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

February 2019

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- Reports from the following **active** TCNs:

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☒ EPICC	☐ MHC	☒ SoRo
☐ FIC	☒ MiCC	

Reports from the following **retired** TCNs are no longer included:

~~GLI~~	~~MaCC~~	~~TTD~~
~~InvertNet~~	~~NEVP~~	~~VACS~~
~~LBCC~~	~~Paleoniches~~	

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ADBC Google Analytics

Neil Stanley Cobb <Neil.Cobb@nau.edu>

Sat 1/26/2019 4:06 PM

To: blieber@KU.EDU <blieber@KU.EDU>; bthiers@nybg.org <bthiers@nybg.org>; Carl Rothfels <crothfels@berkeley.edu>; Cesar nufio <cnufio@nsf.gov>; cgries@WISC.EDU <cgries@WISC.EDU>; chdietri@ILLINOIS.EDU <chdietri@ILLINOIS.EDU>; chris.neefus@UNH.EDU <chris.neefus@UNH.EDU>; cjohnson@amnh.org <cjohnson@amnh.org>; crmarshall@BERKELEY.EDU <crmarshall@berkeley.edu>; cskema@UPENN.EDU <cskema@UPENN.EDU>; Blackburn, David C <dblackburn@flmnh.ufl.edu>; eclites@BERKELEY.EDU <eclites@berkeley.edu>; Edward Gilbert <egbot@asu.edu>; edwin.scholes@CORNELL.EDU <edwin.scholes@CORNELL.EDU>; erin.tripp@COLORADO.EDU <erin.tripp@COLORADO.EDU>; EShea@DELMNH.ORG <EShea@DELMNH.ORG>; Gil Nelson <gnelson@bio.fsu.edu>; James Ryan Allen <james.r.allen@COLORADO.EDU>; Jenn Yost <jyost@calpoly.edu>; Jennings,David T <djennings@flmnh.ufl.edu>; kmcameron@WISC.EDU <kmcameron@WISC.EDU>; Matthew Pace <mpace@nybg.org>; md68135@appstate.edu <md68135@appstate.edu>; michael.denslow@GMAIL.COM <michael.denslow@GMAIL.COM>; msw244@CORNELL.EDU <msw244@CORNELL.EDU>; murrellze@APPSTATE.EDU <murrellze@appstate.edu>; Neil Stanley Cobb <Neil.Cobb@nau.edu>; Nelson,Gil <gnelson@floridamuseum.ufl.edu>; Takano,Oona <otakano@flmnh.ufl.edu>; patrick.sweeney@YALE.EDU <patrick.sweeney@YALE.EDU>; psierwald@FIELDMUSEUM.ORG <psierwald@FIELDMUSEUM.ORG>; 'rolrober@nsf.gov' <rolrober@nsf.gov>; rsbeaman@nsf.gov <rsbeaman@nsf.gov>; Talia.Karim@COLORADO.EDU <Talia.Karim@COLORADO.EDU>; tom.nash@asu.edu <tom.nash@asu.edu>;

1 attachment

ADBC_Google_Analytics_Jan_2019.xlsx;

I had an hour this morning to update the GA stats for all the ADBC portals/websites that I know about. Feel free to use these stats for your upcoming reports, let me know if I made any mistakes. If I do not have anything listed for your site then please either give me access to your GA site (best option) or send me the URL for your google data studio page. The only big change from the last report is that the paleo site stats are now looking good. Otherwise, plants still rule.

Cheers,
Neil

	Nov 1 2018 to Jan 24 2019			
Website	**Users**	**Sessions**	**Pageviews**	**Bounce Rate**
iDigBio Portal	5,519	8,206	33,516	57%
iDigBio Website	15,872	19,006	32,918	68%
Digital Atlas of Ancient Life	12,102	14,048	21,010	80%
Digital Atlas of Ancient Life (Ordovician)	508	727	6,073	49%
Pennsylvanian of Ancient Life	1,355	1,592	3,787	65%
Neogene Atlas of Ancient Life	1,090	1,581	7,130	66%
Cretaceous Atlas of Ancient Life	627	741	2,767	61%
Fossil Marine Invertebrate Communities (EPICC)	336	312	400	68%
Fossil Insect Collaborative	NA	NA	NA	NA
Aquatic Invasives	298	458	1,192	67%
SCAN (Arthropods)	4,557	9,981	38,138	45%
LepNet Portal	791	1,060	2,982	65%
LepNet WordPress	592	734	1,248	76%

InvertEBase	1,148	1,372	2,850	68%
Mycoportal	10,205	17,937	45,222	61%
LBCC Lichen	12,451	25,591	73,868	60%
LBCC Frullania	778	934	1,304	79%
LBCC Arctic	270	307	722	76%
LBCC Bryophyte Portal	1,712	3,554	15,412	42%
Macroalgae	2,400	3,778	14,183	56%
The Pteridological Collections Consortium	NA	NA	NA	NA
Capturing California's Flowers	NA	NA	NA	NA
Endless Forms	NA	NA	NA	NA
Herbarios del Noroeste de Mexico	8,062	12,751	47,422	65%
SERNEC	4,395	11,770	58,841	41%
SEINet vPlants	2,105	2,844	10,215	57%
SEINet Intermountain	4,951	8,816	37,454	39%
SEINet Arizona-New Mexico	29,558	62,843	325,320	52%
SEINet Midwest Herbaria	1,871	5,027	30,425	38%
Mid-Atlantic Herbaria	936	2,830	10,785	46%
NANSH	716	1,656	4,689	50%
Northern Great Plains	1,674	3,063	5,473	74%
OregonFlora Portal	2,169	5,008	16,068	46%
CNH Mobilizing New England Vascular Plant Specimen Data (NEVP)	805	1,960	10,691	?
Southern Rockies Plant Niches (SoRo)	NA	NA	NA	NA
Vertebrates (i.e., VertNet)	NA	NA	NA	NA
Symbiota WordPress	2,447	4,055	8,450	63%
Tri-Trophic Databasing (TTD)	NA	NA	NA	NA
A Centralized Digital Archive of Vouchered Animal Communication Signals	NA	NA	NA	NA
Open Exploration of Vertebrate Diversity in 3D (oVert)	NA	NA	NA	NA
InvertNet	NA	NA	NA	NA
	Nov 1 2018 to Jan 24 2019			
	Users	**Sessions**	**Pageviews**	
iDigBio	**21,391**	**27,212**	**66,434**	
TCN and related portals	**110,909**	**207,330**	**804,121**	
Symbiota Portals	**92,444**	**184,274**	**754,504**	
TOTAL	**132,300**	**234,542**	**870,555**	
Portals by Taxa	**Users**	**Sessions**	**Pageviews**	
Vascular Plants	57,242	118,568	557,383	
Lichen & Bryophytes	15,211	30,386	91,306	
Algae	2,400	3,778	14,183	
Fungi	10,205	17,937	45,222	
Invertebrates	7,088	13,147	45,218	
Multiphyla (Aquatic Invasives & Symbiota portal)	2,745	4,513	9,642	
Vertebrates (i.e., VertNet)	NA	NA	NA	
Paleo	16,018	19,001	41,167	

Total	**110,909**	**207,330**	**804,121**	
	Per Day			
	Users	**Sessions**	**Pageviews**	% of total (users)
iDigBio	255	324	791	**16%**
TCN and related portals	1,320	2,468	9,573	**84%**
TOTAL	**1,575**	**2,792**	**10,364**	**100%**
Non-iDigBio by taxa				
Vascular Plants	681	1,412	6,636	**52%**
Lichen, Bryophytes	181	362	1,087	**14%**
Algae	29	45	169	**2%**
Fungi	121	214	538	**9%**
Invertebrates	84	157	538	**6%**
Multiphyla	33	54	115	**2%**
Vertebrates (i.e., VertNet)	NA	NA	NA	**NA**
Paleo	191	226	490	**14%**
Total	**1,320**	**2,468**	**9,573**	

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Submission #1517

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by neilscobb
Sunday, January 27, 2019 - 06:37
174.238.27.9

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:
See attached

Google Analytics

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

Attachment 1
LepNet_SCAN_January_2019.docx

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1517

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

Submission #1516

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by neilscobb
Saturday, January 26, 2019 - 13:44
47.215.133.118

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

Google Analytics

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

Attachment 1
LepNet_SCAN_January_2019.docx

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1516

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

January 26, 2019
Neil Cobb

Progress in Digitization Efforts:

This is a joint report for the two networks SCAN and LepNet. 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. All data presented here were accessed on January 24, 2019. **Table 1** shows the key statistics of Lepidoptera (LepNet) and non-Lepidoptera (SCAN) records to date. These consist of all records and images, including records and images from data providers who have allowed us to post their data on the SCAN/LepNet portal. Providing data from these additional providers increases our ability to georeference, add to taxonomic tables, and more accurately assess the total digitization effort for any given taxon.

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.

	All data	Non-Lep SCAN	Lepidoptera
Specimen Records	18,639,765	16,156,803	2,482,962
# Georeferenced	15,193,147	13,183,580	2,009,567
# Imaged	2,292,299	2,179,589	112,710
# Identified to species	9,988,732	7,645,151	2,343,581

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 serving data snapshots with the LepNet portal.

LepNet - The LepNet ADBC-funded museums are still on target to meet goals for records and images. An additional 32 collaborators (non-ADBC funded museums that use our data portal to serve their data) have also provided additional records for Lepidoptera. There are 26 collections (referred to as added-value) that have allowed us to harvest their data via IPT to serve lepidopteran records. **Table 2** shows the top 10 families of Lepidoptera in terms of total occurrences digitized.

What is most encouraging about the lepidopteran records is that 96% 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 77% 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.

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

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeferenced & Ided to species
Nymphalidae	459,983	401,233	449,224	394,708
Noctuidae	329,518	270,728	312,740	260,779
Pieridae	254,664	202,903	250,993	200,278
Hesperiidae	212,833	176,799	206,235	171,419
Erebidae	208,017	157,086	192,840	146,644
Geometridae	207,174	169,351	194,091	158,708
Lycaenidae	161,088	140,751	157,060	137,959
Tortricidae	94,121	69,847	86,440	64,789
Papilionidae	93,656	65,630	92,379	64,832
Crambidae	72,600	53,307	70,382	51,818

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. We sponsored one successful Partners to Existing Networks project through the University of Texas- El Paso that will start digitizing ants from the McKay ant collection. We will initiate a new PEN with The Field Museum, focusing on several ground-dwelling coleopteran families. **Table 3** shows data for the five major taxa we targeted in SCAN. All five groups have enough data to produce scores of papers.

Share and Identify Opportunities to Enhance Training Efforts: We are developing 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):

Table 3 Number of records for the five focal SCAN taxa groups.

Taxa	# Specimen Records	# Georeferenced	# Specimen Identified to species	# Georeferenced & Ided to species
Formicidae	1,128,695	1,012,248	629,859	555,988
Carabidae	605,050	489,605	402,401	323,910
Araneae	236,683	188,627	206,190	166,018
Acrididae	229,782	172,758	195,453	142,394
Tenebrionidae	180,248	157,804	111,832	98,063

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.

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 .

Identify Gaps in Digitization Areas and Technology: We continue to seek out occurrence data to better 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, Pollardbase, Buguide, LepSoc inventories, and smaller observation sets provided by individual lepidopterists.

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. We are serving data from 191 collections, we continue to add one collection per month. We have been working with GBIF to register entomology collections.

We are collaborating with MycoPortal in helping Franz Krah develop an RSymbiota package to extract data easily from Symbiota portals.

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):

Focus on North American Arthropods We continue to provide North American data obtained from any credible sources to increase the quantity of data available to SCAN and LepNet users. We have added five new collections since the last update.

