

User:Daniel Mietchen/Talks/Biogeosciences and the Wikimedia ecosystem

< [User:Daniel Mietchen](#) | [Talks](#)

About

This page assists a talk (<https://www.bgc-jena.mpg.de/events/31781/2200>) given on 6 April 2023 at the [Max Planck Institute for Biogeochemistry](#).

Logistics

- Time and location: 14:00 CEST in room C0.001.
- For the abstract, see [here \(https://en.m.wikipedia.org/wiki/User:Daniel_Mietchen/Talks/Biogeosciences_and_the_Wikimedia_ecosystem#Abstract\)](https://en.m.wikipedia.org/wiki/User:Daniel_Mietchen/Talks/Biogeosciences_and_the_Wikimedia_ecosystem#Abstract).
- The talk's materials are accessible on-wiki via <https://w.wiki/6XMg> (<https://w.wiki/6XMg>) (mobile) and <https://w.wiki/6XWN> (<https://w.wiki/6XWN>) (desktop) and archived on Zenodo at <https://doi.org/10.5281/zenodo.7792227> (<https://doi.org/10.5281/zenodo.7792227>). You can also download the current version as a PDF via this link (https://en.wikipedia.org/w/index.php?title=Special:DownloadAsPdf&page=User%3ADaniel_Mietchen%2FTalks%2FBiogeosciences_and_the_Wikimedia_ecosystem&action=show-download-screen) or explore the page in slide (<https://niebert.github.io/Wiki2Reveal/wiki2reveal.html?language=en&domain=wikipedia&title=User:Daniel%20Mietchen/Talks/Biogeosciences%20and%20the%20Wikimedia%20ecosystem&shorttitle=Biogeosciences%20and%20the%20Wikimedia%20ecosystem&course=DOI:%2010.5281/zenodo.7792227&coursetitle=DOI:%2010.5281/zenodo.7792227&slidetype=reveal&audioslide=yes>) form or through its [version history \(https://en.wikipedia.org/w/index.php?title=User:Daniel_Mietchen/Talks/Biogeosciences_and_the_Wikimedia_ecosystem&action=history\)](https://en.wikipedia.org/w/index.php?title=User:Daniel_Mietchen/Talks/Biogeosciences_and_the_Wikimedia_ecosystem&action=history).
- Discussion is invited throughout.

Statistics

- How many people are in the room?
- How many people are connected remotely?
- How many have used open-source software?
- How many have contributed to open-source software?
- How many have used open data?
- How many have contributed to open data?
- How many have used Wikipedia or any of its sister sites?
- How many have contributed to any of the Wikimedia projects?

An ecosystem of about 1000 wikis (<https://meta.wikimedia.org/wiki/Special:SiteMatrix>)

Wikipedia



Wikipedia (<https://www.wikipedia.org/>) is available in over 300 languages, together getting multiple billions of monthly page views.

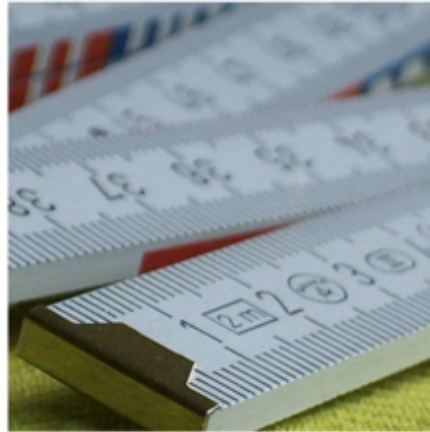
Wikimedia Commons



Wikidata



Item: *Earth* (Q2)



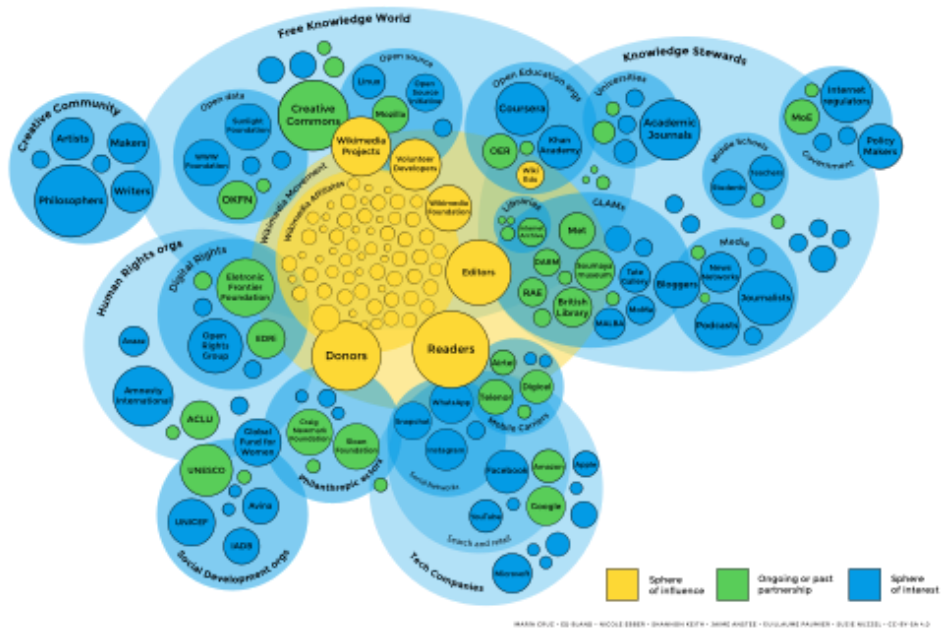
Property: *highest point* (P610)



custom value:
Mount Everest
(Q513)

An example (<https://doi.org/10.5281/zenodo.5201623>) of how each of these projects has its own ways of sharing knowledge around a topic

The landscape around Wikimedia



Wikimedia's strategic direction (https://meta.wikimedia.org/wiki/Movement_Strategy):

"By 2030, Wikimedia will become the essential infrastructure of the ecosystem of free knowledge, and anyone who shares our vision will be able to join us."

