

To: LAUC Research and Professional Development Committee
From: Kristen LaBonte, Life Sciences Librarian, UCSB Library
Date: January 7, 2013



RE: Application for LAUC Presentation Grant for 2013-2014

Project Title:

GIS Data Citation Rates: Is data being properly credited in lists of references?

Amount Requested:

\$500

Release Time Required:

5 days (I will use my 2013-2014 professional development funding to attend this conference)

A: Current Status of Project and Rationale for Requesting a Mini-Grant:

An area of research that I am involved in is the application of GIS in the marine sciences. As a user of GIS data and literature, I have noticed that citations to data are sometimes missing in lists of references and works cited. While presenting a poster on humpback whale habitat preference at the 2012 International Association of Marine and Aquatic Sciences Libraries and Information Centers (IAMSLIC) conference, I engaged in a discussion with other GIS users with shared experiences regarding this issue. I was encouraged to look further into this problem and present a paper at the 39th IAMSLIC Conference to be held October 20-24, 2013 in Dania Beach, Florida.

The details of the conference have not been announced yet, but the IAMSLIC Conference site has information on past conferences:

<http://www.iamslc.org/activities/conferences>

Background:

A search of the Web of Science, Aquatic Sciences and Fisheries Abstracts, Academic Search Complete, Biosis, and Google Scholar on the following search terms yields no relevant results to aid in the examination of citation rates of GIS data, however does yield information relating to the importance of data citation and annotation.

("gis data" OR "geospatial data") AND (citation* OR citing OR cite)

For example, Mazetti et al. 2009, describe applications for geospatial data sharing and the need for the use of international interoperability standards for services including data citation. As more GIS data is stored in repositories, there is a great need to incorporate curation principles into systems to ensure accurate citation over time (Bose and McGarva, 2007).

A further search on the same topics in Google yields numerous research guides and citations of data sets for use in lists of references. The first 10 results yield six academic web pages, a government page, and three from commerce. The first three pages of results contain relevant sites aimed at citing GIS and geospatial data in scientific literature. George Mason University Libraries have a library guide for Geospatial Data & GIS Services with a page specifically for GIS Writing & Citing, linking to other resources that are freely available online. Although information on how to properly cite GIS data is

readily available, these data are often not cited in the list of references of academic journal articles. Many databases, like Web of Science, now supply lists of references that are attached to articles. If GIS data is not cited or not cited properly, data creators are not receiving credit for their work and data are not easily accessible for proper peer review and to interested researchers. This is an issue with all kinds of data sets, and with the implementation of new databases relating to data. If proper citation occurs, data creators have the “potential to become an accountable part of the scholarly communication process” (Mayernik, 2012). Thomson Reuters is building a new “Data Citation Index,” which captures information from repositories and cited references, but data sets will likely be missed if they are not in large repositories or in cited references.

It’s possible, but unlikely that an article with a published map will have been created solely with the authors’ data. Downloadable background layers (such as roads, rivers, and digital elevation models) are readily available from data clearing houses and institutions such as the United States Geological Survey, municipal governments, and ESRI, the makers of the most commonly used GIS program, ArcGIS. Many institutions, such as the Harvard University Graduate School of Design, have created aids for finding spatial data (Cote, n.d.).

The last 5 years of articles in marine and aquatic sciences (2008-2012) will be analyzed to show current trends, if any. Marine and aquatic sciences will be searched specifically, with resulting information to be applicable to the GIS field in general. I would like to narrow down these results to papers that actually use GIS data (determined by a printed map within the article) and further determine if data used is cited in lists of references, inside the paper, in the acknowledgments, or not at all. I will also examine whether the software used to produce the maps are cited.

In a pilot study, I reviewed the first and last papers from 2002 and 2012 that I had immediate access to, following this search in Web of Science:

Topic=((marine OR aquatic) and (GIS OR "geographic information system*"))

The search yields 110 peer reviewed results from 2012 and 41 results from 2002. The results (below) demonstrate the lack of data citation in reference lists and the need for further research.

Author	Year	GIS Map?	Data Cited in References?	Data cited inside article?	Data cited in acknowledgments?	Software cited in text	Software cited in references
Tong and Chen	2002	X		X		X	
Teixidó et al.	2002	X				X	
Neves et al.	2012	X		X		X	
Crecente et al.	2012	X		X			

Following the pilot study, I decided to use Aquatic Sciences and Fisheries Abstracts for my study instead of Web of Science because it is more specific to the field I wish to concentrate on. Using the same search conducted in Web of Science, I found 117 peer reviewed articles from 2012 and 142 from 2002. I

intend to use this in my research, as it gives me a larger, yet still manageable sample size. I will also use the last five years of data, rather than just 2002 and 2012.

