



MAPPING BY WEBLOGS

AS THE WEB OPENS TO NEW POSSIBILITIES, MIKEL MARON EXPLAINS SOME NEW PERSPECTIVES MAP HACKERS AND SYNDICATION BRING TO THE FOREFRONT

A new approach to cartography is to adapt the Web to mapping and geoinformation. The Web is a system that empowers millions of people to contribute and create knowledge with very low barriers to entry. The publishing tools include abilities for sophisticated expression in structured data and accessible application programming interfaces (API). This in turn has led to a bottom-up emergence of the Semantic Web vision, creating a rich environment for developers and hackers to reassemble disparate knowledge in new powerful ways.

To some extent, "traditional" GIS has aimed to facilitate collaboration and open publishing in a geo context without a cartographic outlet. But many of those systems often graft clumsy interfaces onto old systems, which need high levels of expertise and are costly. Alternative methods utilise the existing Web infrastructure and start with the simplest possible routes to mapping.

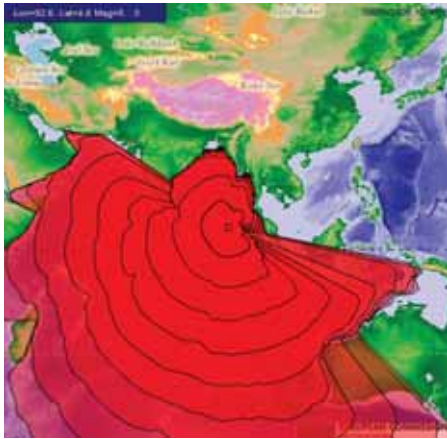
Weblogs have lowered the participation threshold in knowledge sharing and discussion. This flexible technology is based in informal, personal online journal type expression. Neither the technical requirements, nor style expectations, are high; authenticity, immediacy and new perspectives are the key. Blogger.com and TypePad.com are two popular examples of weblog service providers. However, their real impact from a web infrastructure standpoint comes from the by-product publication of Rich Site Summary (RSS).

RSS is an Extensible Markup Language (XML) file format for syndicating news headlines and weblog postings. RSS feeds can be subscribed to in desktop or web based RSS readers, so that updates are received without visiting lots of websites each morning. It's a very straightforward format, basically a list of article titles, descriptions and URLs. After a few years of fermenting among experimenters and early adopters, the technology is mainstream and widespread. An entire ecosystem of tools

has blossomed around the format. These include content aggregators, search engines, notification systems, and code libraries to incorporate in other projects. As a result, RSS has become the default transport mechanism for structured, machine readable data on the web, repurposed for shopping lists, weather conditions, calendars, and many more.

So when I began experimenting with and developing for web based mapping, RSS seemed to be the natural format. My first geo-project, 'World as a Blog', is a real time geographic display of new weblog postings, worldwide, layered on the widespread GeoURL.org method of tagging web pages with geographic metadata. The early Web was touted as removing geographical boundaries, while GeoURL and the new breed of location applications it inspired gave fresh relevance and utility to locale. The popularity of this type of visualization led me to develop 'worldKit', so that anyone with the inclination could easily publish maps on the web. The core component is a Flash movie that handled all the details; users need only provide an RSS file to map. To extend RSS for locations, the "geo" XML/RDF vocabulary is utilized. With this simple vocabulary, each RSS item can be assigned a latitude/longitude position. Geocoded RSS is simple enough to write by hand, and with the extension capabilities of many web-logging and CMS tools, plug-ins soon appeared for many popular and niche platforms. Through RSS, making basic maps became as easy as writing a weblog.

It soon became clear that there was more to cartography than pushing pins on the world. Most needed were sources of high quality base map images on which to layer annotations, and geo-coders to translate known human style addresses into coordinates. The difficulty here is a situation known to many in cartography. Data about our own planet is sometimes locked behind exorbitant fees and restrictive licens-



ing, by both commercial and government entities, hampering the ability of individuals, small organizations, and communities to participate in and utilize geographic knowledge.

For once, the graces of the US government were welcome, as their policy of freely publishing federal data meant that satellite and aerial photos, topographic and street maps, and location geo-coders were actually available. Geo-referenced USGS images were retrieved from TerraServer, the US Census Tigerline Server provided US street maps, and worldwide satellite data from the Landsat 7 mission were all made available for download through the worldKit MapProxy. Geocoder.us provides a machine readable interface to the Tiger data set for address geo-coding, while the worldKit geo-coder provides a similar interface to the GNS database (a decommissioned US military database of 4 million worldwide place names)

and mapufacture.com tied all these pieces together in one web based service, requiring no downloads, installation, or technical skills.

With the package of a visualizer, plugins for geo-coded RSS authoring, and sources for base maps and location lookups, worldKit users became empowered to participate in the creation of the geospatial web. At the same time, capabilities continued to grow with facilities to plot lines and polygons in RSS, WMS client capabilities, and temporal navigation. The effectiveness of mapping with RSS began to spread. The USGS endorsed geo-coded RSS by publishing earthquake alerts in the format, as did the European Commission JRC with their Tsunami modelling tool. Yahoo! recently announced their mapping API based on geocoded RSS, effectively mainstreaming the format. The OGC has become interested as well, sensing the need for a simple and powerful tool to "satisfy 90% of people's needs" and an effort to bridge and reconcile heavy-duty GML with RSS.

Google Maps has really pushed web mapping into the limelight. Its useable interface and style had hackers tearing into its source code to repurpose the maps, pushing Google to release a proper API to the service. However, by not specifying a common format for map annotations in the API, Google missed a real chance to benefit the wider geospatial web. At present, most GMap hacks are lone silos of geoinformation, the annotation layers only accessible by visual inspection of the site and not available for remixing in other applications.

Caption: worldKit generating an animation of the 2004 Tsunami in Southern Asia via JRC

Geocoded RSS enables the opportunity for the next stages of Web cartography: aggregation and search. Leveraging the RSS architecture, geoinformation from across the globe may soon be as immediately useable as layers from shapefile sitting on your desktop.

For more information:

World as a Blog - <http://brainoff.com/geoblog/>

worldKit - <http://brainoff.com/worldkit/>

XML/RDF vocabulary -

<http://www.w3.org/2003/01/geo/>

European Commission JRC Tsunami

modelling tool - <http://tsunami.jrc.it/model/>

Yahoo! Map API -

<http://developer.yahoo.net/maps/>

OGC GeoRSS Process - <http://georss.org/>



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