openevaluation2016

F1000 Faculty of 1000

Accelerating science, understanding its impact:

the promise of open science

Liz Allen | Director of Strategic Initiatives | F1000

Open Evaluation Conference | Vienna | November 25th 2016


open


open

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

OPEN SCIENCE DRIVE

NL EU 2016

OPEN ACCESS

OA2020 – initiative for the large-scale transition to open access

MAX PLANCK digital library

http://www.neth-er.eu/en/news/Amsterdam-Call-Action-Open-Science

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

Citizen Science

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

Citizen Science

Demand to accelerate impact

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

Citizen Science

Demand to accelerate impact

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

Citizen Science

Demand to accelerate impact

Problems in science

Source: Nature, 2015

Source: Academy of Medical Sciences, 2015

OPEN SCIENCE ‘MOVEMENT’: pushes & pulls

Policy & mandates

Demand for rapid access

Citizen Science

Demand to accelerate impact

Problems in science

Technology

TRADITIONAL PUBLISHING: END OF THE ROAD?

Journal concept outdated

Publishing process can be unhelpful:

- **introduces delays**
- **limited access to data**
- **introduces bias**
- **reproducibility**
- **cause of research waste**

Demand for rapid access

Demand to accelerate impact


Reinventing
scholarly
‘publishing’

REINVENTING SCHOLARLY ‘PUBLISHING’

