Estáticas:]

Static checklists, on the other hand, are created manually and may or may not be backed up by current vouchered specimens on the portal. It can be a useful tool if you want to always have a list readily available at all times (and with a specific URL), if you want species notes that are always available, etc. [Las listas estáticas se crean manualmente y pueden o no estar respaldadas por ejemplares certificados en el portal. Pueden ser herramientas útiles si requiere de listas que estén disponibles en todo momento (y con una URL específica), o si desea que las notas de especies estén siempre a su disposición, etc.]

How to view Public Checklists:

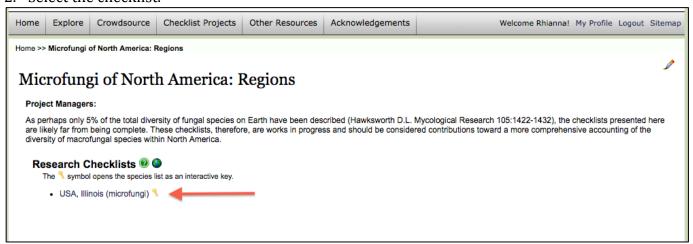
[Como acceder a las Listas Publicadas:]

1. From the Home page, hover over "Checklist Projects," then select the category most closely related to the checklist you are interested in viewing.

IEn la página de inicio, coloque el cursor sobre "Checklist Projects," (Proyectos de Listas) y, a continuación, seleccione la categoría más cercana a la lista que le interese ver.]



Select the checklist.

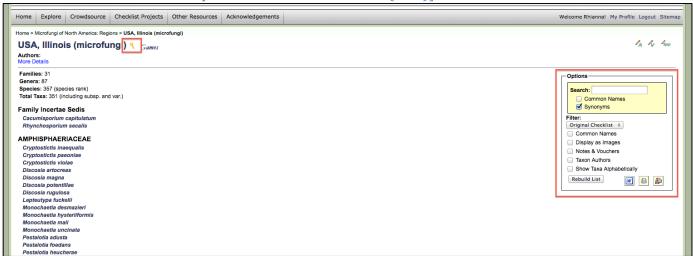


3. View the checklist.

[Vaya a la lista (checklist].

- a. In the Options box on the right side, you can search the list as well as choose how to view the list:
 - [En la "Options" box (opciones) que aparecerá en el lado derecho de la pantalla, podrá realizar búsquedas dentro de la lista, así como escoger entre diferentes opciones de cómo ver la lista:1
 - i. Selecting "Notes and Vouchers" will allow you to distinguish which species have been associated with vouchered specimens on MyCoPortal [Seleccionar la opción "Notes and Vouchers" (Notas y Records) le permitirá distinguir cuales especies están asociadas a muestras que poseen records en el
 - ii. The search feature allows you to narrow your list down (letting you search by taxon, for example)

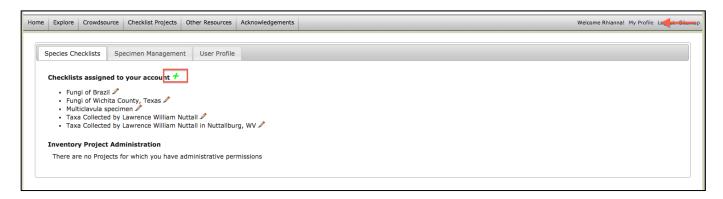
- [La función "Search" (Búsqueda) le permite restringir la lista al parámetro deseado (por ejemplo, buscar taxón.)
- iii. "Filter" allows you to choose the taxonomic filter [La opción "Filter" (Filtro) le permite escoger el filtro taxonómico que desea aplicar.]
- iv. Select "Display as images" and then "Rebuild list" to display the images associated with each species.
 - [Seleccione "Display as images" (Mostrar como imágenes) y a continuación "Rebuild list" (Rehacer lista) para observar las imágenes asociadas con cada especie.]
- b. By selecting the key icon, you can view the interactive key associated with the specimens in that checklist.
 - [Al seleccionar el icono con la llave (recuadro rojo), podrá ver una clave interactiva asociada con los especímenes de esa checklist (lista)]



How to create a Static Checklist:

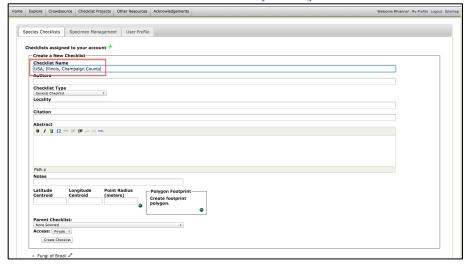
[Como crear una Static Checklist (Lista Estática):]

1. Log on, "My Profile" → press the green cross by "Checklists assigned to your account" [Inicie sesión, "My Profile" (Mi Perfil) → presione la cruz verde "Checklists assigned to your account" (Listas asignadas a su cuenta)]



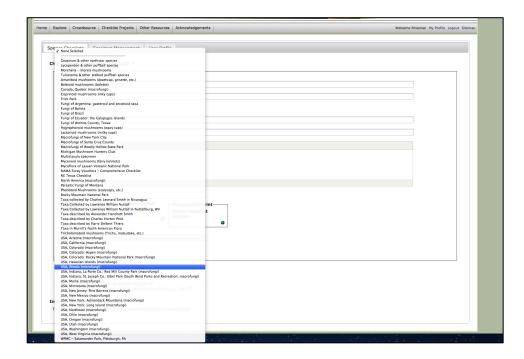
- 2. Input as much information as you have about the checklist you are creating. [Introduzca la mayor cantidad de información que tenga acerca de la lista que está creando]
 - a. Checklists for specific localities should be named uniformly from least specific (country) to most specific (in this case, Champaign County). It is important to add this extra, broad information about the checklists to give other people an idea of where the location is. For example, if my checklist is "Meadowbrook Park," only I would know what park that refers to. However, the name "USA, Illinois, Champaign County, Urbana, Meadowbrook Park" is much more explicit.

[Las listas de localidades específicas deben ser denominadas de manera uniforme de los parámetros menos específicos (país) a más específicos (en este caso, el Condado de Champaign). Es importante agregar información general sobre la lista a fin de dar a otras personas una idea certera de dónde está la ubicación. Por ejemplo, si mi lista es de "Meadowbrook Park", sólo yo sabría a qué parque se refiere. Sin embargo, si incluyo la información adicional: "EEUU, Illinois, condado de Champaign, Urbana, Parque de Meadowbrook", es mucho más explícito.]



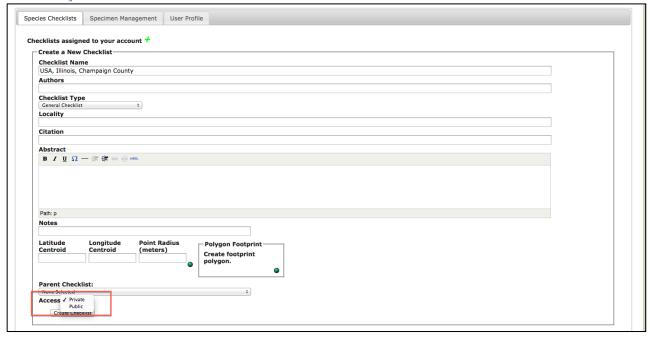
b. Most of this information can be edited after the checklist is done – one important exception is "Parent Checklist." This dropdown list allows you to associate your checklist with existing checklists. In this case, it may be helpful to associate my new Champaign County list with an older list including the whole state of Illinois.

