

# Folksonomy & Landscape Regions

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**Abstract.** The novel development of web-based tools – commonly referred to as “Web 2.0” – and the growth of online GI communities had an immense effect on how people perceive geographical locations in their everyday life, therefore it can be used in toponym collecting. This paper describes potential benefits and problems related to tagging in landscape region research.

## 1 LANDSCAPE REGIONS AND THEIR NAMES

*Landscape region* is an area differentiated from adjacent regions by its typical characteristics of geography, relief, hydrography, climate, vegetation and man-made features (Marosi, 1980). Defining landscape regions is necessary in geography for land description, systematization, modeling and mapping. (Teleki, 1917; Prinz, 1936)

The main purpose of landscape region naming is orientation in the environment, to embrace newly explored lands, and to identify geographical features in verbal and written communication. Most of the native and artificial names reflect geographical characteristics and relations of features (Juhász, 1988).

*Unique identification* of a geographical place can be difficult because places usually have different name variants in publications and on maps of different authors. *Dialects* or different use of *geographic concepts* can be reasons for name variants in the same language, while name variants in different languages are due to overlapping name areas of different nations. For this reason, cartographers, ethnologists and linguists collect toponyms and establish multilingual gazetteers (e.g. [www.geonames.org](http://www.geonames.org)). The name collecting process is expensive and time-consuming.

Apart from toponyms, *boundaries* of landscape regions are in many cases undefined, diffuse and dynamic by nature, which renders an unambiguous representation on a map difficult. Nonetheless, in most cases the *local community* deals easily with the spatial contents of their used toponyms. Special thematic maps are required to display such boundaries of landscape

regions. But in general, typographical tools like advanced name positioning are used. This method is known as schematic landscape representation (Klinghammer, 1997).



Figure 1: The placement of toponyms indicates the extent of landscapes

## 2 FOLKSONOMY AND TAGGING

The term *folksonomy* emerged in 2004 and refers to a bottom-up categorical structure development. Folksonomy is user-generated and therefore inexpensive to implement. It provides a useful and low-cost alternative to more traditional, institutionally supported taxonomies or controlled vocabularies. Concerning geographic information, *tags* can be used as keywords assigned to map objects or landscape regions. They carry information about the items and enable keyword-based classification. Tagging is based on the attitude of people that they are ready to share their knowledge, and collaboration has mutual benefits. People submit information in fields in which they are experts or they are interested in, which can ensure that quality remains at an acceptable high standard. Certain problems arise concerning multiple appearances of synonyms and suffixes, but on the long run, as *tag clouds* are formed in the semantic web, *meaning* of tags become more important than their spelling.

## 3 TAGGING IN LANDSCAPE REGION RESEARCH

Online webmapping services like Google Maps and Yahoo Maps! have a significant effect on geographic literacy (Gartner, 2007). Vast online communities have grown around these sites where active users share their geographic knowledge by identifying and describing the places they find important and interesting. Important examples of community markup tools related to geospatial information are: Google MyMaps, Wikimapia, Sha-

peWiki, Tagzania, GeoURL, etc. All of these sites actively involve their virtual community members to continuously develop their knowledge base.



Figure 2: Lake Velence and its surroundings: Wikimapia allows for drawing areas and assigning multiple labels

Recently a number of services emerged which enable users to share their photos, videos and other media online (eg. Flickr, Panoramio, YouTube). Most of these shared documents have certain descriptive tags and keywords, but *geotagging* is becoming popular also. Geotagged data is usually associated with latitude and longitude coordinates, though it can additionally include altitude and place names.

Feature types (e.g. settlement, administrative region), feature name types (e.g. official name, exonym), name variants, connections to administrative, or historical entities, hierarchical status, and more, can be tags for geographic information. Tagging could be used by cartographers, linguists and other experts to develop national and international gazetteers. Compared to traditional name usage research it provides the following advantages:

3. Allows for collecting numerous name variants
4. Analysis of tag clouds can provide the foundation for further operations:
  - fuzzy set operation of landscape regions
  - incidence of tags refers to conventionality and popularity
  - investigation of synonyms, homonyms and co-occurrence matrix
  - comparison of diverse geographic concepts
  - investigation of tendency of real name forms used by people
  - construction and refinement of hierarchy and geontology

5. Folksonomic geotagging similarly to community-wide name surveys reflect natural (native) naming of landscapes

### 3.1 Emerging Problems with Folksonomy in GIScience

The activities of non-professional authors raise general problems for experts of geography:

- people living in communities tend to demand hierarchy, e.g. from local to global landscapes
- artificial landscape naming inevitably uses rigid taxonomy
- the absence of strict hierarchy hinders the orientation in a tag cloud
- synonyms and homonyms cause faults in identification
- non-professional readers could worsen quality

The best available result depends on the base map quality and invested effort, because the definition of landscape regions happens on sight (Google Maps does not provide metadata for maps)



Figure 3: Geocoded Flickr photo tags mapped on Yahoo! <http://tagmaps.research.yahoo.com/worldexplorer.php>

## 4 CONCLUSIONS

We have tried to focus on a problem statement for potential research. Web-based folksonomy provides good opportunity to harvest information about names for landscape regions and name variants of diverse concepts. The effectiveness of that depends on the user motivation. For professional applications tag clouds must be processed to extract relevant information and quality management procedures have to be implemented.

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