Beyond journals: beyond articles

KUDOS

figshare

PLOS ONE
A peer-reviewed, open access journal

elixir

HOW WE SHARE & TALK ABOUT SCIENCE IS CHANGING FAST

PeerJ

bioRxiv beta
THE PREPRINT SERVER FOR BIOLOGY

Euro Scientist

eLIFE

THE CONVERSATION

COMMONS
A forum for scientific discourse
PubMed

F1000Research
Open for Science

COS
CENTER FOR OPEN SCIENCE

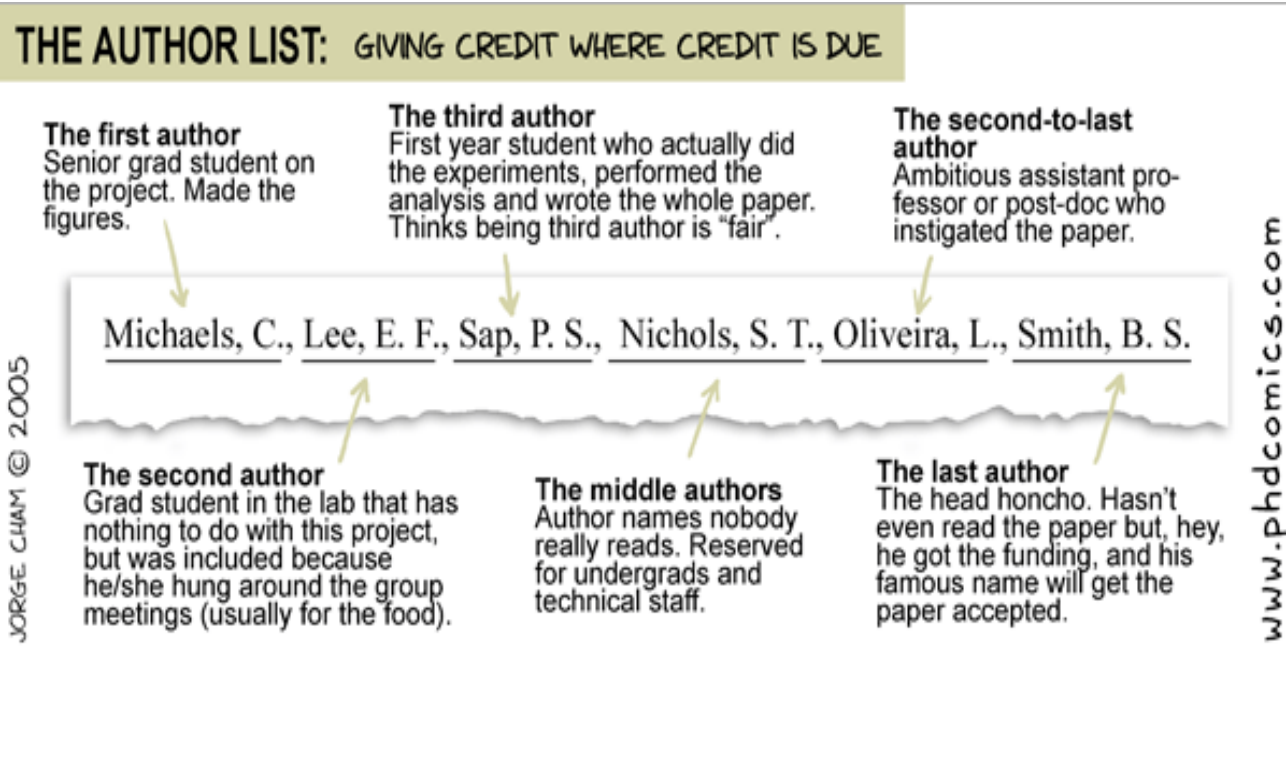

Wellcome Open Research
Wellcome Open Research
A new way for Wellcome-funded researchers to rapidly publish any results they think are worth sharing.
BROWSE ARTICLES
SUBMIT YOUR RESEARCH

REINVENTING SCHOLARLY ‘PUBLISHING’

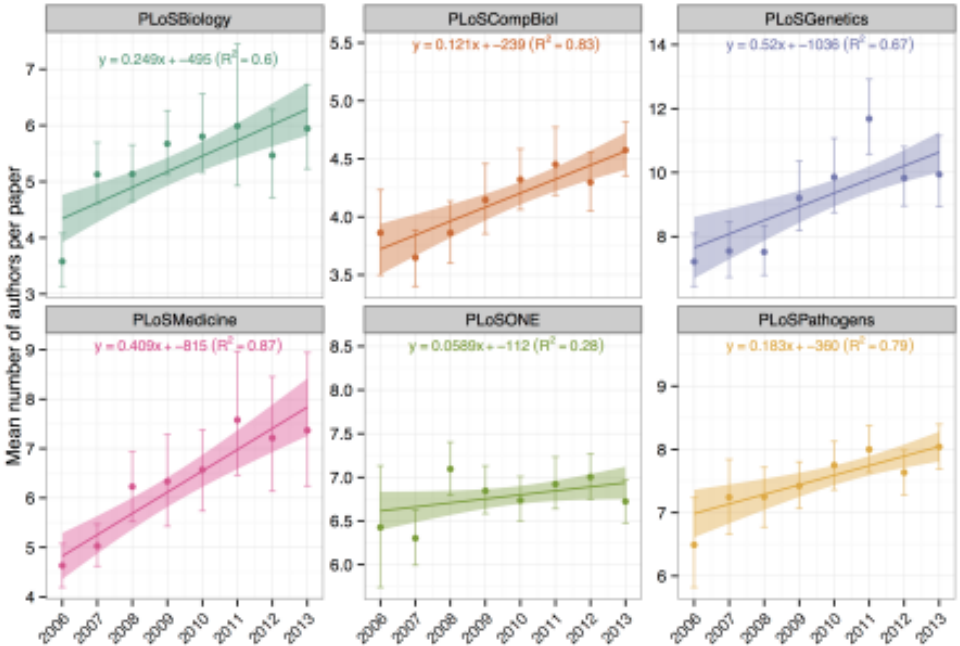
Beyond journals: beyond articles

Rethinking ‘authorship’

CHANGING CURRENCY OF AUTHORSHIP



THE DEMISE OF THE LONE AUTHOR



Nature **508,** 312–313 (17 April 2014) doi:10.1038/508312a

Term	Definition
Conceptualization	*Ideas; formulation or evolution of overarching research goals and aims.*
Methodology	*Development or design of methodology; creation of models.*
Software	*Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.*
Validation	*Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.*
Formal Analysis	*Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesize study data.*
Investigation	*Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.*
Resources	*Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.*
Data Curation	*Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.*
Writing – Original Draft	*Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).*
Writing – Review & Editing	*Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.*
Visualization	*Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.*
Supervision	*Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.*
Project Administration	*Management and coordination responsibility for the research activity planning and execution.*
Funding	*Acquisition of the financial support for the project leading to this publication.*

Contributorship badges: a new project

Posted on November 21, 2014 by Abigail Cabunoc Mayes

At the Science Lab, we're always looking for opportunities to work with the community to build prototypes that help research thrive on the open web. We find that these prototypes are best approached by bringing together existing tools and the right groups rather than starting from scratch. This way, we can bridge gaps in workflow and communities while building on existing work done in this space.

