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Evaluating Watershed Health Risks through Integrated Water Quality Analyses, Community Capacity Assessments, and Outreach Appraisals

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Abstract Text:

An interdisciplinary investigation of water quality and community capacity for conservation will be conducted to evaluate and communicate watershed and community health risks. Eighteen urban-rural subwatersheds within the Lower Kaskaskia River Watershed in southern Illinois were chosen to be intensively monitored for a variety of water quality parameters, including nitrate, ammonium, pH, total suspended solids, fecal coliform, and E. coli. Eight communities were selected within the subwatersheds for social data collection including interviews, focus groups, and surveys with community gatekeepers, stakeholders, and residents. Primary social indicators of interest are human capital, institutional support, social capacity, and community empowerment. Key research questions include: (1) What is the capacity of urban and rural communities in the subwatersheds to engage in watershed planning and adopt comprehensive conservation strategies, (2) How do land use and conservation practices affect water quality, and (3) Which outreach messages and techniques are most effective in communicating risks, inspiring conservation, and empowering stakeholders? To address these questions, social and water quality data will be integrated to evaluate stream impairment and community capacity (i.e., watershed health risk) in each subwatershed community. Based on the evaluations, three innovative outreach techniques—interactive workshops, traveling exhibits, and an integrated website—will be developed for the subwatershed communities that communicate risks, identify impairment sources, and establish community capacity-building strategies. These techniques will be appraised for effectiveness. From problem identification to outreach implementation, a participatory approach will be taken that informs and empowers diverse stakeholders with varying interests. Recommendations for integrating effective watershed conservation, community capacity building, and outreach strategies will be provided for each subwatershed community in a management plan. The study will enable policy makers to equitably prioritize and target watersheds for conservation programs and identify key steps in mobilizing community support.

Impact Statement:

An interdisciplinary investigation of water quality and community capacity for conservation will be conducted to evaluate and communicate watershed and community health risks. Eighteen urban-rural subwatersheds within the Lower Kaskaskia River Watershed in southern Illinois were chosen to be intensively monitored for a variety of water quality parameters, including nitrate, ammonium, pH, total suspended solids, fecal coliform, and E. coli. Eight communities were selected within the subwatersheds for social data collection including interviews, focus groups, and surveys with community gatekeepers, stakeholders, and residents. Primary social indicators of interest are human capital, institutional support, social capacity, and community empowerment. Key research questions include: (1) What is the capacity of urban and rural communities in the subwatersheds to engage in watershed planning and adopt comprehensive conservation strategies, (2) How do land use and conservation practices affect water quality, and (3) Which outreach messages and techniques are most effective in communicating risks, inspiring conservation, and empowering stakeholders? To address these questions, social and water

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