The Dual Role of the GeoWeb for Informed Response to Environmental Issues

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Defining the Geospatial Web

The concept of the Geospatial Web (GeoWeb) has not been clearly defined nor a singular definition agreed upon. It commonly refers to a *mashup* or combination of a base map layer (i.e., Google Maps™) and an web layer that enables users to contribute geographically linked (geotagged) content in such forms as text, pictures, videos, data etc. Further definitions allow the database created through the GeoWeb be commonly shared, enabling utilization of the same content by different GeoWeb tools, varying in the presentation or features. This capacity of the GeoWeb would be similar to Google™ search, presented as a visual geospatial platform for data self-organization, discovery and use by other software tools or services.

We prefer to cast a wider definition, proposing that the GeoWeb be web pages that combine any content that are manually or automatically tagged with geographic reference(s). Thus database interoperability or data organization/search capability is not required for this definition, though often at least rudimentarily implemented. GeoWeb *tools* define the way in which the data is displayed and manipulated, reflecting the varied and dynamic user needs and content.

Dual Role of the GeoWeb

Use of GeoWeb tools enable the concentration of local climate change information through contributions by citizens on a *common* Internet-based platform(s) and linked databases. This includes new or past knowledge of environmental change through the context of local citizens in the various forms of content, and can include observations, experience and/or opinions. In effect, citizens act as "sensors" in environmental issues, providing their content as Volunteered Geographic Information (VGI).

Similarly, the GeoWeb can offer a means for governments to accumulate environmental knowledge for better informed response in relevant planning, programming or policy. Such knowledge can be derived from the collective contributions on the GeoWeb from citizens or laypersons, from experts/specialists, or a combination of both. This dual role may allow both citizens and government to gain from efficient and interactive resource and knowledge pooling.

Potential of GeoWeb Use in Climate Change Response: Relevant Highlights of Dual Role from a Study in City of Toronto, Ontario, Canada

Context

- Interview study of the Live Green Toronto's Sustainability Map GeoWeb tool. The Live Green Toronto animator program aims to engage the public through an integrated offline and online "green" living strategy, connecting people and organizations with resources and sharing local knowledge about climate change response strategies. The GeoWeb tool deployment is *expected February 2010.*
- Key participants and program staff within the Live Green Toronto program were interviewed regarding the *potential* of the GeoWeb for Toronto's public engagement strategy in climate change issues. The GeoWeb tool was demonstrated to interviewees; they experienced using the tool.

Relevant Findings

- The tool is envisioned to serve a dual purpose of a central repository of resources for relevant information, communications and networking tools, while providing the public and interested parties with a forum for knowledge and opinion sharing regarding green projects and climate change issues
- The tool requires both accumulation and access to relevant data quickly and efficiently, consolidating input and offering organization benefits. This includes contributions from both citizens and government (e.g., maps, environment data, projects and events)
- Common and frequently asked information can be centralized and efficiently accessed, reducing unneeded resource use by participants including government
- The tool needs to provide a two-way communication conduit between citizen and government
- Feedback and contributions from users will be used to enhance further programming, engagement, and response strategies
- Use, formally and informally, in agenda setting and planning, will be needed
- "Opinions and ideas would likely be noticed by those in the policy sphere, and [they] should be keeping an eye on it at the very least. These indirect connections [have potential] to make a real impact."
- The mapping component is considered to be "a perfect match" for environmental matters such as the Live Green Toronto program. "There would likely be many other such projects in which the functionality would be at the very least engaging to potential users"
- Legitimacy and momentum afforded by government support will likely enhance the probability of wider usage, aiding in the concentration of content.