REINVENTING SCHOLARLY ‘PUBLISHING’

Beyond journals: beyond articles

Rethinking ‘authorship’

Digitisation of research outputs & products

SOFTWARE TOOL ARTICLE

Hierarchical Bayesian inference for ion channel screening dose-response data [version 1; referees: awaiting peer review]

Ross H Johnstone[1], Rémi Bardenet[2], David J Gavaghan[1], Gary R Mirams[1,3]

Author affiliations

Grant information

Abstract

Dose-response (or 'concentration-effect') relationships commonly occur in biological and pharmacological systems and are well characterised by Hill curves. These curves are described by an equation with two parameters: the inhibitory concentration 50% (IC50); and the Hill coefficient. Typically just the 'best fit' parameter values are reported in the literature. Here we introduce a Python-based software tool, *PyHillFit*, and describe the underlying Bayesian inference methods that it uses, to infer probability distributions for these parameters as well as the level of experimental observation noise. The tool also allows for hierarchical fitting, characterising the effect of inter-experiment variability. We demonstrate the use of the tool on a recently published dataset on multiple ion channel inhibition by multiple drug compounds. We compare the maximum likelihood,

Open Peer Review

Referee Status:

	Invited Referees	
Version(s)	1	2
Version 1 published 15 Nov 2016	read report	read report

1 **Hans Lassmann**, Medical University of Vienna, Austria
Simon Hametner, Medical University of Vienna, Austria

2 **George Harauz**, University of Guelph, Canada
Vladimir V. Bamm, University of Guelph, Canada

Data and software availability

Latest source code and datasets used in the publication: https://github.com/mirams/PyHillFit

Archived source code and datasets as at the time of publication: https://doi.org/10.5281/zenodo.163113 (Johnstone *et al.*, 2016b)

License: BSD 3-Clause

The code contains the experimental input data required to reproduce the examples shown here in comma separated value (CSV) format in the file `data/crumb_data.csv`. Installation instructions for the tool and its dependencies can be found in the README file, in the main folder at the above links.

