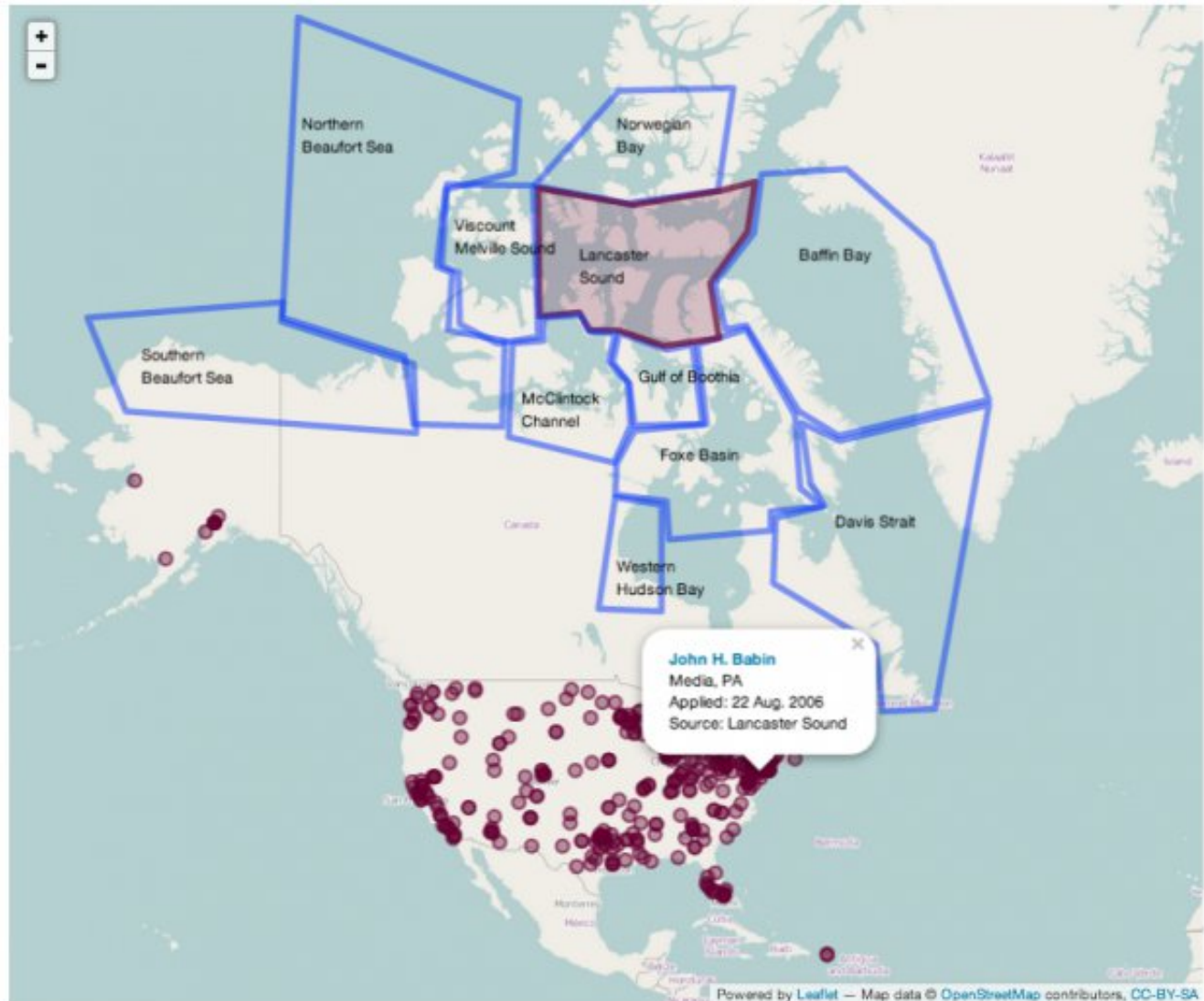


# Ant, Spider, Bee

Exploring the Digital Environmental Humanities



## New Media and New Publics: An Example with Polar Bears

*Etienne Benson* is a historian of science, technology, and environment in the [Department of History and Sociology of Science](#) at the University of Pennsylvania. In this guest post he describes his interactive web-based map plotting publicly available government data about who has applied for polar bear trophy import permits, and its implications.