GBIF Registration - There are 26 Live collections on SCAN that are now registered with GBIF and 29 other entomology collections from the United States that have institutional collection data sets on GBIF.

Taxonomy Tables - We added the complete taxon table provided by Pohl, Patterson, and Pelham (2016)

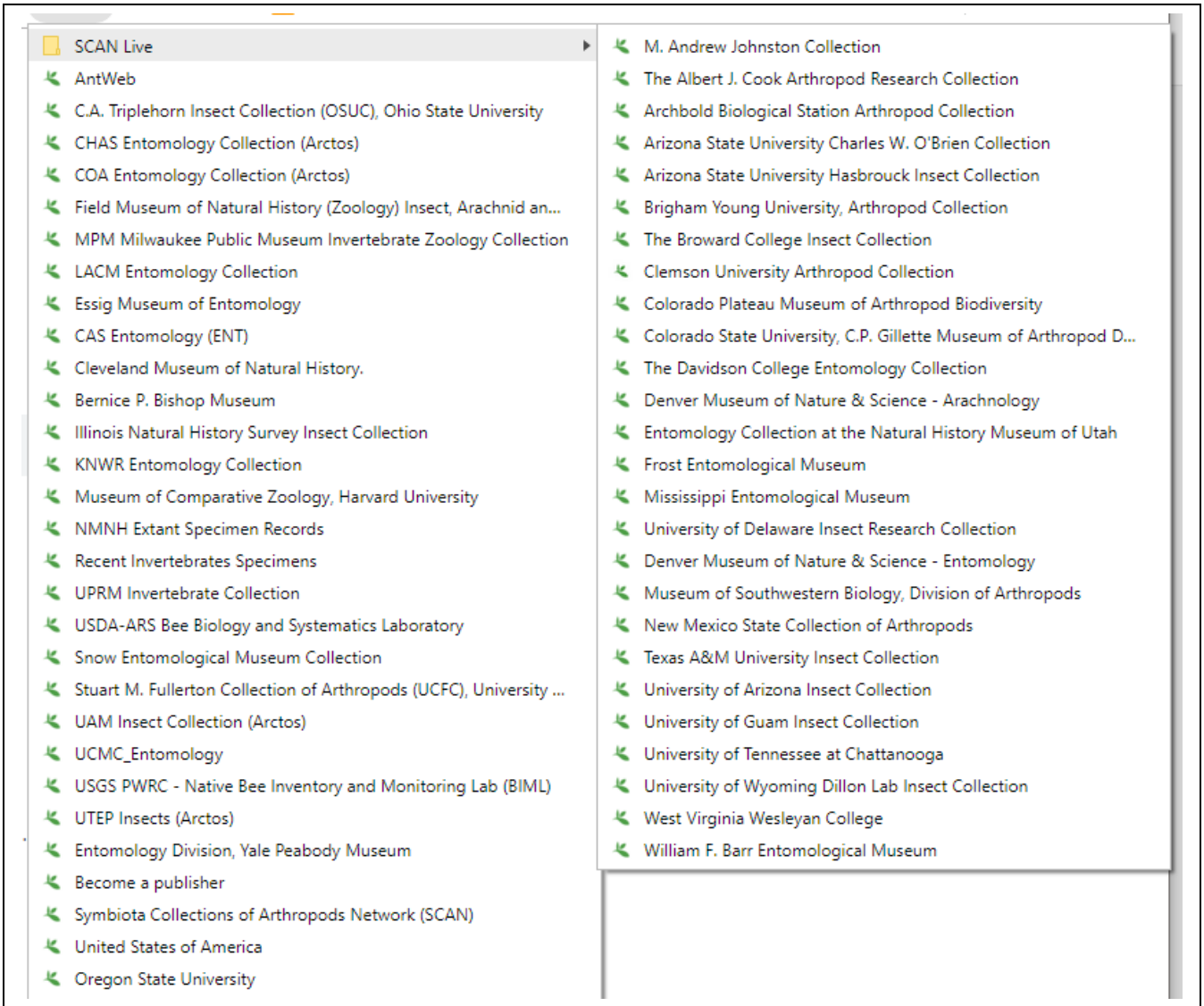


Figure 1. Entomology collections that are registered with GBIF.

into the LepNet taxonomy tables and shared a csv version with LepNet collaborators using other databases (Specify, Emu, Arctos).

LepNet Research Advisory Board - We have created a LepNet research advisory board (RAB), which is a subgroup of the LepNet TCN's CoPIs charged with developing guidelines for research projects and grant proposals that are requesting digitized specimen data ahead of online publication. LepNet is receiving requests for Lepidoptera on a regular basis, including requests for student research projects

and conservation projects that include sensitive data. Thus, the goal of the RAB is to establish a process that maximizes efficiency of digitization for LepNet, opportunity for collaboration, and publications for those involved (as appropriate). We are tracking LepNet's collaborative research projects online and engaging in regular discussions with PIs and at RAB monthly meetings. While project tracking will help our TCN become more organized, we also hope this new pipeline will generate even more energy and excitement for research that uses digitized collections data. The initial project that precipitated the creation of a research advisory board was the Poweshiek Skipperling project, which was so successful in terms of soliciting participation by museums, we wanted to expand the projects program. We hope that we can ensure that participants are provided attribution (e.g. authorship in checklist publications) and project leads let participants know exactly what they need.

We have identified nine projects to date, each one is described below.

Project Name	**Name, Affiliation (contacts)**
Puerto Rico Hurricane Project	Catherine Hulshof
Woolly bear tymbal morphology Project	Nick Dowdy
Colias eurytheme Project	Matt Nielsen,
Agriculturally significant Lepidoptera Project	Jen Zaspel, Bledsoe, Neil Cobb, Klem
Pieris biocontrol Project	JJ Weis
Mimallonid biogeography	Ryan St Laurent
Collection patterns of North American Lepidoptera	Erica Fisher & Anthony Cognato
Catocala	Akito Kawahara, Larry Gall
Poweshiek skipperling Project – Published BDJ	Anna Monofils

Publications - We have published an overview of the LepNet project (Seltmann et al 2017), and several LepNet participants collaborated on a publication below (Belitz et al., 2018). We are finishing a draft manuscript reviewing North American entomology collections.

Belitz, M.W., Hendrick, L.K., Monfils, M.J., Cuthrell, D.L., Marshall, C.J., Kawahara, A.Y., Cobb, N.S., Zaspel, J.M., Horton, A.M., Huber, S.L. and Warren, A.D., 2018. Aggregated occurrence records of the federally endangered Poweshiek skipperling (*Oarisma poweshiek*). *Biodiversity data journal*, (6).

Google Analytics: Below (**Figure 2**) is the summary graphical stats for the period since our last report November 6,, 2018 to January 24, 2019) for the SCAN portal, http://scan-bugs.org/portal/index.php and the LepNet data portal http://symbiota4.acis.ufl.edu/scan/lepnet/portal/index.php. The LepNet data portal actually shares the same underlying database with SCAN and so some people that only participate in LepNet still enter, annotate, and review Lepidoptera data from the SCAN portal. We also have a WordPress site http://www.lep-net.org/ that features LepNet but also provides SCAN updates. There was a slight decreasing trend in use from May to July that likely corresponds to the field season and travel to collecting sites.

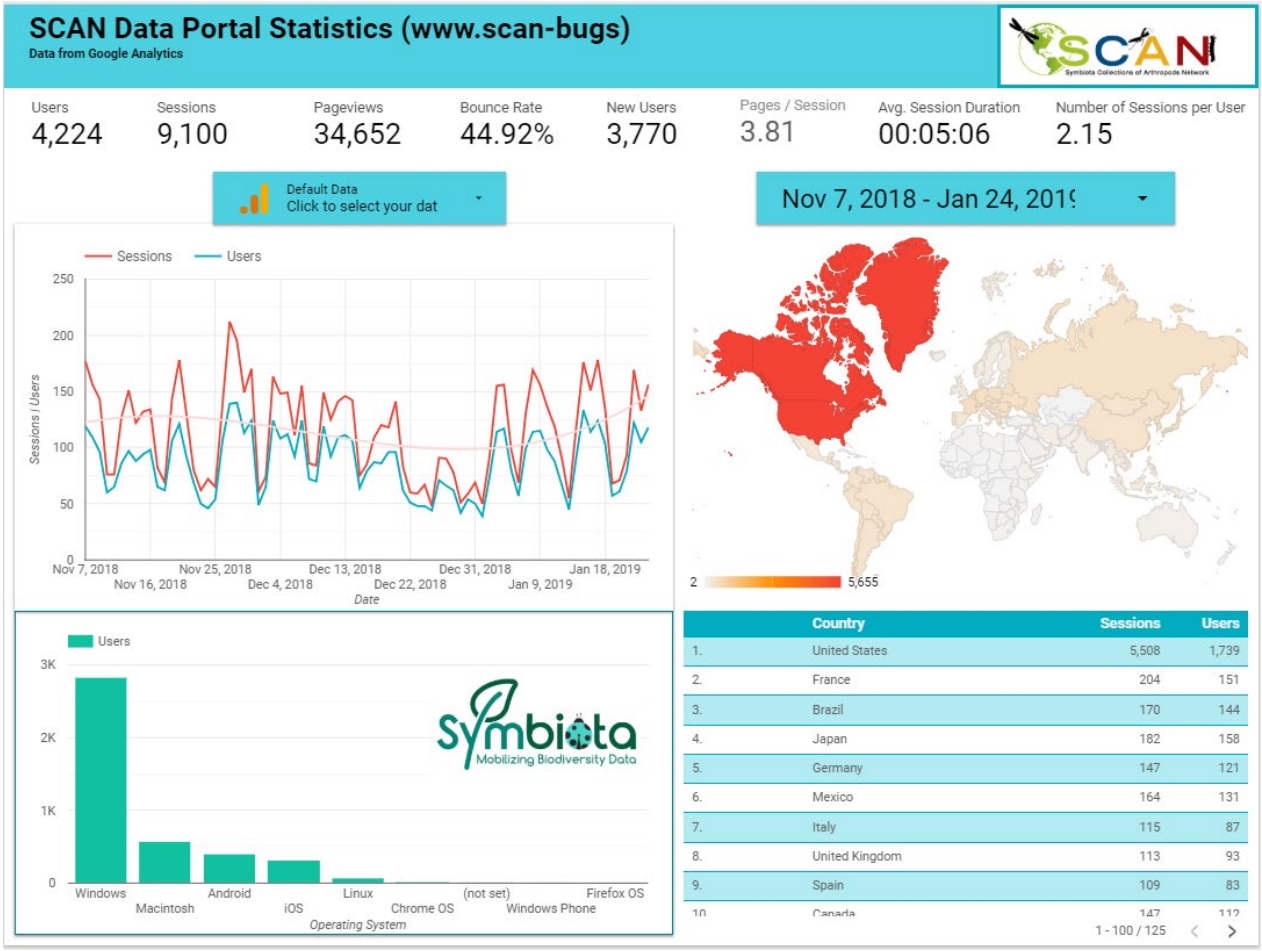


Figure 2. Summary statistics for SCAN/LepNet (November 7, 2018 to January 24, 2019.