[La mayor parte de esta información puede editarse después de que la lista está hecha. Una de las excepciones más importantes es "Parent Checklist." (Lista Base). Esta lista desplegable le permite asociar su lista con las listas existentes. En este caso específico, puede ser útil asociar mi nueva lista del condado de Champaign con una lista más antigua que incluya todo el estado de Illinois.]



c. ["Access" can be set to Private or Public. It's advisable to keep it Private until completed, and then set it to Public if desired]

["Access" (Tipo de Acceso) puede establecerse como Privado o Público. Es aconsejable mantenerlo Privado hasta que esté terminado, y luego configurarlo como Público si se deseal

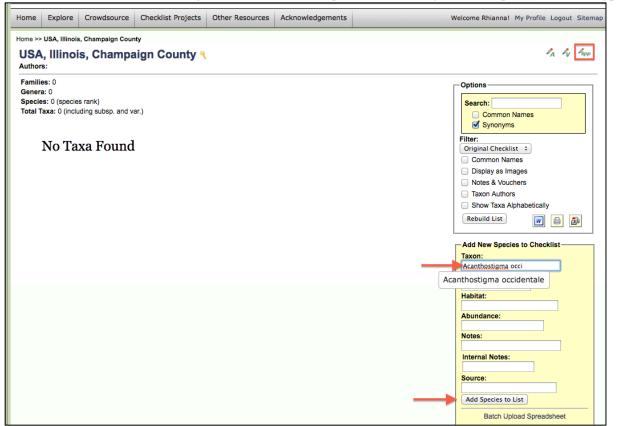


d. Press "Create Checklist." Now, whenever you are editing the checklist, you can press the pencil icon with the "A" beside it (upper right hand corner) to edit the checklist description. [Presione "Create Checklist." (Crear Lista). De ahora en adelante, cuando esté editando la lista, puede presionar el icono de lápiz con la "A" junto a ella (esquina superior derecha) para editar la descripción de la lista.]

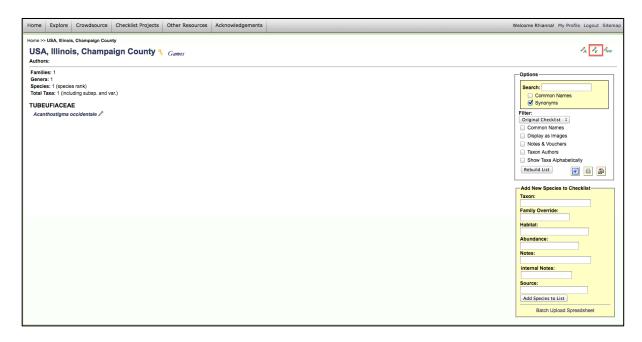


- 3. Add species to your checklist. This can be done in a couple of different ways. If you want to individually add a specific list of specimen to your checklist:
 - a. Press the pencil icon with "spp" beside it. This will bring up the box that says "Add New Species to Checklist"- input the desired taxon/other information and select "Add Species to List."

[Presione el icono del lápiz con "spp" al lado. Esta acción abrirá la pestaña "Add New Species to Checklist" (Añada Especies Nuevas a la Lista)- Ingrese el taxón / otra información deseada y seleccione "Add Species to List." (Añadir especies a la lista)].

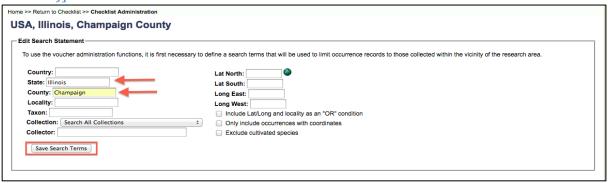


b. Now, to check for vouchered specimens, press the pencil with the "V" [Ahora, para revisar los "voucher specimens" (Records de los especímenes), presione el lápiz con la "V"]



c. From here, type your search parameters (in this case, Illinois and Champaign County) and press "Save Search Terms." This will pull up a list of vouchered specimens of the species in your checklist that match the search criteria. Check the box next to each name and select "Add Vouchers."

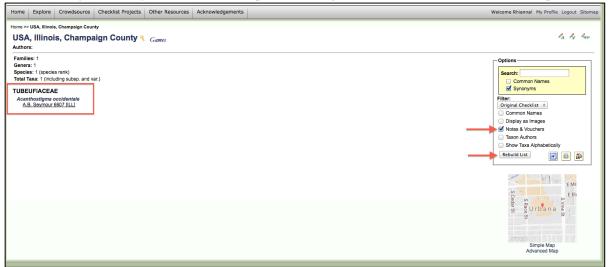
[A continuación, escriba los parámetros de búsqueda (en este caso, los Condados de Illinois y Champaign) y presione "Save Search Terms." (Guardar los términos de búsqueda). Esto mostrará una lista de ejemplares de la especie en su lista que coinciden con los criterios de búsqueda. Marque la casilla junto a cada nombre y seleccione "Add Vouchers." (Añadir Records)1.





d. Now you are back at your checklist. Under "Options" → "Filter," press "Notes & Vouchers" then "Rebuild List," and the checklist will list the specimens and vouchers associated with those specimens.

[Ahora estará de nuevo en su lista (checklist). Bajo "Options → Filter," (Opciones → Filtro) presione "Notes & Vouchers" (Notas y Records) y luego "Rebuild List," (Reconstruir lista), y la lista (checklist) mostrará los especímenes y records asociados con esos especímenes.]

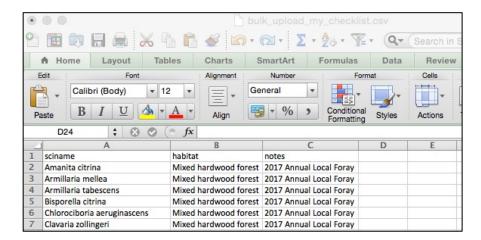


If you want to batch upload a list of species names:

[Si desea subir por lotes una lista de nombres de especies:]

a. create a .csv file with the columns "sciname," "family," "habitat," "abundance," and "notes" (sciname is required, the other columns are optional)

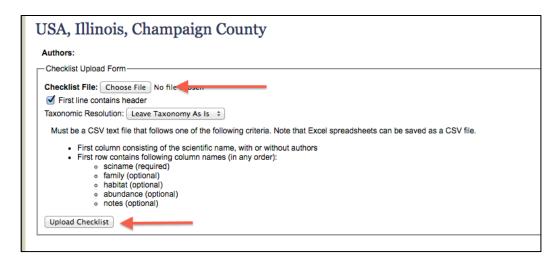
[Cree un archivo .csv con las columnas "sciname", "family", "habitat", "abundance" y "notes" (se requiere la columna "sciname", las otras columnas son opcionales)]



b. In the "Add New Species to Checklist" box, select "Batch Upload Spreadsheet" [En el cuadro "Add New Species to Checklist" (Agregar nuevas especies a la lista de verificación), seleccione "Batch Upload Spreadsheet"]



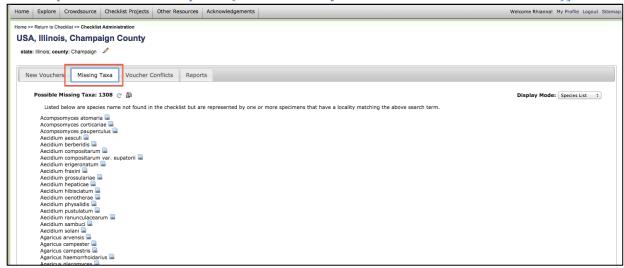
c. From here, select "Choose File," then "Upload Checklist." [Desde aquí, seleccione "Choose File," (Elegir archivo), luego "Upload Checklist." (Cargar lista")]



If, on the other hand, you are populating your checklist based on certain criteria: [Si, por el contrario, está completando su lista (checklist) basándose en ciertos criterios:]

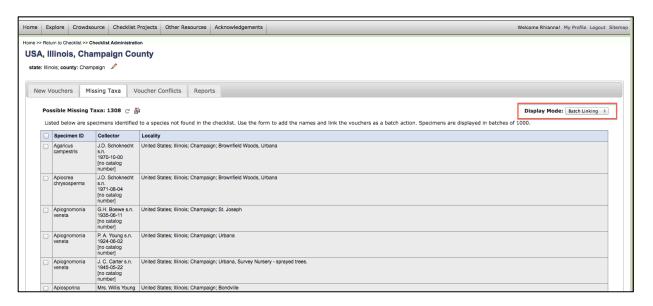
a. Press the pencil with the "V" and add the search parameters, but now go to the "Missing Taxa" tab. This will show you all of the vouchered specimens that match those search parameters (similar to the Dynamic Checklist).