References:

- Bose, R. and G. McGarva. "Safeguarding the Citation Lifecycle for Global Geospatial Repositories." *Geophysical Research Abstracts* 9 (2007): 08548. *Google Scholar*. Web. 7 Jan. 2013.
- Cote, Paul. "Cultivating Spatial Intelligence: Sources of Spatial Data." Harvard University Graduate School of Design, nd. Web. 7 Jan. 2013. <http://www.gsd.harvard.edu/gis/manual/data/index.htm>
- Crecente, Juan M., Inés Santé, Carlos Díaz, and Rafael Crecente. "A multicriteria approach to support the location of thalassotherapy (seawater therapy) resorts: Application to Galicia region, NW Spain." *Landscape and Urban Planning* 104.1 (2012): 135-147. *Web of Science*. Web. 7 Jan. 2013.
- "GIS Writing & Citing." George Mason University Libraries. 13 Dec. 2012. Web. 7 Jan. 2013. <http://infoguides.gmu.edu/content.php?pid=11647&sid=142993>
- Mayernik, Matthew S. "Data Citation Initiatives and Issues." *ASIS&T Bulletin* (June/July 2012). Web. 7 Jan. 2013. http://www.asis.org/Bulletin/Jun-12/JunJul12_MayernikDataCitation.html
- Mazzetti, P., S. Nativi, and J. Caron. "RESTful Implementation of Geospatial Services for Earth and Space Science Applications." *International Journal of Digital Earth* 2 (2009): 40-61. *Academic Search Complete*. Web. 7 Jan. 2013.
- Neves, Diogo R., et al. "Application to the Port of Sines of a new tool for risk assessment in port navigation." *Journal of Coastal Conservation* 16.4 (2012): 489-501. *Web of Science*. Web. 7 Jan. 2013.
- Teixidó, N. J. Garrabou and W. E. Arntz. "Spatial pattern quantification of Antarctic communities using landscape indices." *Marine Ecology Progress Series* 242 (2002): 1-14. *Web of Science*. Web. 7 Jan. 2013.
- "Thomson Reuters launches data citation index for discovering global data sets." Thomson Reuters, 16 Oct. 2012. Web. 8 Jan. 2013. http://thomsonreuters.com/content/press_room/science/730914
- Tong, Susanna T. Y. And Wenli Chen. "Modeling the relationship between land use and surface water quality." *Journal of Environmental Management* 66.4 (2002): 377-393. *Web of Science*. Web. 7 Jan. 2013.

B: Timetable for Activities:

I plan to conduct research prior to the conference and present findings there in late October. After receiving feedback from colleagues, I plan to submit my manuscript to an open access peer-reviewed academic journal by the end of the year. Examples of journals I am considering are *Issues in Science and Technology Librarianship* or the *Journal of eScience Librarianship*.

C: Summary of Budget:

Early conference registration (estimated): \$450

Hotel (October 19 – 25, 2013): (estimated) \$100 per night, Total for 6 nights: \$600

Flight (estimated): \$500

Meals (estimated, as some meals are included in the conference): \$300

Estimated total: \$1850

D: Representation by UC-AFT

I am a member of a bargaining unity represented by UC-AFT.

E: Abstract of the paper or poster accepted for presentation

The conference will be held in October 2013 and there has not been a call for presentations yet, so this is not an accepted or a final version of my abstract:

Researchers in the field of Geographic Information Systems (GIS) use large data sets, many of which are combined with additional data sets to analyze and display information. Data relating to research is usually collected in the field and combined with layers of data from other sources. These data sets from other sources are often credited within the text of an academic paper, but are not reported in the list of references. Data citation is important to acknowledge and validate the source, improve the efficiency of the peer-review editing process, and create ease of access for other users. This study will be conducted to assess the rates of GIS data citation from the past five years in marine and aquatic sciences to illuminate trends in citation patterns and the current state of GIS data citation.

F: Name and sponsoring organization of the conference

International Association of Marine and Aquatic Sciences Libraries and Information Centers

G: Description of any funds that have been requested from other sources

I will use my 2013-2014 professional development funding of \$1,000 towards attendance at the conference.

Please contact me should you have any questions. I can be reached at 805-893-2689 or klabonte@library.ucsb.edu

Thank you for your time and consideration.