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

Submission #1519

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by EPICC
Wednesday, January 30, 2019 - 17:28
192.40.158.125

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:
cgarcia@calacademy.org

Progress in Digitization Efforts:
As of 1/30/2019, the TCN has fully curated and computer cataloged 1,616,609 specimens (101% of goal) and made 338,036 of these specimens available in the iDigBio portal (21% of goal). The TCN has photographed 117,229 specimens (141% of goal) and georeferenced 22,378 localities (68% of goal). UCMP is working on updating the higher taxonomy of older UCMP data (i.e., those entered pre-EPICC) to modernize and standardize the taxonomic hierarchy to match that of WoRMS (World Register of Marine Species) and to improve how open nomenclature (e.g., cf., aff., etc.) is recorded in their data; approximately 18,000 records have been updated to date. LACM has nearly finished cleaning legacy specimen records. LACM is also in the process of preparing TCN localities for collaborative georeferencing. UCR has completed scanning of their locality cards.

Share and Identify Best Practices and Standards (including Lessons Learned):
At UCR, one student is working on creating a streamlined taxonomic dictionary for their EPICC relevant specimens. CAS continues to update the taxon tree created by LACM and CAS. Cleaning of potential duplicates (synonyms) are nearly complete, and should be finished by the end of February. Once this tree is complete, the TCN will analyze our taxonomic coverage against expected coverage of EPICC relevant taxa. This will help us identify gaps and strengths in our TCN's coverage, and inform future digitization priorities and specimen-based research.

Identify Gaps in Digitization Areas and Technology:
At UCMP, staff turnover (mainly the departure of project manager, Erica Clites) has caused a lag in digitization progress. The Burke Museum has finished moving their collections and labs into their new building. During the move, the Burke's collections were inaccessible, which caused a temporary slowdown in digitization progress. LACM has purchased additional external hard drive space to improve data security and the speed of image processing, which has been slow in previous months. LACM is now in phase 2 of data migration from MS Access to Axiell-Emu. Phase 3 of data migration will capture EPICC data, which will then be served to iDigBio. All of LACM's locality data has been moved into Emu but their taxonomic backbone, specimen records, and images are yet to be transferred. UCR is having technical challenges in photographing smaller

specimens. UCR is also working to fill their open Museum Scientist position, which should be filled this Spring.

Share and Identify Opportunities to Enhance Training Efforts:
LACM has trained three new volunteers, UO trained three students in georeferencing with GeoLocate, and CAS hired and trained one new staff member in locality verification and specimen data entry.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
The Burke shared taxonomic information and general curatorial guides with Western and Central Washington State Universities. LACM visited USNM to review their process for taxonomically cleaning ledger data and tested out annotation of barcoded specimens in collections. LACM staff also identified ~700 USNM lots during a two day visit to the collection. UCR discussed hiring priorities for open Museum Scientist position with other members of the EPICC TCN. UO has absorbed more TCN localities for georeferencing, going above and beyond their institutional goals.

Share and Identify Opportunities and Strategies for Sustainability:
UO is participating in the Specify Collections Consortium in an effort to maintain support for their database and IPT.

Share and Identify Education and Outreach (E&O) Activities:
Lisa White (UCMP) gave presentations on the EPICC Virtual Field Experiences at both the Geological Society of America (November 7 in Indianapolis, IN) and Society of Vertebrate Paleontology (October 17-20 in Albuquerque NM) meetings. Chrissy Garcia (CAS) gave a talk at the GSA Fall meeting on specimen-based research and digitization efforts at CAS, including work being done on EPICC. The Burke is working with their Education Division on new K-8 curricula that is built around EPICC collections. Rob Ross (PRI) created a video on behalf of the EPICC outreach team (Ross, R.M., Haas, D., White, L.D., and Clites, E.C.) for their presentation "Virtual Fieldwork Experiences for Classic Eastern Pacific Cenozoic field sites for the EPICC Project" at the 1st Palaeontological Virtual Congress held in Valencia, Spain, December 1 -15, 2018.

Google Analytics

Other Progress (that doesn’t fit into the above categories):
After the departure of project manager Erica Clites at the end of September, 2018, UCMP advertised the open position, conducted interviews and made a selection for a new project manager who they hope to have on board early in 2019.

Attachment 1

Attachment 2

Submission #1520

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by BruceL
Thursday, January 31, 2019 - 14:43
129.237.90.174

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 (BSL) and with major involvement from collections manager Julien Kimmig (JK), we have databased 51,713 fossil specimens total, with 21,613 specimens databased since the last reporting period. All but ~ 180 of these specimen records are also georeferenced. In addition, we have georeferenced 1,526 localities since the last reporting period and have now georeferenced a total of 6,946 localities associated with this project. We also generated 1,500 new images.

Regarding the Yale University portion of the project, led by PI Susan Butts, during this period:

They have databased 87,907 Cretaceous specimens total, with 7,519 databased since the last reporting period. 78,348 of these specimen records are also georeferenced. In addition, they have georeferenced 275 localities since the last reporting period and now georeferenced a total of 2,291 Cretaceous localities associated with this project. They also generated 5,619 new composite (multiple view) images.

Regarding the Fort Hays State University portion of the project, led by PI Laura Wilson:

They have databased 3,809 Cretaceous specimens total, with 51 databased since the last reporting period. 47 in the reporting period and 2,484 total of these specimen records are also georeferenced. In addition, we have georeferenced 161 localities since the last reporting period and now georeferenced a total of 700 Cretaceous localities associated with this project. They also generated 1,222 new images.

Regarding the University of Colorado portion of the project, led by PI Talia Karim:

They have databased 15,031 Cretaceous specimens total, with 2,329 databased since the last reporting period. About 10,000 of these specimen records are also georeferenced. They will be importing these georeferences back into Specify in January/February 2019. In addition, they have georeferenced 60 localities since the last reporting period and now georeferenced a total of 1,036 Cretaceous localities associated with this project. They also generated 2,121 new images.

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

They have databased 1354 Cretaceous specimens total, with 398 databased since the last reporting period. 890 of these specimen records are also georeferenced. In addition, they have georeferenced 20 localities since the last reporting period and now georeferenced a total of 178 Cretaceous localities associated with this project. They also generated 54 total images and 35 new images since last reporting period.

Regarding the American Museum of Natural History (AMNH) portion of the project, led by PI Neil Landman and co-PI Ruth O'Leary:

They have databased 15,080 Cretaceous specimens total, with 10,128 databased since the last reporting period. 15,080 of these specimen records are also georeferenced (all other specimens georeferenced to date in this project were previously databased). In addition, they have georeferenced 18 localities since the last reporting period and now georeferenced a total of 644 Cretaceous localities associated with this project.

Regarding the University of Texas portion of the project, led by Rowan Martindale and Lisa Boucher with major participation from Liath Appleton:

They have 23,865 Cretaceous cataloged records, representing ~80,000 specimens total, with 61 new records databased since the last reporting period 9/24/2018. Of the total number of specimen records, 25,321 have been georeferenced. In addition, they have now georeferenced a total of 4,751 Cretaceous localities (out of 5,705 total) associated with this project (349 localities georeferenced since our last report). They also generated 491 new images since 9/24/2018. The total number of images attached to their Specify database is 2682. Liath will be contributing images for the Cretaceous Atlas before April or so. They also plan to do an update of sharing data with iDigBio before June. In addition, Lisa will be following up with the tech folks about the status of the Paleomap plugin.

Regarding the South Dakota School of Mines & Technology portion of the project, led by co-PI Laurie Anderson:

They have databased 33,242 Cretaceous specimens (2,707 lots) total, with 6,488 (729 lots) databased since the last reporting period (Sept 19, 2018-Jan 25, 2019). 32,876 of these specimen records (2,608 lots) are also georeferenced, with an additional 90 (21 lots) being evaluated for georeferencing. Of the remainder: 190 (41 lots) have locality numbers but are missing locality data, 39 (11 lots) have locality information that is too vague to make georeferencing meaningful, and 47 (26 lots) have no locality information. In addition, they have georeferenced 14 localities since the last reporting period and now georeferenced a total of 581 Cretaceous localities associated with this project (456 of these georeferenced localities are associated with collection objects, the remaining 125 georeferenced localities are in the database but not yet linked to a specimen record).

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:
Regarding the University of New Mexico (UNM) portion of the project, they have successfully trained 9 individuals to work on the digitization process. These consist of 5 volunteers (3 undergraduate and 2 high school students), 3 graduate students, and 1 undergraduate student. They are getting more requests from people that want to volunteer to assist in the digitization process. The high school student volunteers are planning to present their progress in learning about specimen digitization and paleontology at their local institutions.

Regarding the University of Texas portion of the project, they have another graduate student this semester funded by the grant. She will also be able to follow up with vertebrates that have not been imaged. She will continue working with them in the summer too via other funding.

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, Bruce Lieberman is working on the next chapter of the Digital Encyclopedia of Ancient Life (DEAL) along with Jon Hendricks from the Paleontological Research Institution (PRI). The chapter focuses on “Evolution and the Fossil Record.”
BSL has also created a blog along with Niles Eldredge called “Macroevolutionaries” that highlights topics in macroevolution and paleobiology for a non-technical audience: https://bronze-sheep-29mh.squarespace.com . Our first post, https://bronze-sheep-29mh.squarespace.com/blog/2018/9/1/survival-of-the-laziest-or-how-we-learned-to-stop-worrying-and-love-the-nap , featured research supported by NSF-ADBC funding.

Staff from the KU Natural History Museum (KUNHM) have also been involved with the project in several outreach efforts, especially Teresa MacDonald, Laura Mohr, and Eleanor Gardner. One thing the KUNHM staff, including undergraduates and graduate students working in BSL’s lab, did was participate in an event themed around National Fossil Day referred to as “Member Day” this past fall where they showed fossils from our collections and discussed our Cretaceous World project with visitors to KU. About 75 people attended. Some of the activity also focused on exhibits, and staff especially emphasized the connections between our grant and the KUNHM exhibits of fossil marine life from the Cretaceous period such as fish, sharks, mosasaurs, plesiosaurs, and crinoids. In addition, associated with these exhibits, KUNHM staff have generated QR codes and signage that has been placed in the museum, including next to our Cretaceous exhibits. Temporary signage was put up in October and the final versions were placed up in November of 2018. The QR codes are to be used by visitors with phones/mobile devices and it allows them to access the Digital Atlas of Ancient website associated with our project so they can learn more about the marine fossils of the Cretaceous period. In addition, if they have an iPhone they can use the QR codes to download our Digital Atlas of Ancient Life App, again to learn more about the life of the Cretaceous and also to discover nearby localities where they can collect fossils.

They also had what is called a “Discovery Day” in the end of January where they created a scavenger hunt that incorporated the QR codes and used an interactive iPad featuring the

Cretaceous Atlas website along with a Kansas fossils station. The two graduate students currently supported by the project, Julie Taylor and Steven Byrum, participated and had ~ 40 visitors.

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

Since the last report, efforts at the Paleontological Research Institution (PRI; PI Hendricks) have continued to focus on development of outreach products related to the Digital Atlas of Ancient Life project (homepage: https://www.digitalatlasofancientlife.org/).

The online, open access Digital Encyclopedia of Ancient Life (DEAL) paleontology textbook continues to grow, which is resulting in increasing web traffic as more content comes online. The most substantial addition since the last update was the completion of the Cephalopoda section of DEAL, which may be accessed at https://www.digitalatlasofancientlife.org/learn/mollusca/cephalopoda/.

Several other DEAL chapters are also under active development. First, Hendricks is preparing a chapter on fossil Cnidaria (the first section, on rugose corals, is now online: https://www.digitalatlasofancientlife.org/learn/cnidaria/anthozoa/rugosa/). Second, PI Lieberman and Hendricks are collaborating on a chapter on Evolution, which is about half-way finished. Finally, PRI Research Scientist Dr. Elizabeth Hermsen—as part of her NSF-supported research—is developing DEAL chapters on plants and paleobotany and some of these are also nearing completion. We expect to be ready to share some of this new DEAL content by the time of the next report.