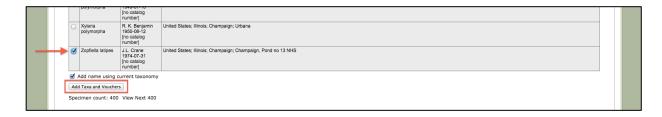
[Presione el lápiz con la "V" y agregue los parámetros de búsqueda; pero ahora vaya a la pestaña "Missing Taxa" (Taxa Faltantes). Esto le mostrará todos los ejemplares que coinciden con los parámetros de búsqueda (similar a la "Dynamic Checklist " Lista Dinámica)]



b. Changing the "Display Mode" from "Species List" to "Batch Linking" will allow you to easily add as many or as few of these vouchered specimens to your checklist. Check the box next to the record, then press "Add Taxa and Vouchers" at the bottom.

[Si cambia el "Display Mode" (Modo de visualización) de "Species List" (Lista de Especies) a "Batch Linking" (Vinculación por lotes), podrá agregar fácilmente a su lista (checklist). el número de ejemplares que desee. Seleccione la casilla que se encuentra al lado del record y, a continuación, pulse "Add Taxa and Vouchers" (Añadir Taxa y muestras) en la parte inferior de la pantalla.]





4. Once you have added species to the checklist, you can also add notes to those species. By selecting the pencil icon with "SPP," more pencil icons will pop up next to each species name. Press those to bring up a dialogue box in which you can type in notes that will appear next to the vouchered specimen.

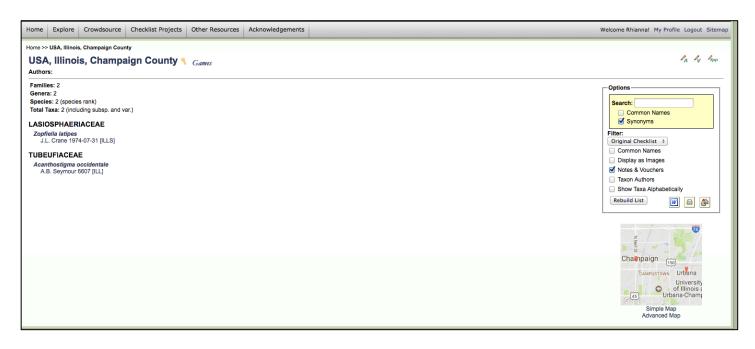
[Una vez que haya añadido especies a la lista (checklist), también puede agregar notas a esas especies. Al seleccionar el icono de lápiz con "SPP", más iconos de lápices aparecerán junto al nombre de cada especie. Presione en aquellos nombres que desee, para abrir un cuadro de diálogo en el que puede escribir notas que aparecerán junto al espécimen.]



нена напр	es of USA, Illinois, Champaign County
General Editing	Voucher Admin
Edit Checklis	st Information————————————————————————————————————
Habitat:	
Abundance:	
Notes:	
Editor Notes	:
Source:	
Family Override:	
Submit Checklis	t Edits
— Rename Tax New Taxon Name:	on / Transfer Vouchers
	ouchers & notes will transfer to new taxon
Rename and	Transfer
—Delete——	
Delete Delete Taxon Fr	om Checklist

5. Repeat as many times until your checklist is complete! Once you are confident in the list, you can request for the MyCoPortal team to add it to one of the Checklist Projects so that it is easily accessible. Without being added to a specific project, you (and other editors of the list) will have access and can share a URL for the list, but other users will not be able to find the checklist by browsing the portal. [Note: you will continue to be able to edit the list as necessary even after it is added to a Checklist Project].

[Repetir tantas veces como sea necesario hasta que su lista (checklist)esté completa. Una vez finalizada, puede solicitar que el equipo de MyCoPortal la agregue a uno de los Proyectos de Listas existentes, a fin de que esta sea fácilmente accesible. Si no desea que su lista sea incluida dentro de un proyecto específico, usted (y otros editores de la lista) tendrán acceso y podrán compartir una URL para dicha lista, pero otros usuarios no podrán acceder a esa lista navegando por el Portal]. [Nota: Usted seguirá teniendo la posibilidad de editar la lista según lo desee, incluso después de que esta sea incluida a uno de los Proyectos de Listas (checklists)].





Published on iDigBio (https://www.idigbio.org)

Home > Collaborators > TCN Bi-Monthly Progress Report to iDigBio > Webform results > TCN Bi-Monthly Progress Report to iDigBio

Submission #995

Submission information -

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by EPICC

Thursday, June 22, 2017 - 19:22

136.152.142.62

TCN Name:

Documenting Fossil Marine Invertebrate Communities of the Eastern Pacific - Faunal Responses to Environmental Change over the last 66 million years

Person completing the report:

eclites@berkelev.edu

Progress in Digitization Efforts:

As of 6/1/2017, the TCN has fully curated and computer cataloged 679, 989 specimens (43% of goal) and made 51,068 of these specimens available in the iDigBio portal. The TCN has photographed 22,969 specimens (28% of goal) and georeferenced 14,341 localities (41% of goal).

Original source material digitized: Scanning of CAS ledgers continues and is now 70% complete. At UCMP we continue to check and update locality records based on handwritten ledgers and other archival materials stored with the fossils. This information is immediately added to our database to facilitate georeferencing.

Photography: UCMP successfully uploaded the first batch of specimen photographs and label photographs to CalPhotos using their bulk loading system.

Serving data to iDigBio: CAS is currently working on serving their data to GBIF via the CAS IPT and will begin exporting data to iDigBio through GBIF's IPT once that has commenced. This should be accomplished over the next month.

Share and Identify Best Practices and Standards (including Lessons Learned):

During our May TCN call, the group identified several best practices for specimen imaging including: photographing specimens of a similar size at the same time as that requires fewer equipment adjustments, choosing assistants with at least some photographic experience and an aptitude for following written instructions as well as creating a manual before assistants leave to maintain consistency throughout the project.

UO has amended their system update policy due to issues detailed below. UCMP has added a step to their taxonomic checks. They are now checking each tray for unlabeled specimens that project staff can identify.

Identify Gaps in Digitization Areas and Technology:

UO has been having trouble with their Specify system related to operating system updates. There has been a change in IT personnel at the museum and updating procedures had not been regularized, resulting in server crashes from version compatibility issues. UO has amended their updating policy and UO EPICC personnel are in the process of ensuring all parts of their Specify system are in compliance.

