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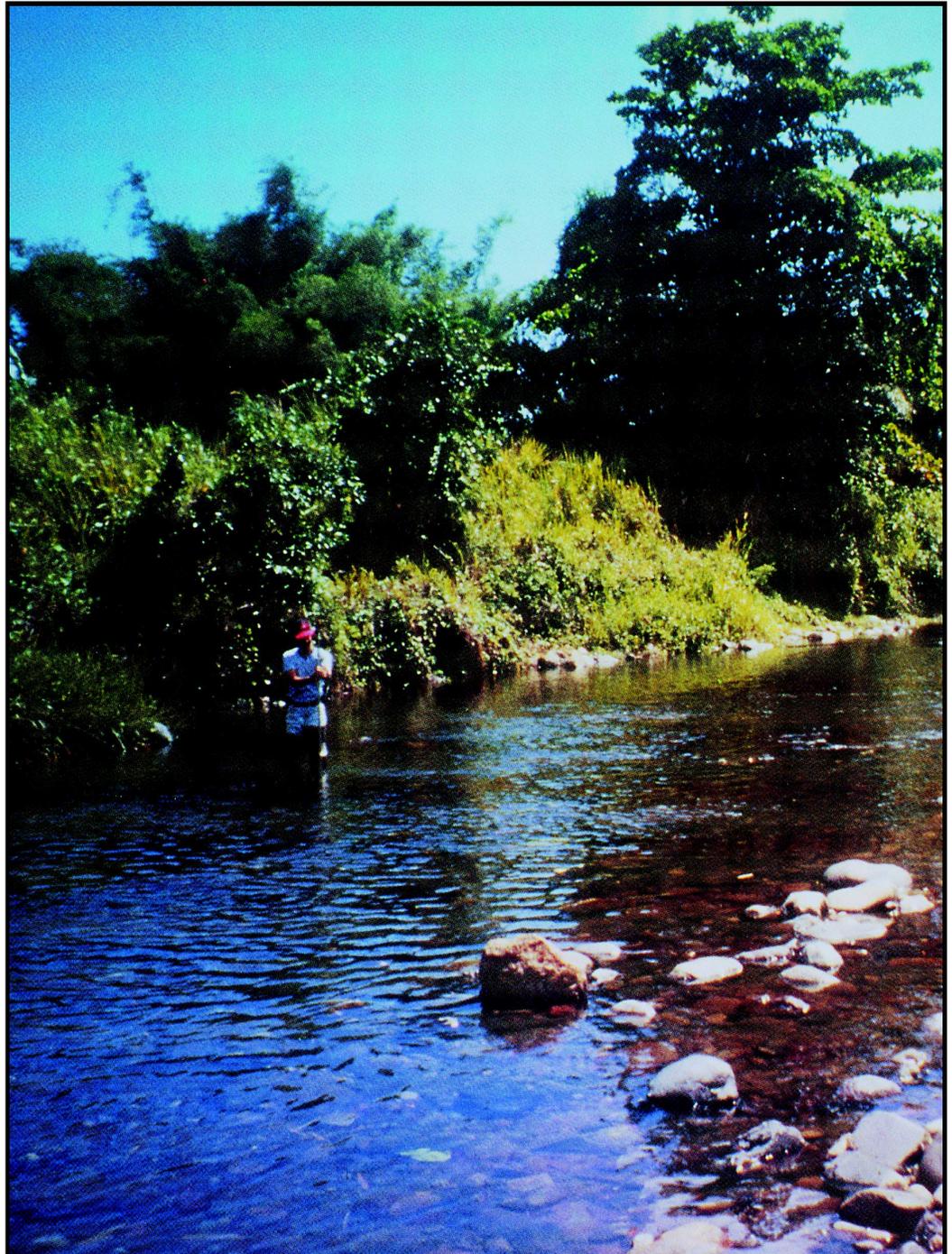
Research Paper
PSW-RP-240



Measuring the Economic Benefit of Maintaining the Ecological Integrity of the Río Mameyes in Puerto Rico

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Abstract

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A contingent valuation in-person survey of Puerto Rican households was performed from April to August 1995 to estimate their willingness-to-pay for preserving instream flows in the Río Mameyes and avoiding a dam on the Río Fajardo. Annual willingness-to-pay was \$21 for each river. When expanded to the 1 million households in Puerto Rico for the 5-year period households were asked to pay, this amount increased to \$110 million for the Ríos Mameyes and Fajardo. Visitors to the Río Mameyes indicated they would reduce trips by 93 percent if 10 million gallons daily were withdrawn from the river, resulting in a loss of \$250,000 in annual recreation benefits. Both the household and recreation values can be compared to the costs of repairing water lines and in-home water conservation measures to determine if there are more net benefits to these alternative sources of water than withdrawals from the Rio Mameyes.

Retrieval Terms: benefit cost analysis, contingent valuation method, logit regression, recreation benefits, travel cost method, willingness-to-pay

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The Puerto Rico Aqueduct and Sewer Authority's (AAA) proposal to withdraw up to 10 million gallons of water daily from the Río Mameyes in the municipality of Río Grande, Puerto Rico, caused an ongoing controversy. The Río Mameyes is the last pristine river remaining on the Island. This research is an effort to contribute to the understanding of the economic implications of projects such as that proposed by the AAA and the economic benefits to Puerto Rico of maintaining the ecological integrity of the Río Mameyes.

We quantified the total economic value to households in Puerto Rico of preserving the ecological integrity and riparian zone viability of the Río Mameyes via studying alternative flow levels in the river; the recreation use of the river as a function of river flow; and the total economic value to households in Puerto Rico of preserving flows and avoiding a dam on the Río Fajardo whose headwaters are in the Caribbean National Forest. We also investigated the substitution and complementary relationship between the Río Mameyes and the Río Fajardo.

We obtained a response rate of 40 percent for the households survey and 70 percent for the recreation survey. Maintaining the Río Mameyes and the Río Fajardo for future generations, for clean air and for protecting the environment, were some of the most important reasons given by households interviewed for caring about these rivers. Annual willingness-to-pay (WTP) for preserving instream flows in the Río Mameyes and avoiding a dam on the Río Fajardo was \$21 for each river. Expanding the WTP to the 1 million households in Puerto Rico for the 5-year period increased the amount to \$110 million. Visitors to the Río Mameyes indicated they would reduce their visits to the river by 93 percent if 10 million gallons were withdrawn daily from the river. This reduction in trips would result in an economic loss of \$250,000 in annual recreation benefits.

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