Evaluation of Management Actions within the Kinnickinnic Watershed and the River

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Assessment of Management Actions on the Kinnickinnic River and Within the Watershed

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Abstract

The Kinnickinnic River, designated as a Class I trout stream and "Outstanding Resource Water" by the Wisconsin Legislature, is now facing several challenges related to land use, population growth, and environmental degradation. In response, a variety of scientific research projects have been initiated in the watershed in an effort to understand these challenges and promote sustainability. However, the projects spanning multiple fields of inquiry and completed by different stakeholder organizations has made it difficult to coordinate research interests, and inform the community about the magnitude of work being completed. Until now, there has not been research on what the public thinks about the opportunities and challenges facing the watershed. The purpose of this study was to evaluate the management actions within the Kinnickinnic watershed utilizing qualitative analysis. A household survey was sent to 1,200 residents in the watershed. The survey included topics on the watershed value, perceived conflict or threats, possible opportunities for the communities, and future management actions such as removal of two dams. Dam removal was expected to be a major concern; however, the data showed that invasive species and agricultural runoff were of greater concern to the general public and they valued protected areas and recreational opportunities highly.

Introduction

Currently there are two dams at Junction Falls and Powell Falls on the Kinnickinnic River creating two small reservoirs, Lake George and Lake Louise. In the early 1900 these dams were built to create hydro-electrical power. Since then the percent of hydro-power produced by the dams have dropped to approximately 1.5% of the city's needs. The two facilities currently operate under a Minor Water Power Project license issued by the Federal Energy Regulatory Commission which expires on August 31, 2018. In 2013, the City of River Falls started the process to re-licensing the facilities for another 30 years[1]. This has sparked interest by some local stakeholders to propose the removal of the dams, citing the dams' limited power benefits and enhanced recreational opportunities on a free-flowing river. Since 2014, a variety of scientific research projects have been initiated at in the watershed in an effort to understand these challenges and promote sustainability. However, the projects spanning multiple disciplines and conducted by different stakeholder organizations has made it difficult to coordinate research interests and inform the community about the magnitude of work being accomplished. While at the town meetings the main discussion has been on dam removal, these discussions have mostly been led by stakeholders interested in the removal of the dams. Prior to this study, little was known about the values, perceptions or management concerns by the community as a whole. To address this gap, a household survey was sent to 1,200 residents in the watershed. The survey included topics on the watershed value, perceived conflict or threats to the river, possible opportunities to the communities, and future management actions, including the potential removal of the hydroelectric dams.

Objectives

The purpose of this study was to evaluate the management actions within the Kinnickinnic watershed utilizing qualitative analysis.

Materials and Methods

Household Survey

- Random sample of 1,200 households in the Kinnickinnic watershed
- Which included 13 towns and villages within Pierce and St. Croix counties
- 420 respondents – 30% response rate

Questions

1. How important are each of the following aspects of the Kinnickinnic to you?
   - 14 value aspects listed
2. Please indicate how concerned you are about these threats to the Kinnickinnic River.
   - 12 risk perceptions listed
3. Indicate your level of agreement with each of the following potential future management actions to address the values and threats discussed in the above questions.
   - 9 management actions listed

The above questions were based on a 7-point Likert scale.
Six demographic questions were also asked. Their responses were then compared to the counties demographics to make sure the respondents were a representative sample of the area.

Results

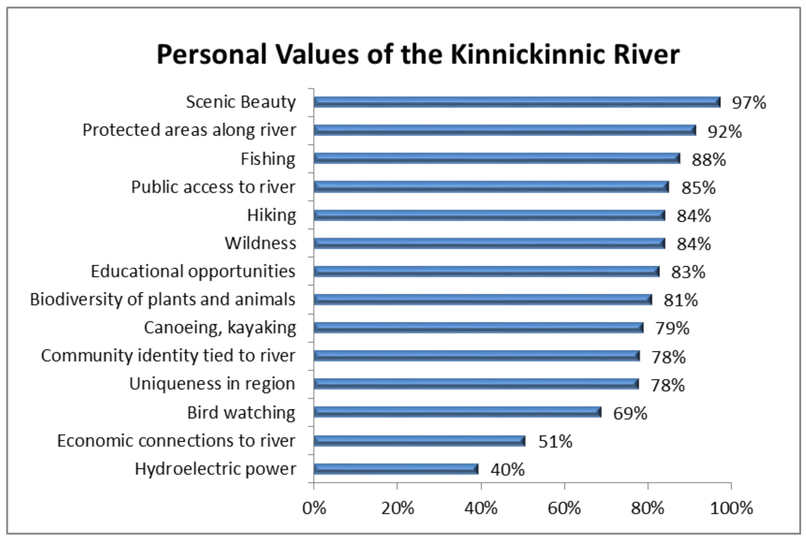

Figure 1 shows that respondents valued the river's scenic beauty, protected areas, recreation, wilderness, and educational opportunities most highly. They valued economic impacts of the river and hydroelectric power the least.

