



Interactions Between Vegetation Patterns, Social Preferences, and Stream Biotic Conditions:

***An integrated approach to watershed planning
in the Puget Sound lowlands***

**Vivek Shandas, PhD Candidate
University of Washington**

Presentation Outline

- Challenges to urban watershed management
- Research Question
 - Conceptual framework
 - Methods
 - Preliminary results
- Conclusion – Management implications

Challenges to Urban Watershed Management



- Ecological research in urban areas

- Human preferences for vegetation along urban streams

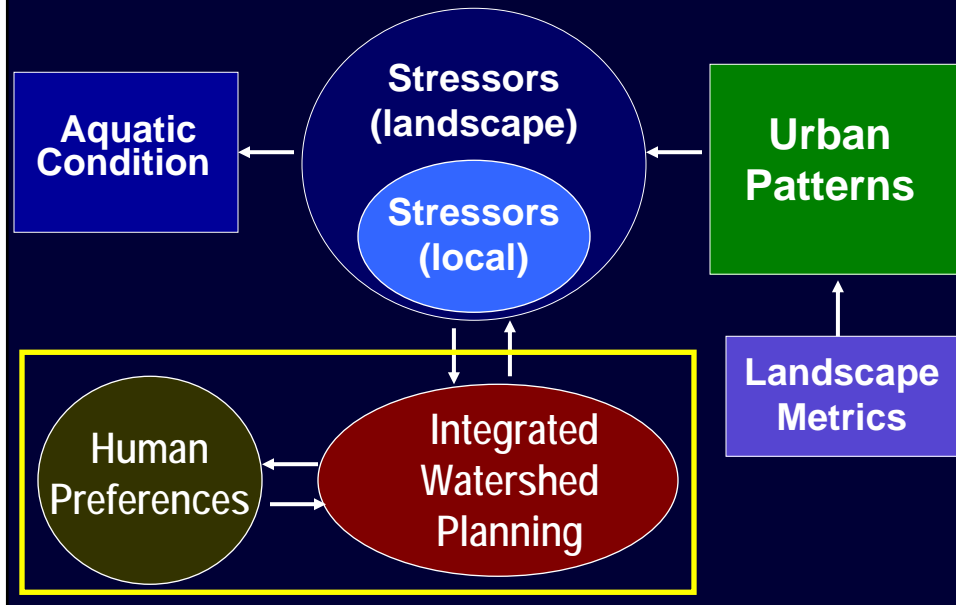


Francis, T., K. Whittaker, V. Shandas, A. Mills, J. Graybill (2004)

Over-arching Research Question

How can **urban ecological information** in conjunction with **social preferences** of watershed residents aid planners in developing appropriate riparian management strategies?

Conceptual Framework



Preference Theory

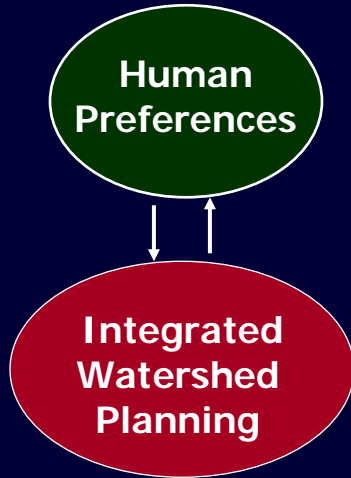
Biological, information-processing, transactional, and behavioral theories

Physical landscape features affect human experiences

Preference for specific landscape features strongly influence the physical outcome of local landscapes

Preference influences support for conservation in privately held parcels

Research Question



Can the information gleaned from preference studies of streamside residents better inform the prospects of applying buffering strategies to urban watershed?

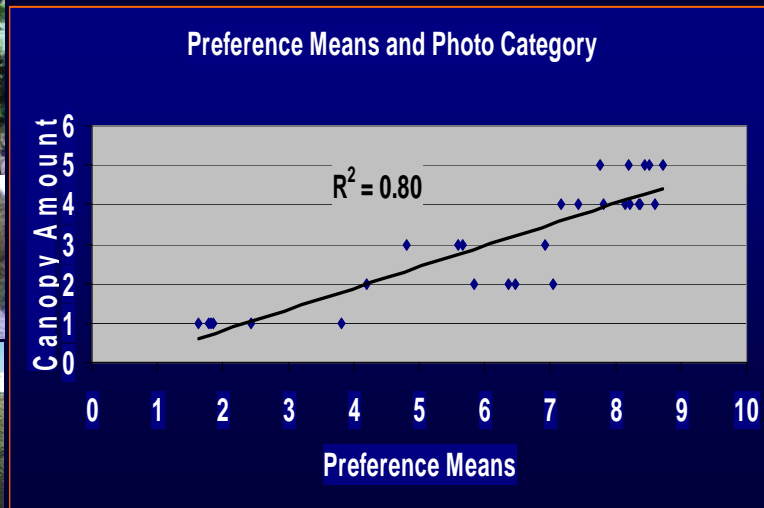
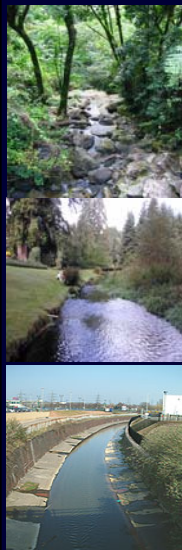
Methods – Survey Instrument

- Stated preference questionnaire
- Mailed to streamside residents
- Combination of open-ended, short answer, Likert scales

General Characteristics of Survey Respondents

Total Number of Respondents	212
Years in Location	19.55
Years in Washington State	43.76
Age Category	50 - 59

Stream Canopy Preference Results



Survey Responses

“...I have many trees but not on the stream bank because it would block my view of the stream....”

