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Identifying Ecosystem Services of Rivers and Streams Through Content Analysis

While much ecosystem services research focuses on analysis such as mapping and/or valuation, fewer research efforts are directed toward in-depth understanding of the specific ecological quantities people value. Ecosystem service monitoring and analysis efforts and communications could be enhanced by such knowledge. For example, small changes in the way ecosystems are described can influence relevancy to the public and improve the reliability of valuation estimates. Research on river and stream attributes considered important by the public is particularly important for nonmarket ecosystem services, since the characteristics that are valued cannot be readily observed as with goods and services bought and sold in traditional markets.

We conducted content analysis of existing publications to document the breadth and frequency with which various measureable attributes of rivers and streams appear in news outlets. Media publications consumed by a given audience are one way to gather insight on perspectives held by that audience. Due to the potential impacts of material written for different audiences, different sources of river and stream news are analyzed: mainstream news sources (the New York Times and the Wall Street Journal), and a blog hosted by National Geographic.

Content analysis allows for a team-based approach through use of standardized codes. These codes are systematically linked to passages that reference a concept (e.g. "Water Supply Scarcity" or "Recreational Contact Health Risk") allowing researchers to compile and analyze all examples of a specific code. The initial codebook was based on prior focus group and interview research with the general public in two separate locations of the US on the same research topic. Coding of content during a pilot phase allowed for refinement of standardized codes and assessment of inter-coder reliability. During the operational phase of the project, two independent coders evaluated a sample of articles from each source.

Results document not only prevalent attributes of rivers and streams, but also motivations, including recreation, public health, or preservation of resources for future generations. Comparisons between sources can be made, as well as co-occurrence of river and stream attributes with specific motivations. The project demonstrates a quantitative approach to analyzing preexisting qualitative data.