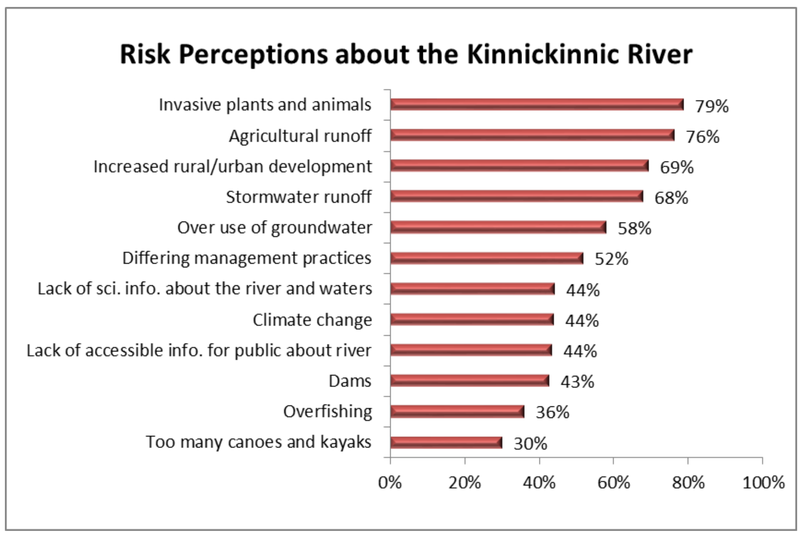

Figure 2 shows that the public assessed the highest risks to be associated with invasive species and agricultural run-off. Increased rural and urban development and stormwater run-off were also seen as significant risk factors. The lowest risk were overuse of recreation and dams.

Results

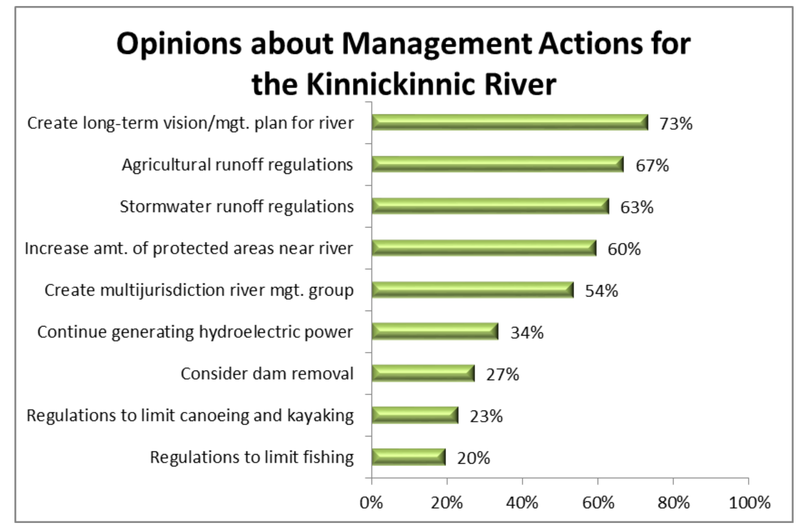

Figure 3 shows that management actions such as creating a long-term plan for the river, which would include regulations of agricultural and stormwater runoff, and increasing the amount of protected areas using a multi-jurisdictional management group were preferred management actions. There was significantly less support for dam removal and regulations on recreation.

Discussion

While many of the stakeholders will likely continue to advocate for removing the dams, this survey showed that dam removal is not the most important management action to the general public.

Future research in this area will include:
Explore findings by river segment (upper, mid, lower).

Explore the relationships between demographics and responses on value, risk and management practices.

Calculate the Euclidean distance between participant home address and the river and explore the correlation relationship between distance from the river and respondents' perceptions of values, risk and management practices

Literature Cited

1. Hatch, B. "River Falls Hydroelectric Project." Internet site: http://www.rfcity.org/DocumentCenter/View/750 (Accesses January 2016).