North American Lichens and Bryophytes: Sensitive Indicators of Environmental Quality and Change

Report submitted by: cgries@wisc.edu
Report Submitted on: 01/23/2014 - 10:46

Progress in Digitization Efforts

As of January 2014 the number for the LBCC are as follows:
Lichens: http://lichenportal.org
Herbaria actively submitting images or key stroked records to the portal: 49
Specimen records in portal: 1,155,951 (up by 85200 since September 2013)
Specimen records with label images: 466,360 (over 103,967 labels have been imaged since September 2013)

Bryohpytes http://bryophyteportal.org
Herbaria actively submitting images or key stroked records to the portal: 46
Specimen records in portal: 1,694,563 (up by 126,833 since September 2013)
Specimen records with label images: 518,215 (166,517 labels have been imaged since September 2013)

the numbers show, that now the majority of new records are coming through label imaging and not so much through mobilizing existing databases, although that still represents a significant contribution to the increase in numbers of records.

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

nothing new to share

Identify Gaps in Digitization Areas and Technology

nothing new

Share and Identify Opportunities to Enhance Training Efforts

our annual project meeting will be at the end of February and will be devoted to 'train the trainer', that is, we have invited the collaborating institutions and representatives from the small collections for which specimens have been digitized. We will provide training in how to manage collections in Symbiota and how to effectively use the transcription interface.

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

Share and Identify Opportunities and Strategies for Sustainability

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

We are gearing up for the massive transcription phase. This involves working with the UW financial service to determine how best to pay for transcription that may happen from all around the country. After our annual meeting we will be advertising and recruiting volunteers as well as professional transcribers.

Attachment

iDigBio is funded by a grant from the National Science Foundation's Advancing Digitization of Biodiversity Collections Program (#EF1115210)

THE MACROFUNGI COLLECTION CONSORTIUM: UNLOCKING A BIODIVERSITY RESOURCE FOR UNDERSTANDING BIOTEC INTERACTIONS, NUTRIENT CYCLING AND HUMAN AFFAIRS

Report submitted by: Bthiers@nybg.org
Report Submitted on: 01/28/2014 - 10:13

Progress in Digitization Efforts

Specimens added to the MycoPortal: since October 2014: 121,638
Total specimens in the MycoPortal: 1,574,761

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

Nothing new to report

Identify Gaps in Digitization Areas and Technology

Gaps in digitization areas and technology remain with regard to interpretation of OCR results and data parsing. We have tested the new data parsing techniques in Symbiota (available only in the Lichen and Bryophyte portals at this time); we are hopeful that these techniques will speed the creation of records when the feature in installed in the MycoPortal.

Share and Identify Opportunities to Enhance Training Efforts

1. All institutions participating in the project have now been trained and have begun their digitization projects. Additional training at this point consists mostly of answering questions and trouble-shooting problems with the imaging setup or the MycoPortal software.

2. Crowdsourcing: We have been contributing images of specimens for transcription to Notes from Nature since late October 2013. It has been a mixed success. There is interest in the project – more tha10,000 transcriptions have been done – but the project is hampered by a lack of attention to bugs and glitches by the Zooniverse developer, and the lack of a dedicated staff member to manage the project. The Macrofungi Collection Consortium has contributed three blogs about the project to the Notes from Nature website – two of which have been published, and one is in the queue.

What are Macrofungi? Barbara M. Thiers, 26 Nov 2013
The Macrofungi Collection Consortium – some background 12 Nov 2013
The University of Michigan Herbarium – Mecca for Macrofungi 28 Jan 2014

3. Two student interns have just completed their internships at The New York Botanical Garden. Mari Roberts has been hired as the manager of another digitization project at The Garden, and Thomas
Park is a strong contender to assume the role of Project Coordinator of the Macrofungi project.

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

. Our collaboration with Genbank continues – Genbank numbers are now included in records for those specimens whose sequences have been uploaded to GenBank. Conversely, a link to the specimen record in MycoPortal now exists from GenBank. We are very excited about this collaboration because it not only addresses the problem of poor citation of specimens in GenBank, but also further imbeds the MycoPortal in the standard work practices of mycologists, which is key to the sustainability of this resource.

2. We are collaborating on a Genealogy of Life proposal with a team of mycologists who have been involved in building the Fungal Tree of Life, to combine specimen data, phylogenetic data, and descriptive data in preparation for a project to document all species of Macrofungi on earth.

Share and Identify Opportunities and Strategies for Sustainability

Our strategy for sustainability is as follows:
1) Make the MycoPortal an indispensible tool for mycological research by linking it to GenBank (see above), and making upload of specimen data into the MycoPortal a requirement for publication in Mycologia, the journal of the Mycological Society of America. Discussions have started on GenBank portion of this strategy, and will be started with the editor of Mycologia at the annual MSA meeting in August.
2) Continue the reach of the MycoPortal beyond macrofungi. Dr. Andrew Miller of the Illinois Natural History Survey is preparing a proposal to digitize microfungi to be added to the MycoPortal. Broadening the user base will help sustain the project
3). Internationalization of the MycoPortal. Soon we will add data from non North American herbaria to the MycoPortal; we hope this will stimulate continued discussion of the development of complementary projects in Asia, Europe and South America that further broaden the scope of the MycoPortal
4) Management of the Portal beyond the current grant: My dream is to have the MycoPortal Management become a standing committee of the Mycological Society of America, and that they will allow donations above their current membership rates to support the MycoPortal. I hope to start discussions with members of the Executive Committee of the Society about this at the MSA meeting in June 2014

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

1. Presentations about the MycoPortal and the MaCC Project were given at the iDigBio Summit in late November 2013, and at the Education and Outreach Workshop in Gainesville in January 2014.
2. Subcontracts have been rearranged in the project so that Scott Bates, now at University of Minnesota, can hire staff and students to help manage the MycoPortal as well as digitize specimens in that collection. The Denver Botanic Garden is currently advertising for a staff member who will devote 20 hrs. per week for the next two years to record completion.
3. The New York Botanical Garden team is currently in transition – Project Coordinator Shannon Ascencio has accepted a position at the Canadian Museum of Nature, beginning February 2014. A search for her replacement has begun, and hopefully a new staff member will be in place by the end of February 2014.