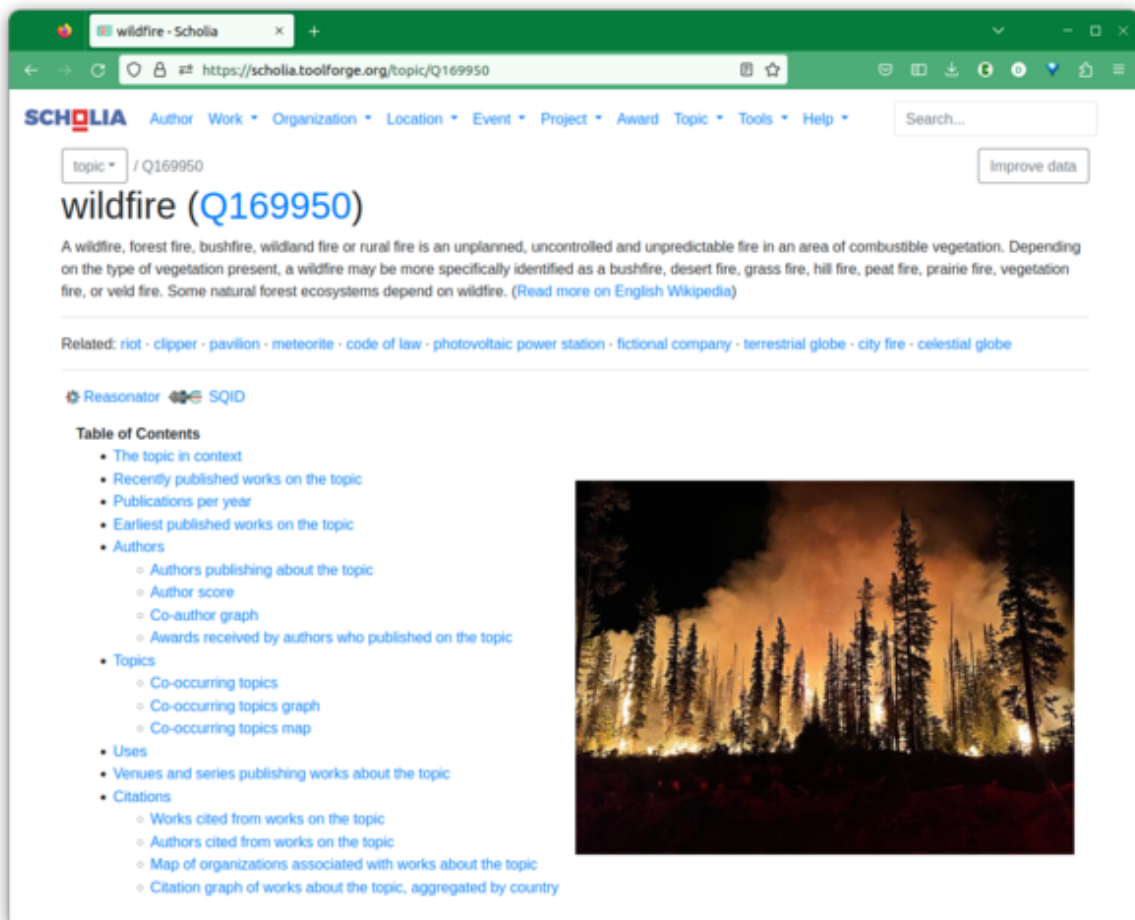
Wikimedia for research

Wikimedia about research



This photo of what is thought to be a new species of crane fly was on Wikimedia Commons, through which researchers discovered it (background (https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_Signpost/2016-10-14/News_and_notes#Indian_flora_windfall_for_Commons)).

Wikimedia resources relevant for research



Scholia (<https://scholia.toolforge.org/topic/Q169950>) provides about 30 types of scholarly profiles, all based on Wikidata

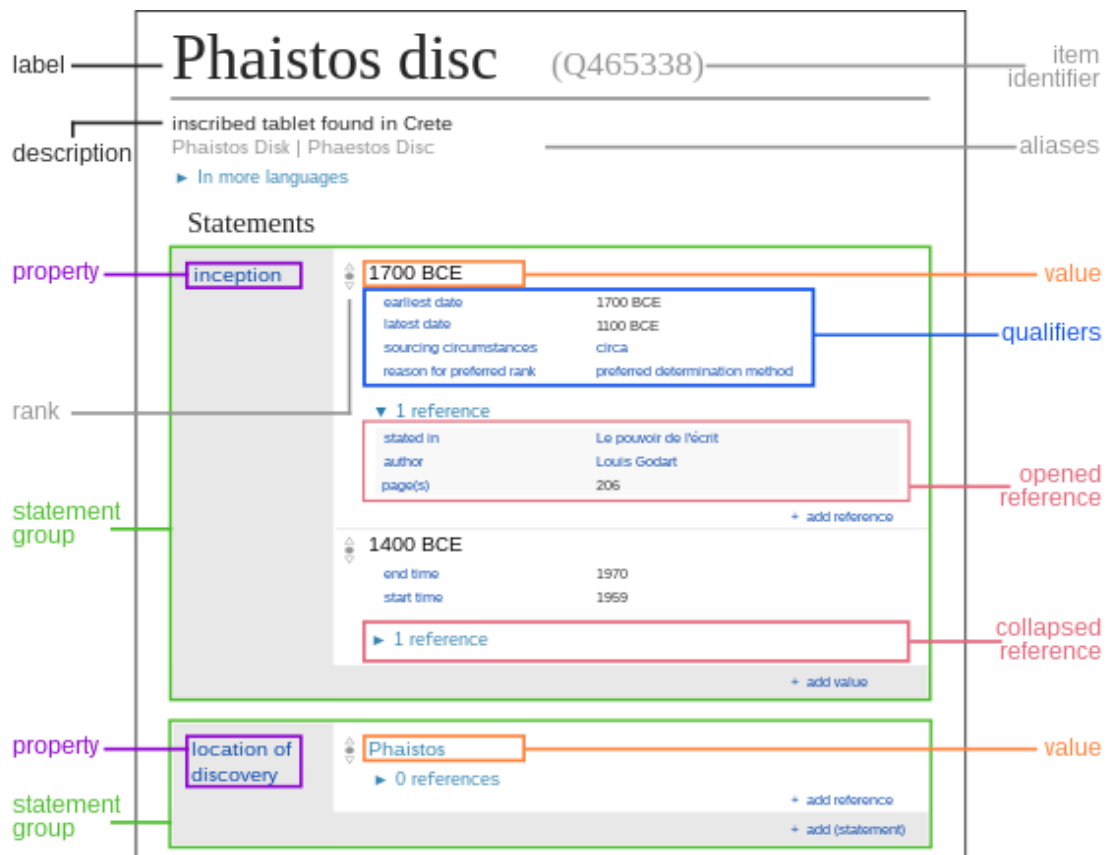
Wikibase

Wikibase background

- <https://wikiba.se/> (<https://wikiba.se/>)
- Open-source software suite mediating between MediaWiki and the Semantic Web
- Used on Wikidata
- Increasingly used in other MediaWiki instances

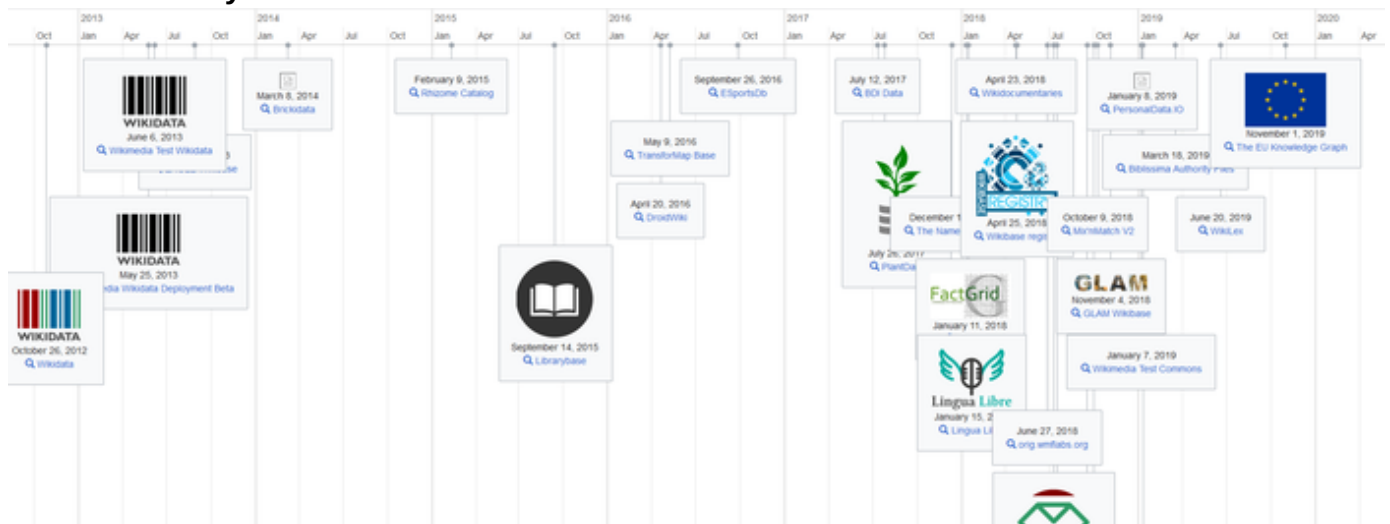
- Wikibase brochure (https://commons.wikimedia.org/wiki/File:Wikibase_brochure.pdf)