The Burke Museum has posted a subset of their data to VertNet to test the iDigBio and GBIF ingestion process before all databased records are posted. iDigBio and GBIF are using outdated static taxonomic reference lists which do not represent specimens from Washington, so about half of the records we have submitted have had their names changed by the aggregators in some way. Also, because of the low resolution of GBIF's state/country maps and the level of our fuzzing the data (to 0.1 degree), about 500 of our records (about 7% of those we have served) have a "country code mismatch" flag and do not display as valid georeferenced data points in GBIF's dataset. Since these appear to be issues with the data aggregators, Burke staff will continue to database and georeference without modifying their procedures. They hope to work this summer to add Washington's taxonomic lists to the backbone that iDigBio and GBIF use.

Share and Identify Opportunities to Enhance Training Efforts:

Clites (UCMP) attended Digital Data in Biodiversity Research Conference organized by iDigBio and the University of Michigan. Pearson (UCMP) attended Western Society of Malacology meeting hosted by LACM. Clites participated in DwC Hour webinar on controlled vocabulary fields. Clites attended scientific storytelling workshop led by UC Berkeley graduate student Sara Elshafie with participation from Pixar animation studios staff. Clites is using these storytelling techniques to improve her VFE modules. Skibinski (PRI) participated in or viewed iDigBio webinars.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations: Suggested change to iDigBio TCN Resources ADBC info sheet based on feedback from TCN partners.

Share and Identify Opportunities and Strategies for Sustainability:

The Burke Museum has now made the connection from their collections to the VertNet IPT. Because they are actively updating the specimen records daily, they have the VertNet IPT set to harvest the data weekly. At the close of the EPICC project, they will set the IPT to harvest data at a less frequent interval. The Burke will leave the connections to the IPT in place, so that any changes in our database records will be reflected by the data aggregators, even after this project is completed.

Share and Identify Education and Outreach (E&O) Activities:

TCN staff trained 4 new graduate students and one new undergraduate student.

Feedback from advisory board has been incorporated into VFE modules and the team is working on final edits as well as a teacher and student guides. Created VFE glossary and made other updates to VFE webpage in preparation for launch of the first modules.

Other Progress (that doesn't fit into the above categories):

Held virtual TCN meeting May 19 which included discussions of the next steps for collaborative georeferencing and discussion of best practices for imaging.

Attachment 1

Attachment 2



Published on iDigBio (https://www.idigbio.org)

Home > Collaborators > TCN Bi-Monthly Progress Report to iDigBio > Webform results > TCN Bi-Monthly Progress Report to iDigBio

Submission #1006

Submission information -

Form: TCN Bi-Monthly Progress Report to iDigBio Submitted by BruceL Monday, July 3, 2017 - 16:46 24.225.98.220

TCN Name:

The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway

Person completing the report:

blieber@ku.edu

Progress in Digitization Efforts:

Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman and with major involvement from collections manager Julien Kimmig, associated with this project we have databased 15,735 Cretaceous specimens total, with 756 databased since the last reporting period in early May. Most of these specimen records are also georeferenced. At present we are focusing on databasing our mollusks. In addition, we have now georeferenced a total of 1,987 Cretaceous localities associated with this project. We are also continuing to image ammonoid specimens.

Regarding the Paleontological Research Institution (PRI) portion of the project, led by PI Jonathan Hendricks, efforts have focused on:

- 1) A Digitization Assistant (undergraduate from SUNY-Geneseo) was hired for the summer to assist with processing a backlog of images (provided to PRI from TCN partner museums) for addition to the Cretaceous Atlas of Ancient Life (www.cretaceousatlas.org). These images are being regularly added to the Cretaceous Atlas, which currently features pages for 84 species of Cretaceous fossils.
- 2) Work continues on developing a listing of valid taxonomic names for Late Cretaceous invertebrate fossils from the Western Interior Seaway (WIS). The purpose of this list is to provide all members of the Cretaceous World TCN with a common taxonomic framework for data entry, allowing standardization across the TCN. We expect that this resource will also be of interest to the broader community of paleontologists. The current lists of revised/accepted names for ammonoid families can be accessed at: http://www.cretaceousatlas.org/taxonlist/.

Regarding the Yale University portion of the project, led by PI Susan Butts, during this period 47 relevant localities were georeferenced, 5,434 relevant specimens were databased, and they now have a total of 44,498 specimen records in their database.

They also imaged 4,987 specimens in this reporting period and have imaged a total of 32,962 relevant specimens.

Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson, they have georeferenced 79 new WIS localities during this reporting period and they now have a total of 2816 Vertebrate and 1328 Invertebrate WIS specimen records in their database.

They also produced 420 images of 143 Invertebrate WIS specimens during this reporting period and now have produced a total of 761 images of WIS specimens.

Regarding the University of New Mexico (UNM) portion of the project, led by PI Cori Myers:

They have georeferenced 52 new WIS localities since the last reporting period. They have databased 110 new specimen records since the last reporting period and have databased 417 specimens total. They have also just obtained their imaging equipment and are learning how to use it. Soon after they begin imaging they plan to start sending data to iDigBio (and then iDigPaleo).

Regarding the American Museum of Natural History portion of the project, led by PI Neil Landman and co-PI Ruth O'Leary, they have georeferenced 28 relevant localities in the reporting period, for a total of 4,003 specimens georeferenced. They also now have a total of 41,019 specimens in their database (563 of these are vertebrates). They imaged 59 specimens in the reporting period and have produced a total of 259 images.

Share and Identify Best Practices and Standards (including Lessons Learned):

Regarding the Fort Hays State University portion of the project, they develop and utilize a digitization guide that is constantly being updated and improved to aid training new volunteers and interns. They found that training is done best in teams of two - one student, using the printed guide, instructs the other student on the computer. They work together to determine necessary changes in camera settings and lighting to produce the best photo. Then work is checked by the collections manager periodically.

Regarding the University of New Mexico portion of the project, they have found that keeping a collection of papers for identification and referencing is extremely helpful, as is noting in detail where things are found.

Identify Gaps in Digitization Areas and Technology:

Regarding the Fort Hays State University portion of the project, they are awaiting their relational database and are in the final weeks of the development phase.

Regarding the University of New Mexico portion of the project, they have had many issues with Specify 6. In particular, there are errors in the code that force data to go to the wrong forms. This

has meant that they have to go through and double check every entry associated with specific areas of data.

Share and Identify Opportunities to Enhance Training Efforts:

Regarding the PRI portion of the project, they hired a new undergrad (mentioned above under digitization efforts).

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Regarding the University of Kansas portion of the project, collections manager Julien Kimmig has been helping to identify and select specimens of Cretaceous inoceramid clams in our collections that can be used for geochemical analysis by our partners at the University of New Mexico, Cori Myers and her graduate student.

Regarding the Yale University portion of the project, PI Butts attended the iDigBio Inaugural Digital Data in Biodiversity Research Conference, 5-6 June 2017, Ann Arbor, Michigan and discussed many potential collaborations around the idigpaleo/Cretaceous World specimen portals.

Share and Identify Opportunities and Strategies for Sustainability:

Share and Identify Education and Outreach (E&O) Activities:

The Cretaceous World project was featured in a write-up in the online version of Smithsonian Magazine:

http://www.smithsonianmag.com/smart-news/scientists-are-putting-tens-thousands-sea-fossils-online-180963792/

Also, regarding the PRI portion of the project, the next chapter of the Digital Encyclopedia of Ancient Life (a free, open-access online "textbook" about paleontology that we are developing as a broader impact for our TCN; http://www.digitalatlasofancientlife.org/learn/) is nearly finished. This chapter focuses on systematics and includes detailed overviews of both taxonomic practice (including both zoological and botanical approaches) and phylogenetics, suitable for undergraduate classrooms. As soon as it is completed (~mid-July), we will send a separate notification to iDigBio, as we think it might be of broad interest to the museum community.

