The Application of Community Based Participatory Environmental Research (CBPR) on the Study of the Water Quality of a Major Regional Water Source

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Background

The Allegheny River Stewardship Project (ARSP) is a large community based participatory environmental research project, focusing primarily on communities along the lower Allegheny River. This study of fish, sediment and surface water is based on the premise that bio-magnification of contaminants occurs up the food chain from river bottom deposits and contaminated water to preditory fish. Some of the processes involved include the concentration of organic pollutants in lipids and the binding of heavy metals to fish proteins. The sediment at the river floor acts as a sink and a source of contaminant floor acts as a sink and a source of contaminant contaminants. The sediment at the river floor acts as a sink and a source of contaminant contaminants. The sediment at the river floor acts as a sink and a source of contaminant contaminants.

Methods

A variety of systematic techniques were used to achieve the objectives of the study. Figure 1 illustrates the interaction between a number of diverse groups and organizations. Information from the systems approach was used extensively throughout the community to assess community needs and concerns related to environmental issues. Window walks and participant observation were employed in order to better understand the issues and key locations for each site selected for sampling. Focus groups and one on one interviews were conducted to learn about the state of knowledge of the community members. The interviews were conducted in a variety of public spaces such as community centers, schools, and various groups as well as radio, television and print media. The internet was an important tool for sharing information with the community as well as providing an expeditious means for community input gathered from pollution narratives.

Results

• One result of employing this variety of CBPR techniques was to create one of the largest community based environmental studies in Southwestern Pennsylvania.

• Figure 2 illustrate the four major sites which were selected for water, sediment, and fish sampling based on community input gathered from pollution narratives.

• Fifty to approximately one hundred community volunteers attended the four community fishing days at each of the collection sites.

• Registered community volunteers permitted ongoing dialogue with researchers resulting in a feedback loop affecting study variables and study parameters.

• The amount of community information gathered resulted in important knowledge about how to communicate results as well as inform future initiatives.

• The size, types and number of fish collected are more highly indicative of fish generally caught by people living and recreating on this river.

Conclusions

There are numerous benefits and challenges to this type of environmental study. The major benefit from this study is the high degree of collaboration and knowledge gained from the community allowing for targeted communication of results as well as ongoing information sharing.

This project has also created a wonderful chance of ongoing information and support allowing for numerous opportunities for future research, with this study as a foundation.

Across the Allegheny Watershed, trust has been built with many community components.

Public Health Implications

Knowledge and pathways have been created which can be beneficial to communicating results from this study which may be important for health behavior changes, as well as environmental policy adjustments.

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Figure 1. ARSP Groups and Organizations involved

Figure 2. Map of 4 Sampling Sites

Figure 3. ARSP researchers

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