

For the past ten years, I have researched and worked with conservation/environmental non-governmental organizations (NGOs) and grassroots groups on the use of geospatial technologies for social change (Sieber 2006, 2007). In terms of data, this advocacy varies by type (e.g., watersheds, urban forests, environmental toxins) and data collection (e.g., conducting their own geospatial inventories, accessing digital data from a regional government, sharing geospatial data and code via a listserv with a global community). Conservationists were the first advocacy NGOs to use GIS, which offered a direct extension from their use of maps and computer programs such as MS Excel. Early adoption was still challenged by resource intensity of the technology but GIS offered a good fit for their needs and existing capacities.

The Geoweb is intriguing because of its widespread availability on the Internet, its platform-independence, and its opportunities for integrating user generated content. It represents an “architecture of participation,” a system that encourages user contribution by its design (O’Reilly 2004). So it would seem ideal for advocacy and preservation of the environment. Despite its attraction, several issues slow that adoption.

**Validity.** Geospatial information must be valid for the activity. The choice of the word, valid, is interesting because it begs the question: valid for what? In other words, what is the purpose behind the data? Validity does not necessarily equal accuracy. However, for conservationists both utility and accuracy are intertwined and knowledge of the data accuracy is crucially important. Whereas the wholesale harvesting of georeferenced data afforded by innovations on the Geoweb (e.g., geotagged photos of an invasive species) may be quite useful, it may be difficult to determine the underlying accuracy of that data. Of course, validity goes both ways—NGOs have frequently and quite rightly questioned the validity, specifically the accuracy, of official datasets.

Paradoxically, most information may very well be screen scraped from official sources. In certain instances, this derived information represent the only publicly available official source that is digital. The greatest validity then may come from these “involuntary” sources.

How does one determine the validity, the underlying purpose, of information when neither the information nor the platform may be under one’s control? The notable case is of Google Earth complying with the French courts to remove Greenpeace France’s annotations identifying geolocations of genetically modified crops. There also have been instances of selective reductions in resolution of certain sites. Lack of control is not new; one always has had to navigate the hidden (or not so hidden) agendas embedded in secondary data sources. There have been few cases, though, in which the platform is so utterly controlled. [Note that one can make the same argument about scraping. One only has to consider the impact of anti-scraping software on the application for which the scraped data is crucial.] It is hard to conceive of a GIS vendor exerting that control or, more importantly, being able to enforce it. Ironically, a (relatively stand-alone) GIS platform maybe more egalitarian than the widespread platform simply because the applications and data cannot be policed.

Cases will emerge in which deliberate misinformation will flood the Geoweb. What prevents corporations—say, astroturf organizations—from “geospamming” to sway the user generated content or crowd out a message? Conflicts between coastal fishers and fish farmers may generate bouts of “geoflaming”, of hostile competitions of placemarks and info windows. How best does the advocate traverse those contentious conditions? More simply, how does one manage the sheer volume of VGI?

Data validity would be enhanced with metadata. However, updating the information or providing the metadata tends to be cumbersome and less glamorous than the initial release of a product.

OpenStreetMaps founders are quite transparent about the messy condition of their metadata. One’s application may very well depend on this questionable source. Instead of advancing a semantic web, in some instances innovations may lead to ontological chaos.

**Volunteered?** I would take slight issue with the title volunteered information because it presumes information that is (beneficially) offered up to someone. In the short term at least, the beneficiaries of

volunteered information are corporate interests instead of citizen science or citizen interests. Geotaggers may not be offering their Flickr photos to the world but instead to their circle of friends. Participatory GIS, as a descriptor, has posed the same problem. Participation, by definition, suggests that one participates in some, likely official, process. However, what if the actions and advocacy occur outside the political process or in opposition to the status quo (such as with OpenStreetMaps)? Conservationists have largely rejected the term PPGIS (“we don’t participate; we do science”). That is why I would argue for the seemingly benign but socially more potent term, “user generated” content.

And I would like to argue that the ‘I’ in VGI needs expanding. It should not merely refer to the data but also the underlying technology and the code that is shared (e.g., sea level rise maps of light blue line - <http://liline.org/node/134>; GCensus). Indeed Geoweb services constitute a kind of counter modeling if activists choose to employ, for example, mashups. The remote method calls can embed an intelligence in the information that transcends standard definitions of metadata. I am not arguing against the importance of metadata but rather that, through code and not metadata, neogeographers have established semantic interoperability on parts of Web 2.0 (although the caveat above regarding new products, remains).

**The motivation to act.** A significant worry is that the act of viewing may equate with activism. “I’ve participated in the solution because I have looked at an info window.” The Darfur Project is the most noted example of the Geoweb for social change. A more local example is the voice against mountain top removal (<http://ilovemountains.org/>). These contain powerful visual images. It is unclear, though, how one moves from a visualization environment of a digital earth to an action environment (political weblogs are at the forefront of addressing this issue). Arguably maps contain the most power and may propel one to action when one has a tangible connection to the area being visualized. Elliot Schrage, public affairs chief of Google (2007) agrees and asserts that the more locally relevant the information that Google has, the more Google connects to the public.

At the most recent Where 2.0 conference in San Jose, I engaged in a spirited debate about the various legal and technical obstacles to obtaining secondary data over the Web. A frequently encountered attitude was “if the data’s not accessible then we will just recreate it.” The impression holds that thousands of individuals can be marshaled to collect data, a la OpenStreetMaps or the Mumbai Free Map (or Wikipedia). But it is difficult to envision a citizen replacement for the types of data needed by conservationists (e.g., US hydrography). I would encourage a dialog on the motivation of some neogeographers to diminish data’s value if it is not easily accessible or user generated or scraped off a user site. Keen (2007) attributes this attitude to a dismissal of the scientific expert and the promotion of experience as substitute. Conservationists may distrust politics and political influence on information but many view themselves as citizen scientists who also have great respect for expertise.

Lastly, why would conservation nonprofits be motivated to use VGI? With data of questionable origin and a platform that is still largely visualization as opposed to analytic, the answers are mixed (cf. Friends of Urban Forest-- <http://www.fuf.net>; 30 Proof’s collaboration with Wild Sanctuary, <http://www.wildsanctuary.com/>). MapQuest’s research has shown that the majority of users do not desire the bells and whistles or the ability to broadcast to the larger ‘unknown’ public. The tendency amongst many of us is to focus on the technology push. The challenge is determine what people want and will use. I look forward to discussing these and other issues with other members of the workshop.

## References

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