Measuring Impact by Empowering Users to Illustrate the Effort they Put in Natural History Collections

David P. Shorthouse
Agriculture & Agri-Food Canada

Anne Thessen
Linus Pauling Institute, Oregon State University
“Is it possible that the lack of recognition in the academic assessment system of these forms of productivity has contributed to the diminished status—indeed even the near disappearance from many academic departments—of traditional systematics...”
Natural History Museums Desperately Need
Brand Awareness
Meaningful Measures of Impact
How Do We Fix This?
(or at least make it better)
Det.: R. Behm, 2018

Col. Jacqueline Pena-Sosa
<table>
<thead>
<tr>
<th>Name</th>
<th>Gray, Asa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth</td>
<td>1810</td>
</tr>
<tr>
<td>Date of death</td>
<td>1888</td>
</tr>
</tbody>
</table>


ASA Botanist ID: 100103
GUID: [http://purl.oclc.org/net/edu.harvard.huh/guid/uuid/3fb8c70aa-1862-4784-8453-f69ffe810fa0](http://purl.oclc.org/net/edu.harvard.huh/guid/uuid/3fb8c70aa-1862-4784-8453-f69ffe810fa0)
Authority Management for People Names
Sofia, BU, 12-13 March 2019

Leader and Co-Leader:
Elspeth Haston (RBGE) and
Arnald Marcer (CREAF)
17 Participants

Review of existing people name identifiers
Presented existing pilot case studies
Recommended use of ORCID, wikidata, &
International Standard Name Identifier (ISNI)
Loaned specimens are returned with new dets.
Specimens are donated and exchanged
Experts visit museums to identify specimens

A citation graph!
Ozymandias: a biodiversity knowledge graph

Roderic D.M. Page

IRDSC, MVLS, University of Glasgow, Glasgow, United Kingdom

ABSTRACT

Enormous quantities of biodiversity data are being made available online, but much of this data remains isolated in silos. One approach to breaking these silos is to map local, often database-specific identifiers to shared global identifiers. This mapping can then be used to construct a knowledge graph, where entities such as taxa, publications, people, places, specimens, sequences, and institutions are all part of a single, shared knowledge space. Motivated by the 2018 GBIF Elbe Nielsen Challenge I explore the feasibility of constructing a “biodiversity knowledge graph” for the Australian fauna. The data cleaning and reconciliation steps involved in constructing the knowledge graph are described in detail. Examples are given of its application to understanding changes in patterns of taxonomic publication over time. A web interface to the knowledge graph (called "Ozymandias") is available at https://ozymandias-demo.herokuapp.com.
Drivers for the Institution
Just wrote a use-case: "As a visiting taxonomist, I want my curatorial activities in foreign collections to be seamlessly & transparently recorded so that my institution receives recognition for having partially paid for my travels."

"And don’t make me count it!"

Fully automated
Quantifiable / Verifiable
Ingredients to Make This Happen

Newly digitized specimen

- **identifiedBy / recordedBy**
  - https://orcid.org/0000-0001-9144-2848
  - ORCID: ringgold, GRID

- **institutionCode**
  - not sameAs
  - ORCID: employment/education start/end date

- **dateIdentified**

GBIF
Claim the natural history specimens you collected or identified, track their use in new science, and help acknowledge your peers, mentors, and organizations.

https://bloodhound-tracker.net
Impact on Activities in Other Organizations

Current and previous personnel have claimed specimens now curated at the following organizations that they collected or identified while affiliated with Canadian Museum of Nature.

