

Unexpected Results of Fish Consumption Focus Groups with Anglers in Southwestern Pennsylvania: Anglers As Environmental Reporters and Interpreters

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A scenic landscape featuring a calm lake in the foreground, reflecting the surrounding environment. The middle ground is dominated by a forested hillside with trees in various shades of green and autumnal colors like orange and red. In the background, a dark, forested mountain rises against a bright blue sky with wispy white clouds. A prominent rocky peak with a few trees sits atop the hill on the right side of the image.

OUR CHALLENGE

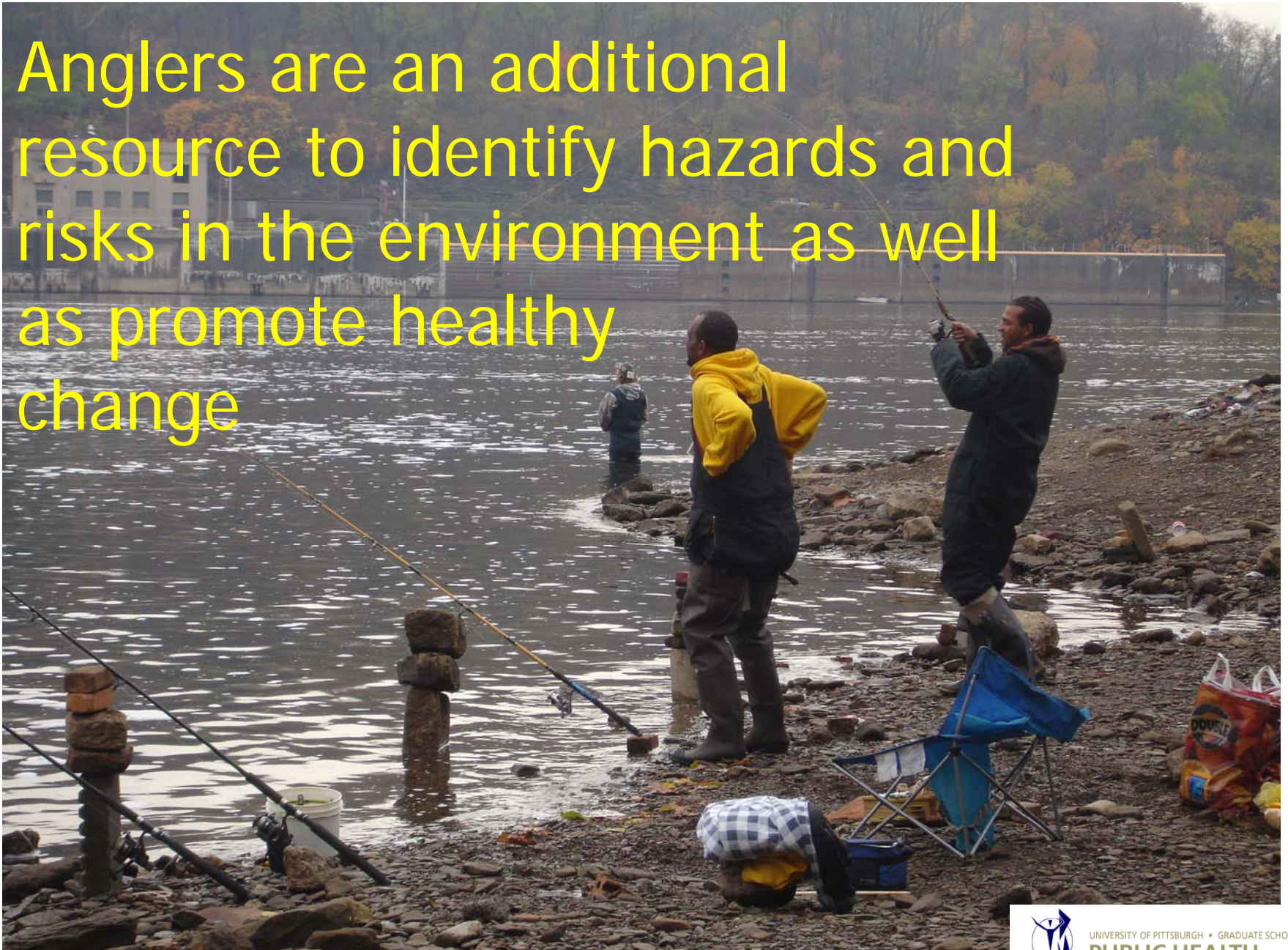
Identify, Educate and
Change the exposure to
toxins, hazards and
forces that threaten the
environment through a
community based
participatory approach



FISH ARE EXCELLENT
BIOMARKERS OF
EXPOSURE!!



