

chicago manual of style geographic data analysis citation

chicago manual of style geographic data analysis citation forms the bedrock of academic and professional integrity when presenting spatial information. Accurately citing geographic data, whether it originates from a publicly accessible database, a proprietary GIS layer, or a satellite imagery source, is paramount for ensuring transparency, reproducibility, and proper attribution. This comprehensive guide delves into the intricacies of citing geographic data analysis within the framework of the Chicago Manual of Style (CMOS), exploring various data types and common scenarios. We will cover the essential components of a geographic data citation, delve into specific examples for different sources, and offer best practices for integrating these citations seamlessly into your research. Understanding these principles is crucial for anyone undertaking studies that involve spatial elements, from environmental science and urban planning to history and social sciences, demonstrating a commitment to scholarly rigor.

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Understanding the Importance of Geographic Data Citation

The meticulous citation of geographic data is not merely a formality; it is a fundamental requirement for scholarly communication and ethical research conduct. When you present geographic data, you are drawing upon the work of others – be it the individuals who collected the raw measurements, the organizations that compiled the datasets, or the developers who created the tools used for analysis. Proper citation acknowledges these contributions, preventing plagiarism and allowing readers to verify your findings by accessing the original sources. This is especially critical in geographic data analysis, where the interpretation of spatial patterns and relationships heavily depends on the quality, scope, and origin of the data itself.

Furthermore, a robust citation practice fosters reproducibility, a cornerstone of scientific advancement. By clearly identifying the data sources, including their version or date of access, researchers can replicate your analysis, validating your results or exploring alternative interpretations. This transparency builds trust within the academic community and strengthens the credibility of your work. In disciplines increasingly reliant on spatial thinking, from environmental impact assessments to demographic trend analysis, the ability to trace the provenance of geographic information is indispensable.

Core Components of a Chicago Style Geographic Data Citation

While the specific elements may vary depending on the nature of the geographic data source, a standard Chicago style citation for geographic data typically includes several key components. These elements work in concert to provide a complete and unambiguous identification of the data used. Adhering to these components ensures that your citations are both informative and compliant with CMOS guidelines.

Author or Creator

This identifies the individual, organization, or government agency responsible for creating or distributing the geographic data. For datasets, this might be a specific research institution or a governmental body like the U.S. Census Bureau. For maps, it could be a cartographer or a publishing house. If no explicit author is listed, the organization that owns or hosts the data often serves as the author.

Title of the Data

This is the specific name given to the dataset, map, or collection of geographic information. It should be as precise as possible to distinguish it from similar data. For instance, instead of just "Population Data," a more specific title might be "2020 U.S. Census Block Group Population Data." Titles of standalone works, such as published maps or atlases, are usually italicized.

Publication or Distribution Information

This section details where and when the data was made available. It can include the publisher, the name of the website or archive where it was found, and the date of publication or last update. For online data, this is particularly important as datasets are frequently revised or updated.

Date of Access or Use

For digital geographic data, which can be dynamic and subject to change, the date you accessed or used the data is crucial. This helps establish a specific snapshot of the data at a particular moment, which is important for reproducibility if the data is later modified or removed.

Location Information (URL or DOI)

If the geographic data is available online, a persistent identifier like a Digital Object Identifier (DOI) or a stable URL is essential for directing readers to the source. If a DOI is available, it should be prioritized as it is more enduring than a standard URL.

Geographic Scope and Scale

While not always a mandatory element in the citation itself, it is often beneficial to note the geographic area covered by the data (e.g., North America, a specific city) and its scale (e.g., 1:24,000). This context is vital for understanding the applicability and limitations of the data within your analysis.

Citing Specific Types of Geographic Data Sources

The Chicago Manual of Style, while not offering an exhaustive list for every conceivable geospatial product, provides a framework that can be adapted to various data types. The key is to identify the fundamental characteristics of the source and apply the relevant citation principles. This section explores how to cite some of the most common forms of geographic data encountered in analysis.

Citing Geographic Data from Databases and Web Services

Geographic data is frequently accessed through online databases and web services, such as those provided by government agencies, academic institutions, or commercial providers. When citing these sources, treat them as electronic resources.