A mundane, but important, recent addition to the Digital Atlas homepage was the incorporation of a SSL certificate that will make the website more secure for visitors (in a nutshell, these change the familiar http:// prefexes in front of website names to https://). Similar certificates were also added to the Neogene and Pennsylvanian Atlases of Ancient Life and will be added soon to the Cretaceous Atlas.

In November, PI Hendricks, Hermsen, and SUNY-Geneseo undergraduate student Emily Hauf presented a talk on the DEAL at the Geological Society of America Meeting in Indianapolis. The abstract of this talk is available at: https://gsa.confex.com/gsa/2018AM/webprogram/Paper318607.html.

Finally, the 3D photogrammetry models that Emily Hauf created during summer 2018 were also the subject of a recent blog post on the Sketchfab website: https://blog.sketchfab.com/science-spotlight-digital-atlas-of-ancient-life/. This blog gives a nice overview of our broader project, as well as the educational potential of 3D models in paleontology.

Social media: The Digital Atlas Twitter account (@PaleoDigAtlas) currently has 1096 followers and has produced 876 tweets.

Regarding the University of New Mexico (UNM) portion of the project, the La Cueva High School Science Olympiad team has been utilizing their collection in preparation for the Albuquerque region Science Olympiad contest.

Google Analytics

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

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1520

Submission #1521

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by djbarroso
Tuesday, February 5, 2019 - 20:17
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:
diego.barroso@yahoo.com

Progress in Digitization Efforts:
• Angela Yoon, a University of Illinois undergraduate student digitizer who was hired and trained in September 2018 to digitize the Iowa State University collection (ISC), is continuing to work on the MiCC TCN during the Winter 2019 term.

• During this reporting period, 1198 ISC specimens were digitized, represented by 1198 newly-created records and 2365 images that have been added to MyCoPortal. Another 123 records have been updated or modified.

• MyCoPortal has been updated with a Google API key, allowing the Google Maps plug-in to display correctly and without error messages.

Share and Identify Best Practices and Standards (including Lessons Learned):
* Nothing new to report.

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

Share and Identify Opportunities to Enhance Training Efforts:
• Another University of Illinois undergraduate student, Saul Rivera, has also been recently hired to work on the MiCC TCN. He will help curate MyCoPortal data.

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

• ~ 775,000 records from the U.S. National Fungarium (BPI) were run through GeoLocate by Nelson Rios at Yale University, using a Python script for automated georeferencing. MiCC Project Manager Diego Barroso has since learned how to do this, and plans to run another ~ 115,000 records from Cornell University (CUP) in the coming weeks.

• Created new presence for the collection of the Patuxent Research Refuge (USFWS), Nov. 19th, 2018

• Created new presence for the collection of Western Colorado University (WSC), Dec. 11th, 2018

• Created new presence for specimen-based collection from Museo Nacional de Costa Rica (CR), Dec. 20th, 2018. ~39,000 records were added.

• Created new presence for observation-based collection from Museo Nacional de Costa Rica (CR), Dec. 20th, 2018. ~2,500 records were added.

• ~16,200 records from the Rene Pomerlau Herbarium (QFB), in Montreal, Canada, were cleaned and added to MyCoPortal (December 21st, 2018).

• Conferred with Mushroom Observer / NAMP Mycoflora Committee to learn about their iNaturalist translator/exporter tool (December 2018)

• Created new presence for the collection of Valdosta State University (VSC), Jan. 3rd, 2019

• Received images from FNL (Foray Newfoundland and Labrador Fungarium) corresponding to 2018. Uploaded 776 new records and 577 new images to MyCoPortal (January 2019).

• Updated MyCoPortal code to enable sharing of data with GBIF (January 17th, 2019). To date, the University of Tennessee Fungal Herbarium (TENN-F) has successfully published its data to GBIF using this MyCoPortal tool, and Utah State University – Intermountain Herbarium (USU:UTC) is also in the process of publishing its data.

• MyCoPortal is currently in talks with the curator and collection manager of the Herbario de la Universidad de Antioquia (HUA, University of Antioquia Herbarium, in Medellin, Colombia), so that they might join MyCoPortal as a new specimen-based collection.

• MyCoPortal has been assisting researchers at the University of Arkansas (Steven Stephenson and Richard Stauffacher at UARK) in the extraction of Myxomycetes data from the portal, in the course of preparing a manuscript for publication.

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

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

• Training and support for Dr. Jeanne Lodge and student digitizer Aidan Moore at GAM have continued (November 2018 and January 2019).

• The Miller lab is currently hosting a Peruvian undergraduate student (Stephany Mendieta), who will be doing research and will also learn the MyCoPortal digitization workflow.

Google Analytics
MyCoPortal_Data_Studio.pdf

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

• Please see MyCoPortal Data Portal Statistics generated from Google Analytics (attached).

• Summary of MyCoPortal Statistics (February 5th, 2019):

I. Specimen-based records
4,158,073 occurrence records
1,591,744 (38%) georeferenced
1,705,420 (41%) imaged
3,125,304 (75%) identified to species
1,733 families
8,272 genera
112,093 species
118,303 total taxa (including subsp. and var.)

II. Observation-based records

483,104 occurrence records
416,475 (86%) georeferenced
238,702 (49%) imaged
423,308 (88%) identified to species
440 families
2,718 genera
18,576 species
19,397 total taxa (including subsp. and var.)

• MyCoPortal Citations for this 2018-2019 reporting period (Peer-reviewed papers in which the MyCoPortal data were actually used in the paper, not just a mention of the MyCoPortal):

Banasiak, Ł., M. Pietras, M. Wrzosek, A. Okrasińska, M. Gorczak, M. Kolanowska, and J. Pawłowska. 2019. Aureoboletus projectellus (Fungi, Boletales) – An American bolete rapidly spreading in Europe as a new model species for studying expansion of macrofungi. Fungal Ecology 39: 94-99. doi: 10.1016/j.funeco.2018.12.006

Bates, S.T., A.N. Miller and the Macrofungi Collections and Microfungi Collections Consortia. 2018. The protochecklist of North American nonlichenized Fungi. Mycologia, online. doi: 10.1080/00275514.2018.1515410

Krah, F-S., S.T. Bates, and A.N. Miller. 2019. rMyCoPortal - an R package to interface with the Mycology Collections Portal. Biodiversity Data Journal 7: e31511. doi: 10.3897/BDJ.7.e31511

Tripp, E. A., Agabani, R., and McMullin, R. T. 2018. New and noteworthy reports of Colorado lichens and lichen allies, 1: Phaeocalicium polyporaeum. Opuscula Philolichenum 17: 362–367.

Voglmayr, H., Fournier, J., & Jaklitsch, W. M. 2019. Two new classes of Ascomycota: Xylobotryomycetes and Candelariomycetes. Persoonia 42: 36–49. https://doi.org/10.3767/persoonia.2019.42.02

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1521

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

Submission #1522

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by kds15e
Wednesday, February 6, 2019 - 12:44
97.86.129.241

TCN Name:
Capturing California's Flowers: Using Digital Images to Investigate Phenological Change in a Biodiversity Hotspot

Person completing the report:
kdpearso@calpoly.edu

Progress in Digitization Efforts:
All institutions have been trained to image (for those not sending specimens to other institutions for imaging) and use the CCH2 portal as of February 1, 2019. Cal Poly (OBI; lead institution) hired 11 student imaging technicians and one supervisory student. Other institutions are also recruiting and/or hiring students, barcoding specimens, and beginning to image.
Katie Pearson (project manager; PM), Jason Alexander (data manager; DM), Jenn Yost (lead PI) and Ed Gilbert (Symbiota developer) have weekly video conferences related to portal development and data migration.
All live collections in the grant have been migrated into CCH2, our Symbiota-based data portal, reflecting 1,772,225 specimen records, 56% of which are georeferenced and 3% of which currently have images in the portal.
In the future, digitization progress will be reported in terms of new images created. Because this is the first report in which all institutions are uploaded in the portal and many institutions are still in beginning stages of imaging, we provide raw numbers in Table 1 and comment on the statuses of certain institutions.
Table 1 Number of total specimens, number of georeferenced records, and number of imaged specimens for each institution in the CCH2 portal as of February 5, 2019. Shaded rows indicate institutions that have been actively imaging and successfully uploading images to the portal. Non-shaded rows indicate institutions that are currently preparing for imaging or have not been able to upload images. A single asterisk (*) indicates institutions that have been imaging but have not been or have been unable to upload images to the portal, and therefore the numbers of images for these institutions do not reflect the true number of images created. A double asterisk (**) indicates the institution that has not been uploaded into the CCH2 portal to date but did provide the number of images created.
(see pdf version of the report for formatted table)
Collection Specimens Georeferenced Imaged
BSCA - Colorado Desert District, California Dept. of Parks and Recreation (sending to RSA) 3618 2848 0
CHSC - Chico State Herbarium 116798 95341 0

CSULA - Cal State LA Herbarium 0 0 0
CSUSB - CSU San Bernardino (sending to RSA) 3981 2585 0
DAV - UC Davis Herbarium 108571 80804 1*
FSC - Fresno State Herbarium 3379 5 2018
HSV - Humboldt State University Vascular Plant Herbarium 73108 12765 0
IRVC - University of California, Irvine Herbarium 15215 4118 *
LA - UCLA Herbarium 24511 2959 0
LOB - CSU Long Beach Herbarium 6883 2713 7*
MACF - MacFadden Herbarium, Department of Biological Science, CSU Fullerton 595 6 0
OBI - Robert F. Hoover Herbarium, Cal Poly State University 55073 30178 1050
RSA - Rancho Santa Ana Botanic Garden Herbarium 612870 143582 *
SBBG - Clifton Smith Herbarium, Santa Barbara Botanic Garden 129621 105776 52
SD – Herbarium, San Diego Natural History Museum 239037 191021 *
SDSU - San Diego State University Herbarium 21753 16685 545
SFV - CSU Northridge Herbarium 15122 11217 8838
SJSU - Carl W. Sharsmith Herbarium, San Jose State University 15761 5353 *
UCJEPS - UC/Jepson Herbaria, UC Berkeley 2** 0** 17432
UCR - UC Riverside Plant Herbarium 269826 252531 0
UCSB - UC Santa Barbara Herbarium 44568 20561 41929
UCSC - UC Santa Cruz Herbarium, Kenneth S. Norris Center for Natural History 11580 6742 235

Share and Identify Best Practices and Standards (including Lessons Learned):
All protocols are being edited and re-issued as new efficiencies are discovered throughout the digitization process. The PM is planning a webinar for March or April in which institutions “swap stories” about tips and tricks they have found to make the process run more smoothly.
The PM continues to monitor created images, solicit feedback from member institutions, and adjust recommendations as necessary to create the best possible images. For example, in response to concerns about dull coloration of images, we now recommend increasing exposure compensation at time of imaging. Similarly, Susan Mazer (UCSB PI and phenological researcher) reported that images of about 5-10 MB were best for viewing reproductive structures of specimens, and the recommended size of processed jpegs was increased to meet this standard.
We will initiate discussions with our review board this coming quarter to establish the phenological standards and terminology with which we will codify phenological data. Ed Gilbert is continuing to work on ways to collect and store these data in the CCH2 portal.

