

Smithsonian Research Online 2023 Annual Report



Smithsonian
Libraries and Archives

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Introduction

This is the fifth annual report on the activities of Smithsonian Research Online (SRO). Since the program began in 2008, SRO has proven invaluable in the service of Smithsonian research. SRO has documented Smithsonian research outputs, reported to Smithsonian decision makers, and provided metrics to stakeholders across the board to show that the Smithsonian is not just destination museums in Washington, DC, but a major global research hub, spanning disciplines from “art to zoology.”

Alvin Hutchinson, and a broad team Smithsonian Libraries and Archives staff, work diligently to ensure Smithsonian research outputs are tracked in both SRO and the broader scholarly output ecosystem. Whether it is assigning Digital Object Identifiers (DOIs) for publications, ORCID identifiers for people, and the most recent identifier, Research Organization Registry (ROR) used for research organizations, provide high quality and actionable data is the defining mission of SRO and vital to documenting the Smithsonian’s position in global research.

I will be leaving the Smithsonian at the end of June 2024. Having worked with Alvin since those early days of SRO, watching it expand into program of Scholarly Communications which includes Smithsonian Profiles and a variety of identifier services, I know it is in good hands.

I look forward to watching the “increase and diffusion” of Smithsonian research through the lens of SRO in the coming years.

Martin R. Kalfatovic

Associate Director, Digital Initiatives and Scholarly Communications

Smithsonian Libraries and Archives

Program Overview

- Smithsonian Research Online (SRO) collects and manages information describing research conducted at the Smithsonian.
- The Program also manages [Smithsonian Profiles](#), the staff expertise locator based on the publications and other research activity of Institution scholars.
- SRO is managed by staff of the Digital Initiatives and Scholarly Communication division but relies on support from staff across the Smithsonian Libraries and Archives (SLA).
- The information collected is stored centrally and shared widely via regular and custom reporting as well as Smithsonian systems including EDAN and unit websites.
- SLA staff rely on the researchers for notification of new additions and verification of the accuracy of existing data.

This annual report is designed to highlight Program accomplishments, notable research activity and to provide examples of possible analysis. Using SRO to highlight research impact is a key use-case for the program and one that is core to its mission.

The report is intended to be internal to the Smithsonian Institution. Feedback from stakeholders provide guidance on new service development and desired outcomes from the program.

Program Feedback

In 2023, users across the Institution expressed their appreciation of the value of the SRO program:

“Such a useful tool I use all the time.”

“This is a huge service to the Smithsonian and our many user communities.”

“I remain a grateful beneficiary of all the work you and your colleagues do to track and organize the Smithsonian research output.”

“I would like to thank you for letting readers know via SRO the work we do in Panama.”

“The work [your team does] is so helpful and it’s great to have a place to check citations and Altmetric scores as well.”

2023 Program Highlights

During 2023 the SRO program . . .

- Solicited and reviewed bids for a tool to pull specimen identification information from the full text of scholarly publications. The contract was let in August and a prototype delivered in September as part of the Enhancing the Museum Data Ecosystem (Big Data) project.
- Executed the migration of all metadata to an upgraded platform for managing publication information.
- While continuing to archive digital versions of Smithsonian-published series, the team worked to assign specific research units (e.g. NH Anthropology, STRI, etc.) to legacy publications previously unidentified.
- In coordination with the Biodiversity Heritage Library, began adding Smithsonian-authored articles to the SLA-managed repository where the full volume has been digitized in BHL.
- Coordinated with communications staff of the National Zoo and Conservation Biology Institute in their reuse of information from Smithsonian Profiles to fill out scientists' web pages.
- Responded to a request from a Native American community in Florida to responsibly remove a legacy publication from the Repository containing material found to be culturally sensitive.
- Provided input and participated in SLA digital ecosystem planning for the near- to medium-term and support for the SRO program.
- Provided a newly formatted science metrics report to all SI science units and ASCEA strategic communications office.
- Reviewed and contributed to the revision of the Smithsonian's plan for public access to federally funded research materials.
- Informed the SI compliance oversight on the use of ORCID IDs at the Smithsonian and on communicating the White House directive covering ORCID IDs for all federally funded researchers.
- Instructed CHORUS (Clearinghouse for the Open Research in the U.S.) staff on how to access SRO publication data via EDAN API.
- Added the 100,000th Smithsonian-authored research output to the database. News of this milestone brought positive comments from users.

