Extended Abstract (7/15/2008)

Relational marketing: linking trust and place meanings to protect cultural landscapes

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A framework to articulate and protect (or restore) relationships between the public and public lands was described by Watson and Borrie (2003) as public purpose marketing. These authors, and others, applied this framework to a study of how public attitudes toward recreation fee policies relate to relationships with public lands and public lands managers. They also demonstrated the effectiveness of segmenting the public based on relationships with National Forest lands (Borrie and others 2002). These authors also built upon this framework to propose a system for monitoring relationships between the public and wilderness lands (Watson and Borrie 2006). Within this framework, the public is considered primary stakeholders (both customers and partners) of public lands services.

Most marketing approaches focus on transactions with customers, which have a distinct beginning, short duration, and sharp ending. A relational exchange, however, acknowledges effects of previous contacts and knowledge, is longer in duration, and reflects an ongoing process. Watson and Borrie (2006) suggest that when providing services for the public through the development of programs on public lands (or any other collective lands), the more appropriate view of "customer service" would probably be the fostering of a relationship between the members of the public and the places that have been established on their behalf as public lands, particularly any type of protected areas.

Not everyone desires the same relationship with a producer of goods or services. An organization may need to pursue both transactional and relational marketing simultaneously, and customers may exist on a continuum of transactional to collaborative exchanges. In the public sector, however, members of the public are, by definition, involved in a collaborative relationship with the stewardship agency taking responsibility for implementation of public policy. While we are suggesting that a collaborative relationship exists for all people, we do acknowledge that the level of commitment or (or intensity of meanings) for the services provided by an agency and the level of trust instilled among members of the public may vary substantially. Relational marketing suggests that a focus on understanding variation in trust, commitment, and meanings attached to protected areas will be paramount in developing and implementing public policy to meet the mandates or purpose of these public lands (Watson and Borrie 2006).

A Cultural Landscape with Contrasting Meanings

On the Flathead Indian Reservation in Montana, the Mission Mountains Tribal Wilderness (92,000 acres) is bordered on the east, across the Mission Mountain divide, by Forest Service Wilderness (Flathead National Forest, Mission Mountains Wilderness – 74,000 acres) and on the west, between the Wilderness and the Reservation community, about 22,000 acres of

land in a unique protected status. It's not wilderness, but when originally established it was listed as not available for commercial timber harvest, either. The "Buffer Zone," originally designated to protect the Wilderness from human activities extends along the wilderness boundary and contains some homes, a few roads, and therefore, remains a working landscape within the community. Both the Wilderness and the Buffer Zone are broadly considered protected cultural, as well as natural, landscapes, thus major decisions about management of these areas are subject to review by the Tribal Cultural Committee, the Tribal Council and the Tribal member public. To successfully improve forest health within that Buffer Zone and increase opportunities to restore fire in the Wilderness, the Tribal Forestry Department and the public need to work together to find solutions to increasingly threatening fuel buildups.

Participatory approaches to understanding values at risk

One of the key problems in developing a better understanding of different responses to landscape level management actions, such as fuel treatments, is being able to confidently record and accurately spatially delineate the meanings stakeholders ascribe to the landscape. Being able to actually map and discuss the different meanings people place on the landscape has a number of advantages over more general place-based techniques. These include the ability to link meanings to specific locations or landscape units, and perform advanced analyses on responses by looking at spatial relationships based on proximity, adjacency, containment, connectivity and visibility. "Hot spot" areas have been delineated in past studies through categorizing information such as number of people indicating a particular spot is important, the type of importance people gave to that indicated spot and the specificity of the area indicated. Of particular need for improvement in this type of methodology was the need to increase the number of people engaging in this map-based activity, retain good scale representation, but also capture the intensity of the meanings and identify perceived threats to those meanings. The cumbersome task of a researcher meeting with every person, or even in focus group discussions, and leading them through a pencil and paper exercise while trying to either record or note things they say about these important areas was difficult. Mailback attempts at this complex task have largely provided unacceptable response rates, particularly within native sub-populations. An individual's relationship with a local landscape is essentially fuzzy and cannot be easily captured using traditional map-based features or entities such as points, lines and polygons. So, while scale has sometimes been estimated, it has not been captured efficiently, and the intensity of meanings attached to places has not previously been captured at all.