Wikibase data model



Data model for the Phaistos Disc (Q465338 (<https://www.wikidata.org/wiki/Q465338>) on Wikidata)

Wikibase ecosystem



This query (

E%5D%2Cen%22%20%7D%0A%20%20%20%20OPTIONAL%20%7B%20%3Fitem%20wdt%3AP8%20%3Flogo%20%7D%0A%7D%0AGROUP%20BY%20%3Fitem%20%3FitemLabel%20%3FcreationDate) provides more recent data

Example Wikibase instance

The screenshot shows the Wikibase publication interface. On the left, a sidebar contains navigation links: Tutorial, Speaker, Details, Studio, and Publish (highlighted with a blue circle and the number 5). The main area is titled "Publication" and is split into two columns. The left column lists terms with checkboxes: abattage, accastillage, accostable, accoster, affluent, affouillement, aĩ, aiguilles, algues, and amateur. The right column displays a video player for the selected term "abattage". Above the video, a message reads "Check your records before starting their publication." The video player shows a play button, a progress bar, and a timestamp of 0:01 / 0:01. Below the video, there is a progress indicator showing "0 / 10". At the bottom of the interface, there are three buttons: "Cancel", "Previous", and "Publish on Wikimedia Commons".

Lingua Libre (<https://lingualibre.org>) can be used to record the pronunciation of words and phrases (<https://ordia.toolforge.org/>) in any language(s) known to Wikidata

Wikimedia for Biogeosciences

Category:Biogeochemical cycle

Category [Discussion](#)

[Language](#)
[Watch](#)
[History](#)
[Edit](#)
[More](#)

Main category: [Biogeochemical cycle](#)

Subcategories

This category has the following 13 subcategories, out of 13 total.

C

- [Cadmium cycle](#) (2 F)
- [Calcium cycle](#) (3 F)
- [Carbon cycle](#) (4 C, 193 F)

I

- [Iron cycle](#) (6 F)

M

- [Marine snow](#) (9 F)
- [Mercury cycle](#) (3 F)

N

- [Nitrogen cycle](#) (10 C, 101 F)

O

- [Oxygen cycle](#) (23 F)

P

- [Phosphorus cycle](#) (14 F)
- [Potassium cycle](#) (6 F)

S

- [Sulfur cycle](#) (19 F)

W

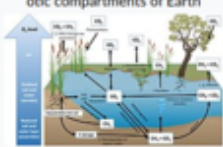
- [Water cycle](#) (4 C, 76 F)

Z

- [Zinc cycle](#) (4 F)

biogeochemical cycle

pathway by which a chemical element or molecule moves through both biotic and abiotic compartments of Earth



[Upload media](#)

[Wikipedia](#)

[Wikiquote](#)

Instance of	cyclic permutation
Subclass of	cyclic process (biogeochemistry)
Said to be the same as	nutrient cycle

Authority control

■ [Q846303](#)

■ **Library of Congress authority ID:** [sh85014144](#)

NDL Authority ID: [00576377](#)

NKCR AUT ID: [ph225448](#)

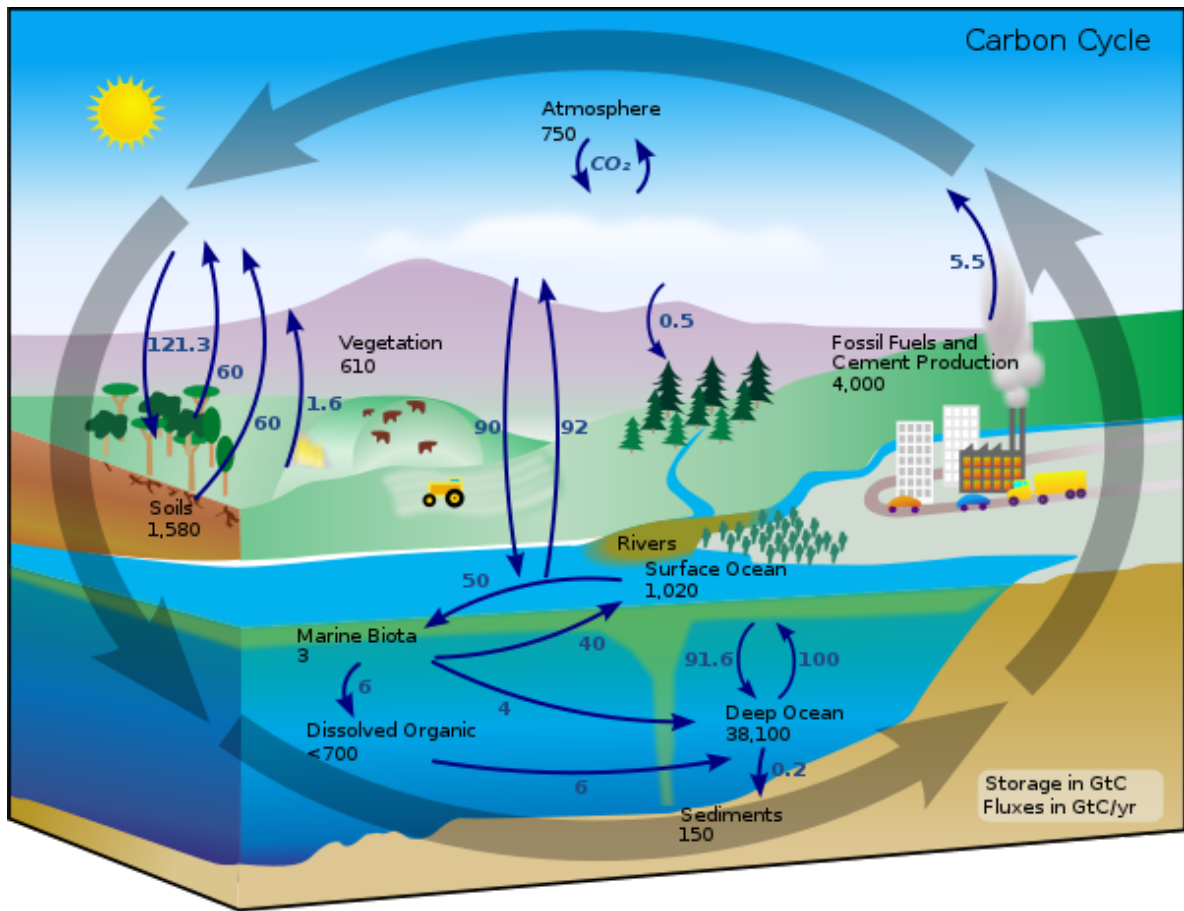
BabelNet ID: [03124050n](#)

National Library of Israel J9U ID: [987007282564805171](#)

[Reasonator](#) • [Scholia](#) • [PetScan](#) • [statistics](#) • [WikiMap](#) • [Locator tool](#)