Specimens Collected

<table>
<thead>
<tr>
<th>Organization</th>
<th>Specimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>KU</td>
<td>76,834</td>
</tr>
<tr>
<td>UTC</td>
<td>3,396</td>
</tr>
<tr>
<td>US</td>
<td>2,678</td>
</tr>
</tbody>
</table>
Are There Other Drivers?
Newly digitized specimen

identifiedBy / recordedBy
http://rs.tdwg.org/dwc/iri/identifiedBy

https://orcid.org/0000-0001-9144-2848
This is a really cool tool! Claiming all the specimens you have identified/collection is uplifting and addicting (albeit a little time consuming) - This is an awesome profile that can be attributed to your @ORCID_Org ID

WOW! Natural history collector friends, there is a tool out there to link *YOU* to specimens you've collected and identified. Birds I prepped as a grad student in Kansas have made it as far as museums in Auckland! @BloodhoundTrack
@dpsSpiders please add collector John Roscoe Hendrickson (Q62011107) to Bloodhound. Thx!

7:08 PM - 9 Mar 2019

© Kris-Mikael Krister

Dean Hendrickson @HendricksonDean · Mar 19

Replying to @dpsSpiders

Uncle John had a huge influence on getting me addicted to biology & conservation. Downloaded Bloodhound set, added some pivot tables and map, and sent it to cousins working on cataloging his specimens at Bishop Museum and working on his biography. They're psyched. THX!
ENETwild modelling of wild boar distribution and abundance: initial model output based on hunting data and update of occurrence-based models


After presenting preliminary models to estimate the habitat suitability for wild boar in MSs and neighbouring countries as a proxy for its relative abundance (i.e. the relative representation of a species in a particular ecosystem), a kind of proxy of the density) the ENETWILD consortium has developed...

Sus scrofa • distribution • game management • hunting bags • population abundance • population monitoring

Data used in study: DOI 10.15468/dvl.v2ydsu

140,403 occurrences downloaded

Citation: GBIF.org (31 October 2018) GBIF Occurrence Download https://doi.org/10.15468/dvl.v2ydsu

License: CC BY-NC 4.0

Filter: 5 MB CSV

Involved datasets: 131

Make sure to read the data user agreement and citation guidelines.
Science Enabled by Specimen Data


The importance of museum and herbarium collections is especially great in biodiverse countries such as Angola, an importance as great as the challenges facing the effective and sustained management of such facilities. The interface that Angola represents between tropical humid climates and semi-dese...


Determining the mechanisms that underlie species distributions and assemblages is necessary to effectively preserve biodiversity. This cannot be accomplished by examining a single taxonomic group, as communities comprise a plethora of interactions across species and trophic levels. Here, we examine...
Michael Pirie

Annonaceae, Erica, Evolution, Phylogeny, Systematics, Taxonomy

https://orcid.org/0000-0003-0403-4470

Johannes Gutenberg Universität Mainz, Mainz, Rheinland-Pfalz, DE

Germany

0 Field notes

Pirie, Michael. 2019. Natural history specimens collected and/or identified and deposited. [Data set]. Zenodo.
https://doi.org/10.5281/zenodo.2670039

Michael D. Pirie

ORCID iD

https://orcid.org/0000-0003-0403-4470

Natural history specimens collected and/or identified and deposited.
Zenodo
2019-05-07 | data-set
DOI: 10.5281/zenodo.2750946

Source: DataCite

Preferred source
Be Responsible – The Metric Mantra

• Respect privacy
  – People, places, dates on specimen labels *could* reveal sensitive, incriminating information

• Anticipate potential for misuse
  – Numbers of specimens collected or identified by individuals is partly an artifact of the taxa, community practices

• Anticipate changes in behavior
  – *Should* we support or dissuade the gaming of a metric?

• Cut the wick at the first sign of weaponization
A metric (on/for people) must...

1. Be recognized and used when hiring new staff and when evaluating applications for promotion
2. Be voluntarily reported on and included in professional resumes
3. Be included as criteria when evaluating applicants for awards (funding, honoraria from societies)
4. Be easily, transparently, and verifiably calculated
5. Fluctuate in response to known causes
6. Lead to decisions that trigger action
7. Not disenfranchise anyone
8. Incorporate network effects