Identify Gaps in Digitization Areas and Technology:
In reference to a previously indicated technological gap: an experienced equipment tech at Cal Poly, Doug Brewster, designed and manufactured a secure mechanism for mounting the imaging camera atop the lightbox. These camera mounts were assembled at Cal Poly and distributed to each institution with the necessary hardware.
The primary technological gap we now face is web-hosting the jpeg images. The iDigBio Image Ingestion Appliance has not functioned properly for several institutions, and iDigBio IT support has not been available due to being short-staffed. Our interim solution will be to have the PM regularly upload these institutions’ images from a working Image Ingestion Appliance instance. The PM met with iDigBio IT and discussed a future, sustainable option for web-serving jpeg images involving Internet Archive, and we are strong advocates of this future direction.
There has been some indication that iDigBio servers may not continue to support our Symbiota instance (i.e., our data portal) past the duration of iDigBio’s funding, which is of cause for some concern. We will continue to remain in discussion with iDigBio about the future of our data and consider alternative options.

Share and Identify Opportunities to Enhance Training Efforts:
The PM visited all 22 institutions on the grant from December 2018 – February 2019. In these visits, the PM set up and installed equipment; discussed workflow and protocols; brainstormed ways to

avoid bottlenecks and overcome inefficiencies; trained PIs, staff, volunteers, and students in digitization protocols, using equipment and software, managing data in the CCH2 portal, and other tasks; and addressed other institutional needs and requests.
The PM conducted check-in meetings with each institution in November 2018. December check-in meetings were not conducted because the PM visited most institutions in person, and January check-in meetings were not conducted due to the holiday break. February check-in meetings are scheduled for the second week of February.
Two well-attended webinars were conducted in October 2018 and November 2018. The first described how to navigate and edit data in the CCH2 portal and had 12 participants. The second described how to use the administrator control panel and had four participants. Recordings of these webinars are posted on the CAP TCN website (capturingcaliforniasflowers.org). Relevant webinars from other projects (e.g., the Symbiota Working Group) are also posted on the Webinars page of the website, and collaborators are regularly encouraged to visit the site for these and other resources. Future webinars will address the topics of collection management tools, data cleaning, and georeferencing.
The website has been kept up-to-date with the latest digitization protocols and new training resources. The PM produced an imaging flowchart to help student technicians quickly remember critical steps, and she completed an imaging protocol video that walks the viewer through the imaging process. The PM is currently working on a comprehensive digitization manual that will contain a project overview, workflow, setup description, all protocols, and other necessary information.
The PM is regularly on call and quick to respond to communications from collaborators regarding best practices, equipment issues, and protocol questions. She also communicates to collaborators that she is willing to schedule and conduct virtual trainings as requested.
The lead PI and PM are planning a TCN community event to coincide with the annual meeting of the California Botanical Society in San Luis Obispo on April 6, 2019. This will be an ideal opportunity to communicate our experiences and discuss best practices moving forward. The lead PI and PM will also attend Botany 2019 in late July, where they will be able to meet and discuss pertinent topics with collaborators.

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Collection data from San Francisco State University have been successfully imported into the CCH2 portal and are now being actively managed there. The PM and DM provide training and support to SFSU workers as necessary. Additional herbaria other than those listed in the grant will soon be solicited for data to host in the CCH2 portal.
The PM attended the iDigBio Phenology Deep Learning Workshop on January 17-18, 2019, where the topic of storing phenological data from machine learning applications was discussed. We are continuing to consider themes from this workshop and how they relate to coding phenological data from our specimen images. For example, we will consult developers of the Plant Phenology Ontology while determining the necessary vocabulary for codifying phenological data in the CCH2 portal in a standardized way.
The PM has identified many iDigBio-related resources for dissemination to CAP collaborators including webinars for georeferencing and data cleaning recorded by the Symbiota Working Group. We intend to schedule a community viewing time for one or more of these webinars as the topics become relevant to the activities of the TCN.

Share and Identify Opportunities and Strategies for Sustainability:
Project leadership is training administrators and technicians in using the CCH2 data portal to enable active collections management in perpetuity.
Each institution has identified a sustainable data storage solution for their specimen images that does not rely solely upon external hard drives or subscription services. As iDigBio IT support wanes, we are in discussion with iDigBio IT to find a long-term, sustainable option for web-serving jpeg images for viewing on the CCH2 portal.

Share and Identify Education and Outreach (E&O) Activities:
The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN). Pictures of most collections on the grant were posted as the PM conducted site visits. PIs, volunteers, and students are posting about the project as digitization activities accelerate.
The PM presented a poster at the Southern California Botanists Symposium on November 3rd and is currently drafting a scholarly article to submit to Madroño, the peer-reviewed journal published by the California Botanical Society.
The Central California Coast National Public Radio station, KCLU, featured digitization through the CAP TCN at UC Santa Barbara in this news piece: http://www.kclu.org/post/south-coast-scientists-involved-creation-online-plant-encyclopedia-study-climate-change#stream/0. An intern for the Cal Poly College of Science and Mathematics photo-documented the imaging training sessions at Cal Poly.
Cal Poly is tentatively planning an “herb-a-thon” community digitization event for local naturalists in the San Luis Obispo area during which we will discuss the importance of natural history collections for science and society, which an emphasis on phenological research.

Google Analytics

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

Attachment 1
February2019QuarterlyReport.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1522

CALIFORNIA PHENOLOGY TCN – QUARTERLY REPORT – FEBRUARY 2019

Assembled by Katie Pearson and Jenn Yost, February 5, 2019

Progress in Digitization Efforts:

All institutions have been trained to image (for those not sending specimens to other institutions for imaging) and use the CCH2 portal as of February 1, 2019. Cal Poly (OBI; lead institution) hired 11 student imaging technicians and one supervisory student. Other institutions are also recruiting and/or hiring students, barcoding specimens, and beginning to image.

Katie Pearson (project manager; PM), Jason Alexander (data manager; DM), Jenn Yost (lead PI) and Ed Gilbert (Symbiota developer) have weekly video conferences related to portal development and data migration.

All live collections in the grant have been migrated into CCH2, our Symbiota-based data portal, reflecting 1,772,225 specimen records, 56% of which are georeferenced and 3% of which currently have images in the portal.

In the future, digitization progress will be reported in terms of new images created. Because this is the first report in which all institutions are uploaded in the portal and many institutions are still in beginning stages of imaging, we provide raw numbers in Table 1 and comment on the statuses of certain institutions.

Table 1 Number of total specimens, number of georeferenced records, and number of imaged specimens for each institution in the CCH2 portal as of February 5, 2019. Shaded rows indicate institutions that have been actively imaging and successfully uploading images to the portal. Non-shaded rows indicate institutions that are currently preparing for imaging or have not been able to upload images. A single asterisk (*) indicates institutions that have been imaging but have not been or have been unable to upload images to the portal, and therefore the numbers of images for these institutions do not reflect the true number of images created. A double asterisk (**) indicates the institution that has not been uploaded into the CCH2 portal to date but did provide the number of images created.

Collection	Specimens	Georeferenced	Imaged
BSCA - Colorado Desert District, California Dept. of Parks and Recreation (sending to RSA)	3618	2848	0
CHSC - Chico State Herbarium	116798	95341	0
CSULA - Cal State LA Herbarium	0	0	0
CSUSB - CSU San Bernardino (sending to RSA)	3981	2585	0
DAV - UC Davis Herbarium	108571	80804	1*
FSC - Fresno State Herbarium	3379	5	2018
HSV - Humboldt State University Vascular Plant Herbarium	73108	12765	0

IRVC - University of California, Irvine Herbarium	15215	4118	*
LA - UCLA Herbarium	24511	2959	0
LOB - CSU Long Beach Herbarium	6883	2713	7*
MACF - MacFadden Herbarium, Department of Biological Science, CSU Fullerton	595	6	0
OBI - Robert F. Hoover Herbarium, Cal Poly State University	55073	30178	1050
RSA - Rancho Santa Ana Botanic Garden Herbarium	612870	143582	*
SBBG - Clifton Smith Herbarium, Santa Barbara Botanic Garden	129621	105776	52
SD – Herbarium, San Diego Natural History Museum	239037	191021	*
SDSU - San Diego State University Herbarium	21753	16685	545
SFV - CSU Northridge Herbarium	15122	11217	8838
SJSU - Carl W. Sharsmith Herbarium, San Jose State University	15761	5353	*
UCJEPS - UC/Jepson Herbaria, UC Berkeley	2**	0**	17432
UCR - UC Riverside Plant Herbarium	269826	252531	0
UCSB - UC Santa Barbara Herbarium	44568	20561	41929
UCSC - UC Santa Cruz Herbarium, Kenneth S. Norris Center for Natural History	11580	6742	235

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

All protocols are being edited and re-issued as new efficiencies are discovered throughout the digitization process. The PM is planning a webinar for March or April in which institutions “swap stories” about tips and tricks they have found to make the process run more smoothly.

The PM continues to monitor created images, solicit feedback from member institutions, and adjust recommendations as necessary to create the best possible images. For example, in response to concerns about dull coloration of images, we now recommend increasing exposure compensation at time of imaging. Similarly, Susan Mazer (UCSB PI and phenological researcher) reported that images of about 5-10 MB were best for viewing reproductive structures of specimens, and the recommended size of processed jpegs was increased to meet this standard.

We will initiate discussions with our review board this coming quarter to establish the phenological standards and terminology with which we will codify phenological data. Ed Gilbert is continuing to work on ways to collect and store these data in the CCH2 portal.

Identify Gaps in Digitization Areas and Technology:

In reference to a previously indicated technological gap: an experienced equipment tech at Cal Poly, Doug Brewster, designed and manufactured a secure mechanism for mounting the imaging camera atop the lightbox. These camera mounts were assembled at Cal Poly and distributed to each institution with the necessary hardware.

The primary technological gap we now face is web-hosting the jpeg images. The iDigBio Image Ingestion Appliance has not functioned properly for several institutions, and iDigBio IT support has not been available due to being short-staffed. Our interim solution will be to have the PM regularly upload these institutions' images from a working Image Ingestion Appliance instance. The PM met with iDigBio IT and discussed a future, sustainable option for web-serving jpeg images involving Internet Archive, and we are strong advocates of this future direction.

There has been some indication that iDigBio servers may not continue to support our Symbiota instance (i.e., our data portal) past the duration of iDigBio's funding, which is of cause for some concern. We will continue to remain in discussion with iDigBio about the future of our data and consider alternative options.

Share and Identify Opportunities to Enhance Training Efforts:

The PM visited all 22 institutions on the grant from December 2018 – February 2019. In these visits, the PM set up and installed equipment; discussed workflow and protocols; brainstormed ways to avoid bottlenecks and overcome inefficiencies; trained PIs, staff, volunteers, and students in digitization protocols, using equipment and software, managing data in the CCH2 portal, and other tasks; and addressed other institutional needs and requests.

The PM conducted check-in meetings with each institution in November 2018. December check-in meetings were not conducted because the PM visited most institutions in person, and January check-in meetings were not conducted due to the holiday break. February check-in meetings are scheduled for the second week of February.

Two well-attended webinars were conducted in October 2018 and November 2018. The first described how to navigate and edit data in the CCH2 portal and had 12 participants. The second described how to use the administrator control panel and had four participants. Recordings of these webinars are posted on the CAP TCN website (capturingcaliforniasflowers.org). Relevant webinars from other projects (e.g., the Symbiota Working Group) are also posted on the Webinars page of the website, and collaborators are regularly encouraged to visit the site for these and other resources. Future webinars will address the topics of collection management tools, data cleaning, and georeferencing.

The website has been kept up-to-date with the latest digitization protocols and new training resources. The PM produced an imaging flowchart to help student technicians quickly remember critical steps, and she completed an imaging protocol video that walks the viewer through the imaging process. The PM is currently working on a comprehensive digitization manual that will contain a project overview, workflow, setup description, all protocols, and other necessary information.

The PM is regularly on call and quick to respond to communications from collaborators regarding best practices, equipment issues, and protocol questions. She also communicates to collaborators that she is willing to schedule and conduct virtual trainings as requested.