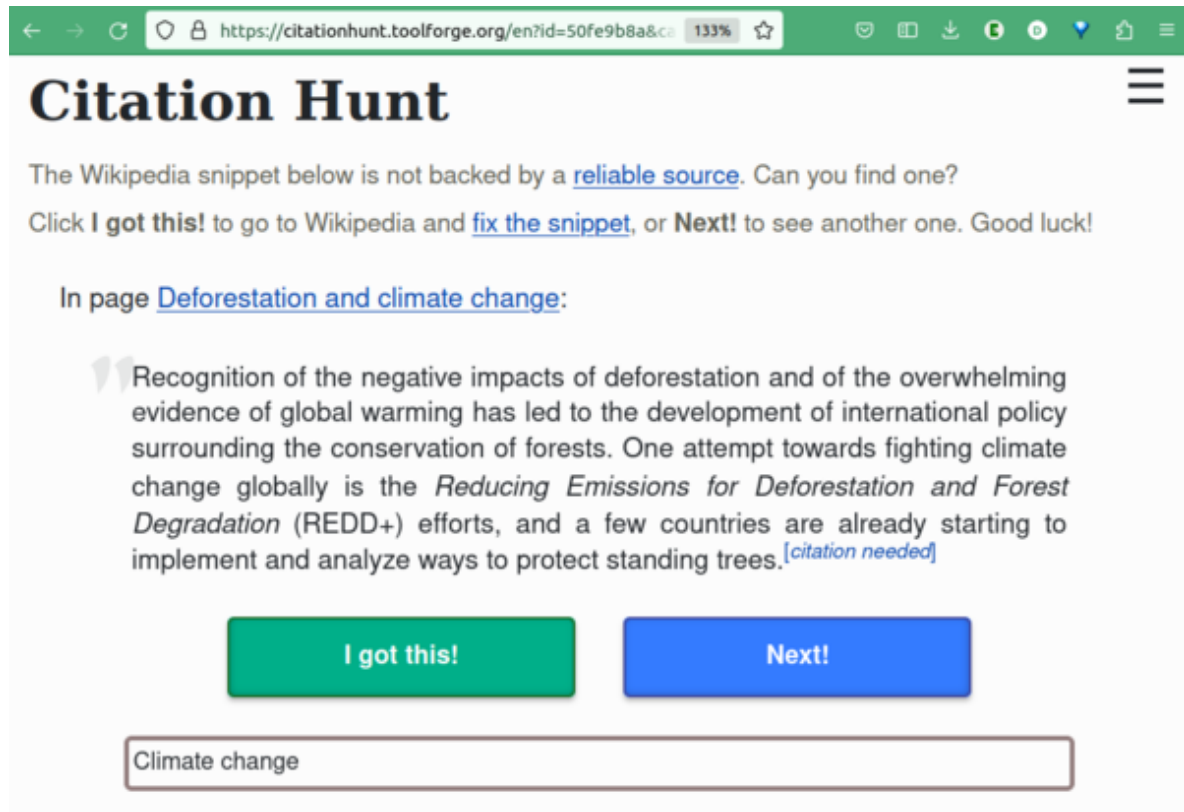
Categories, infoboxes, identifiers, links

Media files



A carbon cycle diagram (https://commons.wikimedia.org/wiki/File:Carbon_cycle-cute_diagram.svg) available in 18 languages

Articles



The screenshot shows a web browser window with the URL <https://citationhunt.toolforge.org/en?id=50fe9b8a&ca>. The page title is "Citation Hunt". The main content area contains the following text:

The Wikipedia snippet below is not backed by a [reliable source](#). Can you find one?
Click **I got this!** to go to Wikipedia and [fix the snippet](#), or **Next!** to see another one. Good luck!

In page [Deforestation and climate change](#):

Recognition of the negative impacts of deforestation and of the overwhelming evidence of global warming has led to the development of international policy surrounding the conservation of forests. One attempt towards fighting climate change globally is the *Reducing Emissions for Deforestation and Forest Degradation* (REDD+) efforts, and a few countries are already starting to implement and analyze ways to protect standing trees. ^[*citation needed*]

Below the text are two buttons: a green "I got this!" button and a blue "Next!" button. At the bottom, there is a search bar containing the text "Climate change".

0bd%3AserviceParam%20wikibase%3Alanguage%20%22en%22.%20%7D%0A%7D%0AGROUP%20BY%20%3Fparent_taxon%20%3Fparent_taxon_name%0AORDER%20BY%20DESC%20%28%3Fcount%29).

Research for Wikimedia

Research about Wikimedia

- [Research by and/ or with the Wikimedia community \(https://meta.wikimedia.org/wiki/Research:Index\)](https://meta.wikimedia.org/wiki/Research:Index)
- Publications about
 - [health information on Wikipedia \(https://scholia.toolforge.org/topic/Q16235120\)](https://scholia.toolforge.org/topic/Q16235120)
 - [Wikidata \(https://scholia.toolforge.org/topic/Q2013\)](https://scholia.toolforge.org/topic/Q2013)

Research resources relevant for Wikimedia reuse

- Research materials can be reused if they use
 - Open standards
 - Open-source software
 - Open hardware
 - Open licenses on website and when sharing papers, software, data, PR materials, hardware designs etc.
 - Machine actionable formats
 - Public version history for any such materials

- Any published research materials may be cited

Biogeosciences for Wikimedia



A map (https://commons.wikimedia.org/wiki/File:Ohrid_Basin_map.png) of the basin of Lake Ohrid in North Macedonia, originally published in *Biogeosciences*, now illustrates the article (https://mk.wikipedia.org/w/index.php?title=%D0%9E%D1%85%D1%80%D0%B8%D0%B4%D1%81%D0%BA%D0%BE_%D0%95%D0%B7%D0%B5%D1%80%D0%BE&oldid=4959138) about the lake in the Macedonian Wikipedia.

Opportunities for further interactions

Motivation

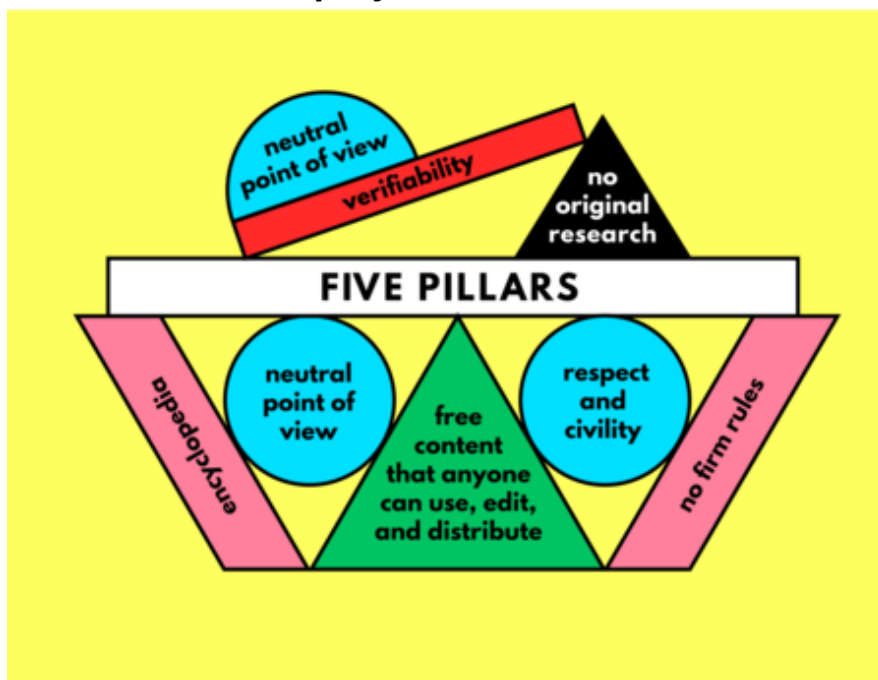
- Wikimedia projects are already widely used in research and many other contexts
- Reuse on Wikimedia projects is a great way to demonstrate Reusability of research in the FAIR (https://en.wikipedia.org/wiki/FAIR_data) sense
- Wikimedia contributions can be integrated with educational activities
- Five ways academics can contribute to Wikipedia (<https://wikimediafoundation.org/news/2018/11/13/five-ways-academics-can-contribute-to-wikipedia/>)