I know very little about John H. Babin of Media, Pennsylvania — really not much more than the snippets and fragments that one can discover about most people in developed countries in the course of a few minutes on the web. One [database of political contributions](#) indicates, perhaps accurately and perhaps not, that he has donated to the campaigns of both Democratic and Republican candidates over the past ten years, and that he has worked in the construction industry. Other websites offer phone numbers, addresses, and background checks, some for free and some for a fee.

It is difficult to know how accurate any of this information is. One thing I do know with some certainty, however, is that sometime before April 22, 2006, Mr. Babin shot and killed a polar bear in the Lancaster Sound region of the Canadian Arctic, most likely with the assistance of an Inuit guide. I know this because [it is in the public record](#), and it is in the public record because of the peculiar way that the U.S. Marine Mammal Protection Act was amended in 1994 to allow, for the first time in more than two decades, the skins and skulls of sport-hunted polar bears to be imported to the United States from Canada.

Between 1997 and 2008, Mr. Babin's name and the names of more than 900 other polar bear hunters appeared in the U.S. *Federal Register*. They did so because the 1994 amendment to the Act placed permits for sport-hunters in the same regulatory category as permits for scientists and zoos, which meant that the applications were, nominally at least, subject to the same expert review and public comment process that was legally required for other permitted activities. The last of these applications was submitted in 2008, when *Ursus maritimus* was listed as “threatened” under the Endangered Species Act and imports were once again banned.

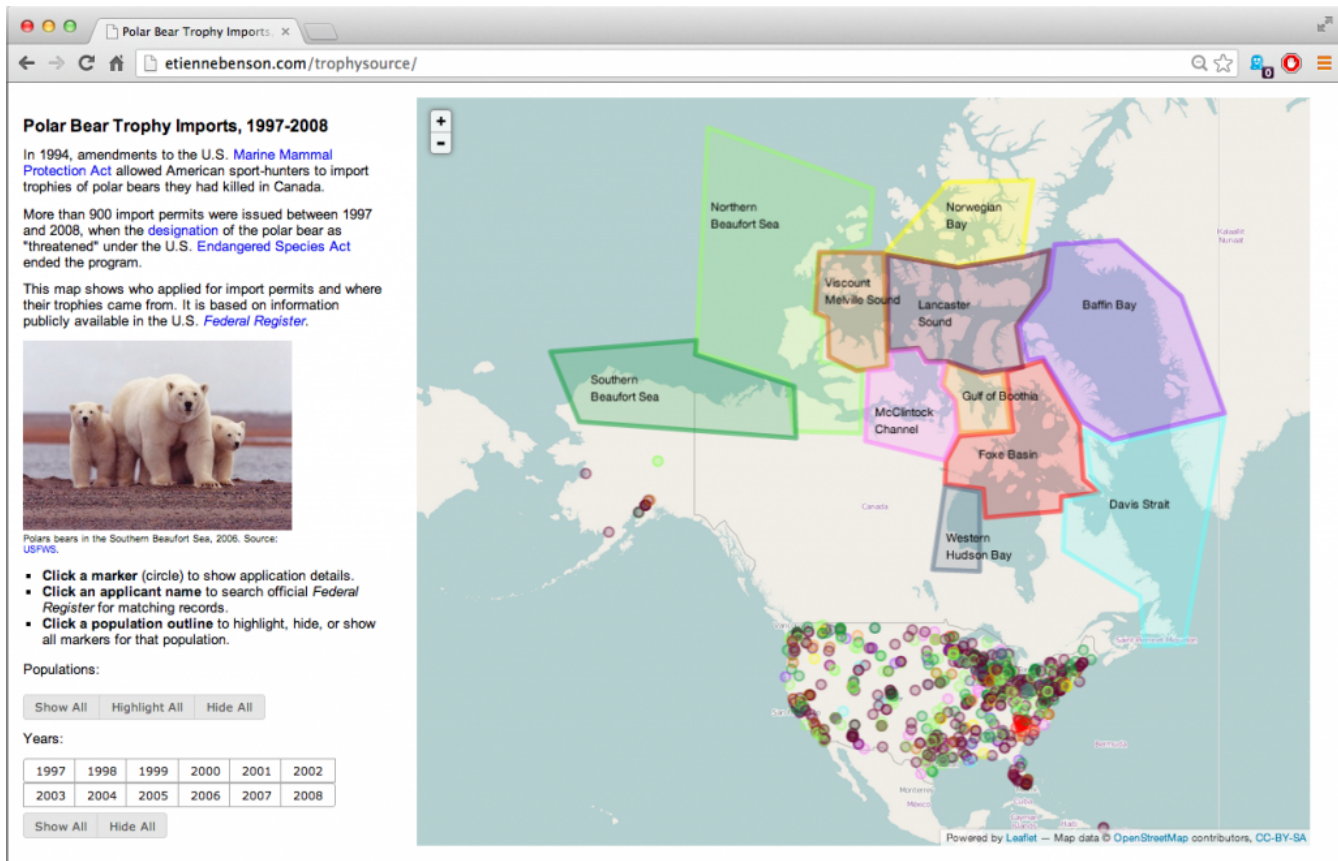
In practice the review process for individual polar bear trophy imports was less rigorous and in most cases much less public than for those for scientific research and public display. There is, moreover, a big difference between “public” and “accessible.” Until recently even the electronic version of the *Federal Register*, which in hardcopy reaches into the tens of thousands of pages of small print each year, was difficult to search and therefore, in practice, accessible only to the devoted few. Under such conditions the notices that Mr. Babin and his fellow polar bear hunters had submitted permit applications were, even if technically public, effectively invisible.