In order to address the issues described above, the current project adopts more fuzzy methods of capturing the landscape areas that people value or for which they hold a particular meaning. This is based around the application of a Java-based mapping applet called "Tagger" that uses a spray-can tool, similar to that found in most desk top image processing/manipulation packages, to allow users to define areas over a base map in a manner that allows them to easily vary the density, extent and shape of the sprayed area. This is used to capture information about fuzzy spatial concepts such as vagueness and approximation in defining spatial pattern and extent, as well as (un)certainty and importance in the relative values and meanings attached to these. The system can be used both online over the internet and offline on a stand-alone laptop facilitated by a member of the research team.

A combination of qualitative, culturally sensitive research and a web-based mapping exercise employing fuzzy mapping methods was used to develop understanding of the meanings Tribal members attach to the Buffer Zone, articulate trust issues, and describe perceived threats

to these meanings. An important element in developing this understanding was describing contrasting meanings associated with both the Wilderness and the Buffer Zone by both Tribal and Non-tribal residents. Results are guiding focus group discussions with forest managers and Tribal members about proposed fuel treatments. While public lands programs affect and are somewhat responsive to both Tribal and Non-tribal residents, only Tribal residents vote on representatives to the Tribal Council and on important community issues. To build trust among Tribal residents, fire planners must understand how proposed actions interact with values at risk assigned by the local community and describe a prioritization process that addresses publicly perceived threats.

The actual methods used here to capture spatially fuzzy regions and their ascribed attributes draw strongly on previous work on mapping place meanings and on participatory GIS. These methods are brought together in developing a fuzzy GIS-based tool for collecting qualitative, but spatially referenced, local knowledge and meanings from a range of key informants and local people. These are analyzed by creating composite maps of the fuzzy attribute-tagged maps generated by survey respondents and linking these to more in-depth interview transcripts from key informant interviews. The result of this phase of the project is a GIS dataset that provides a visual representation of the range, types, intensity and spatial distribution of the meanings associated with the Buffer Zone.

Data were collected in a way that generated five map layers of themed meanings. These were driven by the qualitative research findings, and collected to represent the meanings of the Buffer Zone for themed topics covering “protection of the wilderness,” “wildlife and water quality,” “recreation and scenic values,” “access and functional attachments,” and “personal and cultural” meanings. This chapter will build upon analysis that used 255 images developed by over 60 participants across the five themed layers. A broad appeal was issued to residents to participate in the web-based version of the information collection activity or have a research assistant bring a laptop version to the person encouraged broad participation in the community for 3 months. Input is averaged and images produced using classes based on natural groupings inherent in the data with break points identified by picking the class breaks that group similar responses and maximize the differences between classes (Jenks, 1967). For maximum insight, contrasts are made not only across layers of meanings, but also across Tribal and Non-tribal residents. There are several ways these maps can be used to fuel discussion with the public.

Implications for decision making

Complete analysis links these mapped meanings to the threats respondents perceive associated with each layer of meanings. These are the priority inputs (location, meaning, intensity of meanings, and threat) that in combination managers must integrate with resource management objectives to maintain public trust. Focus groups composed of Tribal members, facilitated by the Tribal Forestry Community Outreach Education Specialist, interact with Forestry Department staff who are proposing specific fuel treatments at specific places. Emphasis is on three questions in these focus groups: 1) further clarify the threat (or benefit) of “logging” on the various layers of meanings ascribed to specific places, 2) further clarify the threat (or benefit) of fire (wildfire? Prescribed fire? Exclusion of fire?) on layers of meanings, and 3) help with understanding of how Tribal members evaluate tradeoffs between these two threats to the meanings they attach to this landscape and how trust will be affected by decisions implemented. This, the final stage of this project, is focused on application of place meaning

knowledge to decision-making and an evaluation of whether public members believe better solutions result from participatory activities will be obtained.

Figure 1. Example analysis of data maps across 5 layers of meanings attached to the Mission Mountain Tribal Buffer Zone by Tribal and Non-tribal members (10 category Jenks method).

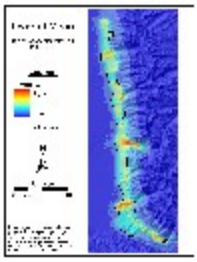

Figure 2. Example analysis of a single layer of meaning (Recreation) attached to the Mission Mountain Tribal Buffer Zone by Tribal and Non-tribal members (10 category Jenks method, categories derived from data point overall analysis and applied to this single data layer).