The lead PI and PM are planning a TCN community event to coincide with the annual meeting of the California Botanical Society in San Luis Obispo on April 6, 2019. This will be an ideal opportunity to communicate our experiences and discuss best practices moving forward. The lead PI and PM will also attend Botany 2019 in late July, where they will be able to meet and discuss pertinent topics with collaborators.

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

Collection data from San Francisco State University have been successfully imported into the CCH2 portal and are now being actively managed there. The PM and DM provide training and support to SFSU workers as necessary. Additional herbaria other than those listed in the grant will soon be solicited for data to host in the CCH2 portal.

The PM attended the iDigBio Phenology Deep Learning Workshop on January 17-18, 2019, where the topic of storing phenological data from machine learning applications was discussed. We are continuing to consider themes from this workshop and how they relate to coding phenological data from our specimen images. For example, we will consult developers of the Plant Phenology Ontology while determining the necessary vocabulary for codifying phenological data in the CCH2 portal in a standardized way.

The PM has identified many iDigBio-related resources for dissemination to CAP collaborators including webinars for georeferencing and data cleaning recorded by the Symbiota Working Group. We intend to schedule a community viewing time for one or more of these webinars as the topics become relevant to the activities of the TCN.

Share and Identify Opportunities and Strategies for Sustainability:

Project leadership is training administrators and technicians in using the CCH2 data portal to enable active collections management in perpetuity.

Each institution has identified a sustainable data storage solution for their specimen images that does not rely solely upon external hard drives or subscription services. As iDigBio IT support wanes, we are in discussion with iDigBio IT to find a long-term, sustainable option for web-serving jpeg images for viewing on the CCH2 portal.

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

The PM shares updates on the project and phenology-related news via the network Twitter account (@CalPhenologyTCN). Pictures of most collections on the grant were posted as the PM conducted site visits. PIs, volunteers, and students are posting about the project as digitization activities accelerate.

The PM presented a poster at the Southern California Botanists Symposium on November 3rd and is currently drafting a scholarly article to submit to *Madroño*, the peer-reviewed journal published by the California Botanical Society.

The Central California Coast National Public Radio station, KCLU, featured digitization through the CAP TCN at UC Santa Barbara in this news piece: http://www.kclu.org/post/south-coast-scientists-involved-creation-online-plant-encyclopedia-study-climate-change#stream/0. An intern for the Cal Poly College of Science and Mathematics photo-documented the imaging training sessions at Cal Poly.

Cal Poly is tentatively planning an “herb-a-thon” community digitization event for local naturalists in the San Luis Obispo area during which we will discuss the importance of natural history collections for science and society, which an emphasis on phenological research.

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

Submission #1523

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by cskema
Wednesday, February 6, 2019 - 13:15
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):
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:
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.

Google Analytics

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

Attachment 1
2019_02_MAM_Quarterly_Progress_Summary.pdf

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1523

Mid-Atlantic Megalopolis TCN

Quarterly Progress Report[1]

November 2018 – January 2019

Progress in Digitization Efforts: Figure 1 shows progress over time for the MAM Project by changes in the number of both specimens entered into workflow and completely digitized specimens (= imaged + transcribed + georeferenced) against the number of specimens promised to NSF for the project. The current numbers for progress of digitization efforts by specimen category for each herbarium are shown in Table 1 and Figure 2. MOAR is currently finishing up the process of reviewing all the images and transcriptions for SIM to improve the quality, hence the big swing in counts per processing status category from the last report for this institution.

Share and Identify Best Practices and Standards: Nothing to report.

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

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

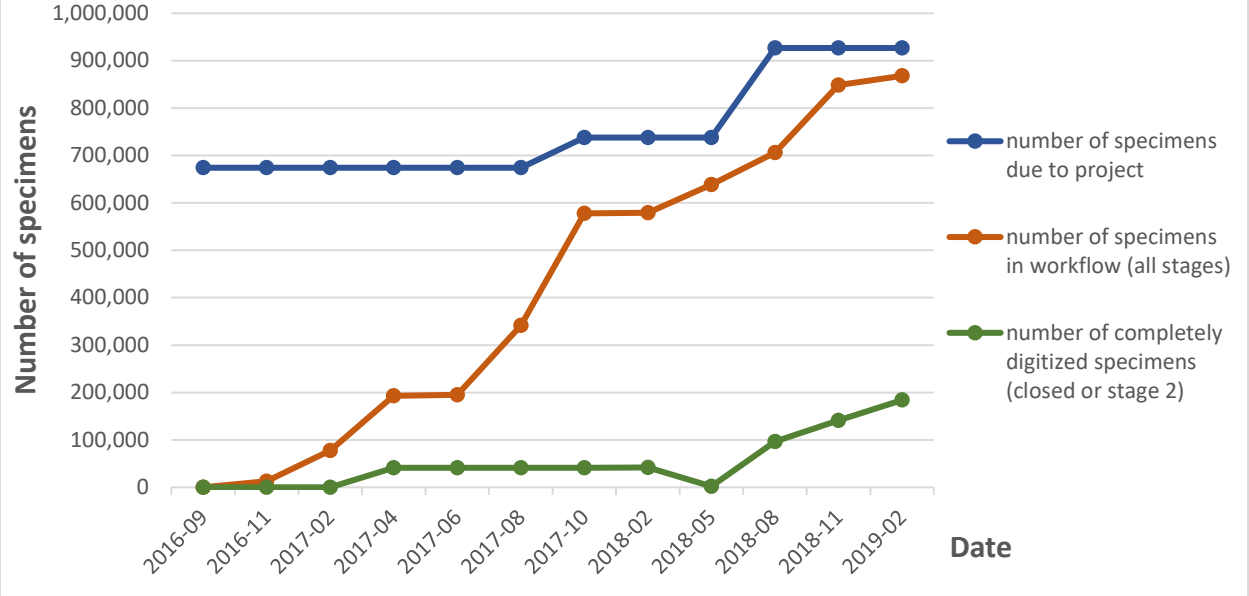
Share and Identify Collaborations with other TCNs, Institutions, and Organizations: Nothing to report.

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

Share and Identify Education and Outreach Activities: Nothing to report.

Other Progress: Nothing to report.

Figure 1. Progress over time for MAM Project.



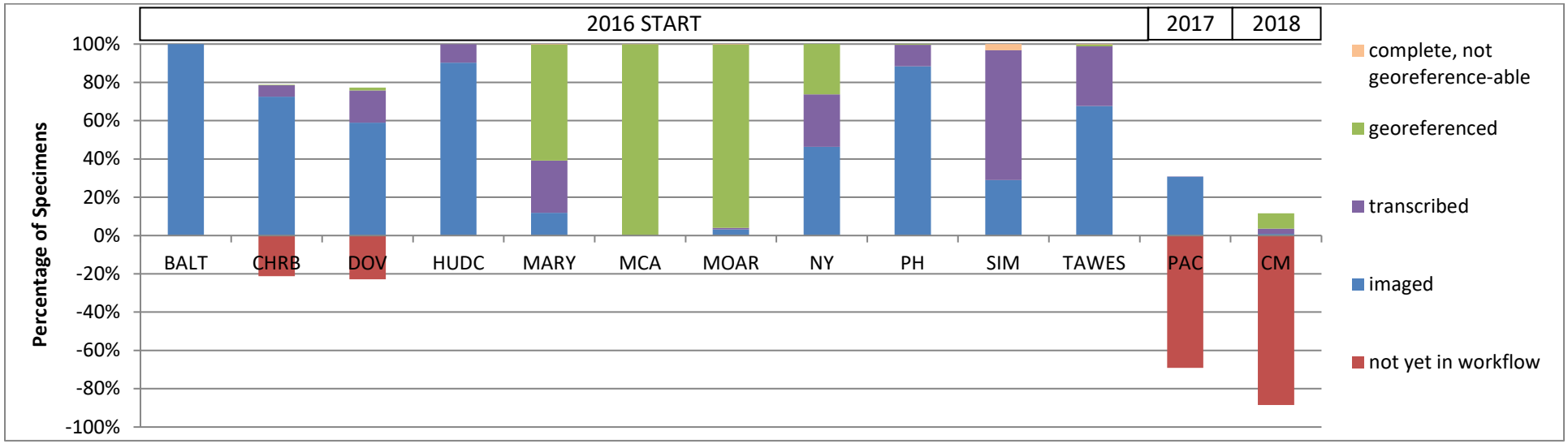
[1] Throughout this report, herbaria are referred to by their Index Herbariorum acronyms, which correspond to institutional names as follows: BALT = Towson University, CHRB = Rutgers University, CM = Carnegie Museum, DOV = Delaware State University, HUDC = Howard University, MARY = University of Maryland, MCA = Muhlenberg College, MOAR = Morris Arboretum of the University of Pennsylvania, NY = New York Botanical Garden, PAC = Pennsylvania State University, PH = The Academy of Natural Sciences of Drexel University, SIM = Staten Island Museum, TAWES = Maryland Department of Natural Resources

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

	Herbarium													
Specimen Stage	BALT	CHRB	CM	DOV	HUDC	MARY	MCA	MOAR	NY*	PAC	PH	SIM	TAWES	**Totals**
# specimens imaged[1]	16,275	18,531	1,630	9,707	100	0	0	0	118,800	4,921	3,113	0	0	**173,877**
# specimens as above and uploaded to Symbiota along with skeletal data; transcription/review may be in progress[2]	725	16,976	0	19,779	2,862	5,310	0	26	0	14,752	281,223	3,331	2,223	**352,167**
# specimens as above + completely transcribed and transcription reviewed[3]	0	3,066	5,093	8,432	2,063	12,253	0	182	70,152	100	36,185	14,458	1,350	**152,212**
# specimens as above + georeferenced[4]	0	130	15,049	693	2	27,352	51,007	20,225	67,190	0	1,359	4	42	**183,052**
# specimens that need special attention, e.g. go back to sheet[5]	0	1,485	12	0	41	72	2	636	0	0	0	2,828	706	**5,768**
# specimens imaged, uploaded, transcribed BUT not able to be georeferenced[6]	0	0	0	0	10	98	54	52	0	0	0	671	10	**885**
Totals	**17,000**	**40,188**	**21,784**	**38,611**	**5,228**	**45,085**	**51,063**	**21,121**	**256,142**	**19,773**	**321,880**	**21,292**	**4,331**	**867,961**

*NY only uploads to the MAM Portal periodically, after georeferencing is complete.
Processing Status in the MAM Portal: [1] No stage, not in Symbiota yet; [2] Unprocessed + Expert Required + Pending Review; [3] Stage 1; [4] Stage 2; [5] Stage 3; [6] Closed

Figure 2. Percentage of specimens by stage of completion and herbarium for MAM TCN. With this presentation of digitization progress, the final goal for each institution is to have a mostly green column above the X axis (could potentially have orange up to roughly 10%). Specimens not yet in workflow are set as negative numbers.



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

Submission #1524

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by mwdenslow
Wednesday, February 6, 2019 - 13:37
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:
All SERNEC:
There are 108 collections serving data through the SERNEC portal. There are currently 4,491,014 specimens records and 387,776 (9%) of those records are georeferenced. There are currently 3,956,448 imaged specimen images available. There are currently 49 collections publishing to iDigBio.

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).

We recently modified some image renaming scripts developed by the Consortium of Northeastern Herbaria (https://github.com/psweeney-YU/reBar). For SERNEC we needed to make some changes as well as use them in the Python environment. We have been making use of them and they posted to GitHub (https://github.com/ccampell/BarcodeReader) for any researchers to use.