Attachment

DIGITIZING FOSSILS TO ENABLE NEW SYNTHESES IN BIOGEOGRAPHY- CREATING A PALEONICHES

Report submitted by: blieber@ku.edu
Report Submitted on: 01/28/2014 - 14:58

Progress in Digitization Efforts

Please see attached file

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

Please see attached file

Identify Gaps in Digitization Areas and Technology

Please see attached file

Share and Identify Opportunities to Enhance Training Efforts

Please see attached file

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

Please see attached file

Share and Identify Opportunities and Strategies for Sustainability

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

Attachment

https://www.idigbio.org/sites/default/files/webform/tcn-reports/PaleoNichesiDigBioUpdateJan2014_0.docx

Paleoniches Update, January 2014

Regarding the **University of Kansas** portion of the project, led by PI Bruce S. Lieberman and co-PI Una Farrell, we now have a total of 115,922 specimens databased. Of these, there are a total of 109,272 specimens databased that have clean, proofed localities. Further, we now have a total of 81,695 specimens that are georeferenced. In addition, a total of ~4800 localities have been georeferenced. In other relevant news, Una Farrell and post-doc Michelle Casey attended a georeferencing workshop in August and the paleodigitization workshop at Yale in September, and each of these will enhance our ability to train others and improve progress on the grant. Una Farrell will also be attending the upcoming paleo imaging workshop at Texas this spring. Further, recently Ohio State submitted a PEN to join our TCN and KU will be providing a small subcontract on that. In addition, post-doc Michelle Casey and Bruce Lieberman are close to putting on line a lab resource on trilobites that draws on images of specimens from our collections that can be used in outreach efforts and also teaching college invertebrate paleontology labs on trilobites at schools that lack fossil collections. Finally, PI Bruce Lieberman and one of the graduate students funded off the grant, Erin Saupe, have a paper, along with PI from San José State Jon Hendricks, (and one other author) describing our ecological niche modeling relying on georeferenced and environmental data from mollusks housed in the museum of one of our partners on the grant (FLMNH) in press at the *Journal of Biogeography*.

Since the last update, PI Hendricks (**San Jose State University; SJSU**) and his undergraduate and graduate student assistants have continued to generate content for the "Digital Atlas of Ancient Life" and have put it online (currently accessible at http://www.geosun.sjsu.edu/~jhendricks/AtlasTemp/).

Important new updates include the following:

1) Species-level pages for the bivalve families Cardiidae and Carditidae were added to the Neogene Atlas.

2) A new undergraduate student has been trained on working with Dreamweaver and adding content to the Digital Atlas webpages.

3) An undergraduate student (same as #2) has been working on developing content for the Brachiopoda portion of the Pennsylvanian Atlas webpage.

4) The domain names www.digitalatlasofancientlife.org, www.pennsylvanianatlas.org, and www.neogeneatlas.org have been registered and content is gradually being transferred to a new, permanent server (on www.ipage.com).

5) PI Hendricks attended the iDigBio Education and Outreach workshop in Gainesville, FL on Jan. 16 and 17, 2014. He also presented the Digital Atlas of Ancient

Life to the workshop participants, as this is the major outreach component of our TCN.

Planned activities between now and the next update include:

1) Adding species-level pages for the bivalve family Arcidae to the Neogene Atlas.

2) Adding species-level pages for the Brachiopoda to the Pennsylvanian Atlas.

3) Transferring all existing web content from the temporary location (http://www.geosun.sjsu.edu/~jhendricks/AtlasTemp/) to the new domains listed above.

Since the last update, the Ordovician part of our project, led by PI Stigall (**Ohio University; OU**) reports the following: Since the launch of our website at the annual GSA meeting in Denver, has had 12 species completed and live on the webpage. Further, they have been focusing on finalizing the content for the top 50 species and the associated higher taxonomic units. This has been completed and nearly all top 50 species have pages created for them but are currently hidden from the public. All of the top 50 species that we have in our collections have been photographed and we will be traveling to the (Cincinnati Museum Center) CMC and Miami University, both collaborators in the project, to photograph the remaining specimens this month.

In addition to the top 50 species, the majority of the bryozoan pages had been nearly completed prior to the graduation of grad student Hannah Brame who was supported by the project. All but three families of bryozoans have pages on the Atlas but many are missing pictures, which we will hopefully be able to acquire on our museum trip. Making paleoecology and stratigraphy figures will be finished this month for the top 50 species and we will hopefully be going live with the majority of the pages in the near term. Production is summarized in the table below.

Taxon	**Total in Collection:** **Families - Genera (species)**	**Atlas Pages Created** **Families - Genera (species)**	**Atlas Pages Live** **Families - Genera (species)**
Brachiopods	17 – 28 (49)	11 – 15 (19)	5 – 5 (9)
Arthropods	7 – 7 (9)	5 – 5 (6)	1 – 1 (1)
Corals	6 – 7 (7)	2 – 2 (2)	-
Bryozoa	15 - 38 (89)	15 - 28 (46)	1 – 1 (3)
Bivalves	11 – 20 (24)	3 – 4 (4)	-
Cephalopods	7 – 9 (10)	2 – 3 (3)	-

Gastropods	7 – 12 (20)	4 – 0 (0)	-
Porifera	2 – 2 (2)	-	-
Echinoderms	11 – 13 (16)	3 – 1 (1)	
Graptolites	2 – 2 (2)	-	-
Tentaculites	2 – 2 (3)	-	-
Monoplacophora	1 – 1 (1)	-	-
Trace Fossils	0 – 11 (0)	-	-
Totals:	**88 – 152 (232)**	**45 – 58 (81)**	**7 – 7 (13)**
Final Totals:	**472**	**184**	**27**

The spring semester goals include:

1. Researching and creating pages for the top 50 genera in the Cincinnatian
2. Generating dynamic maps to correspond with each of the species location data
3. Creating easy-identification figures for each of the species

Associated with the work on the Ordovician part of the project, for the Miami University collaborator, they are continuing to georeference Shideler's localities and have completed those from Indiana and at least 90% of those from Kentucky and Indiana. In fact, they are in the process of going back to do more difficult ones that were put on hold until they were more experienced. The numbers of georeferenced localities since the last report are 393. For the CMC collaborator, since the last update over 2500 catalogue records have been added into the KeEmu database, over 700 type specimen photographs have been taken, and 70% of the Ohio site records in KeEmu have been georeferenced.

