
Name of Organization: Ohio State University School of Public Health

Type of Organization: College or University

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Project Title: Evaluation of High Risk Fish Consumers in Urban Cleveland

Project Category: Contaminated Sediments

Rank by Organization (if applicable): 0

Total Funding Requested (\$): 89,330 **Project Duration:** 2 Years

Abstract:

This project will focus on identifying and evaluating the characteristics of subpopulations who are potentially at high risk from exposure to bioaccumulative contaminants of concern through the consumption of sport-caught fish from the Cuyahoga River system. Although there are fish consumption advisories in effect for Lake Erie, the Cuyahoga River and its major tributaries, the extent to which these advisories are recognized or heeded by local fishermen is largely unknown. The extent to which nearby populations catch and consume fish from contaminated stretches of the Cuyahoga and its major tributaries is also ill-defined.

The existing USGS sediment database and the Ohio EPA's sediment and fish tissue databases will be used to identify specific stream segments along the Cuyahoga River and its major tributaries that are known or suspected to be contaminated and where fishing may also occur. Stretches of accessible Lake Erie shoreline in Cleveland will also be included in the geographic areas of interest. U.S. Census data will be used to estimate the socio-economic status and demographics of neighborhoods in proximity to the stream segments of interest. The extent of fishing along the Cuyahoga and the characteristics of the fish consuming populations will be evaluated using a two-pronged approach. People who are observed to be fishing in the areas of interest will be approached and interviewed using the format of a creel survey. In order to characterize potential exposures to pregnant women and children, we propose to interview clients in community health clinics or other appropriate venues to estimate fish consumption by non-fishermen and general knowledge/understanding of the current advisory information.

Geographic Areas Affected by the Project

States:

- | | | |
|------------------------------------|-------------------------------------|--------------|
| <input type="checkbox"/> Illinois | <input type="checkbox"/> | New York |
| <input type="checkbox"/> Indiana | <input type="checkbox"/> | Pennsylvania |
| <input type="checkbox"/> Michigan | <input type="checkbox"/> | Wisconsin |
| <input type="checkbox"/> Minnesota | <input checked="" type="checkbox"/> | Ohio |

Lakes:

- | | | |
|-----------------------------------|-------------------------------------|-----------|
| <input type="checkbox"/> Superior | <input checked="" type="checkbox"/> | Erie |
| <input type="checkbox"/> Huron | <input type="checkbox"/> | Ontario |
| <input type="checkbox"/> Michigan | <input type="checkbox"/> | All Lakes |

Geographic Initiatives:

- | | | | | |
|--|---|-------------------------------------|--------------------------------------|---|
| <input type="checkbox"/> Greater Chicago | <input checked="" type="checkbox"/> NE Ohio | <input type="checkbox"/> NW Indiana | <input type="checkbox"/> SE Michigan | <input type="checkbox"/> Lake St. Clair |
|--|---|-------------------------------------|--------------------------------------|---|

Primary Affected Area of Concern: Cuyahoga River, OH

Other Affected Areas of Concern:

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area: Not Applicable

Other Affected Biodiversity Investment Areas:

Problem Statement:

The Cuyahoga River and near-shore Lake Erie in the Cleveland area are currently under a fish consumption advisory due to mercury and PCB contamination in several species of edible fish. Although the Cuyahoga and its major tributaries are not easily accessible in downtown Cleveland, it is possible that fishing occurs upstream in areas with known or suspected sediment contamination. Subsistence fishing may occur among members of cultural, ethnic or lower socio-economic subgroups in the Cleveland/Akron metropolitan area. Localized high-levels of exposure to contaminants through the consumption of fish from the Cuyahoga River system may result in a higher level of risk to specific minority groups. Specifically, the extent to which women of child-bearing age and children are potentially exposed to contaminants in locally-caught fish has not been evaluated to our knowledge. If these potential exposures are confirmed, then fish consumption advisory information and other public health interventions can be structured that are appropriate for specific high-risk groups.

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Proposed Work Outcome:

The major objectives and expected outcomes of this project are summarized below.