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

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
All SERNEC:
Nothing to report

Share and Identify Opportunities and Strategies for Sustainability:
All SERNEC:
Nothing to report

Share and Identify Education and Outreach (E&O) Activities:
All SERNEC:
The TCN continues to be active on Notes from Nature with several expedition running. We recently started a new series called Spring Refresher in order to transcribe specimens from the state of Tennessee. Student from Tennessee as well as volunteers associated with the annual Wildflower Pilgrimage (http://www.wildflowerpilgrimage.org/) have been active on these expeditions.

Google Analytics

Other Progress (that doesn't fit into the above categories):
All SERNEC:
The TCN leadership are in the process of evaluating our final activities, deliverables and budget in order to figure out if the lead institution will be applying for a second no-cost extension.

Attachment 1

Attachment 2

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

Submission #1525

Submission information

Form: TCN Quarterly Progress Report to iDigBio
Submitted by akasameyer
Wednesday, February 6, 2019 - 13:49
136.152.143.14

TCN Name:
The Pteridological Collections Consortium: An integrative Approach to Pteridophyte Diversity Over the Last 420 Million Years

Person completing the report:
akasameyer@berkeley.edu

Progress in Digitization Efforts:
During this reporting period, Pteridophyte Collections Consortium members have created skeletal records for 75,401 extant specimens, fully transcribed 12,913 extant specimens, imaged 60,498 extant specimens, and georeferenced 9,500 extant specimen records.

In our Pteridoportal, for the extant specimens we currently have:
513,487 specimen records
207,333 (40%) georeferenced
241,568 (47%) imaged
231,372 (45%) identified to species
64 families
517 genera
11,991 species
13,009 total taxa (including subsp. and var.)

For fossil progress during this reporting period, Pteridophyte Collections Consortium members have databased 613 fossil specimens, imaged 1,145 fossil specimens, and geo-referenced 2,020 fossil specimens. The total pteridophyte fossil specimen progress including work done prior to the start of the grant is 14,315 fossil specimens databased, 9,902 fossil specimens imaged, and 6022 fossil specimen records georeferenced. These records have not been uploaded to the Pteridoportal yet because the Symbiota Paleo Module is still in development.

Additionally, organizations are preparing for digitization by organizing their collections to facilitate digitization, setting up their imaging stations, staging specimens to facilitate the digitization process, barcoding specimens, running OCR on specimen images, and creating a Excel file of county, state/province or country with centroids coordinates georeferenced for use in providing “county level” georeferenced localities and/or specimens.

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

Rutgers: During the setup of the project we have communicated extensively and discussed best practices in updating the ordering of specimens (classification) within the collection, and been in touch with several institutions to learn from them. We realized that the best way to reorganize and update herbarium sheets before digitization was while entering skeleton data into Symbiota, where it is possible to check the synonym lists for current names. This lead to a more streamlined and efficient process when compared to if the name checking and data entry and adding of barcodes were done separately.

OU: We are getting close to having detailed written museum-specific workflows for various processes of the project. After they have been checked by all who use them in our collection and used to train our new volunteers and undergraduate student(s), they will be shared. Lesson Learned: 1. Having pre-existing standardized and detail-oriented photography procedures helps, but additional standards still take lots of time to add to the photography process. 2. The pre-photographic paleo-related procedures are more important than the photography procedures, in helping ensure that volunteers and undergraduate students understand and can achieve the standards.

Identify Gaps in Digitization Areas and Technology:
A challenge for our project has been that most participants have their data as a live collection in another Symbiota Portal (SERNEC, MAM, etc.) and are are serving their pteridophyte data to the Pteridoportal as a snapshot so that they do not have live data in two portals. This has led to some confusion as some participants were planning on entering data in the Pteridoportal but will now be entering project data in their home portal. This would also complicate error-correction, duplicate-matching, and other features that we might wish to do within the Pteridoportal.

The Pteridoportal migrated to the new IDigBio server December 15, 2018. This resolved the performance issues we had on the old server that made it difficult to load some datasets.

The Paleo Module for Symbiota is still being developed, this module will will allow participants to enter fossil data into the Pteridoportal.

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

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
Participants are collaborating with the following TCNs: SERNEC, Endless Forms, Phenology, and Mid-Atlantic Megalopolis.

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

Share and Identify Education and Outreach (E&O) Activities:
Rutgers: Herbarium Director Lena Struwe also leads the Scarlet Pimpernel Project at Rutgers University. This initiative that aims to highlight, connect, and develop the hidden biodiversity treasures on our campuses and use then in classes, for informal learning, and for many other purposes. Over 100 faculty are currently participating in this project, and the Chrysler Herbarium as one of the key organisations involvedWe plan an open house of the herbarium during Rutgers Day in April 2019 and will showcase both pteridophytes and digitization processing at that time. On average about 100 000 visitors attend Rutgers Day.

Yale: We hosted a WeDigBio event that was attended by 12 citizen science volunteers who transcribed data from herbarium specimen labels.

UNC: Carol McCormick published an article about the PCC TCN in the North Carolina Botanical Garden January, 2018 e-newsletter.

Field Museum: We participated in the quarterly Collections Club hosted at Field Museum where 50 volunteers on two days helped with curation and databasing. This included Notes from Nature and Fantastic Ferns transcription.

Google Analytics
PCC_AnalyticsFeb2019.pdf

Other Progress (that doesn't fit into the above categories):
Together the PCC institutions have trained at least 61 students, staff, and volunteers for the project. Portal Manager Joyce Gross has been working with individual institutions to load data and set up regular transfers of data from other Symbiota portals and databases to the Pteridoportal using a script written by Ed Gilbert. 53 collections are currently set up in the Pteridoportal, 21 of those collections have data loaded. The PCC project team has been meeting with participants to facilitate the digitization process as needed and continues to work with Ed Gilbert to develop the Paleo Module for Symbiota.

The project now has a Taxonomy Committee and is working on both extant and fossil taxonomy issues. The Pteridoportal's taxonomic thesaurus was populated with the names and taxonomy of extant pteridophytes from World Ferns, generously supplied to PCC by the author, Michael Hassler. This process--populating the taxonomic thesaurus--ran into some technical hurdles, but a foundation is now in place. The Taxonomy Committee will work to refine the thesaurus. For fossil names, we're still in the preliminary phase. An initial batch of names, covering extinct horsetails and their relatives, should be ready for incorporation shortly.

The Executive Committee met to discuss project progress.

A new logo and website header was developed and implemented on the PCC website, the format change for the portal will follow soon.

Attachment 1

Attachment 2

Source URL: https://www.idigbio.org/node/564/submission/1525

Re: Form submission from: TCN Quarterly Progress Report to iDigBio

Jennings,David T

Wed 5/8/2019 12:23 PM

To:James Ryan Allen <james.r.allen@Colorado.EDU>;

Cc:Love,Kevin J <klove@flmnh.ufl.edu>;

Thanks, Ryan. I will incorporate your report into the February TCN updates. For some reason, your report was not registered in the webform results. Thanks for forwarding the email.

David Jennings
iDigBio Project Manager, iDigBio Node Manager, GBIF Nodes Regional Representative North America
Florida Museum of Natural History
Office: 352-273-1906
Subscribe to the iDigBio calendar to never miss an upcoming event!

From: Love,Kevin J
Sent: Wednesday, May 8, 2019 12:07 PM
To: James Ryan Allen
Cc: Jennings,David T
Subject: Re: Form submission from: TCN Quarterly Progress Report to iDigBio

Thanks for the heads up. I've copied David Jennings, iDigBio Project Manager, on this email. He should be able to help you get this squared up.

-Kevin

From: James Ryan Allen <james.r.allen@Colorado.EDU>
Sent: Wednesday, May 8, 2019 3:04 PM
To: Love,Kevin J
Subject: Fw: Form submission from: TCN Quarterly Progress Report to iDigBio

Kevin,
I am not sure if you aggregate all of the data, but I noticed our report from February was not included in the overall report.
https://www.idigbio.org/wiki/index.php/Internal_Advisory_Committee

I don't want anyone to think I was a slacker and did not send in the report...

Thanks,
Ryan

J Ryan Allen
Project Coordinator Southern Rocky Mountain TCN

Project Manager Biodiversity Informatics
University of Colorado Museum of Natural History
Herbarium (COLO)
350 UCB
Boulder, CO 80309
303-492-3216
https://botanydb.colorado.edu/
http://www.soroherbaria.org/

From: acis-admin@acis.ufl.edu <acis-admin@acis.ufl.edu> on behalf of iDigBio <acis-admin@acis.ufl.edu>
Sent: Wednesday, February 6, 2019 11:51 AM
To: James Ryan Allen
Subject: Form submission from: TCN Quarterly Progress Report to iDigBio

Thank you for your report. We look forward to seeing you at the next TCN IAC meeting. If you have any questions or issues, please don't hesitate to contact us at help@idigbio.org.

Please remind your Symbiota data managers to publish any updates you have had since last month (refer to Ed Gilbert if this is a strange request: egbot@asu.edu).

Here is a copy of your submitted report:

Submitted on Wednesday, February 6, 2019 - 13:51
Submitted by user: jrallen99
Submitted values are:

TCN Name: SoRo: Using Herbarium Data to Document Plant Niches in the High Peaks and High Plains of the Southern Rockies - Past, Present, and Future
Person completing the report: james.allen@colorado.edu
Progress in Digitization Efforts:
Collectively for the current quarter roughly November of 2018 to January of 2019 we have entered 32,366 new records into databases, barcoded 67,014 new specimens, imaged 83,685 new specimens and georeferenced 18,282 records.

In aggregate the project has now produced 132,127 new database records, 462,831 newly barcoded specimens, 467,911 new images and 26,622 new georeferences.

The balance of the project focus is starting to shift away from the imaging process with more effort being placed on transcription of specimen records and georeferencing.

Share and Identify Best Practices and Standards (including Lessons Learned):
Mit McGlaughlin established a UNC Herbarium google account to easily share protocols among herbarium workers (all protocols are posted) and to keep track of georeferencing progress. The georeferencing sheet on the google doc

allows workers to enter which specimens they have completed and make notes about any difficult specimens that were skipped or other resources that will be require to accurate georeferenced a specimen.
Harvard University is finalizing a transcription tool to database from images rather than the physical specimens; it is currently in a state that can be used for further staff testing and gathering feedback. Their Biodiversity Informatics is working on its final deployment to the servers (estimated 1-2 weeks calendar time). Plans to integrate the outstanding image processing steps so that the image backlog will be linked in the HUH database and be available online (HUH website).
UNM and COLO building in steps for imagers to check quality before starting work can prevent the need to redo work at a later date. Check for light outages frequently; we encourage a brief check before each imaging session, while imagers check white balance and focus.
NYBG has begun georeferencing for SoRo, primarily for records that can be batch georeferenced with GEOLocate. Currently, this includes records with Township, Range, and Section values and those with a precise location at the city-level only. Lead Digitizer, Sarah Dutton, was trained to use the batch tool and to identify large groups of records that would provide the best results in batches.

Identify Gaps in Digitization Areas and Technology:
Our collection at CSCN has been working through fixing a defective camera that has now been returned to Nikon for servicing. I wonder if at the community we could devise a loaner program to help reduce down time when collections run into unexpected issues with equipment.
GREE is working to share images with the SoRo portal and is working with Specify to better share data. Shifts to the online version of Specify has changed the way data can be exported to Symbiota based portals like SoRo.
SJNM several specimens have not been entered into SEINet correctly or have never been entered. This requires extra time. Many specimens (ferns) have been moved into different families that have not been entered into SEINet. K.Heil is in charge of entering those vouchers that have never been entered into SEINet and selecting which plant families vouchers belong to. Dr. Michael Windham is doing the fern family treatment for the New Mexico Flora. The taxonomy of this group will change, and updates will follow after Dr. Windham has completed his fern treatment.
HUH is also working on contributing their data and images to the SoRo portal. Ryan Allen and Ed Gilbert are in contact with Jonathan Kennedy to arrange an IPT set-up.
RM and COLO Canon discontinuing their EF 50mm f/2.5 Compact Macro lens that many of our imaging stations rely on. COLO recently purchased a Sigma 50 mm F1.4 DG lens that appears to be a good (although more expensive) substitute for the canon lens and will report its findings when the camera goes into service.