Finally, for our PEN partners. First, **Texas**, PI: Ann Molineux, Co-PI: James Sprinkle

1) Transfer and upgrade all relevant digital records into Specify 6 and make them available to the TCN and iDigBio HUB

Migration to Specify 6 continues, as of 1-27-2014 about 100k records covering more than 325K have been upgraded. We continue to image the Carboniferous specimens and labels, extracting data from those labels for addition into Specify. We had 13 distinct databases that we have been migrating, those covering the

Paleozoic and Paleogene/Neogene specimens have now been migrated. Specify has improved the paleo context side of the database and importing geological data has been made more effective and efficient. We continue to work to refine as many records to the finest stage/age level as possible (Jim Sprinkle, Lou Zachos and myself are involved in that action). The 'Tertiary' database has now been migrated into Specify and Lou Zachos is working on those specimen localities and taxonomies and those in his own collection. We continue to improve the lithostratigraphy and chronostratigraphy of the early Paleozoic

2) Acquire scaled, digital images of key specimens;

We continue to add high resolution images of relevant new type and figured material. We have demonstrated our techniques at SPNHC and have been working with the iDigBio paleo workflow group and other related iDigBio groups and were involved in the workshop in Yale. New software in this area has boosted throughput, Helicon Focus remote in this instance. This automates the multilevel focus shots and makes the image process much more efficient. Our software scripts for embedding scales are available on our redeveloped website.

We have, however, been very active with iDigBio. I am working on several working groups and we are jointly hosting a digital paleoimaging workshop at UT at the end of April. This will allow us to provide hands on experience for several imaging techniques, CT scanning, SEM imaging, our own 2D stacking and scale embedding plus several other methodologies that others are finding productive.

3) Integrate images with supplemental metadata (from interviews with emeritus curators and professors, field notebooks, peels, thin sections;

As stated above we have scanned James Sprinkle's field notebooks and have also scanned those available for H. B. Stenzel and the locality cards of Helen Plummer.

4) Georeference all localities for mapping;

Liath Appleton continues to train and quality control the output of our georeferencers. We have over 14K collection localities uploaded into Specify and 20% are georeferenced with quality control. We are concentrating on those sites relevant to the PEN project.

5) Update PaleoCentral web access to the digital data from Specify 6 , and provide portal access to GBIF and PaleoPortal, enabling multi-collection and cross-discipline searches;

The other good Specify development has been the web-viewing module (web portal). Tomislav Urban, our TACC connection, is currently working on ours and soon we shall be able to have online access to all records for selected fields and media. We have not yet sent/connected data to iDigBio that is this year's agenda item. Tomislav and I have been working on a new version of PaleoCentral.org to include a current and deep time mapping for each specimen, based on the UTIG PLATES project algorithms. The beta version for this is also complete. We are putting together an ABI proposal to develop this deep time ability as a plugin for all Specify users and are working with support from Jim Beach on that development.

6) Extend mobile applications for greater access to all dimensions of our data;

   Our smartphone app, Fossil Roulette, is being demonstrated at NAPC and I shall be talking about how we are using volunteer and avocational person power at NPL to achieve our goals.

7) Further develop our GIS ability to track specimens and disseminate their data.

   Our inventory continues and as mentioned in the last report we have a working beta system for direct online access to the collections repository and to the data relating to the specimens. This ArcOnline project had an initial issue when we moved from MSAccess to Specify, we could not create a dynamic and effective link to the database without somewhat cumbersome downloads. We have solved that issue now and are just completing a 'view' of Specify that links to our ArcGIS management system and will allow us to move forward. I was especially concerned with this recent admin move that we needed to make the offsite collections much more virtually accessible to researchers and teachers as well as the public. I believe we have that now and are routinely creating whole drawer images so the user can literally browse from a distance. I spoke at GSA this year about this project and demonstrated the technique.

And finally for **Yale**:

In October 2013 we held a two day georeferencing conference at Yale. Jessica Utrup, Museum Assistant, who attended and co-taught the idigbio georeferencing "train the trainers" course was the instructor with assistance from Susan Butts (Senior Collections Manager) and Eric Peavey (student worker). Twenty-six participants attended and were awarded an average of $568 per person to compensate for travel expenses. Eight additional Yale participants attended but were not compensated.

Additionally, the conference was webcast using Adobe Connect facilitated by idigbio. Up to 6 external participants at a time viewed remotely.

Since September 2013, we have cataloged 27 additional drawers, a total of 1,120 specimens and we have reached our goal of material to be cataloged from the stratigraphic collection. This most recent batch of drawers awaits imaging. We have also georeferenced 558 pre-existing and new localities (affecting 5,027 object records) and have reached the georeferencing goals described in our proposal. We have not yet started digitizing material from our ledgers.

Developing a Centralized Digital Archive of Vouchered Animal Communication Signals

Report submitted by: msw244@cornell.edu
Report Submitted on: 01/30/2014 - 06:38

Progress in Digitization Efforts

In the first seven months two major thematic network partner NHC audio collections were fully digitized: (1) KU ornithology collection of Mark Robbins covering over 500 physical specimens, and (2) the Oecanthus spp. recordings of Dartmouth researcher Laurel Symes, some 665 physical specimens. Digitization has commenced on thematic network partner Yale's avian audio recordings by Kristof Zyskowski, and also KU herpetological audio recordings by William Duellman. These digitized recordings are now available through the Macaulay Library (ML) website.

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

The Macaulay Library uses an audio archival standard of 96kHz 24-bit, the audio standard recommended by Sound Directions: Best Practices for Audio Preservation <http://www.dlib.indiana.edu/projects/sounddirections/papersPresent/index.shtml> and a standard adopted by leading audio archival institutions such as the Library of Congress and The British Library.

Identify Gaps in Digitization Areas and Technology

There are no accepted standards for the preservation and subsequent presentation of electric organ discharges (EODs) produced by electric fish (e-fish). Macaulay Library audio archival staff are working with staff at the Cornell University Museum of Vertebrates to develop archival and web-proxy presentation protocols, in collaboration with other e-fish researchers, that will serve as a model formats for EODs.

Share and Identify Opportunities to Enhance Training Efforts

Staff from the participating institutions and other institutions have met several times to discuss and develop plans for training. ML personnel have interacted one-on-one with network NHC principals from California Academy of Sciences, Dartmouth, KU, LSU, Texas A&M, and Yale on topics ranging from audio recording technology to metadata structure. Participant Liz Derryberry (Tulane) visited in the Fall 2013 to meet with Cornell staff and students and discuss the use of archived sound recordings for research. LSU personnel [Dan Lane] are scheduled to visit ML in March. Finally, we have begun planning for a forthcoming workshop on media digitization.