2024 Goals

For 2024 the Program has the following high-level goals:

- **Migrate research data sets from SRO repository to the Smithsonian-licensed FigShare platform managed by OCIO.** Prior to an SI-wide platform for hosting datasets created by SI researchers, the SRO collected and described over 75 of these. It is now time to turn them over to the OCIO-managed FigShare platform.
- **Establish regular access to OAAI information about fellows and research associates.** The SRO keeps information on author-creators as well as their research output. Details such as appointment, separation, renewal, unit and sponsor are key pieces of information that the OAAI can provide the SRO program.
- **Load SRO research authors into a local Wikibase.** The Smithsonian is launching a test Wikibase installation, SI WikiNames, to examine linked data modeling for personal names used at the Institution. SRO's author database is considered one of the base data sets with the robust collection of alternative names and ORCID identifiers for SI researchers. The goal is to test link data in SRO to internal sources including within the SRO corpus. In a pilot project, the data model showed potential in producing an interesting knowledge graph of SI research to specific publications and to co-authors.
- **Participate in the OCIO and ODT analysis of personal names at SI.** Personal names have been an ongoing metadata issue at the Institution. Discussions have focused on the idea of having some form of authority control shared by units and collection information systems to leverage the knowledge across SI. Before a module develops in EDAN, the ODT and OCIO are examining the use of people names across SI. SRO is participating in the data collecting and use cases for the analysis while also addressing the issue in the WikiNames Wikibase .

Research Output at a Glance

Research Productivity

- Smithsonian Research Online has tracked **2,118** research outputs published in 2023.
- **1,784** (84.2%) of these outputs are journal articles, published in **596** different journals, representing a 10.4% decrease over the 2022 reported number (1,990).
- **64** are book chapters and **32** are books, which is 34.7% less and 33.3% more than 2022, respectively.
- **238** other outputs were collected including datasets, reports, exhibitions, and other formats.

Smithsonian-Affiliated Scholars

- There are **1,353** identified individuals who have Smithsonian affiliation and have authored, edited, or otherwise created outputs listed in Smithsonian Research Online in 2023.
- Among all authors in the database, **134** were marked as separated in 2023. This includes all temporary appointees and staff who have contributed to Smithsonian Research Online. By comparison, the previous year (2022) there were 255 departures.
- In 2023, SI staff or appointees were listed as the **lead author 857 times** out of 1,784 journal articles co-authored by Institutional scholars.
- Smithsonian Profiles added **24 awards** for individuals in 2023 including Grammy Awards and from the Organization of American Historians, the Alabama Folklife Association and the Paleontological Society.
- Smithsonian Profiles continues to increase the awareness of Smithsonian scholarship. Profiles was the conduit for personal contact of more than **200** Smithsonian scholars during 2023. These researchers received a total of **1,900 requests** for information or collaboration last year. That compares with 1,118 times during 2022. A list of those most frequently contacted is available from SLA staff.

Collaborations

- Over **82.1%** of scholarly outputs in SRO represent a collaboration with scholars at one of thousands of outside research organizations. **85** outputs include collaborations among Smithsonian units.
- **34** publications in 2023 included **100 or more co-authors**, while 25.7% of all 2023 publications included ten or more co-authors.

- Research Online attributes each research output to **49** different unit and departmental tags as appropriate, representing organizations across the Smithsonian Institution and now including the Smithsonian American Women’s History Museum.

Open Access Publishing

- **1,305** (73.2%) of journal articles in Research Online published in 2023 are openly accessible, either directly from the publisher or through a repository. This does not include currently restricted publications that will become open after embargo expiration.

Impact

- Smithsonian-authored publications from 2023 that have DOIs and are indexed in Web of Science Core Collection have already been cited **5,327** times.
- **98.1%** of journal articles in Smithsonian Research Online for the year 2023 have a DOI, allowing for better integration with external data and tracking systems.
- Smithsonian research outputs published in 2023 and tracked in Altmetric.com garnered **43,464** mentions, including 36,106 mentions on Twitter, 348 citations in Wikipedia, and 6,038 mentions in news stories.

Data for analysis was collected on April 24, 2024.

Open Access Publishing at the Smithsonian

In 2023, Smithsonian scholars were listed as author or co-author on **647** articles in open access journals, with **574** requiring an article processing charge. Additionally, **338** articles were published as open access articles within for-pay journals, and **300** articles had the option of being made open through paying an article processing charge. The article processing charges on the 912 articles requiring them amount to **\$2.9 million dollars**, although data on whether the Smithsonian authors paid none, some, or all of the fees are currently not available.

Altmetrics

The Institution's research publications are regularly mentioned in a variety of media platforms. Altmetrics show online attention paid to scholarly works either through social media or other digital communication channels.