Anglers are an additional resource to identify hazards and risks in the environment as well as promote healthy change



- There is large body of literature devoted to the hazards, risks and perceived risk of consumption of contaminated fish caught by sports anglers, and subsistence and semi-subsistence fishers.
- Risk of waterborne disease affecting anglers is understudied.



PITTSBURGH RIVERS FISH CONSUMPTION STUDY

Sept. 2005



The history of heavy industrial pollution as well as continuing contamination by sanitary sewer overflow of the rivers in the Pittsburgh area forms the background to this research.



PITTSBURGH RIVERS FISH CONSUMPTION STUDY

Sept. 2005

- Purpose
 - Determine the species and sizes taken, monthly quantities eaten, and preparation and cooking techniques used by local anglers.
 - Screen for heavy metals including arsenic and lead in white bass and channel catfish fillets.
 - Preliminarily assess, *in vitro*, the ability of extracts of the fat from the fish plus fish fillet to competitively bind vs. estradiol with alpha estrogen receptors and stimulate the proliferation of estrogen sensitive breast cancer cell lines.
 - Determine effective risk communication strategies.



PITTSBURGH RIVERS FISH CONSUMPTION STUDY

Sept. 2005

- A Community Based Participatory Research project (CBPR)
- Partners:
 - Clean Water Action of Western Pennsylvania (an environmental action group)
 - Venture Outdoors (a local non-profit that promotes guided outdoor activities including fishing excursions)
 - University of Pittsburgh Cancer Institute- Center for Environmental Oncology (UPCI-CEO)
 - The University of Pittsburgh Graduate School of Public Health (GSPH) (EOH and BCHS)
 - The University of Pittsburgh School of Medicine
 - The Center for Healthy Environments and Communities (CHEC)
 - The Heinz Endowment



PITTSBURGH RIVERS FISH CONSUMPTION STUDY

Sept. 2005

- 1st Phase – Qualitative Study
 - Participant Observation
 - Key Informant Identification
 - Recruitment of Focus Group Participants
 - Focus Group Sessions
 - Data Analysis



Development of Qualitative Phase

- Establishment of partnerships.
- Partners identify key informants.
- Key informant identify key sports fishing and subsistence fishing locations.
- Participant observation at these locations to identify possible focus group participants.
- Recruitment of focus groups from fishing locations and markets.
- Inform participants of the purpose of focus groups.
- Inform participants of requirements for participation in focus groups.



FOCUS GROUP #1

- River Anglers
 - 10 participants
 - 9 males and 1 female
 - 3 African American and 6 White
 - Ages ranged from 23-59, 5 group members were over 50 years of age and 3 were in their 40's .
 - 1 teacher, 2 sales, 1 law enforcement, 1 retired, 1 employed no stated job title.
 - Subsistence “meat fishers” and recreational fishers.



FOCUS GROUP #2

- Lake and Stream Anglers
 - 10 participants
 - 9 males, 3 females
 - 9 Caucasian, 1 African American, 1 Hispanic, 1 more than one race
 - Age range 30 to 75, with mean age = 45
 - 4 retired, 2 mechanical/engineering, 1 self employed, 1 administrator, 1 employed no job title given.



FOCUS GROUP #3

- Non Anglers - Market Fish Consumers
 - 7 Participants
 - 3 males, 4 females
 - 4 African American, 3 Caucasian
 - Age range 36 to 52, mean age = 45
 - 2 design/arts, 1 self employed, 1 unemployed, 1 service, 1 management/administration.
 - Participants recruited from the community and from one on one survey interviews at a local fish market.