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

No collaborations with other TCNs at this time, but we are exploring data-cleaning and geo-referencing capabilities developed by other TCNs. We have also begun discussing possible PEN project with staff and researchers at the California Academy of Sciences.

Share and Identify Opportunities and Strategies for Sustainability

A strategy being employed by the Cornell Lab of Ornithology is to put considerable effort into national-level reporting of research/archival achievements, in particular through the public media (NPR, etc). Media from the archive, including media digitized as part of this TCN, can be used and highlighted. This raises the public profile of the research collection, garnering benefits through increased public and institutional support.

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

A forthcoming publication describing a new species of mormyrid fish references forty EOD recordings, deposited with the Macaulay Library (as part of this project) by thematic partner Carl Hopkins of CUMV/Cornell. Also a forthcoming article by ML staff on digitization and archival practices for natural history media.

Attachment

PLANTS, HERBIVORES AND PARASITOIDS: A MODEL SYSTEM FOR THE STUDY OF TRI-TROPHIC ASSOCIATIONS

Report submitted by: moon@begoniasociety.org
Report Submitted on: 01/30/2014 - 10:39

Progress in Digitization Efforts

* Insect record report:
Complete records now available through iDigBio: ~400,000
Total insect data numbers, as of January 9, 2014: ~754,887

* Plant record report:
Complete records sent to NY:1183076
Complete records with images sent to NY: 80838
Skeletal records sent to NY : 438525
Skeletal records with images sent to NY: 393172
Skeletal Records completed at NY: 8137
Complete Records in Symbiota: 674522
Skeletal Records in Symbiota: 326372
Images uploaded to DiscoverLife: 146489

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

* We plan on writing up a description of our data for the Biodiversity Data Journal, thereby giving us a DOI to enter as attribution for the project.
* The TTD proposed standards for sharing association data are now open for review. They are here: http://tinyurl.com/lxbgfxd SCAN project, iDigBio Team and our TTD partners are all reviewing these at the present time. The first set of TTD data shared conforms to these standards.

Identify Gaps in Digitization Areas and Technology

* A major concern for us is how to encourage our researchers and graduate students to participate in the digitization effort. They have research databases of specimens from multiple institutions and would like a clear path detailing how to share these data.

Share and Identify Opportunities to Enhance Training Efforts

* Danielle Pace, one of our digitizers and Museum Studies masters student, participated in the Education and Outreach workshop. Engaging local Museum Studies programs has been very successful for us. We have a second intern, Becky Fisher, who is working for school credit in the project developing a virtual exhibit on early women insect collectors from our data.
* Christiane Weirauch, Mellissa Tulig, and Kim Watson taught a two week Biodiversity Data Capture bioinformatics course in Ghana between Jan 11-23 (http://biodiversity-informatics-training.org/training-courses)

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

* Kim Watson participated in the iDigBio Small Herbaria Digitization workshop December 9-11, 2014, during which she gave two 30-minute presentations and an afternoon of herbarium imaging station demonstrations.
* Robert Naczi, Katja Seltmann, and Richard Rabeler attended the iDigBio Summit III during 19--20 November 2013 in Tallahassee Florida. Rob and Rich delivered a 5-minute lightning talk on the Tri-trophic TCN, “Plants, Herbivores, and Parasitoids: A model system for the study of tri-trophic associations”: https://www.idigbio.org/sites/default/files/workshop-presentations/summit3/iDigBioSummit_2013_TTD_FNL.pdf .

* The TTD second sponsored education and research workshop is in the planning stages. This second workshop engages graduate students and researchers to explore data collected from the project in niche modeling and data mining research. Members of SCAN TCN and TaxonWorks (INHS) are both involved.
* Discover Life Time Machine Portal (http://www.discoverlife.org/timemachine) continues to be developed as one of our methods for capturing data from images.
* Many of our insect partners participated in this years Entomological Collection Network and Entomological Society of America meetings.
* Arthropod Easy Capture at AMNH hosts projects from multiple Planetary Biodiversity Inventory projects, we have engaged these projects concerning sharing data to iDigBio

Share and Identify Opportunities and Strategies for Sustainability

* Creating a repository for sharing research datasets, with linkable DOIs, might lead toward a GenBank like model.

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

* Kimberly Watson, Tri-trophic Data Capture Specialist and Project Coordinator for Botany at The New York Botanical Garden during 2011--2013, has been promoted to Herbarium Information Manager. We congratulate Kim on her new position, as well as thank her for her excellent and indispensable work on this project.

* We welcome Mari Roberts as our new Data Capture Specialist and Project Coordinator for Botany, and congratulate her on her promotion to this position. Mari comes to us with a rich background in digitization, including working as NYBG Herbarium Intern specializing in digitization since June 2013.

Attachment

MOBILIZING NEW ENGLAND VASCULAR PLANT SPECIMEN DATA TO TRACK ENVIRONMENTAL CHANGE

Report submitted by: patrick.sweeney@yale.edu
Report Submitted on: 01/30/2014 - 14:24

Progress in Digitization Efforts

Capture of collection level-information (i.e., "pre-capture") is the primary activity. At this stage approximately 700,000 specimens have been pre-captured -- with at least current identification captured. Testing & configuration of one high-throughput digitization apparatus (conveyor system) was completed in late November - primary digitization has been taking place since early December. A second unit will be installed in March. Light-boxes are deployed at three institutions, and primary digitization has begun at those institutions. Approximately 28,000 images and full metadata records have been captured.

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

We continue to collaborate with, iPlant, the FilteredPush project, the Symbiota team, and iDigBio.

Share and Identify Opportunities and Strategies for Sustainability

nothing to report

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

nothing to report

Attachment

INVERTNET: AN INTEGRATIVE PLATFORM FOR RESEARCH ON ENVIRONMENTAL CHANGE, SPECIES DISCOVERY AND IDENTIFICATION

Report submitted by: chdietri@illinois.edu
Report Submitted on: 02/04/2014 - 13:36

Progress in Digitization Efforts

Approximately 14,200 images have been uploaded to date and are searchable via the InverNet.org portal and zoomable viewer. The second InvertNet workshop was held Nov. 1-3 at the University of Illinois and focused on group discussions of digitization efforts, demonstration of the robotic drawer digitization prototype system, and training in the use of the InvertNet cyber infrastructure. Although the InvertNet technical team was hoping to deliver pre-assembled robotic drawer digitization systems to collaborators at the workshop, unanticipated delays in obtaining some precision-machined parts resulted in the systems not being ready in time for the workshop. We plan to deliver and set up the systems at collaborating institutions within the next month.