Further reading

- The LOTUS initiative for open knowledge management in natural products research (<https://doi.org/10.7554/eLife.70780>) (2022)
- Wikidata as a knowledge graph for the life sciences (<https://scholia.toolforge.org/work/Q87830400>) (2020)
- Geospatial data and Scholia (<https://scholia.toolforge.org/work/Q50813856>) (2018)

- [Science Is Shaped by Wikipedia: Evidence from a Randomized Control Trial \(https://scholia.toolforge.org/work/Q42013239\)](https://scholia.toolforge.org/work/Q42013239) (2017)
- [Wikipedia as a gateway to biomedical research \(https://doi.org/10.1371/journal.pone.0190046\)](https://doi.org/10.1371/journal.pone.0190046) (2017)
- [Amplifying the impact of open access: Wikipedia and the diffusion of science \(https://scholia.toolforge.org/work/Q27467795\)](https://scholia.toolforge.org/work/Q27467795) (2016)
- [Topic Pages: PLoS Computational Biology Meets Wikipedia \(https://doi.org/10.1371/journal.pcbi.1002446\)](https://doi.org/10.1371/journal.pcbi.1002446) (2012)

Basic principles of Wikimedia projects



Some [key principles \(https://en.wikipedia.org/wiki/Template:Wikipedia_principles\)](https://en.wikipedia.org/wiki/Template:Wikipedia_principles) that the ecosystem is built on

Five pillars of Wikipedia

- [WP:5P1 \(https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P1\)](https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P1) Wikipedia is an encyclopedia
- [WP:5P2 \(https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P2\)](https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P2) Wikipedia is written from a neutral point of view
- [WP:5P3 \(https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P3\)](https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P3) Wikipedia is free content that anyone can use, edit, and distribute
- [WP:5P4 \(https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P4\)](https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P4) Wikipedia's editors should treat each other with respect and civility

- WP:5P5 (https://en.wikipedia.org/wiki/Wikipedia:Five_pillars#WP:5P5) Wikipedia has no firm rules

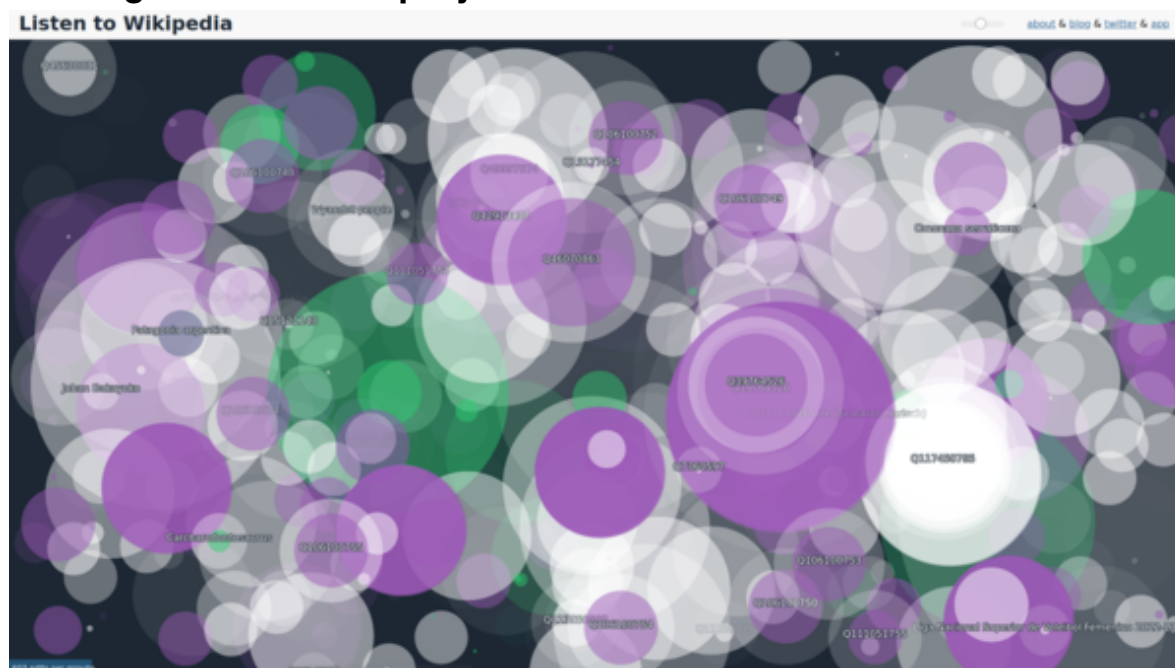
Core content policies

Wikipedia's content is governed by three principal core content policies: [neutral point of view](#), [verifiability](#), and [no original research](#). Editors should familiarize themselves with all three, jointly interpreted:

1. **Neutral point of view (WP:NPOV)** – All Wikipedia articles and other encyclopedic content must be written from a *neutral point of view*, representing significant views fairly, proportionately and without bias.
2. **Verifiability (WP:V)** – Material challenged or [likely to be challenged](#), and all quotations, must be attributed to a reliable, published source. In Wikipedia, **verifiability** means that people reading and editing the encyclopedia can check that information comes from a [reliable source](#).
3. **No original research (WP:NOR)** – Wikipedia does **not** publish original thought: all material in Wikipedia must be attributable to a [reliable, published source](#). Articles may not contain any new analysis or synthesis of published material that serves to advance a position not clearly advanced by the sources.

Core content policies on the English Wikipedia (https://en.wikipedia.org/wiki/Wikipedia:Core_content_policies); the other wikis have similar ones.