FOCUS GROUPS

- Semi Structured
- Incentive Provided - \$50 gift card
- Participants informed they are the experts
- Encouraged to talk about beliefs, attitudes and knowledge of
 - Fishing methods
 - The amount and type of fish caught
 - Whether or not the fish is taken home and eaten
 - Cooking methods
 - Reasons participants have about fishing rivers, lakes or streams and eating fish from the market.



FOCUS GROUPS (con't)

- Prior to each group the facilitators developed a list of questions intended to facilitate discussion rather than to direct the group
 - Water Quality
 - Health
 - Fishing
 - Fish Cleaning
 - Cooking and Eating
 - Ecological Questions.
- Group members were encouraged to follow strings of thought related to any water, fishing, contamination, health, fish consumption and fish preparation issue of interest.



FOCUS GROUPS (con't)

- › Each focus group was taped and later transcribed and analyzed for important domains of discussion.
- › Within each domain the categories of responses were noted and standardized and the number of times it was mentioned by a group member was tallied.
 - This method allowed for relative power of each domain and category of domain talked about in the group to be determined.



RESULTS

- Anglers fish for the challenge, especially the challenge of bigger fish
- Anglers can be different types:
 - Avid Anglers – well aware of the waters, regulations, conditions
 - Recreational (no interest in keeping the fish and eating it)
 - Subsistence or “meat fishers” (main interest is catching fish for consumption). Some of this is cultural and some is driven by market prices of fish
 - Tournament anglers
- The location is important for anglers for different reasons:
 - Convenience
 - Quantity and type of fish
 - Ease of the catch
 - Some lake and stream anglers fish these because they are safer and quieter



Results (con't)

- Participants reported that the general water quality in the main stem rivers has improved dramatically.
- **All 9 participants rated raw sewerage overflows in wet weather as the most important threat to water quality, fishing and to their health.**
 - **All members stated releases are not subtle, that as soon as it begins to rain even a small amount in some locations that the river conditions change very quickly, fish disappear, and large sewerage belches occur.**
- Group members were very vocal regarding concern for their own health after contact with contaminated water or fish.
 - Unanimous in a call for adequate sanitation and hygiene facilities on the river at convenient and popular river access points.
 - Anglers more frequently reported gastrointestinal disorders connected with fishing and water contact.



Results (con't)

- This group is also concerned about the levels of contaminants in the fish themselves – especially the fish that they eat.
 - Half of the participants would rather eat the fish they catch than eat from the market.
 - Some participants have changed the amount of fish eaten because of information about contaminants.
 - Others believe cooking is the way to avoid contaminants in the fish being consumed.
 - Most participants do not want to eat fish from the rivers.
 - Some anglers believe they can tell the level of contamination in the fish by looking at it.
- Market fish buyers mostly buy fish when convenient or according to price.
 - Level of contaminants in fish is not a main concern.



Results (con't)

- Good deal of variety in the way fish is cooked.
 - Market fish buyers are less likely to be concerned about contaminants in fish than anglers.
- Anglers obtain information about fish contamination from various sources.
 - Caucasians most frequently from television, fish commission and printed material.
 - African Americans by word of mouth from trusted companions or family members.



DISCUSSION

- The main points uncovered by these focus groups were many.
- Most significant is that frequently recreational fishers are the first line of defense when it comes to:
 - monitoring water quality
 - environmental impacts on waterways
 - what is living in waterways



DISCUSSION (con't)

- Tournament and frequent recreational fishers have a strong interest in informing authorities and policy makers about the environmental conditions affecting waterways and what lives there.
 - Many avid fishers would be willing to partner with EPA and Fish and Game commissions to keep waterways safe and clean.
 - Recreational and Tournament fishers want to be educated on fish and waterway contamination and safety.
- Partnering with these groups will enhance the resources of overburdened government advisory and regulatory agencies.



DISCUSSION (con't)

- Angling as health promotion offers ample opportunity for
 - social networking
 - enhanced family support
 - outdoor activity
 - physical exercise
 - relaxation and stress relief.