Regarding the Yale University portion of the project, they are providing images to the Digital Encyclopedia of Ancient Life (DEAL), a broader outreach aspect of the project, see: http://www.digitalatlasofancientlife.org/learn/

Regarding the Fort Hays State University portion of the project, they have had the following activities on social media:

Twitter Posts: Retweets and Likes updated, non-WIS/Cretaceous related posts filtered out • #CollectionsLife (total retweets: 0, likes: 3)

- -Posted 20 April 2017: #teamwork at @SternbergMuseum. #digitization of the #Gastropoda Enconulus fulvus. #paleontology #CollectionsLife @CanonUSAimaging @Lightroom [first picture of JD and JAMES! Working on photo editing; second picture of JD and Braeden digitizing tiny gastropods teamwork on the itty-bitties is more efficient than a single person. One person shoots and renames while the other sets up the exemplars that can be difficult to stage]
- #FossilFriday (total retweets: 7, likes: 8, comments: 1 (Anthony Maltese))
- -Posted 21 April 2017: #fish reorganization happening soon in @SternbergMuseum! Cool #FishFriday/#FossilFriday find: Pachyrhizodus. #paleontology #CollectionsLife [one photo of the bottom five cabinets of fish with one drawer pulled out; second picture of beautifully complete Pachyrhizodus]
- #CollectionsLife (total retweets: 1, likes: 6)
- -Posted 25 April 2017: Pteranodon hand holding on #PterosaurTuesday (a.k.a. #PterosaurPtuesday) @SternbergMuseum #paleontology #CollectionsLife [picture of Pteranodon specimen]
- #MolluskMonday (total retweets: 2, likes: 6)
- -Posted 2 May 2017: Photo stacking of #Cretaceous pearl for @PaleoDigAtlas. #digitization @Cognisys1 #HeliconFocus #MolluskMonday (a day late) [picture of IP-861 photo stacking in HeliconFocus]
- #WomenInSTEM (total retweets: 1, likes: 9)
- -Posted 3 May 2017: FHSU Paleo grad student studying #Cretaceous #fish from #kansas @SternbergMuseum. #paleontology #research #WomenInSTEM #trowelblazer [Amber working on fish description of Pachyrhizodus minimus]
- #CollectionsLife/#FossilFriday (total retweets: 8, likes: 11)
- -Posted 19 May 2017: Pachyrhizodus caninus skull from #Cretaceous #Kansas for #FossilFriday #FishFriday at the @SternbergMuseum. #paleontology #CollectionsLife [picture of Pachyrhizodus caninus skull in field jacket VP-2189]
- #CollectionsLife (total retweets: 1, likes: 5)
- -Posted 23 May 2017: Organizing ALL the #fossil #fish at the @SternbergMuseum! #paleontology #CollectionsLife #thestruggleisreal [picture of Amber and Amelia with two drawers of fossil fish they were organizing]
- #FossilFriday (total retweets: 6, likes: 7)
- -Posted 9 June 2017: #Cretaceous food and fights-#mosasaur #predation on #ammonite and bite marks on the skull of #holotype Tylosaurus kansasensis. #FossilFriday [picture of ammonite and tylosaur from WIS exhibit highlighting bite marks...chomp chomp]
- #FossilFriday (total retweets: 21, likes: 46)
- -Posted 16 June 2017: Left maxilla and dentary of #Tylosaurus from the #Cretaceous Niobrara Formation of #Kansas. #FossilFriday #reptiles #moreteeth [picture of VP-7262]
- #MuseumWeek (total retweets: 8, likes: 10)
- -Posted 19 June 2017: #Mosasaurs like shellfish, too. #predation #foodMW #MuseumWeek #ammonite #Cretaceous #Kansas [picture of ammonite on exhibit with mosasaur teeth marks]
- #MuseumWeek (total retweets: 0, likes: 6)
- -Posted 19 June 2017: #Fish are friends, not food....sometimes fish are food for other fish. #Cretaceous #Kansas #fossils #foodMW #MuseumWeek #CollectionsLife [picture of fish cabinets and Fish within a fish exhibit]
- #MuseumWeek (total retweets: 0, likes: 3)
- -Posted 21 June 2017: Stories of #fossils inspire recreation in movies and video games. #Cretaceous #publications #research #storiesMW #MuseumWeek #seamonsters [pictures of Sea Monsters dvd and video game covers and website showing screenshots from the game]
- #MuseumWeek (total retweets: 0, likes: 2)
- -Posted 24 June 2017: #travelMW @christinabyrd88 attended the @SPNHCDen2017 conference in Denver, CO to learn the latest about #CollectionsLife and #digitization [quoted retweet of Christina's tweet: "Kathy Hollis: USGS collection fossils, maps, notebooks develop standards and how to connect all data. @SPNHCDen2017"]
- #MuseumWeek (total retweets: 0, likes: 1)

- -Posted 24 June 2017:#paleontologists travel the world to find #fossils. The Sternbergs: #Kansas, #Canada, South America and more. #travelsMW #MuseumWeek [pictures of the Edmontosaurus mummy Charles Sternberg found in Wyoming that is housed at the AMNH]
- #MuseumWeek (total retweets: 1, likes: 7)
- -Posted 25 June 2017: Remembering our heritage with an exhibit honoring George Sternberg and his contributions to the @SternbergMuseum #heritageMW #MuseumWeek [pictures of the two Sternberg exhibit pieces]
- #MuseumWeek (total retweets: 0, likes: 5)
- -Posted 25 June 2017: @SternbergMuseum in 1907 was "the museum room" in Picken Hall of @FortHaysState (then Kansas Normal School) [1 of 3] #heritageMW #MuseumWeek [picture of Miller and inside Picken Hall]
- #MuseumWeek (total retweets: 2, likes: 9)
- -Posted 25 June 2017: George Sternberg became the Curator of #Geology and #Paleontology in 1933. Museum moved to McCartney Hall. [2 of 3] #heritageMW #MuseumWeek [picture of G. Sternberg with mastodon and inside McCartney Hall]
- #MuseumWeek (total retweets: 0, likes: 3)
- -Posted 25 June 2017: 2 directors later, the @SternbergMuseum's ever growing collections find find a new home in the former Metroplex
- [3 of 3] #heritage MW #MuseumWeek [pictures of Walker, Metroplex and Dr. Z]
- #MuseumWeek (total retweets: 5, likes: 9)
- -Posted 25 June 2017: Our present and future #heritageMW embraces #WomenInSTEM: female curator, collections manager, and several interns. #MuseumWeek #heritageMW [pictures of just us museum girls :)]

Other Progress (that doesn't fit into the above categories):

Regarding the Yale University portion of the project, the following talk was presented at SPNHC 2017 Annual Meeting (Denver, Colorado, June 18-24, 2017) - Christina Lutz, Susan Butts, and Christopher Norris - Novel use of Inselect in digitization of paleontology collections

and the following poster was presented at SPNHC 2017 Annual Meeting (Denver, Colorado, June 18-24, 2017) – Jessica Utrup, Susan Butts, and Christopher Norris – "Increasing data robustness for concretions using Inselect".

Moreover, Maya Juman, student digitizer, led public tours of the YPM Invertebrate Paleontology Division collections, emphasizing Cretaceous World collections and research. Also, divisional staff Susan Butts and Christina Lutz led public tours of the YPM Invertebrate Paleontology Division collections, emphasizing Cretaceous World collections and research.