Smithsonian research published in 2023 was mentioned in:

- Over 21,000 **Twitter** user feeds including those with broad impact such as Greenpeace and The World Wildlife Fund, each with over a million followers.
- Smithsonian scholarship continues to be cited and included in the immensely popular, **Wikipedia**. In 2023 over 4,000 new mentions of SI-authored works published as far back as 1975 were included in Wikipedia articles. Of those published last year, 190 Wikipedia entries mentioned Smithsonian scholarship.
- The Union of Concerned Scientists, the Urban Institute, and the World Health Organization, are among the 27 NGOs, government bodies and others which mentioned Smithsonian materials in their **policy documents** last year.
- **Global news** sources from 82 countries in outlets as varied as Mother Jones, CNN Philippines and USA Today.
- Publications that drew the most Altmetric attention among the humanities during 2023 were, John Troutman's "Biography of a Phantom" (NMAH), Kinshasha Conwill and Kevin Strait's, "Afrofuturism: a history of black futures" (NMAAHC) and the article co-authored by Eleanor Harvey, "An interdisciplinary framework for evaluating 19th century landscape paintings for ecological research" (NPG).

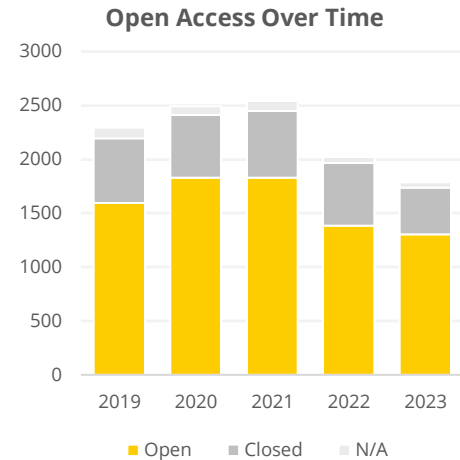


Figure 1: Open Access status of Smithsonian-authored journal articles. Data sources: Unpaywall.org and DOAJ.org. "Unknown" are either DOIs not covered by Unpaywall or were erroneous at the time of analysis.

Selected Analysis

Data from Smithsonian Research Online provides many opportunities for analysis, such as the ones below. Custom reporting is available for research managers, and they are invited to discuss specific needs for analysis with program staff.