Share and Identify Opportunities to Enhance Training Efforts:
Shared resources such workflows and transcription guides have been helpful to share information between collections. COLO is working on adding all of the workflows they have received to a Tab on the SoRo website. This will ultimately be located at
(http://secure-web.cisco.com/1Thl7NjtvnmQ1-A7ALBJm_w38qwPGW5qCvtDfGEGOclll-LfnijWoqxHJaQBzZPAKaYFwVC_Hd6IDRSiRsVMjX3wQ3GcT_YP9N8QgSgSA8zr7tfuDUgaM-Y0vQo_2lI5YxGRxzYlv4NQnRMoqKrdKUiFIze0YrxN7lLEfv_GIBZ97E6o9wTXlS4ZAOtGONfIDrh8CysmxcCqprOxJ0pe6qY6mmrm

CCXt3Oosroq6EysQcUsHkTDLH2jPM30_tGwA35ssw36ml3-0rbuvjoh3-pt03KKLc7K16_qasled0S80rA_EGqB21t1Bm_Ib-i3n2PqcJWrIMo1tEq79SWo0zlTs33wgHD2XiBnTz7tpF_2Emv2dxuQZBTZxaGGcz4xUSBlzRy4KZc_jAzDbep0nOBZ1gd_tWLkQ0DOSXAUOJW1_OPqkQBBubp0RIVc9ohkQWALbYSBrpyuGALx2dKYWRbqg1U7Xym5WgSMgY_-e4lxo/http%3A%2F%2Fwww.soroherbaria.org%2Fportal%2Fdigitization.php), but is currently not available.

SJNM recently contacted Ross McCauley (Fort Lewis College Herbarium-FLD) to address problems with SEINet entries and Adobe Lightroom. Many of their voucher photo files were too large to download onto SEINet. A workflow will be put into place to reduce the size of images when needed.

WSC is developing a training system whereby their experienced transcribers play a major role in training incoming transcribers. Training is a particularly time consuming process and they hope this will alleviate that strain, and will move forward more efficiently with our transcription efforts.

UNM hired two new students last semester and one worked in very easily. The other person proved untrainable and dangerous around our specimens. Extra screening before hiring may prevent this kind of unfortunate situation in the future.

NYBG Every 5-7 years, The New York Botanical Garden embarks on a new strategic plan that incorporates ideas from staff in all departments at every level. 2019 happens to be a planning year for the next one, and they invited TCN full-time staff to take part. SoRo Lead Digitizer, Sarah Dutton, completed a personal assessment of her job functions, which included identifying gaps and ways to improve. She also participated in the Biodiversity Information Management strategy session where we compiled ideas from across our department. They feel this type of strategy training and involvement in policy issues provides their TCN staff with insights in how a large organization works and gives them a better understanding for running a large-scale digitization program at a higher level. We believe this training will help prepare them to lead these projects in the future.

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

We are starting to reach out to other potential collections that would benefit from joining the SoRo TCN and hope to submit at least one new PEN project in the fall. We do not know if the PEN submitted last fall has been funded.

UNM has continued to work with the Seeds of Success Program and have allowed the BLM offices in Santa Fe and Taos to image their specimens for this program at UNM. They have also been working with Warren Wagner at the US herbarium on taxonomic variation and species boundaries that came to his attention through images that were digitized for the SoRo project.

SJNM and FLD have been exchanging numerous duplicates between their two collections. They have done this for many years but with the push to digitize this has been much increased.

COLO worked with the Craig District Herbarium to start the process of adding their collection to SEINet. The collection was previously not listed on the Index Herbariorum.

Share and Identify Opportunities and Strategies for Sustainability: Several collections have explored projects with external agencies such as the BLM to help fund future digitization activities.

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

An article about the digitalization process appeared in the Chadron State

alumni magazine within the last week, but is not available online.
HUH mentions their digitization efforts, including the SoRo project, during educational tours to the Harvard and non-Harvard communities.
Collaborating with San Juan College, Ft. Lewis College, University of Colorado, Northern Arizona University, and the Chicago Botanic Garden to put together a plant collection and herbarium curation workshop aimed at tribally-affiliated college students for May 2019. The group set a date for the workshop, came up with an outline for workshop activities, and created a flyer for the event in order to solicit student participation. NAVA attended a conference call with Chicago Botanic Garden's Budburst program to discuss their role in collaborating on this workshop and other possible outreach opportunities in the future. BHSC is also collaboration with Oglala Lakota College and the Center for American Indian Research and Native Studies to hold a similar workshop in June and has begun for the workshop including discussing sites, numbers of students, leaders and permission for collecting specimens on Native trust lands.
FLD has also begun planning for a small herbarium publicity event on-campus to celebrate the completion of digitization. The idea is to showcase the collection for other faculty and administrators to make them more aware of the resource Fort Lewis has both for teaching and research.
At UNM imaging systems have been discussed in multiple tours of the herbarium and inspired students to use the images available for research and expanding their understanding of the flora of the American Southwest.
Google Analytics:
https://secure-web.cisco.com/1vYZLAfC2oLpJRw_zFqkckRwK_IP792dGlKEU0DqtDPMJQ1WkoweETEyLykTqC2JDmAM22AG4o9QuyBQCp2R-7l_MAfubY-xVINN9PPtOjrh639NwOT7Th5zg5iY0pv8hrmk43T0HfQLkfjQ-IREB--Q5AAr2VyLWkTZPGhV_0OLyodakCSum45PekX6EywMYLzDhQZzfXJ7jUm4zAwuIpiZm7d9-FXuERNCgyg64a_ipYgEauYsbCjAjA5_u2KV7vou1wNWPzh88cAxuBFqFOXB2mxx4VIHB_JmEuofRJkQIjYIeVnqFMJjvYGlly_J-5hXf63owC5tzFAZa2ur_uKcwtvHJtk3QKtEwjwmDZdNiD_GI7WwxcsRy_1ecWEGStIGkjCH5Y-Fq32_9euggkyDRLNkfVWZp688BXUOm4P9vq0ib8FzIoDsXR_2KqAlX8Z732YUf9EwgNa0KuEY_n-DGXZLfxmGGLAsb8P3knHo/https%3A%2F%2Fwww.idigbio.org%2Fsites%2Fdefault%2Ffiles%2Fwebform%2FAnalytics_SoRo_20181101-20190131.pdf
Other Progress (that doesn't fit into the above categories):
Lance Gloss and Tim Whitfield at Brown University are the November 2018 iDigBio Research Spotlight. Lance took the initiative to look into Brown's historic records from early expeditions to the west and used collector field notes to help narrow down the location of several expeditions to help improve location information. The article can be found here:
https://secure-web.cisco.com/1Zh4tXd7tGe75Fz827TIPEpqwVNwB-mABRUOWs2o_RpiV6iaqYn-omzR0AWukajAhli-v75vm55suCWmIb61hP05VYFRRjtDWXMIWq_Do0nHvj55cVCuZvq9lYMC-6mICNPwJCwDsr56oqx1C_xVa4FVOSyzspgz_vsI4P8Yk5pI1VtuC_yB63Ee3R0-jYq3lYcQRi3b2eyjQBQSgmcpmlkfFh9ATXc3p5qDKm07WdJB673Vq2UYSuzXP8fkqcWFQRbxRBXddPGbDmNMgkVsWIBvK40EihJQ2ZR5r-MCnq2KZtLj9IREreF4-u2XuFrZB3ccFyHWijRGANaSDQDLPy5VTg4t7wJouTfmgXepqzQJB01io5XJPIC4UEmA71ly0SM4aJNGbHCFkUWq2rxJxLzkUJrJdF3GY4T-Unib-9-lzpRYjfU_-EBJKavNtqDgUHfLiEmOzsILjTS-c_0XYUrNTJOOwrFg1PN_W9B2avgE/https%3A%2F%2Fwww.idigbio.org%2Fcontent%2Fresearch-spotlight-november-2018

Project Coordinator Allen wrote an article about the SoRo project and the important role smaller/regional collections play in contributing data to biodiversity informatics sites like SEINet. Ultimately this will be available through the Vasculum's website when they post the newsletter.

https://botanydb.colorado.edu/misc/Vasculum13.2_Advancing_Digitization_in_the_Southern_Rocky_Mountain_Region.pdf

COLO built an updated authority list based on the USDA Plants checklist for use with the Imaging Workflow Application (http://lbcc1.acis.ufl.edu/workflow_application) from the LBCC TCN to assist with skeletal data capture during the imaging process. You can download the file here: https://botanydb.colorado.edu/misc/USDA_Plants_sciName_family.zip

COLO has started work to try to incorporate a dropdown list for collectors in the Imaging Workflow Application to assist collections in the rapid acquisition of collector information during the imaging process.

GREE New hires: two graduate TA's each working 10 hours per week (funded by UNC). 4 undergraduates each working 3 hours per week (funded by UNC). 1 undergraduate working 10-15 hours per week (funded by SoRo grant).
SJNM is hoping to hire Gregory Penn in January, to help with imaging.
HUH hired two new digitizers, who started in Nov 2018 and on Jan 22, 2019, respectively. Both digitizers are working on families of the Plants on Edge project only, but some of these overlap with the SoRo project and will involuntary contribute to this project. They are keeping numbers separated for each project and ensure correct payment from the involved funds.
UNM has recruited two new volunteers, since the last report.
NYBG is in the process of hiring year 2 interns for SoRo. Several interviews have taken place and they have identified at least one candidate so far.
Digitization efforts often creates extra associated tasks such as push collections to update taxonomy and filing systems. Many collections are also identifying specimens in need of repair and are building these repairs into the project workflows. These specimens would not be systematically located in the absence of these projects.

Attachment 1:
Attachment 2:

The results of this submission may be viewed at:
https://secure-web.cisco.com/1o3APvfkhXFSYUTMXm-pgoDYV-VMEmsJUMcnjJl9oH_X0c6wBzFZRxN3Jo8XPwmGUtJY60YvGIDd9psoIRJs8pPi9GWlDuWVLmJza1BkKdCqHBGyiIcgjCXOiyWjXBVyJ7yRRxQp-RIWCEkQ1uDeDKJTR7cJ8UpWueB0GISa5QQDbtwUZntTLCZHFTGZHrM4LwGQzW_WmlfdVioLNMyN68_qw3q7fJDCUOn2Pj0vauRLVdNf746lBhneT_gg33Lt2o7RyGs8xs2eEmKv10-fLEBOeQQ9jGcB1ULqubuRU2lfm7cD6iwTpUGEtLUlxTXtrllD1krVhRhFskBn0j7afUpfPla29fozOtAG1YCPf5ryM4GM4vyu8Y54WnQRl8wNJ5swMFEijRK-GMJhVPfGInKLyFAy85C0TzsS2SLvKH_t0dLkYdUoo3Qsyt_9Me5kX0cWhttCka8Bj1Bd_-jvPs3-A1QQEGbCXWWyLgy93b_Q/https%3A%2F%2Fwww.idigbio.org%2Fnode%2F564%2Fsubmission%2F1509