- **Author/Creator:** The organization or institution that developed or hosts the database.
- **Title:** The name of the specific dataset or layer within the database.
- **Publisher/Host:** The name of the website or platform providing access.
- **Publication Date:** The date the dataset was published or last updated.
- **Date of Access:** The date you accessed the data.
- **URL:** The direct web address of the data or the landing page for the dataset.

For example:

U.S. Geological Survey. "National Hydrography Dataset." Last modified September 1, 2023. Accessed November 15, 2023.
<https://nhd.usgs.gov/data.html>.

Citing Geographic Data from Maps and Atlases

Traditional cartographic products require a different approach to citation. Here, the focus is on the map's creator, title, publisher, and publication details.

- **Author/Cartographer:** The individual or entity responsible for creating the map.
- **Title:** The full title of the map.
- **Publisher:** The company or organization that published the map or atlas.
- **Place of Publication:** The city where the publisher is located.
- **Publication Date:** The year the map or atlas was published.
- **Scale:** The map's scale (e.g., 1:100,000).
- **Type of Resource:** Specify if it is a map or part of an atlas.

For a standalone map:

National Geographic Society. "World Political Map." Washington, D.C.: National Geographic Society, 2022. Scale 1:30,000,000.

For a map within an atlas:

Smith, John. "Topographical Map of the Yosemite Valley." In *Atlas of California Landscapes*, 45. Berkeley: University of California Press, 2019.

Citing Geographic Data from Satellite Imagery and Aerial Photographs

Satellite imagery and aerial photographs are unique data sources often characterized by their sensor, acquisition date, and processing agency. The citation should reflect these attributes.

- **Creator/Agency:** The organization that acquired or processed the imagery (e.g., NASA, ESA, a commercial provider).
- **Title/Description:** A description of the imagery, including the sensor or satellite name, and the geographic area it covers.
- **Date of Acquisition:** The date the imagery was captured.
- **Date of Publication/Release:** If applicable, the date the processed imagery was made available.
- **Source/Provider:** The entity from which the imagery was obtained.
- **URL:** If accessed online.

Example:

Landsat 8 OLI/TIRS Collection 2 Level-2. "Imagery of Yellowstone National Park." Acquired April 10, 2021. Processed by U.S. Geological Survey. Accessed December 5, 2023. <https://earthexplorer.usgs.gov/>.

Citing Geographic Data from Software and Models

When the analysis relies on specific GIS software or a particular spatial

model, these tools themselves need to be acknowledged. This ensures that the methodology is clear and that the reader understands the environment in which the analysis was performed.

- **Software Name:** The full name of the GIS software or analytical tool.
- **Version Number:** The specific version of the software used.
- **Developer/Company:** The organization that developed the software.
- **Year of Release:** The year the version was released.

For models, you would cite the model's name, its creators, and any associated publications or documentation.

Esri. *ArcGIS Pro*. Version 3.1. Redlands, CA: Esri, 2023.

For a specific model:

Jones, Sarah, and David Lee. "Spatial Hydrological Model (SHM)." *Journal of Geophysical Research: Atmospheres* 125, no. 3 (2020): e2019JD031500.

Best Practices for Geographic Data Analysis Citation in Chicago Style

Beyond the specific components, certain overarching principles and practices ensure that your geographic data citations are effective and adhere to the spirit of the Chicago Manual of Style. These guidelines help maintain clarity, consistency, and credibility throughout your research.

Ensuring Accuracy and Consistency

The most critical aspect of any citation is its accuracy. Double-check all details: author names, titles, dates, and URLs. Inconsistencies can lead to confusion and undermine the reader's trust in your work. For geographic data, this means being precise about the version of a dataset or the exact acquisition date of imagery. Maintain a consistent format for all your citations, whether in the footnotes/endnotes or the bibliography. If you are citing multiple datasets from the same provider, strive for uniformity in how you present them.

Navigating Uncommon Data Sources

Geographic data analysis often involves novel or less common sources, such as historical spatial records, remotely sensed data with restricted access, or custom-generated spatial models. When encountering such sources, consult the core principles of CMOS. Identify the "author" (the entity responsible), the "title" (a clear description of the data), and the "publication/access information" (where and when it became available or was accessed). If the data is unpublished but has been shared with you, attribute it as personal communication in a footnote, providing as much detail as possible about its origin.