Percentage of Open Access Journal Articles, 2018-2023

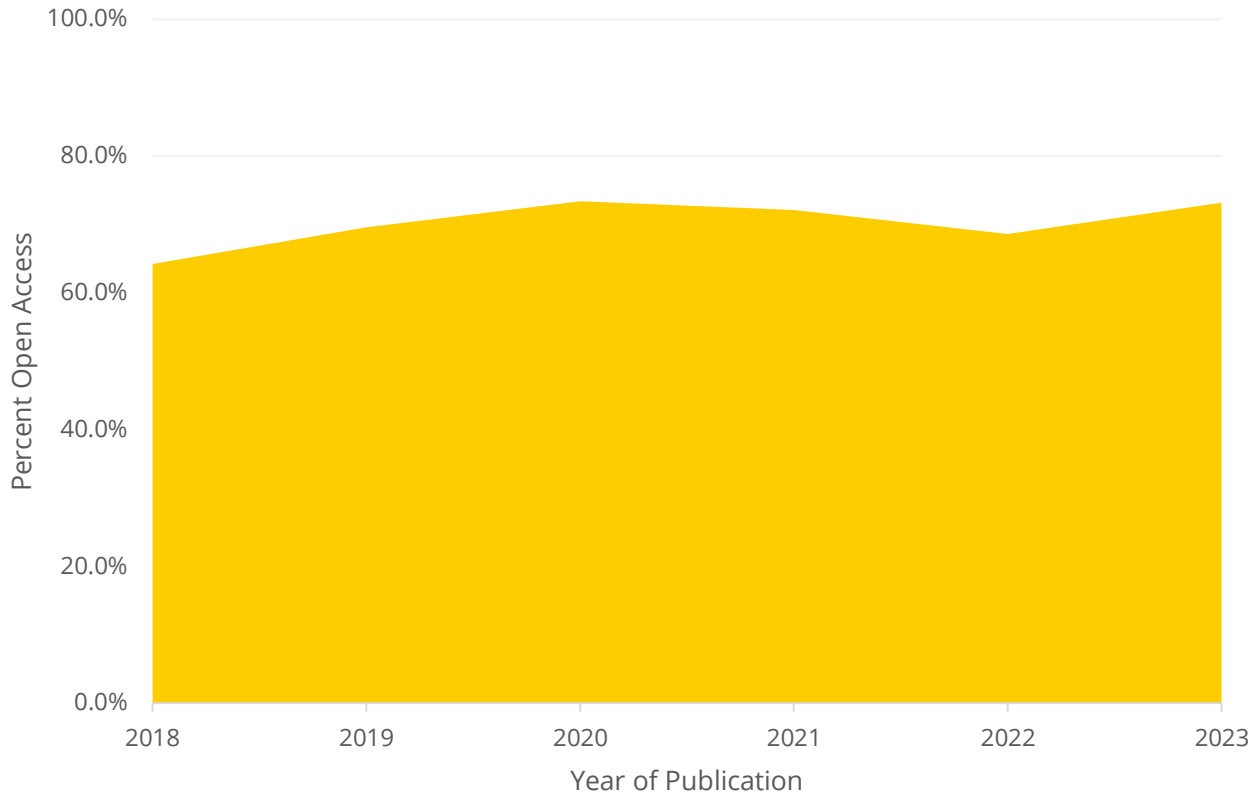


Figure 2: Percentage of journal articles in Smithsonian Research Online that are open access. The Smithsonian Libraries and Archives incorporates data from Unpaywall.org in determining open access status of journal articles, limited to those that are assigned a Crossref DOI.