Attachment 1

Attachment 2



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Submission #1001

Submission information –

Form: TCN Bi-Monthly Progress Report to iDigBio Submitted by cskema
Thursday, June 29, 2017 - 08:01

165.123.74.113

TCN Name:

The Mid-Atlantic Megalopolis: Achieving a greater scientific understanding of our urban world

Person completing the report:

cskema@upenn.edu

Progress in Digitization Efforts:

Please see attached pdf.

Share and Identify Best Practices and Standards (including Lessons Learned):

Please see attached pdf.

Identify Gaps in Digitization Areas and Technology:

Please see attached pdf.

Share and Identify Opportunities to Enhance Training Efforts:

Please see attached pdf.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

Please see attached pdf.

Share and Identify Opportunities and Strategies for Sustainability:

Please see attached pdf.

Share and Identify Education and Outreach (E&O) Activities:

Please see attached pdf.

Other Progress (that doesn't fit into the above categories):

Please see attached pdf.

Attachment 1

2017 06 MAM Bi-monthly Progress Summary.pdf

Attachment 2

Mid-Atlantic Megalopolis TCN Bi-Monthly Progress Report May – June 2017



Progress in Digitization Efforts: The current numbers for progress of digitization efforts by specimen category are shown in Table 1. BALT and CHRB are waiting for a light box to use with their imaging rig (see details in previous bimonthly reports).

Table 1. Digitization of specimens by stage of completion and herbarium for MAM TCN.

	HERBARIUM									
Specimen Stage	BALT	CHRB	DOV	HUDC	MARY	MCA	MOAR	NY	PH	Totals
# specimens imaged										
(no stage, not in	0	0	5,803	1,363	0	2,402	0	0	4,183	12 751
Symbiota yet) # specimens	U	U	3,803	1,303	U	2,402	U	U	4,165	13,751
imaged, and										
uploaded to										
Symbiota along										
with skeletal data										
(Unprocessed										
Stage)	0	1,640	1,542	61	0	12,946	25	0	44,829	61,043
# specimens as										
above +										
completely										
transcribed and										
transcription										
reviewed (Stage 1)	0	518	0	215	0	723	5,247	72,420*	0	79,123
# specimens as										
above +										
georeferenced		_					204	40 506*		40.070
(Stage 2)	0	2	0	0	0	0	391	40,586*	0	40,979
# specimens that										
need special										
attention, e.g. go back to										
sheet, etc.										
(Stage 3)	0	0	0	0	0	0	233	0	0	233
# specimens as							233			
above										
+ closed as										
complete										
(Closed Stage)	0	0	0	0	0	0	0	0	0	0
Totals										
	0	2,160	7,345	1,639	0	16,071	5,896	113,006	49,012	195,129

^{*}Not uploaded to Symbiota yet as NY is using in-house workflow/database until later steps in process.

Share and Identify Best Practices and Standards: Given that MAM participants have found that auto focus does not always produce well-focused images, MOAR is working on a way to objectively and consistently improve focus quality within the following system: Canon EOS 5DS DLSR with a 50 mm macro lens (Sigma or Canon).

Identify Gaps in Digitization Areas and Technology: Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts: Nothing to report.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations: HUDC joined the Small Collections Network (SCNet). A number of individuals from MAM institutions attended the Society for the Preservation of Natural History Collections meeting in Denver, CO in June, and enjoyed networking and learning more about various topics, such as best practices, management, outreach, and crowdsourcing.

Share and Identify Opportunities and Strategies for Sustainability: Nothing to report.

Share and Identify Education and Outreach Activities: CHRB has two students enrolled for summer credit and two working under paid internships on the MAM Project. HUDC hired a summer graduate student research assistant for the MAM Project.

Other Progress: Nothing to report.



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Home > Collaborators > TCN Bi-Monthly Progress Report to iDigBio > Webform results > TCN Bi-Monthly Progress Report to iDigBio

Submission #997

Submission information –

Form: <u>TCN Bi-Monthly Progress Report to iDigBio</u> Submitted by neilscobb

Monday, June 26, 2017 - 09:41

104 114 107 77

134.114.107.77

TCN Name:

Lepidoptera of North America Network: Documenting Diversity in the Largest Clade of Herbivores

Person completing the report:

neilscobb@gmail.com

Progress in Digitization Efforts:

see attached

Share and Identify Best Practices and Standards (including Lessons Learned):

see attached

Identify Gaps in Digitization Areas and Technology:

see attached

Share and Identify Opportunities to Enhance Training Efforts:

see attached

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

see attached

Share and Identify Opportunities and Strategies for Sustainability:

see attached

Share and Identify Education and Outreach (E&O) Activities:

Other Progress (that doesn't fit into the above categories):

see attached

Attachment 1

LepNet SCAN June 2017.docx

Attachment 2

Lepidoptera of North America Network & Symbiota Collections of Arthropods Network (SCAN)

July 7, 2017 Neil Cobb

Progress in Digitization Efforts:

Beginning with the April 2017 report, the bi-monthly reporting will be a combined report covering LepNet and SCAN productivity because there is so much cross-over activity between the two networks. Many museums are involved in both SCAN and LepNet, including collections that have received funding from both TCNs, collections that are unfunded for one TCN and funded by the other, and some collections that are providing data to both and are unfunded by the ADBC program. Both TCNs share the same database http://symbiota4.acis.ufl.edu/scan/portal/index.php, which depending on the context we refer to as the SCAN-LepNet database or the LepNet-SCAN database.

The SCAN network started in 2012 and the TCN funding has ended, but SCAN continues to support PEN projects. The LepNet grant was initiated on July 1, 2016 and there are currently 26 ADBC funded museums and one non-funded museum (Oklahoma State University). Twenty-six museums comprise the NSF-ADBC LepNet and all have established a collection on the LepNet Portal and are serving data directly to iDgiBio via IPT or through DwC archives on the LepNet-SCAN portal. Twenty museums are serving DwC archives to iDigBio and six museums are still establishing connections with the LepNet portal.

Table 1. Records in SCAN/LepNet database, "all data" reflects all arthropod taxa, "Non-Lep" includes all non-Lepidoptera arthropod data, and Lepidoptera includes only Lepidoptera taxa.

		Non-Lep	
	All data	SCAN	LepNet
			1,637,0
	13,520,408	11,883,397	11
Specimen Records			
	10 755 265		1,181,3
	10,755,365	9,574,030	35
# Georeferenced			
	1 101 (2)		212,28
	1,181,636	969,350	6

Imaged

Table 1 shows the distribution of records for all data served on the portal, for both SCAN and LepNet.

LepNet - The LepNet ADBC-funded museums have produced 464,574 records (120% of expected to date) by June 1, 2017, with 88% of records identified at the species or subspecies level, and 52% of the records georeferenced. An additional 32 collaborators (non-ADBC funded museums that use our data portal to serve their data) have provided an additional

257,314 records. There are 26 collections (referred to as added-value) that have allowed us to harvest their data via IPT to serve 915,123 more representing species and 93% of the records are from North America.



We are on target to meet our digitization (i.e., transcribing, georeferencing, and imaging) goals despite having to address unexpected challenges in refining protocols, implementing workflows, and for several museums organizing physical collections in preparation for digitization. **Table 2** shows the top 10

Table 2. The number of occurrence records for the top 10 families of Lepidoptera that have been digitized.