https://crossref.org
@CrossrefOrg
info@crossref.org

5500+ publisher members

Metadata store of 80m+ scholarly content items

Persistent citation linking

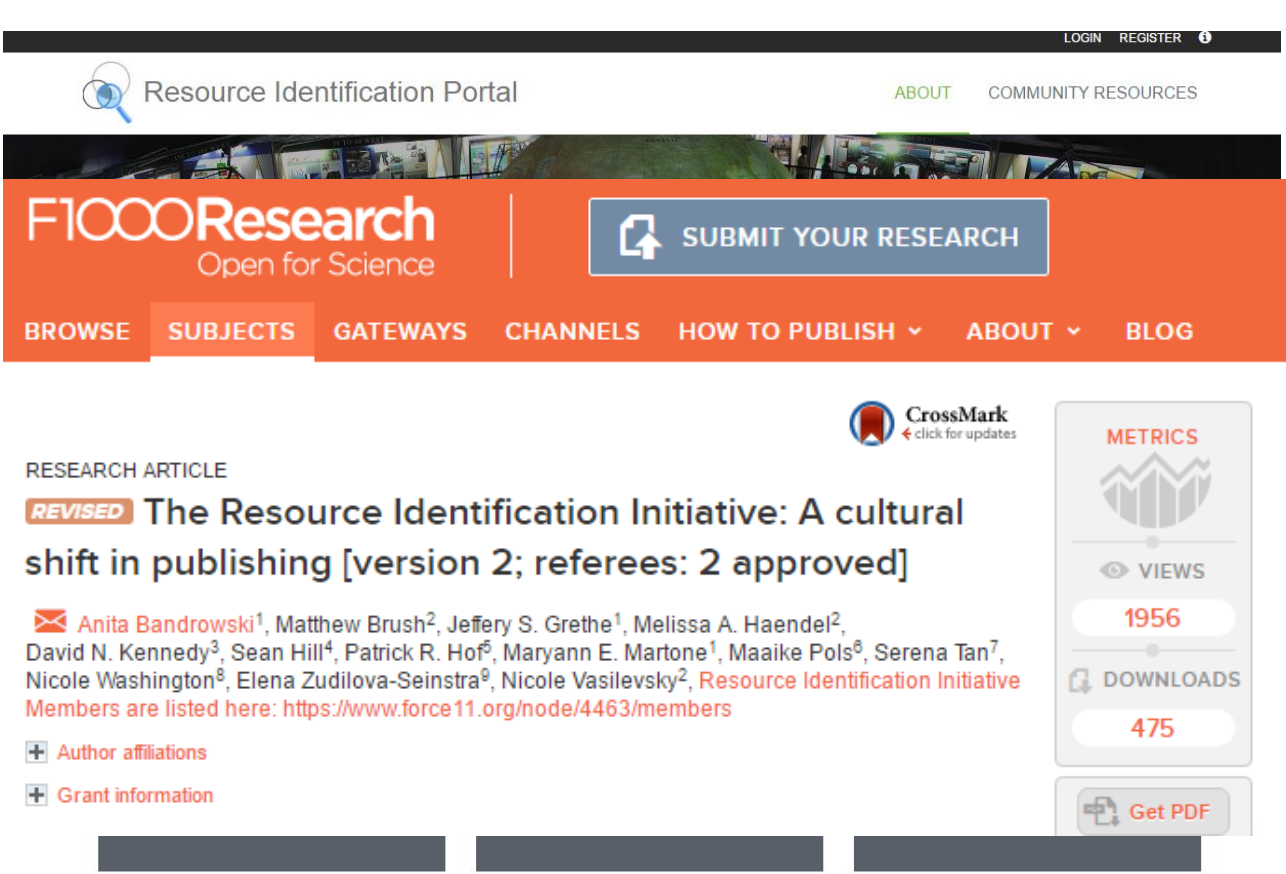
Funder identifiers

Data about content activity e.g. social, dataset links

DataCite Statistics Beta

Registrations by Allocators | Registrations by Datacentres | Registrations by Prefixes | Resolutions by Month

	DOI Registrations				Metadata			
Allocator	Total	This Year	Last 30 Days	Last 7 Days	Searchable	Hidden	Missing	Ratio
ANDS - Australian National Data Service	162 881	153 072	1 813	194	161 683	292	906	99%
BIBSYS - BIBSYS	154	104	85	6	153	1	0	100%
BL - The British Library	955 430	79 401	11 418	1 863	948 431	6 975	122	99%
CDL - California Digital Library	2 234 452	129 554	12 885	1 910	1 584 065	650 387	5	99%
CERN - CERN - European Organization for Nuclear Research	307 409	265 131	153 424	1 276	303 907	3 502	0	100%
CISTI - National Research Council Canada	170 851	83 819	11 007	1 378	169 747	1 086	18	99%
CRUI - CRUI2011	53 130	8 279	926	40	49 929	74	3 127	94%
CSIC - CSIC	7 185	7 185	9	5	7 172	13	0	100%
DATACITE - DataCite	49	23	5	0	49	0	0	100%
DELFT - TU Delft Library	53 622	4 899	317	42	53 312	35	306	99%
DK - Technical Information Center of Denmark	230 649	123 388	10 057	2 621	230 587	61	1	99%
ESTDOI - Tartu University	490 083	2 385	66	2	490 081	2	0	100%
ETHZ - ETH Zurich	1 163 442	124 122	57 158	7 106	1 160 093	1	3 348	99%
FIGSHARE - figshare	449 570	256 960	7 246	1 431	449 555	15	0	100%
GESIS - GESIS - Leibniz Institute for the Social Sciences	494 421	66 262	4 395	1 104	493 994	427	0	100%
INIST - Institute for Scientific and Technical Information	17 739	5 860	935	164	17 572	167	0	100%
JALC - Japan Link Center	20	18	0	0	20	0	0	100%
MTAKIK - MTA Könyvtára	2 335	708	118	24	2 335	0	0	100%
NRCT - National Research Council of Thailand	79 296	27 483	2 119	781	78 933	363	0	100%
NRF - National Research Foundation of South Africa	2	2	0	0	2	0	0	100%
OSTI - Office of Scientific and Technical Information (OSTI), US Department of Energy	70 717	51 596	233	9	69 298	1 419	14	99%
PURDUE - Purdue University Library	13 209	4 568	418	52	12 621	588	0	100%
RG - ResearchGate	483 225	167 294	13 594	3 048	409 108	74 117	0	100%
SND - Swedish National Data Service	2 952	188	60	0	2 948	4	0	100%
SPBPU - SPbPU	1 266	1 266	213	55	1 266	0	0	100%
SUBGOE - Niedersächsische Staats- und Universitätsbibliothek Göttingen	382	176	30	0	382	0	0	100%



