

# Revering Rivers: Perceptions vs. Reality in an Amazonian Watershed

Gabriela Stocks ▪ gstocks@ufl.edu  
Department of Anthropology ▪ University of Florida

## Introduction

Tropical rivers in rural areas are likely to have good water quality. However, current trends indicate that increasing development pressures could have a deleterious effect on these water systems. Understanding local water quality concerns and local systems of resource use are critical to the creation of effective watershed management plans that target the most important issues in a particular area.

Perceptions of Amazonian river dwellers have centered on the idea that they are highly dependent upon aquatic resources for survival and that water quality is threatened principally by erosion and sedimentation due to deforestation. My research demonstrates that these perceptions do not reflect reality in every Amazonian watershed, particularly in watersheds where immigration plays a role in population growth.

The research presented in this poster was conducted from May-August, 2004 in two ethnically distinct communities located on the Upper Acre River in Pando, Bolivia.

## Research objectives

- To determine how the Bolivian communities of San Pedro de Bolpebra and San Miguel de Machineri in the Acre River basin utilize river resources.
- To identify local perceptions of water quality.

## Research site

### San Pedro de Bolpebra

- Population: 100+ people in 21 households
- History
  - Migrated from southern Bolivian highlands in 1992
  - Have communal title to land, but each family has own lot of 500 hectares
- Livelihood strategies:
  - Agriculture
  - Cattle (some families)
  - Street commerce

### San Miguel de Machineri

- Population: 22 people, 5 households
- History
  - Migrated from Rio Yacu, Brazil within last 20 years
  - Have communal title to land in the Yaminahua-Machineri indigenous territory, but each family plants/ harvests own fields
- Livelihood strategies:
  - Agriculture
  - Hunting & fishing
  - Manual labor in Brazil



http://www.fh.usda.gov/amazonecosystems/0201\_america\_0624.jpg

## Methods

### Household interviews

- Interviewed heads of each household in each community
- Semi-structured interviews, 1-4 hours long

### Food log

- In San Miguel, visited three families once per day for eight days. Female head of household was asked to report food consumed the previous day.

### Participant observation

- Provided information on topics not covered in the survey
- Allowed confirmation of information collected during the formal surveys



Household interviews: A family in San Miguel de Machineri



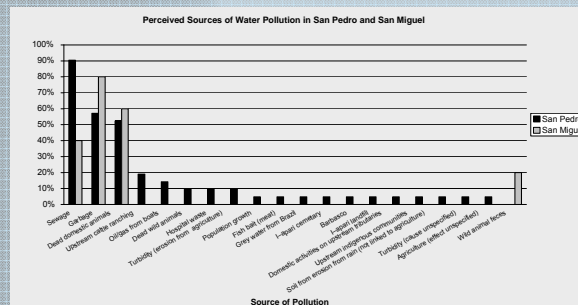
Fishing in San Miguel de Machineri

## Results

### Use of aquatic resources

		San Pedro (Colonist)	San Miguel (Indigenous)
FISHING	Percentage of households that fish	86%	100%
	Average frequency	13.7 times/year	151.3 times/year
	Average quantity of fish caught per time	2.4 kilos	2.2 kilos reported (1.25 kilos according to food log)
	Average quantity of fish consumed per year (including purchased)	41.5 kilos/year*	189.2 kilos/year**
	Other protein sources	Beef: 291.2 kilos/year Chicken: 79.2 kilos/year Pork: 48.4 kilos/year	Wild game = 7.3 kilos/week reported (4.4 kilos hunted, 1.2 kilos raised according to log)
	% of total protein consumption satisfied by fish	9%	15% (according to food log)
TRANSPORTATION		2/21 households own canoe (w/motor)****	1/5 households owns canoe (w/o motor)****
DOMESTIC USE	Drinking water	Spring (100%)	Streams (100%)
	Bathing	Primary location: River (81%) Secondary location: Springs	Streams (100%)
	Laundry	Primary location: River (67%) Secondary location: Springs	Streams (100%)

### Perceptions of water quality



## Conclusions

- Neither research community made as extensive use of river resources as might be expected of Amazonia river-dwellers, based on the results of previous studies.
- Water quality in the Acre River was perceived to be poor by most households.
- The most common water quality concerns were focused on pollution commonly associated with urban areas, rather than on impacts from rural agricultural and forestry practices.
- Our assumptions about the dependence of rural Amazonian communities upon river resources for survival and the types of water pollution of most concern in rural areas may need to be revisited.

## Significance

This research will aid the tri-national watershed management planning process currently occurring in the MAP (Madre de Dios (Peru), Acre (Brazil), Pando (Bolivia) region. It will inform policy-makers as to current uses of river resources and local concerns about water quality, thus informing the development of strategies for water protection.

On a larger scale, development pressures everywhere will force international watershed management into the spotlight. If done well, the MAP region watershed management plan could serve as an example to other international efforts.

## Acknowledgements

This research would not have been possible without the cooperation of the people of San Pedro de Bolpebra and San Miguel de Machineri, the Fundación Jose Manuel Pando, and Rolando Haches and Peter Cronkleton from the Center for International Forestry Research.

I would also like to thank Drs. Anthony Oliver-Smith, Marianne Schminck, and James Jawitz for their guidance.

This research was funded by an NSF-IGERT Working Forests in the Tropics Summer Research Grant.



The tri-national frontier. The photograph is taken from Peru; Brazil lies to the left, Bolivia to the right of the Acre River.



A family in their bean field in San Pedro de Bolpebra

## Works Cited

McClain, Michael E., Luis Miguel Aparicio, and Carlos A. Llerena. 2001. Water Use and Protection in Rural Communities of the Peruvian Amazon Basin. *Water International* 26: 400-410.