That has begun to change with the advent of new online tools for accessing regulatory documents. Since 2010 a revamped web interface to the digital version of the *Federal Register*, launched under the name [Federal Register 2.0](#), has made it easy not only to search for regulatory notices according to a variety of criteria but also to automatically query the database via an Application Programming Interface (API). At the moment, the earliest records accessible in this manner date to 1994, when the *Federal Register* was first published electronically, but older records may eventually be digitized and included. In the meantime the *Federal Register* web interface and others like it have simultaneously opened up new technical possibilities and begun to change the visibility — indeed, the very public-ness — of regulatory matters.

One might state this point even more generally: as the media of publication shift, [so does the very meaning of “public.”](#) This observation is not limited to the Internet age; it applies just as well to the 1930s, when the distribution of the newly created *Federal Register* to depository libraries throughout the United States was a critical part of the implementation of the New Deal regulatory state. New laws and regulatory agencies made the *Federal Register* necessary; in turn, the *Federal Register*, issued daily and collated each year into increasingly massive volumes, helped make regulatory matters public. Public, that is, for those who had the access, the skills, and the will to read it.

But to get back to polar bears. The great white bears of the north are of interest not merely for their own sake but also because of the symbolic role they have come to play in discussions of global climate change. When the U.S. Fish and Wildlife Service decided [to list the species as “threatened” in 2008](#), it was the first time that it had done so primarily on the basis of climate change models — specifically, models that predicted large reductions in Arctic sea ice in the coming decades. Despite widely circulated images of drowning, starving polar bears, most populations are presently in reasonably good condition. It is only in the [“foreseeable future”](#) of the coming decades, as made real by climate and population models, that the continued existence of the species is in doubt.