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

Nothing to report.

Identify Gaps in Digitization Areas and Technology

Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts

Nothing to report.

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

Share and Identify Opportunities and Strategies for Sustainability

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

Attachment

SOUTHWEST COLLECTIONS OF ARTHROPODS NETWORK (SCAN): A MODEL FOR COLLECTIONS DIGITIZATION TO PROMOTE TAXONOMIC AND ECOLOGICAL RESEARCH

Report submitted by: neil.cobb@nau.edu
Report Submitted on: 02/13/2014 - 17:24

Progress in Digitization Efforts

see attachment

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

see attachment

Identify Gaps in Digitization Areas and Technology

see attachment

Share and Identify Opportunities to Enhance Training Efforts

see attachment

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

see attachment

Share and Identify Opportunities and Strategies for Sustainability

see attachment

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

see attachment

Attachment

https://www.idigbio.org/sites/default/files/webform/tcn-reports/SCAN_Feb_2014.docx

Southwest Collections of Arthropods Network Update

February 13, 2014

Neil Cobb

Progress in Digitization Efforts:

We are on target to meet our second-year quota for digitizing labels from pinned specimens. Table 1 presents three sets of statistics as of February 11, 2013. These include data from institutions that are funded by SCAN, institutions that are entering data into the SCAN portal but not funded by SCAN, and the total records in the SCAN portal. Our total records have actually decreased since last fall, 2013 because most of the MCZ records were pulled by Harvard University. These Harvard records will be made available through iDigBio.

Table 1. Number of specimen records digitized and associated summary statistics. From http://symbiota1.acis.ufl.edu/scan/portal/collections/misc/collstats.php

	SCAN funded	SCAN non-funded	TOTAL SCAN
# Specimen Records	441,220	84,353	525,573
# Georeferenced	306,637	28,981	323,409
# Identified to species	317,646	56,940	360,377
# Families	658	467	686
# Genera	6,131	2,889	7,024
# Species	13,217	6,734	16,659
% Georeferenced	69%	34%	65%
% Identified to Species	72%	68%	71%

We have also started creating high-resolution images taken by a subset of SCAN museums that are committed to producing specimen images. Table 2 lists the number of images posted on SCAN by theses participating museums. Our goal is to produce ~16,000 images suites. An image suite consists of 1-5 images representing different aspects of a specimen. This will translate into approximately 40,000 images. We are currently behind on our projections due to unexpected logistical challenges but we expect to greatly increase our productivity over the summer, 2014.

Arizona State University hosted a weeklong Filtered Push hackathon January 6-10, 2014. The annotation system will be ready to roll out in March, 2014.

Table 2. Number of images posted on SCAN portal from SCAN museums that are focused on producing high-resolution images of specimens. Data are recorded from http://symbiota1.acis.ufl.edu/scan/portal/imagelib/photographers.php

Institution	# High-Resolution Images
Arizona State University	987
Colorado State University	23
Northern Arizona University	782
Denver Museum of Nature and Science	480
University of New Mexico	18
Northern Arizona University - NPS	673
New Mexico State University	307
Texas Tech University	38

Share and Identify Best Practices and Standards (including Lessons Learned):
We are identifying best practices on a weekly basis and sharing those with respective people within SCAN.

Identify Gaps in Digitization Areas and Technology:
We need to harvest additional data (i.e. beyond SCAN) to better understand the biogeography of arthropod taxa. We are partially meeting this need by incorporating GBIF into the SCAN database.

Share and Identify Opportunities to Enhance Training Efforts:
Nothing new to report, we are working on activities already described in previous reports

Share and Identify Collaborations with other TCNs, Institutions, and Organizations:
We are primarily working with Tri-Trophic TCN in order to develop questions for analyzing ADBC data. We are working with Pam Soltis and Charlotte Germain on collaborative ecological niche modeling and biodiversity issues.

Share and Identify Opportunities and Strategies for Sustainability:
The next test will be this spring when Colorado State University finishes with their SCAN funds and initiates a program to digitize new material.

Other Progress (that doesn't fit into the above categories):
Nothing new to report, we are working on activities already described in previous reports
Attachments

The Macroalgal Herbarium Consortium: Accessing 150 Years of Specimen Data to Understand Changes in the Marine/Aquatic Environment

Report submitted by: Chris.neefus@unh.edu
Report Submitted on: 02/18/2014 - 15:08

Progress in Digitization Efforts

Six collections have been set up on Macroalgae.org portal. Occurrence records and images are starting to be added. The CONN collection is nearly complete with 2145 specimens, 97% georeferenced and 90% with images. NY has uploaded 16701 occurrence records but has not begun to georeference or add images. NHA has finished barcoding, and imaging is green algae and has started on the reds. They have uploaded 22894 occurrence records, 5% have been fully populated and georeferenced, and 78% are imaged. NCU has uploaded 271 occurrence records, 42% georeferenced and 73% are imaged. MICH has uploaded 1523 occurrence records and has begun imaging, but has not uploaded images. F has just been set up on the portal and is reading to start uploading.

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

Several workflow documents have been added to the project document site (macroalgae.unh.edu). In general the workflow adopted for the project, which is based on protocols from other TCNs is working well.

Identify Gaps in Digitization Areas and Technology

Not a gap, but note. With extended use, the cooling fans on the Photo eBoxes used for herbarium sheet imaging begin to wobble. It is audible and can result in noticeable image blurring. Not a bad idea to keep a spare fan o hand if you are doing a lot of imaging.

Share and Identify Opportunities to Enhance Training Efforts

A number of the Macroalgae consortium members are scheduled to participate in the iDigBio digitization workshop in Honolulu next month. This is an outstanding opportunity to get the Pacific Islanders together for training.

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

Personnel working on the Macroalgae project have been interacting with personnel from other digitization projects at their own institutions. This has been quite helpful for hands on help with data and image uploading to the portal and other procedures.

Share and Identify Opportunities and Strategies for Sustainability

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

Attachment

Fossil Insect Collaborative: A Deep-Time Approach to Studying Diversification and Response to Environmental Change

Report submitted by: Dena@colorado.edu
Report Submitted on: 02/26/2014 - 16:42

Progress in Digitization Efforts

CU-Boulder:
Equipment purchased to date includes: two new computers with Adobe Creative Suite, a new microscope and digital camera, and a BK Lab imaging system from Visionary Digital. Training with Visionary Digital team was completed in Fall 2013. Imaging protocols were developed and are being refined.