Source: https://scicrunch.org/resources

REINVENTING SCHOLARLY ‘PUBLISHING’

Beyond journals: beyond articles

Rethinking ‘authorship’

Digitisation of research outputs & products

Making connections: inter-operability

F1000
Faculty of 1000

ORCID
Connecting Research and Researchers

ENGAGING RESEARCHERS

"Researchers want to be read, acknowledged, and quoted."

"Researchers want to spend their time on research, not reporting"

REINVENTING SCHOLARLY ‘PUBLISHING’

Beyond journals: beyond articles

Rethinking ‘authorship’

Digitisation of research outputs & products

Making connections: inter-operability

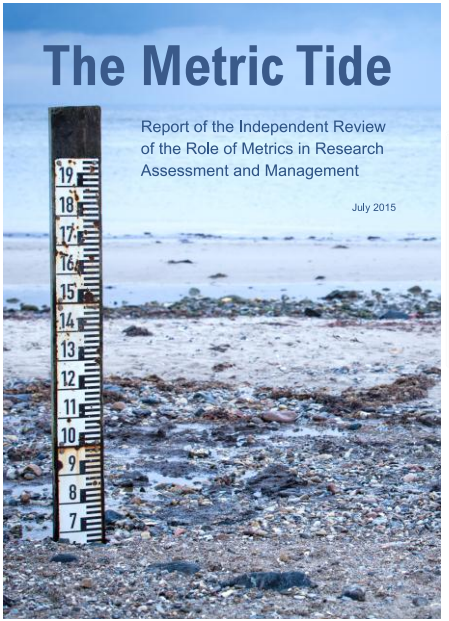
Understanding impact: access, use, re-use & impact

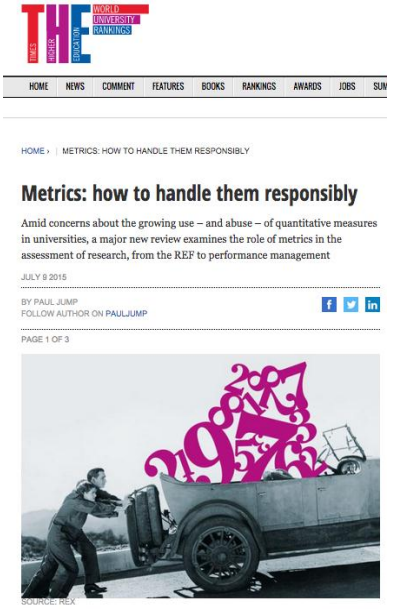
F1000
Faculty of 1000

IMPACT: MANY THINGS TO MANY PEOPLE

Source: HEFCE (REF) 2014

RESEARCH INDICATORS USEFUL BUT USE SENSIBLY





SOURCE: REX

an expanding evaluation toolkit

EVALUATION IS IMPORTANT

Effective funding & learning

Reward & recognition

Strategy setting

Resource allocation

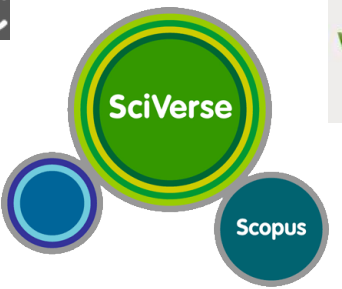
But must be proportionate

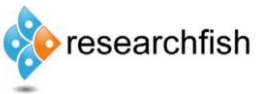
NEW WAYS OF LOOKING AT RESEARCH

- Quality & excellence
- Knowledge progression
- Attention/engagement
- Use & re-use
- Behaviours: *funding, sharing, openness, peer review, governance …*
- Potential impact upon the field
- Broader impact

F1000
Faculty of 1000

EXPANDING TOOLKIT FOR RESEARCH EVALUATION





Altmetric

? What is this page? | Embed badge | Share

Dreadnoughtus schrani 3D PDF images - Lacovara et al., 2014, A Gigantic, Exceptionally Complete Titanosaurian Sauropod Dinosaur from Southern Patagonia, Argentina, Scientific Reports,

Overview of attention for research output published on figshare, September 2014

About this Attention Score

In the top 5% of all research outputs scored by Altmetric

MORE...