It is also essential to consider the context of your work. For example, in historical geography, citing old maps or cadastral records may require attention to archival details and provenance. For complex environmental modeling, detailing the input data sources and their characteristics is paramount for replicability. The goal is always to provide enough information for a reader to locate and understand the data you used, enabling them to build upon or verify your research.

When presenting complex geographic data analysis, consider including a dedicated section in your methodology that outlines the primary data sources used. This can complement the formal citations by providing a narrative overview of your data landscape. For instance, you might describe the different types of data (e.g., vector layers, raster imagery, tabular data) and their respective origins, followed by detailed citations for each.

Finally, remember that citation styles can evolve. Regularly consulting the latest edition of the Chicago Manual of Style and relevant style guides for your specific discipline will ensure your citations remain current and compliant. This ongoing attention to detail is a hallmark of rigorous academic practice.

FAQ

Q: How do I cite a shapefile downloaded from a government website in Chicago style?

A: You would cite a shapefile downloaded from a government website by identifying the agency as the author, the specific name of the shapefile as the title (often italicized if it's a standalone dataset), the website name, the date of publication or last update, the date of access, and the URL. For example: U.S. Environmental Protection Agency. "*National Wetlands Inventory Data*." Last modified October 20, 2023. Accessed November 15, 2023. <https://www.fws.gov/wetlands/>.

Q: What if the geographic data I used has no clear author?

A: If there is no individual author, attribute the data to the organization or institution responsible for its creation or distribution. For instance, if you used a dataset from a university research center, the center would be the author. If it's a general platform with no specific creator identified, the name of the platform or website might serve as the author.

Q: Should I italicize the title of a geographic dataset in my Chicago style bibliography?

A: Generally, titles of standalone works, including specific datasets that are treated as distinct publications, are italicized. However, if the dataset is part of a larger database and is referred to by its common name within that database, it might not be italicized. Consult the latest CMOS edition for nuances, but for clarity, italicizing the specific dataset title is often recommended.

Q: How do I cite historical maps that I viewed in an archive and did not download?

A: For historical maps viewed in an archive, cite the map creator, the title of the map, the publisher (if any), the place and date of publication, and crucially, the name of the archive and its location. In a footnote or endnote, you would also include the specific collection and item number or call number if available, and the date of your visit. For example: Mitchell, John. "A New and Compleat Map of the British Empire in North America." London: Printed for the Author, 1755. Library of Congress, Geography and Map Division, G3300 1755 .M5. Accessed November 15, 2023.

Q: When citing satellite imagery, is the date of acquisition or the date of processing more important?

A: Both dates can be important for a complete citation. The date of acquisition is critical for understanding the temporal context of the data. The date of processing or release is important if you obtained the imagery from a processed product or archive. You should include whichever date most accurately reflects when the data you used was created or made available. Often, it's best to include both if readily available.

Q: How should I cite a live web map service, like Google Maps or an interactive GIS portal?

A: For live web map services, cite the provider (e.g., Google), the specific service or map name (e.g., Google Maps), the version or year if specified, and the date of access. Since the content can change, the access date is vital. For interactive portals, list the platform name, the specific data layer or map being viewed (if applicable), the date of access, and the URL. For example: Google Maps. Accessed November 15, 2023.
<https://www.google.com/maps/>.

Q: What if the geographic data analysis involves complex statistical modeling based on multiple datasets?

A: In such cases, you would cite each primary geographic dataset used in the analysis individually. Additionally, you would cite any statistical software or packages used for the modeling (e.g., R, SPSS) with their version numbers. If you developed a custom model, describe it and cite any publications or documentation associated with it. A clear methodological section in your work should then explain how these different data sources and tools were integrated.

Q: Is it necessary to cite the projection system used for geographic data in Chicago style?

A: While not always a mandatory element of the citation itself, it is highly recommended to mention the coordinate reference system (CRS) or projection system in your methodology section or in a footnote when discussing the data. This is crucial for understanding how the spatial data was processed and

analyzed, contributing to the reproducibility of your work. If the projection is part of the dataset's metadata, you may choose to include it if space allows or if it is particularly relevant to your analysis.

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