Contributing to Wikimedia projects

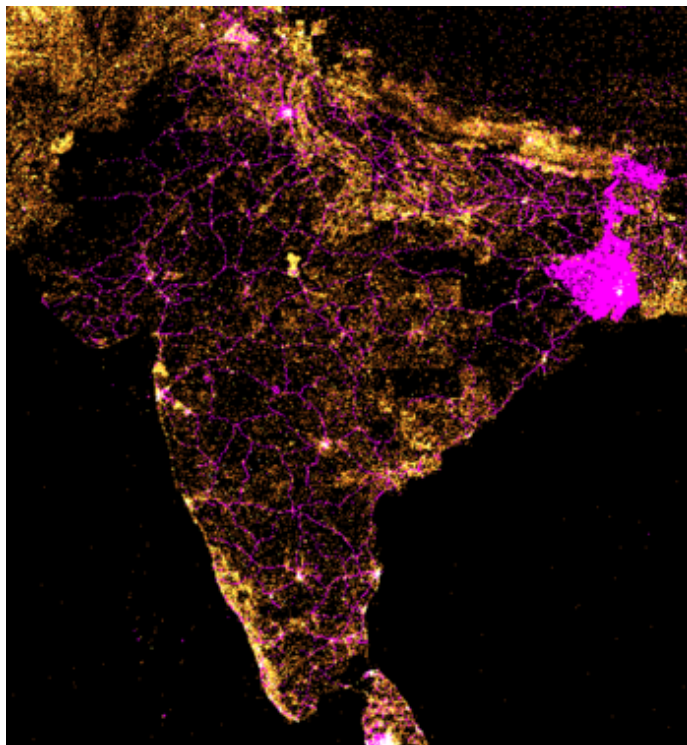


Listen to the edit stream:

[multiple Wikipedias \(http://listen.hatnote.com/#en,uk,fr,de,ja,nl,eo,pt,et,el,hu,be,gu,ru,es,it,fa,zh,bn,ta,kn,sv,he,as,pa,ml,or,pl,sr,fi,ar,id,hi,te,mr,sa,mk,bg,no\)](http://listen.hatnote.com/#en,uk,fr,de,ja,nl,eo,pt,et,el,hu,be,gu,ru,es,it,fa,zh,bn,ta,kn,sv,he,as,pa,ml,or,pl,sr,fi,ar,id,hi,te,mr,sa,mk,bg,no), [Wikidata \(http://listen.hatnote.com/#wikidata\)](http://listen.hatnote.com/#wikidata), both (<http://listen.hatnote.com/>)

n.hatnote.com/#en,uk,fr,de,ja,nl,eo,pt,et,el,hu,be,gu,ru,es,it,fa,zh,bn,ta,kn,sv,he,as,pa,ml,or,pl,sr,fi,ar,id,hi,te,mr,sa,mk,bg,no,wikidata), [recording \(https://en.wikipedia.org/w/index.php?title=File:2016-08-08_Listen_to_Wikipedia.ogg\)](https://en.wikipedia.org/w/index.php?title=File:2016-08-08_Listen_to_Wikipedia.ogg)

Contributing to Wikidata



[Geolocated Wikidata items, with highlighting of changes between October 2018 and May 2019 \(https://commons.wikimedia.org/wiki/File:Wikidata_items_map_with_difference,_India,_October_2018_to_May_2019.png\)](https://commons.wikimedia.org/wiki/File:Wikidata_items_map_with_difference,_India,_October_2018_to_May_2019.png)

Contributing to Wikimedia Commons



An image ([https://commons.wikimedia.org/wiki/File:Goniot euthis_quadrata_\(Blainville,_1827\)_guard_with_a_zigzag-like_deformation_-_photo_vs._MRI.png](https://commons.wikimedia.org/wiki/File:Goniot euthis_quadrata_(Blainville,_1827)_guard_with_a_zigzag-like_deformation_-_photo_vs._MRI.png)) originally uploaded for a talk (https://en.wikipedia.org/wiki/User:Daniel_Mietchen/Talks/DigitalFossil_Berlin_2012/Fossil_MRI/Rare_specimens) was reused (<https://en.wikipedia.org/w/index.php?title=Belemnitida&diff=next&oldid=880223674&diffmode=source#Pathology>) in the Wikipedia article [Belemnitida](https://en.wikipedia.org/wiki/Belemnitida) (<https://en.wikipedia.org/wiki/Belemnitida>).

Contributing to Wikipedia

Period: 2023-02-01 to 2023-02-28

Total views: 11,059,273

Updated: 19:38, 5 March 2023 (UTC)

Rank	Page title	Views	Daily average	Assessment	Importance
1	Greta Thunberg	240,282	8,581	GA	High
2	David Attenborough	196,573	7,020	GA	Mid
3	Car	171,707	6,132	B	Mid
4	Don't Look Up	155,878	5,567	C	Low
5	Antarctica	151,566	5,413	FA	High
6	Cattle	137,607	4,914	B	High
7	Hydrogen	118,200	4,221	C	Mid
8	Climate change	109,750	3,919	FA	Top
9	Polar bear	104,275	3,724	GA	Mid
10	Air pollution	96,570	3,448	B	High
11	Agriculture	94,227	3,365	GA	Low
12	Al Gore	94,007	3,357	GA	High
13	Natural disaster	89,363	3,191	C	Top
14	Lithium-ion battery	89,276	3,188	C	High
15	Köppen climate classification	86,447	3,087	B	Low
16	The Day After Tomorrow	81,253	2,901	C	Low
17	Ammonia	75,326	2,690	B	Low
18	Rice	74,456	2,659	B	High

There is always room for improvement (<https://www.canarymedia.com/articles/climate-crisis/wikipedia-has-a-climatetech-problem>), and there are initiatives like [WikiProject Climate Change](https://en.wikipedia.org/wiki/Wikipedia:WikiProject_Climate_change) (https://en.wikipedia.org/wiki/Wikipedia:WikiProject_Climate_change) or [365climate](https://hashtags.wmcloud.org/?query=365climate&project=&startdate=&enddate=&search_type=or&user=) (https://hashtags.wmcloud.org/?query=365climate&project=&startdate=&enddate=&search_type=or&user=) to address that.

Issues with contributing to Wikimedia projects

What I wonder is why professors don't curate [pages on] Wikipedia and add course materials and open access sections of textbooks, much of which they post online anyways. We aren't really seeing the potential that you would hope for with all of the Web 2.0 tools out there. We aren't seeing the academic community take advantage of them as much as other subsets of the community. — [David Lipman \(2010\)](https://dx.doi.org/10.1016/j.cell.2010.04.019) (<https://dx.doi.org/10.1016/j.cell.2010.04.019>)

- Wikiversity: Why academics do and do not participate on wikis (https://en.wikiversity.org/wiki/Why_academics_do_and_do_not_participate_on_wikis)