Three part-time (5-10 hours/week) undergraduate digitization assistants and two graduate students (20 hours/week) were hired to work on digitization. In fall 2013 the undergraduate students focused on entering new records into the Specify 6.5 database, cleaning up existing records, and began georeferencing. The graduate students worked to set-up the digitization station, created detailed workflow protocols and training manuals, worked on imaging, databasing and assisting with the Facebook page.

Two retired volunteers continue to assist with the large amount of pre-digitization curation associated with the project.

A web-developer was hired to set-up the project website (fossilinsects.colorado.edu) in wordpress. The developer also worked to create a websearch interface for the CU invertebrate paleontology collections database (which is in Specify 6).

A total of 5,831 new specimen records created in Specify and 14,928 records were edited (at a minimum). They will be shifting-focus to imaging and attaching images to records in Specify this semester, but databasing will continue.

MCZ-Harvard:
Purchased equipment and assembled an imaging station (price about 6,500$). Note: the following system has been designed for imaging rock fossils (i.e., impressions/compressions). Amber inclusions (accounting for about 20% of the fossil collection at the MCZ) will require a different approach, and specific equipment will be purchased during this year.
1. Canon EOS 6D + two lenses (EF 100mm macro and MP-E 65mm)
2. Kaiser RS1 stand + light arms equipped with light sockets
3. Gooseneck Lights “Anser” by Littlite x2
4. Camera motor “StackShot” by Cognysis
5. Desktop computer

Hired the paleoentomologist Dr. Ricardo Pérez-de la Fuente (starting in Sept 2013) for an up to three-year post-doctoral appointment.
Two half-time technicians will be hired next year in order to speed up the digitization process. Two imaging systems will be used simultaneously.
Carried out performance tests and established a workflow.
1,600 images from about 1200 specimens (digitization started in mid November) were taken. Imaged material so far: Carboniferous of Mazon Creek, Illinois (100 images) and Permian from the Wellington Fm. of Oklahoma (remaining images).
(Re)determined imaged specimens in their database records (MCZbase) when required and possible.
Created a database for F.M. Carpenter’s bibliographic collection: 2,000 entries recorded (about 70% of the collection).
Note: done while waiting for ordered equipment.

AMNH:
Two high school students (see below) and a volunteer research intern are assisting in the photomicrography.

Database: Entry and modification of over 5,000 collection objects in amber from three major localities (the Burmese, New Jersey and Baltic deposits). These records are about to be exported to Specify 6.5. A template has been created in Excel that allows for entry of significant datasets for other deposits. Specify 6.5 is being set up by the IT department on a dedicated server, so that students and volunteers will be able to contribute significantly to data entry. Editing will be done by our PI David Grimaldi, and Curatorial Specialist Paul Nascimbene.

Imaging: 957 images of individual inclusions in amber. Some of these specimens (196) were scanned from previously archived kodachrome slides, and the remaining photomicrographs have recently been taken utilizing a Microptics system and a Nikon stereomicroscope.

INHS:
Purchased and installed of two dedicated imaging systems: 1) Macrophotography station comprising a Kaiser copy stand with integral lights, a StackShot motorized macro rail, Canon 5D mark III digital SLR camera, two Canon SpeedLite flash units mounted on flexible brackets and a variety of macro lenses. This system is operated through an iMac computer running Helicon Focus and Helicon Remote software 2) Photomicrography station comprising a Zeiss Discovery V20 stereomicroscope with 0.63x and 1.5x objectives, gooseneck and ring-light illumination, motorized digital control unit and a tethered PC running Zeiss ZEN imaging software with Extended Focal Imaging (EFI) module.

Jared Thomas (http://swheads.org/people/mjthomas) was hired to work on digitization of fossil insects in collection.

In-house imaging standards were established. High-resolution digital images of amber specimens were obtained from the historically significant Milton Sanderson collection.

Yale-Peabody:
A museum assistant (7.5 hours per week) was hired in July to assemble material in preparation for digitization by student workers.

To date, 98% (8,217) fossil insect specimens have been cataloged electronically and are available on the Peabody database search and through portals such as GBIF. Sixteen percent of those have been imaged and imaging continues.

VMNH:
Equipment purchased: iMac, Canon DSLR camera, LED ring light, Kaiser copy stand, 65 mm Macro lens and 24-105 mm zoom lens, StackShot motor and rail, extra batteries for camera, My Book Thunderbolt Duo (back-up storage unit), 5 mm scale bar
Software acquired: Aperture, EOS Utility, iWorks suite, FileMakerPro for our database (EGEMS), Xcode, Automator

Key people hired: Christina Byrd

Approximately 300 specimens digitized so far

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

CU Museum:
Imaging equipment arrived in late November and since then we have been developing and fine tuning our imaging workflow. November and December were spent recording all the steps needed to operate the system we purchased from Visionary Digital so that future imagers will have a step-by-step guide that includes both written directions and screen shots/images. Most of January and February have been spent refining this workflow and then adding in the additional steps of creating derivate images that are being attached to our Specify database and web search. We have started to automate some parts of this process by creating actions in Photoshop that batch insert a scale bar and resize images. We are also finalizing a protocol to update specimen determinations as we image.

DS and TK developed agenda and ran year 1 TCN meeting, hosted by the Yale-Peabody Museum group. See "Fossil TCN Notes" to see agenda and topics discussed during meeting.

MCZ-Harvard:
After a sample is placed on the stand and lit properly, a set of pictures is taken with the aid of the camera motor. Pictures are stacked with Helicon Focus, and edited with Adobe Photoshop when necessary. A precision ruler is photographed together with the sample for scaling.

General pictures of imaged trays with their contained samples are taken using a portable camera, so record is kept of each sample with its label(s).
The free utility AutoHotKey (http://www.autohotkey.com/) was used for creating macros in order to automate repetitive computer tasks.
All the former information will be expanded in a Wiki that is currently under construction.

AMNH:
Determination of the most accurate dates for each amber deposit, based on radiometric dating methods where possible, and the latest information is being completed. These dates for individual deposits will be shared across institutions, so that standardization can be achieved (and multiple interpretations with resulting confusion can be avoided. Other members of the TCN are working to standardize data for other localities and will share these with the groups, so that there will be standardization across the group). Specify allows for the direct use of GeoLocate, so that georeferencing information can be entered for an entire deposit (giving access to a map, precise coordinates, and range/margin of error), and be applied to further collection objects that are entered. The georeferencing information will also enable sharing and standardization of information across institutions.