				#
				Georeferenced
	# Specimen		# Ided to	and Ided to
Taxa	Records	# Georeferenced	species	Species
Nymphalidae	508,248	80%	42%	31%
Noctuidae	212,604	65%	88%	59%
Pieridae	210,187	79%	42%	30%
Lycaenidae	161,705	71%	59%	42%
Papilionidae	113,745	57%	57%	28%
Erebidae	101,429	66%	89%	58%
Geometridae	90,205	63%	74%	49%
Tortricidae	50,914	65%	82%	58%
Sphingidae	35,983	61%	84%	52%
Gelechiidae	28,798	72%	81%	58%

families of Lepidoptera in terms of total occurrences digitized.

What is most encouraging about the lepidopteran records is that 88% of the records are identified to species, which is higher than any of the other major orders. Thus, the primary factor limiting the production of "research-ready" data is due to georeferencing. For Lepidoptera 54% of the records are research-ready (i.e., identified to species and georeferenced) and by georeferencing existing records we should increase that percentage to 90% over the next three years. We realize that many records represent misidentified specimens and we also need to seek additional non-ADBC funding to review as many specimen identifications as possible. We are committed to developing stronger connections with Mexico and have added 15 Mexican recordsets, four of which are new collections using the SCAN portal.

LepNet ADBC-NSF funded collections have posted 47,214 images, which is 241% of expected. This higher-than expected result is primarily due to a few collections that used institutional funds (e.g., personal donations) to produce a large number of images. For most of the 19 museums that will have dedicated imaging workflows, expected production is still lagging. Unlike records, the imaging protocols have been more challenging and have ranged from purchasing and setting up imaging stations to developing a workflow that works at each museum. We serve an additional 222,551 lepidopteran images on the LepNet portal from other providers.



Symbiota Collections of Arthropods Network (SCAN) - We have surpassed our overall TCN/PEN goals for the network and have been very successful in supporting data mobilization for unfunded museums and cooperation by larger collections that have allowed there data to be used to help mobilize data from other museums. Table 4 shows data for the five major taxa we targeted in SCAN. All five groups have enough data to produce scores of papers.

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Table 4 Number	er of records for the	: iive iocai iaxa gr	oups targeted by SCAN.
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		I	T	
	# Specimen	#	# Ided to	# Georeferenced and
	Records	Georeferenced	species	Ided to Species
Formicidae	887,388	84%	52%	43%
Carabidae	536,789	79%	63%	51%
Acrididae	159,060	79%	92%	73%
Tenebrionidae	150,900	84%	61%	52%
Spiders	194,516	77%	83%	60%
Total/Average	1,928,653	81%	70%	56%

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hance Training Efforts: We will develop resources on the WordPress site http://www.lep-net.org/. We will expand this to incorporate material from the SCAN drupal project website.

Share and Identify Best Practices and Standards (including Lessons Learned):

We are identifying best practices on a weekly basis and sharing those with respective people within LepNet http://www.lep-net.org/. Most of these are also relevant to SCAN.

<u>Standardization of Images for Research - We developed a consensus for criteria that would make images the most useful for research. We defined criteria that would make images good for computer vision identification (LepSnap) and for ImageJ, a software program designed to quantify pixel qualities http://www.lep-net.org/?p=383.</u>

Symbiota Programming - Ben Brandt developed six new API endpoints within Symbiota primarily for the facilitation of interactions with LepSnap, but the developments can also be used in several future apps. Two of these endpoints provide taxonomic and vernacular name resolution from a user-inputted string and allows for the auto-completion of scientific and vernacular names from the taxonomic thesaurus within LepSnap as users are typing the names of specimens. In order to facilitate the user login process and permission retrieval within LepSnap, two other endpoints were developed, one to generate user access tokens that can then be stored in the LepSnap app on the user's mobile device and used to automate future login requests in LepNet. The other feature provides the user's permissions and accessibility options within LepNet to the LepSnap app. Additionally, in the development of the token endpoint. We made significant modifications to the Symbiota login methods. Another endpoint delivers occurrence data from a given record identifier from either database primary key or catalog number. This endpoint allows LepSnap to retrieve pre-existing occurrence record data for processing images within the app and populate data fields within LepSnap with these data points.



The final endpoint developed facilitates the actual delivery of the processed image and associated data, including computer vision identifications, from the LepSnap app to the LepNet data portal. This allows for the quick delivery of images and new computer vision identifications from users' mobile devices directly to the data portal facilitating rapid generation of high-quality specimen images. In the development of these API endpoints several improvements were made to the login and batch taxonomic name upload processes within Symbiota to further support the work being done in LepNet and SCAN.

Identify Gaps in Digitization Areas and Technology: We need to produce exponentially more occurrence data to understand the biogeography of the focal SCAN taxa and Lepidoptera. For most groups there is not enough data to talk about gaps. We are meeting this need by incorporating additional collections into the SCAN-LepNet database, and harvesting observational records from iNaturalist and LepSoc inventories.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

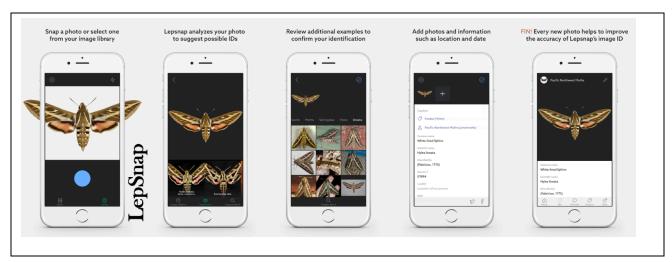
We are primarily working with other Symbiota TCNs and other Symbiota portals. We are also generally collaborating with a variety of individuals, projects and organizations to extend the ability to mobilize biodiversity data and promote the use of data in research.

Share and Identify Opportunities and Strategies for Sustainability: Two museums in SCAN have sustainability plans (CSU and UC-Boulder).

Other Progress (that doesn't fit into the above categories):

<u>Focus on North American Arthropods</u> We continue to provide North American data obtained from any credible sources to increase the quantity of data available to SCAN and LepNet users.

<u>Computer Vision</u> - We are making significant progress in developing the LepSnap app. Our collaborators (FieldGuide & Visepedia) are developing this app. This is initially targeting Lepidoptera but we fully expect it to extend to other arthropod groups within the next two years.



We have collaborated with Andre Poremski (Fieldguide) to develop the LepSnap smartphone app and computer vision capacity that will be built into LepNet. We initiated collaborations between Visipedia



and Fieldguide and also shared information with iNaturalist and the Cornell Lab of Ornithology, both of whom are also working with Visipedia to incorporate their computer vision algorithms. Fieldguide works with Visipedia directly to develop computer vision integration into LepNet projects. Thus, Fieldguide is taking the lead on three fronts, developing both iOS and Android apps (LepSnap), cv-**Batch** (an API service for batch-processing images), and **cv-Widget** (an embeddable image search tool). LepSnap will allow museum personnel to use their iPhone and Android smartphones to upload images of specimens and apply computer vision to obtain probability identifications. The cv-Batch workflow will be built into Symbiota (software that runs LepNet database) to process all images with the computer vision workflow, regardless of whether images are from IPT providers or have "live" collections that are managed directly on the LepNet portal. The cv-Widget tool will reside on the front page of the LepNet portal and will allow anyone to drag an image file into the dialog box and receive a set of probability identifications. This will be a broader impact feature in that the cv-Widget will be able to be used on any portal (e.g., Pacific Northwest Moths). The most important broader impact of this will be to reduce the load on taxonomists for identification requests. We hope to automate the categorization process enough so that individuals can focus on specific groups of interest and not have to spend time sorting through unclassified galleries of images.