Mentioned by

- **4** news outlets
- **2** blogs
- **163** tweeters
- **2** Facebook pages
- **5** Google+ users
- **1** video uploader

SUMMARY | News | Blogs | Twitter | Facebook | Google+ | Video

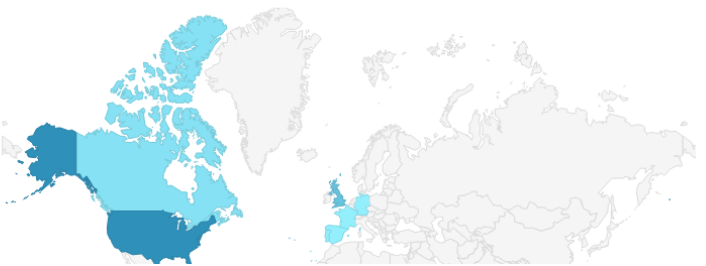
Title	Dreadnoughtus schrani 3D PDF images - Lacovara et al., 2014, A Gigantic, Exceptionally Complete Titanosaurian Sauropod Dinosaur from Southern Patagonia, Argentina, Scientific Reports,
Published on	figshare, September 2014
DOI	10.6084/m9.figshare.1130885
Authors	Kenneth Lacovara, Kenneth, Lacovara

View on publisher site

Alert me about new mentions

TWITTER DEMOGRAPHICS | ATTENTION SCORE IN CONTEXT

The data shown below were collected from the profiles of **163** tweeters who shared this research output. Click here to find out more about how the information was compiled.



Source: https://www.altmetric.com/details/2653335

November 9, 2016

Journal article | Open Access

A dataset of fishes in and around Inle Lake, an ancient lake of Myanmar, with DNA barcoding, photo images and CT/3D models

Kano, Yuichi; Musikasinthorn, Prachya; Iwata, Akihisa; Tun, Sein; Yun, LKC; Win, Seint; Matsui, Shoko; Tabata, Ryoichi; Yamasaki, Takeshi; Watanabe, Katsutoshi

Inle (Inlay) Lake, an ancient lake of Southeast Asia, is located at the eastern part of Myanmar, surrounded by the Shan Mountains. Detailed information on fish fauna in and around the lake has long been unknown, although its outstanding endemism was reported a century ago.

Based on the fish specimens collected from markets, rivers, swamps, ponds and ditches around Inle Lake as well as from the lake itself from 2014 to 2016, we recorded a total of 948 occurrence data (2120 individuals), belonging to 10 orders, 19 families, 39 genera and 49 species. Amongst them, 13 species of 12 genera are endemic or nearly endemic to the lake system and 17 species of 16 genera are suggested as non-native. The data are all accessible from the document "A dataset of Inle Lake fish fauna and its distribution (http://ipt.pensoft.net/resource.do?r=inle_fish_2014-16)", as well as DNA barcoding data (mitochondrial COI) for all species being available from the DDBJ/EMBL/GenBank (Accession numbers: LC189568–LC190411). Live photographs of almost all the individuals and CT/3D model data of several specimens are also available at the graphical fish biodiversity database (http://ffish.asia/INLE2016; http://ffish.asia/INLE2016-3D). The information can benefit the clarification, public concern and conservation of the fish biodiversity in the region.

Preview

5

Tweeted by 8

See more details

Publication date:
November 9, 2016

DOI:
DOI 10.3897/BDJ.4.e10539

Keyword(s):
Myanmar | Shan State | Inle Lake | freshwater fishes | endemic species | alien | GBIF | mitochondrial DNA | COI | CT scan | 3D model,

Published in:
Biodiversity Data Journal: 4 pp. e10539.