INHS:
A workflow for imaging fossil insects with the Macrophotography and Photomicrophagy stations have been established and are continually being refined. Due to the 'amber heavy' nature of the collection, the focus has been primarily on developing workflows for the imaging of amber inclusions. Methods used have been developed through experimentation and communication with Paul Nascimbene and Dave Grimaldi at the AMNH. Workflows will be shared via the Fossil Insect Collaborative website and during the iDigBio Paleo Imaging Workshop in Austin this May.

Yale-Peabody:
Hosted Year 1 initial planning meeting for TCN PIs. This was done in conjunction with the iDigBio Paleo Collections workshop, also held in New Haven. The TCN planning meeting was also attended by additional YPM staff (postdocs, museum assistants), Seth Kauffman (Whirl-i-Gig), and Bruce McFadden (iDigBio – to discuss the public education projects).

VMNH:
Practices: Utilize remote control of camera settings using EOS utility; Workflow developed in Automator software to streamline several steps involved in Aperture import and export of images; Minor photo editing completed in Aperture; Images imported into EGEMS, specimen information checked for inaccuracies —> if present, these are corrected

Additional practice detail: When multiple specimens are present on a slab, a whole slab image is taken and annotated. Annotated image and individual image of specimen are added to database record. This is done to facilitate ease of finding individual specimens when looking at the slabs.

Identify Gaps in Digitization Areas and Technology

CU Museum:

Invertebrate specimen data, including fossil insects, are now searchable at invertpaleosearch.colorado.edu. In the spring, fossil insect specimen images will be attached to specimens and will be searchable using this interface. In addition, the Florissant Database (all fossil specimens) will be available via websearch and have associated images.

MCZ-Harvard: Nothing to report.

AMNH:
There was an initial need to modernize the original database (flat files). These were first exported to Excel 2010, then edited, modified and adapted for upload into the relational database Specify 6.5. In addition, the need to determine standard size of images to link to database is being addressed.

INHS:
Imaging workflows are being refined and this is an ongoing process as we move forward with our digitization efforts. During our first TCN group meeting at Yale in September 2013, we discussed imaging technology at length with other members of our group and offered advise and recommendations based on our experience, particularly with regard to the imaging of specimens using Extended Focal Imaging (EFI) methods. We also formed a subcommittee along with the AMNH team to develop a taxonomic authority file for use by the wider community (also see noted from initial TCN meeting).

Yale-Peabody:
Yale University has a formalized contract with Whirl-i-Gig. YPM PIs and PI Smith have been in close contact with Seth Kaufman (Whirl-i-Gig Principal) and are anticipating review of the database protocol and specification and graphic design elements for iDigPaleo within the next month for our review and discussion.

VMNH: Nothing to report.

Share and Identify Opportunities to Enhance Training Efforts

CU Museum: Participation in iDigBio Paleo Collections workshop in Fall 2013. PI Karim is part of the iDigBio Paleo Collections working group and she will attend the upcoming iDigBio sponsored Specify-Paleo and the Paleo Imaging workshops.

MCZ-Harvard: Nothing to report.

AMNH:
Paul Nascimbene is again working with two gifted High School students through AMNH's Science Research Mentoring Program (SRMP), now in its fourth year. The program was initially funded by NSF, and has been sustained through other funding sources within AMNH. The students, Sarina Wong and Richard Truong-Chau, attend Baruch High School and Brooklyn Latin High School respectively. Their projects include screening and preparation of fossil amber from various deposits containing insects, as well as the photomicrography / digitization of individual inclusions, and curation of specimen drawers.

INHS:
Along with other members of our TCN, we will be attending the iDigBio Paleo Imaging Workshop which will take place in Austin, TX, 29 April through 1 May. This will present us with an opportunity to present some of our imaging techniques and workflows with others as well as learn from the wider community. We have also been working on the home front to train several undergraduate students at UIUC in the preparation and imaging of amber inclusions.

Yale-Peabody: Nothing to report.

VMNH: Nothing to report.

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

CU Museum:
DS and TK attended iDigBio Paleo Collections meeting in September 2013.
DS and TK attended TCN Summit III meeting in November 2013.
DS attended and presented on Fossil Insect Digitization Project at the Entomological Collections Network meeting in November 2013.
DS attended and presented on the use of Fossil Insects to study response to climate change and included the Fossil Insect Digitization Project at the Entomological Society of America meeting in November 2013.
DS is on the steering committee of the Cyber4Paleo RCN funded by NSF-EarthCube (includes regular meetings, facilitation of webinars, and an upcoming paleocollections focused workshop)

MCZ-Harvard:
RPF and CF attended iDigBio Paleo Collections meeting in September 2013.
Shared digitized data on Palaeozoic insects with Conrad Labandeira, Curator of Fossil Arthropods at the Smithsonian Institution, as a prior step to loan some of this material for a future exhibition at the National Museum of Natural History, Washington D.C.

AMNH:
DG and PCN attended the IDigBio Paleontology Digitization Conference/Workshop and TCN Meeting held at Yale in September of 2013.
PCN attended an advanced Georeferencing workshop held at Yale in October of 2013.
PCN attended a Tutorial on Specify held at KU in December of 2013.
PCN will attend the upcoming Workshop on Specify applications to be held at KU in May for more advanced training, and in order to train others more effectively.

INHS:
SH and MB attended iDigBio Paleo Collections meeting in September 2013.
Currently, the focus is on collaboration with members of our own TCN as we are still in the early stages of the project. We hope to expand this collaborative base as we move forward. Indeed, as discussed during our first TCN meeting in Yale, the group discussed various potential collaborative opportunities with other groups both within the US and internationally.

Yale-Peabody:
SB and CN attended iDigBio Paleo Collections meeting in September 2013.
SB attended TCN Summit III meeting in November 2013.

VMNH:
CB and AD attended iDigBio Paleo Collections meeting in September 2013.
CB attended the iDigBio Education and Outreach meeting in January 2014.

Share and Identify Opportunities and Strategies for Sustainability

CU Museum:
Working to build partnerships and opportunities with other members of the Paleo Collection community to further develop iDigPaleo. A team, headed by PIs from CU and YPM are working on an NSF-EarthCube RCN proposal.