We have held five LepNet meetings 1) LepNet Orientation Meeting July 21 2016 (virtual), 2) LepNet and ButterflyNet in-person Meeting August 11 2016; 3) the all-hands meeting at the November 6, 2017 iDigBio Summit; 4) three virtual joint LepNet/SCAN meeting January 25, 2017, March 2, 2017, March 29, 2017. The virtual meetings were all recorded and are available on the project website as well as the PowerPoint presentations given during the in-person meetings. We presented an additional webinar that covered imaging standards for LepNet http://www.lep-net.org/?p=383. This webinar represented the culmination of extensive email correspondence to resolve minimal standards for images posted on LepNet.

<u>Taxonomy Tables</u> - We added the complete taxon table provided by Pohl, Patterson, and Pelham (2016) into the LepNet taxonomy tables and shared a csv version with LepNet collaborators using other databases (Specify, Emu, Arctos).

We are collaborating with Matt Yoder (TaxonWorks), to obtain an updated taxonomy of worldwide Lepidoptera and APIs that will provide us with a much more efficient means of updating taxonomies. Despite the progress in developing taxonomy tables, we have an estimated 56,000 taxa that need to be resolved (i.e. added, synonymized, or corrected).

<u>Publications - We have published an overview of the LepNet project (Seltmann et al 2017)</u>, and we are planning for a short communication publication on developing standards for images used in research.

Seltmann, K.C. N.S. Cobb, L.F. Gall, C.R. Bartlett, A. Basham, I. Betancourt, C. Bills, B. Brandt, R.L. Brown, C. Bundy, M.S. Caterino, C. Chapman, A. Cognato, J. Colby, S. P. Cook, K.M. Daly, L. Dyer, N.M. Franz, J.K. Gelhaus, C.C. Grinter, C.E. Harp, R.L. Hawkins, S.L. Heydon, G.M. Hill, S. Huber, N. Johnson, A.Y. Kawahara, L.S. Kimsey, B.C. Kondratieff, F. Krell, L. Leblanc, S. Lee, C.J. Marshall, L.M. McCabe, J.V. McHugh, K.L. Menard, P.A. Opler, N. Palffy-Muhoray, N. Pardikes, M.A. Peterson, NE. Pierce, A. Poremski, D.S. Sikes, J.D. Weintraub, D. Wikle, J.M. Zaspel and G. Zolnerowich. (2017) LepNet: The Lepidoptera of North America Network. *Zootaxa*, 4247(1), pp.73-77.



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Submission #1004

Submission information

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by BruceL

Friday, June 30, 2017 - 14:14

24.225.98.220

TCN Name:

Digitizing Fossils to Enable New Syntheses in Biogeography- Creating a PALEONICHES

Person completing the report:

blieber@ku.edu

Progress in Digitization Efforts:

Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman, we now have a total of 280,400 specimens databased associated with this project. Further, we now have a total of 251,887 databased specimens that are also georeferenced associated with this project. In addition, a total of 9,472 localities have been georeferenced associated with this project. Essentially all of our major taxonomic groups have been completely databased and georeferenced so now we are starting to database our trace fossils.

Regarding the portion of the project at the Paleontological Research Institution led by PI Jon Hendricks:

Since the last update, the following activities have been completed:

- 1. Approximately 400 additional photographs of Neogene fossils—all from the Plio-Pleistocene of Florida and North Carolina—have been captured. These are currently being processed by a Digitization Assistant at PRI and will be added to the Neogene Atlas of Ancient Life (http://www.neogeneatlas.org). Many of these photographs are of species not currently represented on the Neogene Atlas.
- 2. Over 300 additional lots of Plio-Pleistocene fossils from the Trisha Kelley collection at PRI have been digitized and added to PRI's Specify database; these records will be transferred to iDigBio in the near future.

Share and Identify Best Practices and Standards (including Lessons Learned): N/A

Identify Gaps in Digitization Areas and Technology:

N/A

Share and Identify Opportunities to Enhance Training Efforts:

N/A

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

N/A

Share and Identify Opportunities and Strategies for Sustainability:

N/A

Share and Identify Education and Outreach (E&O) Activities:

Regarding the University of Kansas portion of the project, led by PI Bruce S. Lieberman, the App we created for the iPhone associated with our project has received a total of more than 2,000 downloads.

Regarding the portion of the project at the Paleontological Research Institution led by PI Jon Hendricks:

our Twitter account @PaleoDigAtlas associated with this project (and now also the Cretaceous World TCN), has a total of 890 followers which is a 38% increase from last year at this time.

The parts of the Digital Atlas of Ancient Life website associated with this project have received a total of more than 140,000 visits, and more than 1.2 million hits in the last year.

Other Progress (that doesn't fit into the above categories):

Regarding the University of Kansas portion of the project, we filed our last no cost extension which was approved by NSF, so we will continue working on the project until 6/30/18.

Regarding the portion of the project at the Paleontological Research Institution, the National Science Foundation approved a no cost extension request to continue the PRI portion of the PaleoNiches-TCN project for one final year (through June 30, 2018). Most attention during the final year will focus on the development curricular materials that make use of the existing Digital Atlases.

Attachment 1

Attachment 2

9/18/2017 Submission #1024



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Home > Collaborators > TCN Bi-Monthly Progress Report to iDigBio > Webform results > TCN Bi-Monthly Progress Report to iDigBio

Submission #1024

Submission information-

Form: TCN Bi-Monthly Progress Report to iDigBio

Submitted by psierwald

Wednesday, July 12, 2017 - 15:05

107.0.125.5

TCN Name:

InvertEBase: Reaching Back to See the Future: Species-rich Invertebrate Faunas Document Causes and Consequences of Biodiversity Shifts

Person completing the report:

psierwald@fieldmuseum.org

Progress in Digitization Efforts:

FMNH Invertebrates: 42,000 entered 250,000 records online

FMNH Insects: 120,000 total entered to date

UMMZ Mollusks: 137,000 (10,000 imaged) total entered to date

UMMZ Insects:55,000 total entered to date

DMNH 17,265 freshwater gastropods data uploaded to iDigBio,InvertEBase

CMNH 81,000 total entered to date Auburn: 190,000 total entered to date

Frost: 75,000 images and lot data entered to date

Chicago Academy of Sciences: Mollusk type imaging began at Field Museum

Share and Identify Best Practices and Standards (including Lessons Learned):

Georeferencing workshop held at Field Museum, development of georeferencing strategies and collaboration among TCN partners is the next step.

Identify Gaps in Digitization Areas and Technology:

FMNH collaboration with Argonne National Laboratory (PIs Sierwald and Bieler, FMNH collection manager Dr. C. Maier and ANL Drs Mark Hereld and Nicola Ferrier): Development of 'Rapid 3D capture of physical specimens, an advanced pipeline for high-throughput digitization of large scale collections. Trials have commenced (rapid imaging and image analysis including label data of individual pinned specimens and vials with visible labels. Further development workshop to be held October 2017 at eScience conference.

Share and Identify Opportunities to Enhance Training Efforts:

Mollusk Digitization workshop to be held July 15, 16 at University of Delaware

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:

9/18/2017 Submission #1024

Collaboration with Argonne National Laboratory continues Training of 2 high school students, 14 undergraduate students, 5 interns and several grad students trained during Year 3 in the InvertEBase TCN.

Share and Identify Opportunities and Strategies for Sustainability:

Field Museum supports the TCN with additional in-house funded interns during July and August 2017

Share and Identify Education and Outreach (E&O) Activities: nothing to report

Other Progress (that doesn't fit into the above categories):

Attachment 1

Attachment 2