1. Objective: Determine the extent to which fishing occurs along stretches of the Cuyahoga River, its major tributaries, and the Lake Erie shoreline in Cleveland that coincide with areas of known sediment contamination. The USGS sediment database, and Ohio EPA sediment and fish tissue databases will be used, along with direct observation of fishing to make this determination.
2. Objective: Use U.S. Census data to estimate the demographics and socio-economic characteristics of neighborhoods and communities in proximity to contaminated, but fishable reaches of the Cuyahoga River system. Given the fact that the Cuyahoga is largely inaccessible in downtown Cleveland, and sediments in the navigation channel are regularly removed by dredging, the areas of interest will be primarily upstream and may extend as far south as Akron.
3. Objective: Characterize the population observed to be fishing in the areas of interest. This will entail approaching fishermen, inquiring about their catch (creel survey), fish preparation and consumption patterns, and knowledge/understanding of the current fish consumption advisory information.
4. Objective: Evaluate the potential exposure through consumption of locally-caught fish among non-fishermen in neighborhoods in proximity to the stream segments of interest. This aspect of the study will attempt to estimate the extent to which women of child-bearing age and children actually consume local fish. To our knowledge, fish consumption habits and knowledge of advisory information and potential risks/benefits have not been ascertained among these presumed "sensitive sub-populations" in the Cleveland/Akron area.

Anticipated Outcomes/Uses of the Project Results:

1. Future public health interventions and fish consumption advisory information can be developed for specific high-risk populations (if such populations are demonstrated to exist).
2. Demographic and ethnic/cultural characteristics of potential high-risk groups in the Cleveland/Akron area may transferable to similar groups in other urban centers along the Great Lakes (e.g. Detroit).
3. Specific stream segments may be prioritized for additional characterization and/or interventions based on a demonstration that consumption of fish is, or is not a completed pathway of exposure to contaminants originating in the sediments.

Project Milestones:	Dates:
Project Start	09/2000
Identify Potential Areas of Interest	12/2000
Develop and Test Questionnaire	01/2001
Data Collection/Interviews	06/2001
Data Evaluation	10/2001
Draft Report	03/2002
	/
Project End	05/2002

Project Addresses Environmental Justice

If So, Description of How:

The Cleveland/Akron area has a large ethnic population and a large number of people living below the poverty level. These people are largely underserved in all health care areas. They also have low education levels and are less likely than other groups to get advisory information from commonly used sources such as sporting goods stores, bait and tackle shops, newspapers, radio, and the internet. These groups are the least likely to be aware of advisory recommendations, often due to educational and language barriers. However, members of this group are likely to be at risk from frequent local fish consumption due to financial or cultural considerations. This study targets these groups because they are likely to be at risk from fish consumption and lack of advisory awareness and have few other advocates who can help to reduce that risk.

Project Addresses Education/Outreach

If So, Description of How:

The third phase of this study consists of developing an effective means of communicating fish consumption advisories to at-risk populations. This is to be done in a way that will allow these populations to understand the potential health risks associated with fish consumption, regardless of education or language. By working through the already existing infrastructure of community health clinics and churches, the messages of fish consumption risk can be spread to those populations that are most affected and are the least likely to hear the message from other sources.

Project Budget:

	Federal Share Requested (\$)	Applicant's Share (\$)
Personnel:	50,000	13,000
Fringe:	7,500	1,950
Travel:	3,000	500
Equipment:	0	0
Supplies:	1,000	500
Contracts:	0	0
Construction:	0	0
Other:	0	0
Total Direct Costs:	61,500	15,950
Indirect Costs:	27,830	7,107
Total:	89,330	23,057
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

Description of Collaboration/Community Based Support:

This project is intended to address questions and issues of interest to the Cuyahoga RAP, the Ohio Department of Health and the Ohio EPA. It is anticipated that the Ohio State University School of Public Health will collaborate with the previously named groups, and also with the US Geological Survey, the Cleveland and Akron Health Departments, and community health clinics and churches to implement this project.