Top Ten Articles by Altmetric Score in 2023

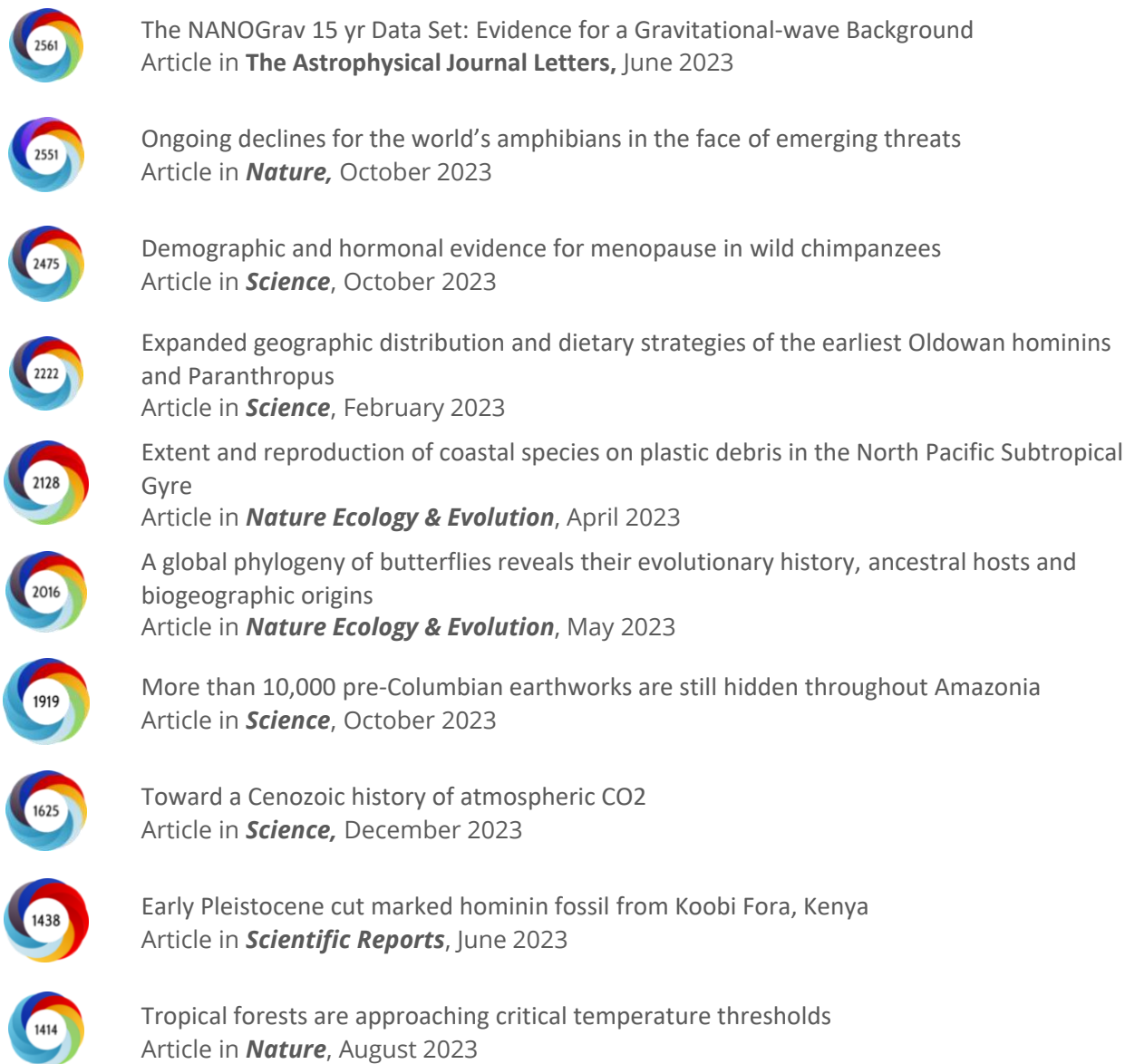


Figure 3: Top ten articles from Smithsonian Research Online by Altmetric Score for 2023. Each score is a weighted indicator based on the number of mentions in various attention sources including social media, Wikipedia, news media, Mendeley, policy documents, and more.

Average Annual Citation Rate by Year of Publication

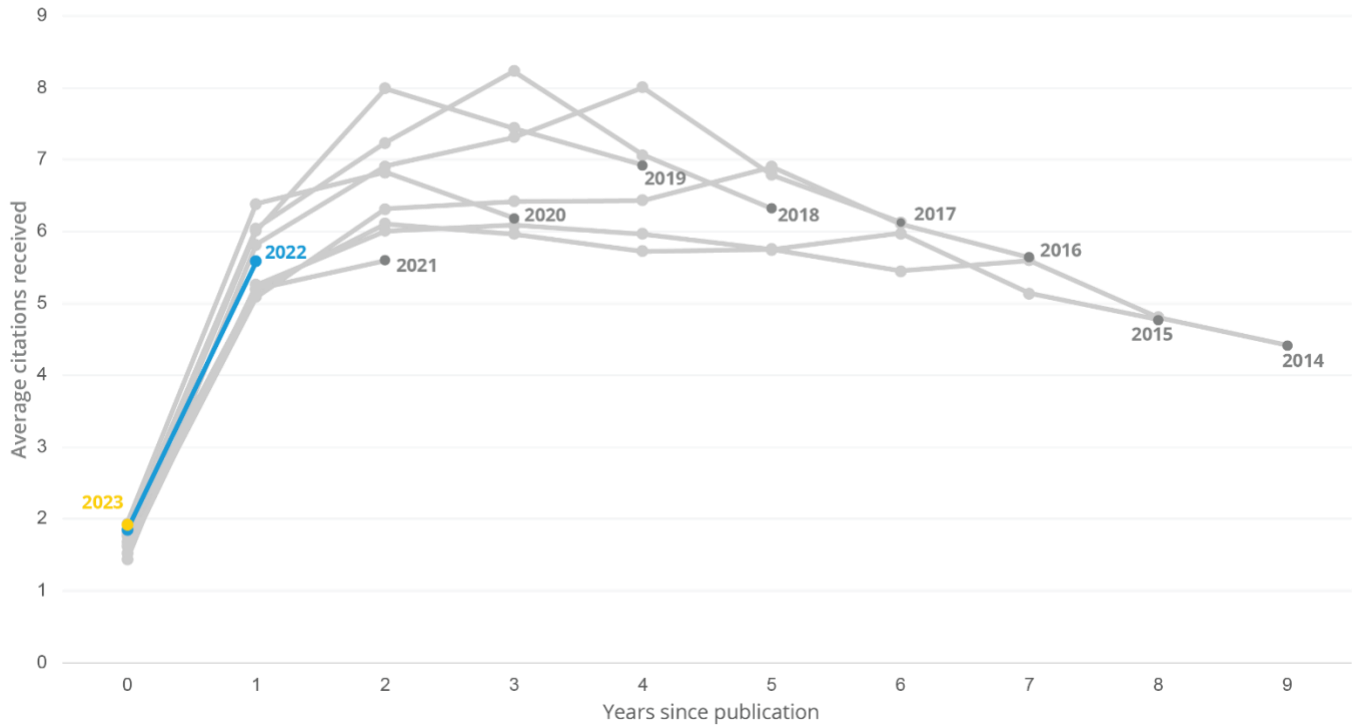


Figure 4: The average number of citations received by publications from a given year across the number of years since publication. The specific dataset for this analysis includes Smithsonian-authored publications present in the Web of Science Core Collection.

About this Report

The Smithsonian Research Online annual report was created by staff of the Smithsonian Libraries and Archives and released on June 3, 2024. This report uses data captured on April 24, 2024, from Smithsonian Research Online, Clarivate's Web of Science, Altmetric.com, Unpaywall.org, and The Directory of Open Access Journals. Data are available upon request.

Past annual reports are available at: <https://research.si.edu/annual-reports/>

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