-- Swamp Creek Resident

“...I am surprised and **disappointed that neighbors are legally allowed to effect the stream** by use of weed killers and fertilizers, and by washing vehicles in driveways...”

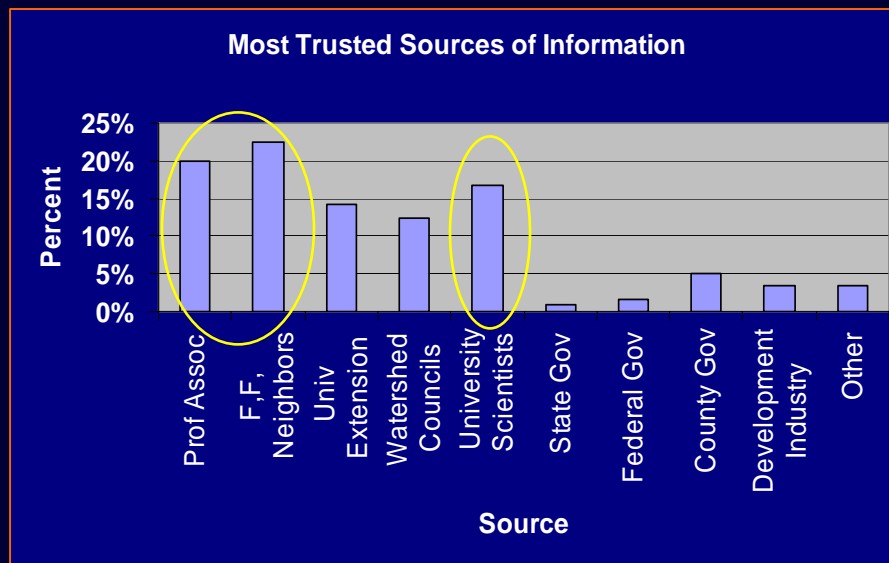
– Thronton Creek Resident

Survey Responses

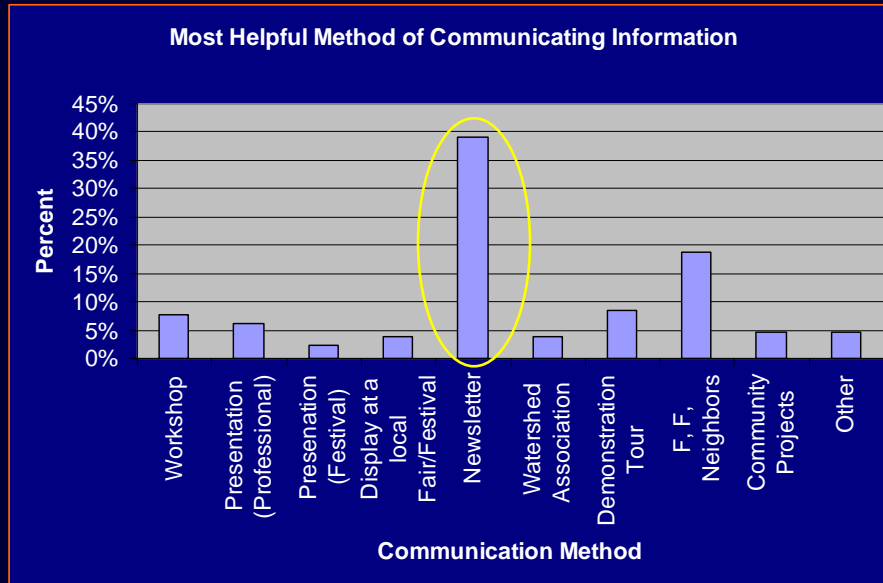
“...A few years ago we were cleaning things out of the creek (i.e. tires, garbage, etc.) and rearranging fallen trees so the salmon could come up; a government person ‘happened’ by and said **we would be fined** if we were ‘caught’.....Consequently, I haven’t appreciated or trusted government agencies...”

-- Little Bear Creek Resident

Trusted Information Preference Results



Helpful Information Preference Results

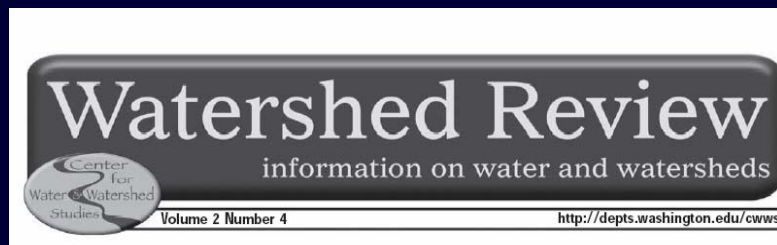


Summary of Results

- Streamside property owners are long time residents
- Strong preference for heavily vegetated scenes
- Permissible and non-permissible streamside activities
- Friends, family, neighbors, professional associations, and university scientists are highly trusted source of information
- Newsletters are the most helpful source of information

Management Implications

- Establish **long-term relationships** with streamside residents
- Manage for a **diverse** set of aesthetic **preferences**
- Foster **educational outreach** efforts – tailoring the strategy
- Bridge **university research** with **professional associations**



Acknowledgements