MCZ-Harvard: Nothing to report.

AMNH: Nothing to report.

INHS:

Long-term sustainability is a key component of this kind of work but is always contingent upon available funding to support the effort and provide resources. However, our group is a very strong one and has already started to formulate strategies for future work building upon the foundation that will be built by our TCN project. These initiatives will include seeking additional external funding as well as using the success of our TCN to leverage further support from our own institutions. Here at INHS, we have already been successful in securing additional support from within our organization for the paleontological collections in terms of additional space for collections and research and funding for collections maintenance.
Yale-Peabody: Nothing to report.

VMNH: Nothing to report.

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

CU Museum:
PI Smith is working with a NESCent funded education working group to discuss E&O projects. This may lead to opportunities related to the broader impacts of the project.

MCZ-Harvard:
Images taken with the new imaging system from of one of the most important fossils of the MCZ's collection, i.e., the holotype of Meganeuropsis americana Carpenter, 1947, were provided to the staff of Atlantic Productions, an independent television production company based in the United Kingdom that specializes in science and natural history programming. They requested high-quality images in order to create a 3D reconstruction of the fossil for a wildlife documentary presented by David Attenborough that will showcase how birds, bats and insects took the air.
AMNH: Nothing to report.

INHS:
In addition to the above, we have also been actively engaged in Education/Outreach activities via contributions to the TCN Facebook page (which is primarily operated by the team at UC Boulder) and also more locally by providing opportunities for K-12 students and adult programs (e.g. Illinois Master Naturalists) to engage in paleontology and entomology. For example, in July 2014 we will host a two day amber workshop for a group of middle school students as part of their summer camp activities. We also plan to host an amber screening event in cooperation with Illinois Master Naturalists during which volunteers will help sort and screen rough amber samples for biological inclusions.

Yale-Peabody: Nothing to report.

VMNH:
Christina Byrd is participating in an online course through Code Coalition for learning how to build phone applications using a software called Xcode.

Attachment

https://www.idigbio.org/sites/default/files/webform/tcn-reports/FossilInsectTCN_Notes_Sept2013.docx

Meeting Agenda with Notes Incorporated

September 26, 2013

9:00-11:00 Introductions
Status of Project Outreach – FB, Webpage, Content Needed, Future Interfaces
Presentations from each institution
Sam Heads – Illinois Natural History Survey
Ricardo la Fuente – Museum Comparative Zoology, Harvard
Susan Butts – Yale Peabody Museum
David Grimaldi – American Museum of Natural History
Butch Dooley – Virginia Museum of Natural History
Kathy Hollis – National Museum of Natural History
Introduction of visitors: Gil Nelson (iDigBio), Bruce McFadden (iDigBio) and Jim Beach (Specify)

11:00-11:15 Break

11:15 – 12:00 Bruce McFadden – iDig Bio and Education/Outreach Program Opportunities

iDigBio support and resources
Working groups
Upcoming workshops
Paleo Imaging – Gil and Deb
Education and Outreach – Cathy and Bruce
Coordinate upcoming workshops at other mtgs. (i.e.- GSA, NAPC)
FOSSIL Project – Amateur Groups just launching
RET to Panama
Leveraging our TCN for further initiatives.
Discussed possibility of Notes From Nature

12-1 Lunch

1-2:30 Taxonomic Standards – Authority Files
- David, Sam and Dena will start developing
- Hymenoptera anatomy ontology-taxonomic workbench:
- http://portal.hymao.org/projects/32/public/ontology/

Imaging Standards
- Scale bars on images
- Metadata:
  - What is the minimum embedded metadata we want?
  - Whit is working on an excel file with what we want to use
- Orientation Suffix List- Talia and Whit working on this
- Common Labeling of Images
  InstitutionPrefix_Cat#_ViewCode

Determined that we will need to set-up Wiki for group – attached to fossil insect webpage. Wiki will contain standards, workflows, etc.

2:30-2:45 Break

2:45-3:30 Voice Recognition Software demo – Susan and Jessica in Invert Paleo

3:30 – 5:00 Georeferencing Standards- Group Discussion

- Georeference- Can use Geolocate Web Application
- Consensus for using point radius method as the bare minimum and when possible use polygon method
- Will make a single standardized list of all localities. Each institution will work on these as appropriate based on strength of data available (i.e. – CU Museum has details for all the Green River and Florissant localities, AMNH has excellent detail for amber localities, VMNH has Solite details, etc.)
- iNaturalist- GeoPrivacy
  - open
  - obscured within 10 km
  - total privacy
  - Example of Protected Cave locality standards- Sam

Dinner

September 27, 2013

9:00 – 11:00 iDigPaleo presentation and group discussion of digitization standards

- Overview of PaleoPortal to PaleoHub to iDigPaleo – Chris

Digitization Standards –Consistency is Important– Seth

Things we all need to get to Seth:

1. How are the data stored (e.g., Specify, KEmu, Access, MCZBase, etc.)?
2. What is the connectivity of your database?
3. Sample of data from the database

What data model are we going to use?

Paleo Portal Schema but expanded?

DarwinCore is too simple for what we need

iDigPaleo will grab image from each database/institution and store it locally on iDigPaleo

- Data will then be distributed to iDigBio
- Group will gain metrics and user comments and corrections in return

Do people have ledgers or labels that need transcribing?

- Could partner with Notes from Nature

What about field notes or other ancillary materials?

- Smithsonian Field Note Book or iDigPaleo?

Discussion of Future Education Opportunities

Visitors joining group (Larry and Roger(?) from Yale)

Where to focus K12 Outreach/Ed efforts

Virtual Collections

Incorporate 2 year colleges – Earth Sci Teacher training
Participation in January iDigBio TCN Ed/Outreach Workshop
Work with Fossil Clubs

Joanna McCaffery is the iDigBio person in charge of their data portal. We should contact her to find out what PaleoContext fields will/are being supported in their portal.

11:00-11:15 Break

11:15-12:30 Update on PENs – Burke, UCMP, LACM, DMNS, Field, Milwaukee Public and Montana State Univ. Add Carnegie and Univ. Michigan to list. Several others interested in contributing data/collaborating, but not needing to PEN

Digitization goals for the year for each institution everyone send to Dena before December.

Meeting and site visit schedule.

More partners in social media component of project.

Some Website related items:

TCN Team Member features for website
Blog tab
Wiki tab
Fill in more information and new people
Password protected page for literature?