Wikifying biogeosciences



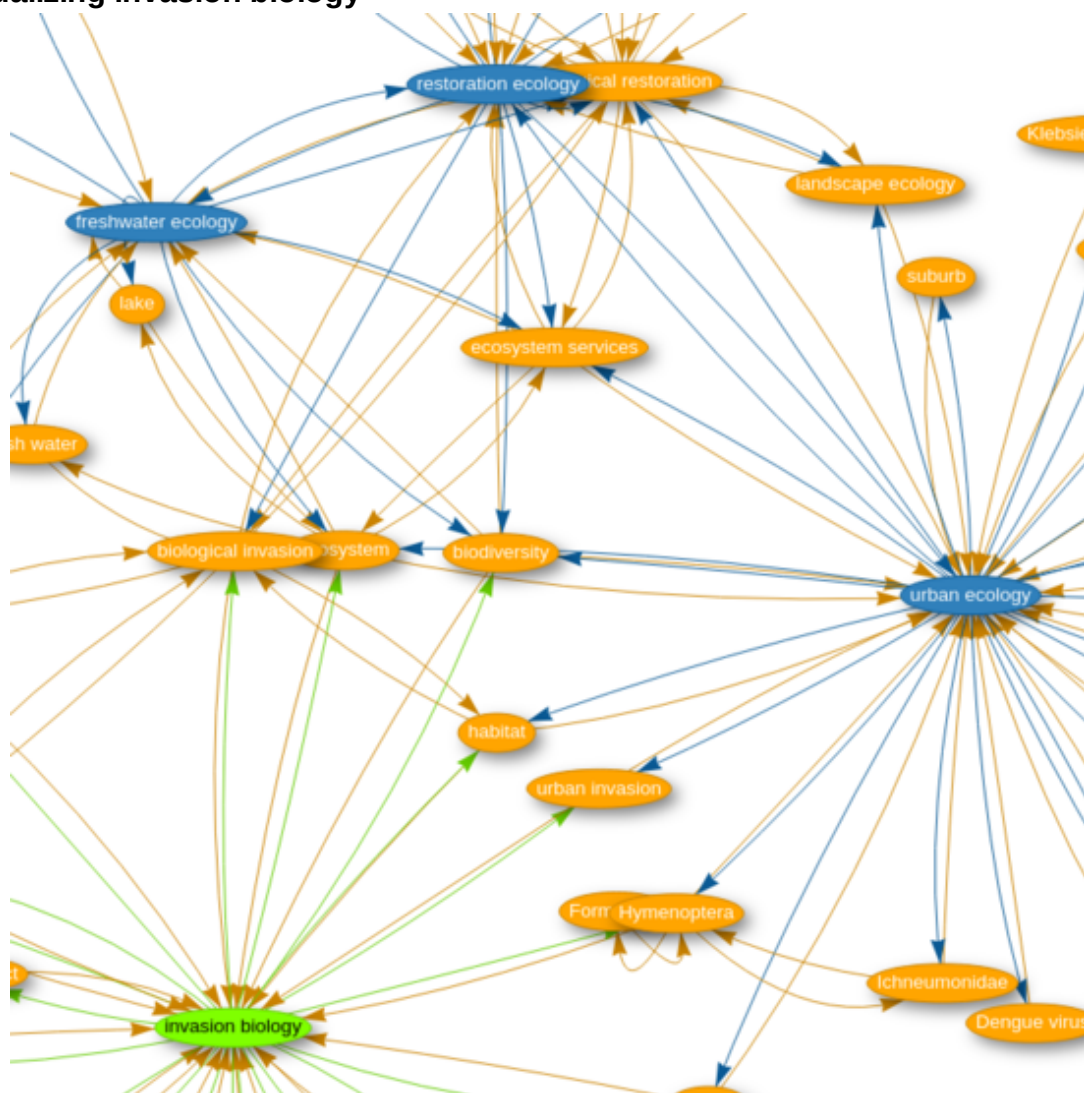
Logo of Wikidata's WikiProject Climate Change (https://www.wikidata.org/wiki/Wikidata:WikiProject_Climate_Change)

Increase opportunities to participate in the research process



In the FossilLab at the National Museum of Natural History in Washington, citizen scientists prepare fossils in an open-science fashion, with the public invited to observe.

Contextualizing invasion biology



A Wikidata query (

- [Wikimedia Sustainability Initiative \(https://meta.wikimedia.org/wiki/Sustainability_Initiative\)](https://meta.wikimedia.org/wiki/Sustainability_Initiative) (2015)

Opening up climate communication






[Unpacking IPCC and IPBES Reports \(https://doi.org/10.5281/zenodo.7223065\)](https://doi.org/10.5281/zenodo.7223065) (2022) — non-open licensing and encapsulation in PDFs are an obstacle to reuse of images or citation information

Wiki99

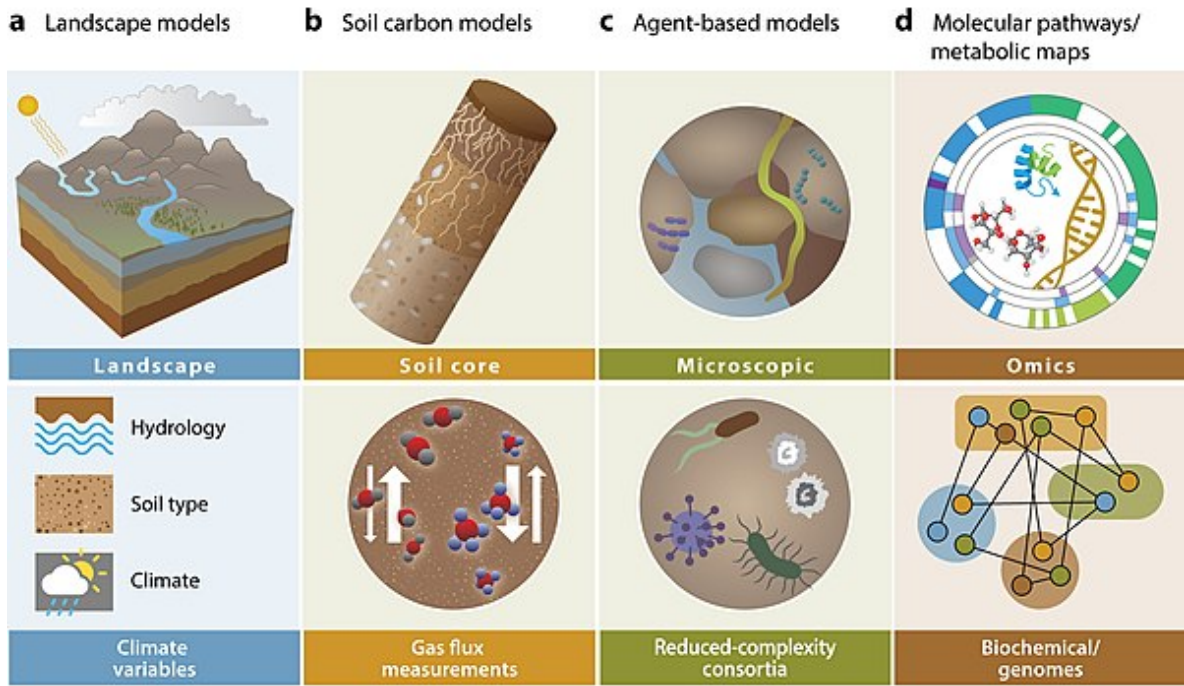
Wiki99 list by topic

Orientation to chemistry

#	Image	Wikipedia articles	Description on Wikidata	Languages											Wikidata item			
				en	de	fr	es	it	pt	ru	uk	pl	nl	sv				
1		chemistry	branch of physical science concerned with the composition, structure and properties of matter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Q2329
2		laboratory	facility that provides controlled conditions in which scientific or technological research, experiments, and measurement may be performed	✓	✓			✓		✓					✓	✓	Q483242	
3		experiment	scientific procedure carried out to support, refute, or validate a hypothesis	✓	✓			✓		✓					✓	✓	Q101965	
Σ		autolist gallery		3	3	2	1	1	3	1	3	1			3	3	avg: 2 \ 100 (61%)	

Wiki99 for chemistry (<https://meta.wikimedia.org/wiki/Wiki99/chemistry>). What about doing one for biogeochemistry?

