Individual Recreation Use as a Function of Stream Features: Testing the Influence of Commonly Reported Stream Variables versus Field Level Stream Variables

Juan Marcos Gonzalez[1] and John B. Loomis
Colorado State University, Dept. Ag. & Resource Economics

Abstract. This paper uses travel cost methods (TCM) to assess the relative impact that commonly reported hydrological characteristics versus field level hydrologic characteristics have on recreation site demand. By incorporating hydrological characteristics, the study tests the relevance that these variables have over visiting decisions and, therefore, over people's valuation of the visited site. This information can be pertinent for managers because it allows them to consider the impact that proposed developments could have on visitor demand. More importantly, they can estimate how valuable stream features are to the public they serve.
The study fits a demand model for 10 sites in the Caribbean National Forest in Puerto Rico. A "simple" recreation demand model is estimated using commonly reported hydrological variables such as daily CFS and gage height, and then another model is estimated where field level hydrologic variables are added. Since visiting information was only collected from visitors, the study uses a corrected Negative Binomial distribution to account for the lack of information on non-active users.

The parameters for the hydrological characteristics are tested individually (t-test) and jointly (LR Test). Also, general goodness of fit is evaluated using an adjusted Pseudo R-Squared measure. Although several field data level hydrological variables were close to being significant, none of them passed the significance test (individually or jointly). For the sites considered, these variables do not seem to add any additional explanatory power beyond the hydrologic variables commonly reported and used in modeling number of recreation trips taken by an average individual.

[1] Colorado State University
Dept. of Ag. & Resource Economics
Fort Collins, CO 80523
Tel.: (970) 491-6325
Fax: (970) 491-2067
E-mail: jmarcos@colostate.edu