Communities:
Zenodo

License (for files):
Creative Commons Attribution 4.0

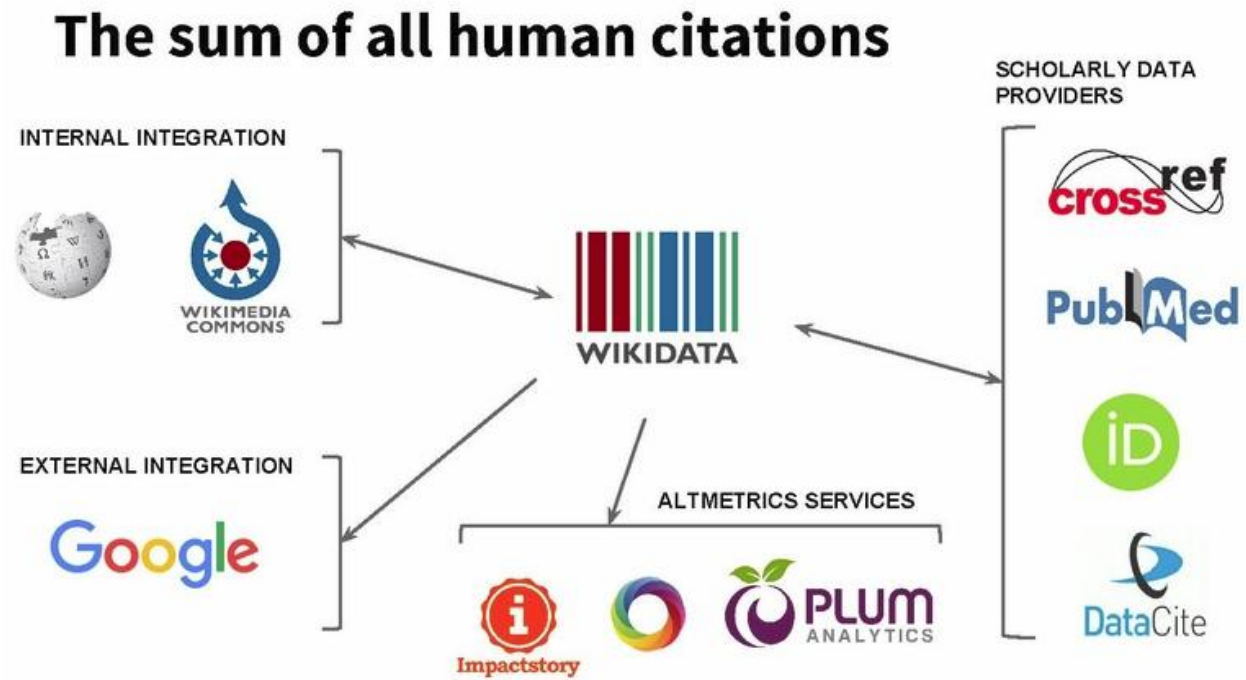
Share

Cite as

Kano, Yuichi, Musikasinthorn, Prachya, Iwata, Akihisa, Tun, Sein, Yun, LKC, Win, Seint, … Watanabe, Katsutoshi. (2016). A dataset of fishes in and around Inle Lake, an ancient lake of Myanmar, with DNA barcoding, photo images and CT/3D models. Biodiversity Data Journal, 4, e10539.


Infrastructure & identifiers
Collaboration
Standards & definitions
Science of science

BUILDING CONNECTIONS: Wikidata



Source: https://upload.wikimedia.org/wikipedia/commons/c/c0/The_sum_of_all_human_citations.pdf

Liz Allen | liz.allen@f1000.com

@f1000 | @f1000research | f1000.com

F1000
Faculty of 1000


TR. CAMPHOR
SP. MENTH. P.
SP. LIMONIS
EL. VAL. AM
P. GAMBOG
P. SERPENT
COCULUS IND
CARBO LIGNI
POT. BROMID.
MAGN. LIGN
ANTHEM. GERM
P.R. SARSAP.
P. LYCOPOD.
S. FŒNIC
G. ACACIÆ
F.E. TARAX
VIN. S. COLCH
F.E. CUBEBÆ
F.E. ERGOTÆ
F.E. SENEGÆ
F.E. STILLING