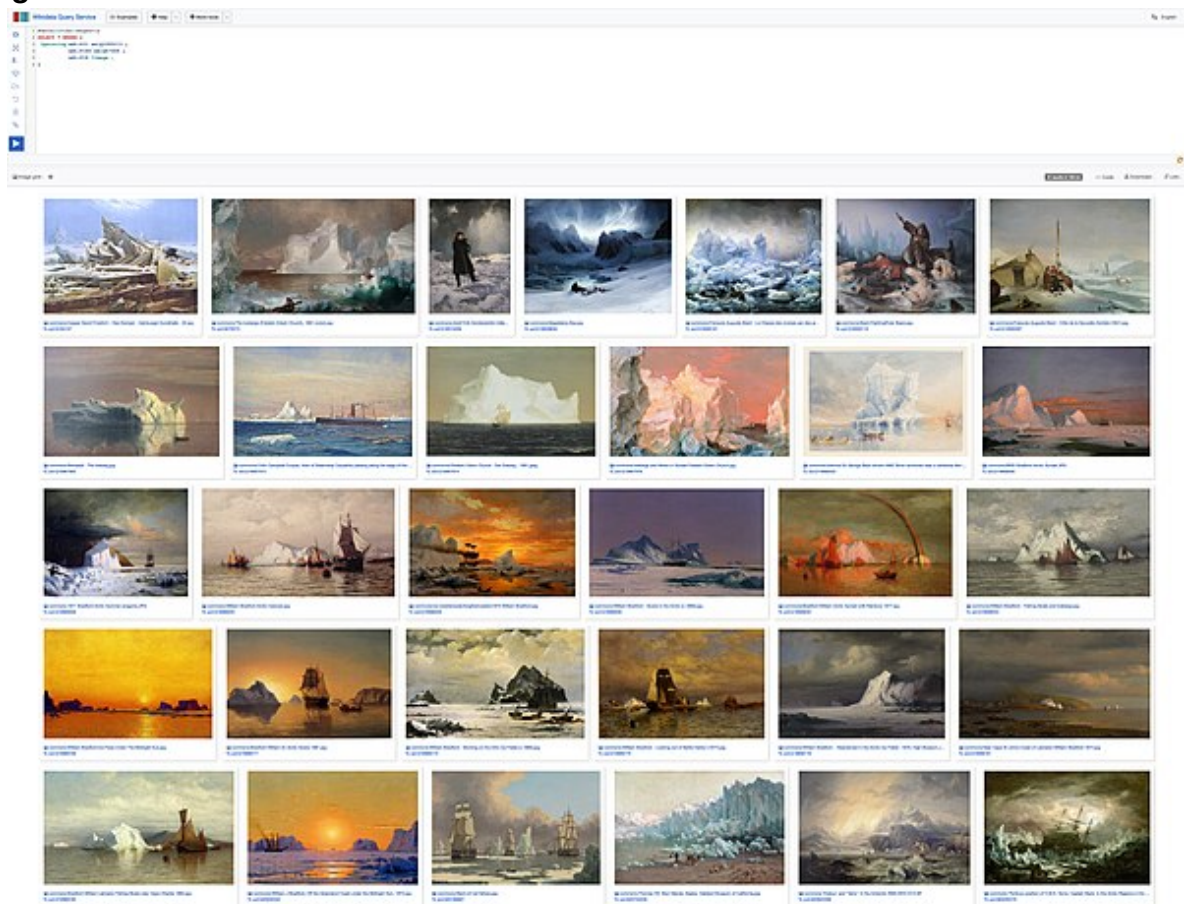
Linking computational models across domains



 Naylor D, et al. 2020. *Annu. Rev. Environ. Resour.* 45:29-59

The NFDI consortium for mathematics (<https://www.mardi4nfdi.de/>) wants to bring together modellers from different domains to discuss best practices for sharing models.

Linking arts and sciences



Paintings depicting icebergs ([https://commons.wikimedia.org/wiki/File:Paintings_depicting_icebergs_-_Screenshot_of_the_Wikidata_Query_Service_as_of_2019-09-23_\(rearranged\).jpg](https://commons.wikimedia.org/wiki/File:Paintings_depicting_icebergs_-_Screenshot_of_the_Wikidata_Query_Service_as_of_2019-09-23_(rearranged).jpg))

Thanks



Abstract

Background

This talk explores existing and potential interactions between biogeoscience research and education on the one hand and the Wikimedia ecosystem on the other. This ecosystem - which includes sites like Wikipedia, Wikimedia Commons, Wikidata and their respective communities and workflows - represents a sociotechnical platform providing a vast and continuously curated repository of openly accessible knowledge and reusable materials on a wide range of topics, including many that are relevant for biogeosciences. This resource is leveraged at the scale of billions of monthly direct pageviews and in many more indirect ways, e.g. via search engines or large language models.

Focus

The presentation begins by providing a general overview of the Wikimedia ecosystem, its structure, and its interactions with and impact on scientific communication. We will then explore how biogeosciences are represented and how biogeoscience-related communities can engage with the Wikimedia ecosystem, including reviewing Wikipedia articles, uploading scientific images or media files to Wikimedia Commons, utilizing Wikidata to connect and visualize reference data across knowledge domains or exploring open-science workflows taking place on Wikimedia infrastructures.

Pros and cons

We will also discuss the benefits of engaging with the Wikimedia ecosystem, including increasing the visibility and impact of biogeoscience research, improving public understanding of scientific concepts, scientific contributions to societal discourse, and promoting collaboration and networking among scientists as well as between them and others. Additionally, we will cover some of the challenges and potential pitfalls of engaging with the Wikimedia ecosystem, such as the different writing styles and attribution mechanisms and the potential for conflicts of interest, bias and misinformation, along with mechanisms for addressing such issues.

Related talks

- [Impact-oriented Citizen Science: The role of Wikipedia, Wikidata and OpenStreetMap \(https://en.wikipedia.org/wiki/Wikipedia:Meetup/CitSciHelvetia_Solothurn_2023/Impact-oriented_Citizen_Science:_The_role_of_Wikipedia,_Wikidata_and_OpenStreetMap\)](https://en.wikipedia.org/wiki/Wikipedia:Meetup/CitSciHelvetia_Solothurn_2023/Impact-oriented_Citizen_Science:_The_role_of_Wikipedia,_Wikidata_and_OpenStreetMap) (2023)
- [Climate knowledge and the Wikimedia ecosystem \(https://doi.org/10.5281/zenodo.7109345\)](https://doi.org/10.5281/zenodo.7109345) (2022)
- [Unpacking IPCC and IPBES Reports \(https://doi.org/10.5281/zenodo.7223065\)](https://doi.org/10.5281/zenodo.7223065) (2022)
- [Multilingual Structured Climate Research Data in Wikidata - The Community \(https://doi.org/10.5281/zenodo.3994272\)](https://doi.org/10.5281/zenodo.3994272) and [Data \(https://doi.org/10.5281/zenodo.3994266\)](https://doi.org/10.5281/zenodo.3994266) Perspectives (2020)
- [Bridging Science, Art, and Community in the New Arctic through Wikimedia projects \(https://en.wikipedia.org/wiki/File:Bridging_Science_Art_and_Community_in_the_New_Arctic_through_Wikimedia_projects.pdf\)](https://en.wikipedia.org/wiki/File:Bridging_Science_Art_and_Community_in_the_New_Arctic_through_Wikimedia_projects.pdf) (2019)
- [Visualizing the research ecosystem of ecosystem research via Wikidata \(https://github.com/Daniel-Mietchen/events/blob/master/ICEI2018-research-ecosystem.md\)](https://github.com/Daniel-Mietchen/events/blob/master/ICEI2018-research-ecosystem.md) (2018)

- [Wikimedia as a platform for scientific information \(https://en.wikipedia.org/wiki/Wikipedia:MPI-CE2012\)](https://en.wikipedia.org/wiki/Wikipedia:MPI-CE2012) — given at the neighbouring MPI for Chemical Ecology (https://en.wikipedia.org/wiki/Max_Planck_Institute_for_Chemical_Ecology) (2012)

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