As a result of the listing, projections of the future status of polar bear populations became the focus of a debate that has pitted environmentalists and animal rights activists against sport-hunters and the indigenous hunting guides who, according to Canadian law, [must be included in any polar bear hunt](#). For the moment, the debate over imports seems to have been settled as the result of the 2008 listing and a series of subsequent lawsuits that have been decided in favor of the ban. Nonetheless, it would not be surprising to see the issue of trophy imports re-emerge, either with regard to polar bears or one of the other species that can be legally imported. In any case, legal wrangling over the length to which the U.S. government should and will go to protect polar bears from the effects of climate change continues.



"Polar Bear Trophy Imports, 1997-2008" website by Etienne Benson at <http://www.etiennebenson.com/trophysource/>

Earlier this year I took advantage of the new interface to the *Federal Register* to create an [interactive web-based map](#) that makes it easy to see exactly who applied for polar bear trophy import permits, when they applied, where they lived when they submitted the application, and in which regions in Canada they had killed their polar bears. I conducted this experiment partly out of curiosity about the open government and government 2.0 movements, partly out of a desire to try my hand at coding a map-based web app, and partly for scholarly reasons: I thought that this information might help clarify whether voters in particular regions of the United States were more likely to support the import ban or oppose it.

Those not interested in the technical details can skip to the next paragraph. In the course of previous project, I had already extracted the underlying data for the map by writing a program in [Python](#) that used the [Federal Register API](#) to automatically download all notices that included the terms "polar bear" or "polar bears." The program then isolated applications for trophy import permits using [regular expressions](#). This resulted in a spreadsheet-like tabular list of personal names, towns, dates, permit numbers, and source populations. To create the interactive map, I used Javascript and the [Leaflet](#) mapping library with [OpenStreetMap](#) data. Finally I added some controls to make it possible to click directly on the map for more information about each applicant or to show or hide all of the applications for polar bears from a particular source population. I've posted the code for the mapping interface on GitHub under the name [TrophySource](#); the code to extract the underlying data can be found as part of the [Polar Bear Feed](#), which was [one of the first apps](#) to take advantage of the Federal Register API.

I had hoped that by mapping the data, and by particularly color-coding the applicants according to the source population to which the polar bear belonged, I would discover interesting patterns in space and time that were not visible in tabular format, let alone in the original data as presented in the *Federal Register*. In fact, no clear patterns emerged. I suspect that one would find them if one dug deeper, but it would probably require aggregating data from other sources or collecting new data oneself. In any case the lack of clear geographic patterns is itself a finding of interest, suggesting that polar bear hunters are scattered broadly across the United States and do not make decisions about where to hunt based on geographical proximity. Support for polar bear hunting, this data suggest, is spread thin but wide.

Although its scholarly significance may be slight, I hope that TrophySource can serve as an example of the uses to which newly available regulatory information might be put. Such data are available for many other regulatory matters, including matters that are subject to intense, ongoing debate. I expect that such data will prove to be useful for historians and social scientists as well as for those who hope to directly influence policy, whether they are sport-hunters or animal rights activists or other special interest groups. Whatever its other effects may be, regulation produces vast amounts of documentation. These texts are clearly biased and limited in many ways, but they can nonetheless be tremendously informative and remain, as of yet, still underutilized by scholars.

One last comment about Mr. Babin, whose digital traces I have taken advantage of for two more or less arbitrary reasons: first, because TrophySource revealed his application to be the one that was geographically closest, at the time of its publication, to my current place of residence; and second, because the name of his place of residence, Media, seemed particularly appropriate to my theme. Earlier this year an American journalist [received death threats and national attention](#) after creating a similar map using the publicly available names and addresses of more than 33,000 holders of gun permits in two New York counties. I have not yet reached any firm conclusions about where the border between the technically possible and the ethically acceptable in such matters lies, but I recognize that there are serious discussions to be had about how new media and open government initiatives can radically change the meaning of “public” and “private,” even if the underlying laws and regulations remain unchanged. Transparency is a value that the drafters of the original Marine Mammal Protection Act of 1972 and other environmental legislation of the era held very dear, but it is neither a panacea nor free from its own ethical quandaries.



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## About Ant, Spider, Bee

Ant, Spider, Bee is the joint account for editorial content.

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