Sincerely,

Kristen LaBonte

Attachments: presentations and publications related to GIS & a separate letter of support from my direct supervisor, Lorna Lueck.

Kristen LaBonte: Presentations and Publications relating to GIS

LaBonte, Kristen and Rachel Cartwright. "GIS Services in the Marine Sciences." International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC) Conference. Anchorage, AK. August 2012. [Poster].

Cartwright, R., B. Gillespie, K. LaBonte, T. Mangold, A. Venema, K. Eden and M. Sullivan. "Between a rock and a hard place: habitat selection in female-calf humpback whale (*Megaptera novaeangliae*) pairs on the Hawaiian breeding grounds." *PLoS ONE*. May 2012. 7(5): e38004. Doi:10.1371/journal.pone.0038004

Cartwright, Rachel. *The Alaska Cruise Companion: A Naturalist's Guide to Alaska's Inside Passage*. 2012. Princess Cruises. [1 large fold-out map and 6 book maps].

Delaney, Patricia L. and Paul Rivera. "Becoming Tongan Again: Generalized Reciprocity Meets Tourism in Tonga." In: Lyon, Sarah and E. Christian Wells (Eds.) *Global Tourism: Cultural Heritage and Economic Encounters*. Society for Economic Anthropology Monographs, v. 30. 2012. Lanham, MD: AltaMira Press. [1 map].

Cartwright, Rachel, LaBonte, Kristen, Gillespie, Blake and Eden, Kevin. Current trends in habitat preference in humpback whale (*Megaptera novaeangliae*) female-calf pairs within Hawaiian waters. The Wildlife Society 18th Annual Conference, Waikoloa, HI. Nov. 8, 2011.

Perry, Jennifer E. and Colleen Delaney-Rivera. "Interactions and Interiors of the Coastal Chumash: Perspectives from Santa Cruz Island and the Oxnard Plain." *California Archaeology*. Spring 2011. 3(1): 103-125. [3 maps].

Delaney-Rivera, Colleen and Robert Wlodarski. "An Early Late Holocene Site on the Edge of the Oxnard Plain, Ventura County, Alta California." *California Archaeology*. December 2010. 2(2): 251-266. [2 maps].

LaBonte, Kristen, Rachel Cartwright and Blake Gillespie. "Habitat Analysis of Maui Humpback Breeding Grounds using GIS." ESRI International User Conference. San Diego, CA. July 2010. [Poster].

Cartwright, Rachel and Matthew Sullivan. "Associations with multiple male groups increase the energy expenditure of humpback whale (*Megaptera novaeangliae*) female and calf pairs on the breeding grounds." with M. Sullivan. *Behaviour*. November 2009. 146(11): 1573-1600. [1 map].

Cartwright, Rachel, Blake Gillespie, Kristen LaBonte and Heather Martin. "Fine scale trends in humpback whale habitat preference (*Megaptera novaeangliae*) on the Hawaiian breeding grounds." 18th Biennial Conference on the Biology of Marine Mammals. Society for Marine Mammology. Quebec, CA. October 2009. [Poster].

Cogan, Christopher and LaBonte, Kristen. [Invited] *Keynote Speech*. Ventura County GIS Day. Ventura County Government Center. Ventura, CA. Nov. 17, 2009.

LaBonte, Kristen. [Invited] *Librarian Applications of GIS*. "Getting the Gist of GIS: Geographic Information Systems and Related Technologies for the Curious Academic Librarian." Science and Engineering Academic Librarians, California Academic & Research Libraries Fall Program. Northridge, CA. Nov. 2, 2007.

January 11, 2013

TO: LAUC Research and Professional Development Committee

FR: Lorna Lueck, Head, Reference Services

RE: Memorandum of Support, Kristen LaBonte

Kristen LaBonte presented a poster on humpback whale habitat preference at the 2012 International Association of Marine and Aquatic Sciences Libraries and Information Centers (IAMSLIC) conference. I hope that LAUC will consider supporting her presentation on GIS data citation rates at the 2013 IAMSLIC conference. Kristen has become involved with IAMSLIC since she became the UCSB Library's Life Sciences Librarian in 2011 and her presentation last year was well received. Her continued participation in this conference will be beneficial to marine science librarians, to the UCSB Library, and to Kristen herself. I fully support Kristen's attendance at this conference as official professional development travel.

Sincerely,

A handwritten signature in cursive script that reads "Lorna Lueck".

Lorna Lueck