

unit, like all other units, is sold at the market price of two dollars, the consumer receives six dollars worth of satisfaction for only two dollars. Thus, he enjoys a "surplus" by receiving excess benefits from the first unit. The same situation exists for the second, third, and fourth units. The difference between the price the consumer is willing to pay for the units of the commodity and the price he actually has to pay for them is called "consumer surplus." Consumer surplus is used later in this study to estimate some of the values associated with the demand for outdoor recreation.

Demand For Outdoor Recreation

Demand for recreation, in the absence of an efficient market, has been estimated in two ways: the direct and indirect methods. In the direct method, the recreationist is asked how much he would be willing to pay for a specified amount of recreation. The indirect method (utilized in this study) involves estimates of willingness to pay for recreation by observing the amount a recreationist actually spends in order to participate in a recreational experience.

Total recreational usage of an area can be defined as the product of the number of days a recreationist uses a recreational site per visit and the number of visits to a recreational site:²

$$\frac{\text{days}}{\text{visit}} \times \frac{\text{visit}}{\text{time period}} = \frac{\text{total visitor days}}{\text{time period}} = \frac{\text{total recreational usage}}{\text{time period}}$$

The number of days per visit can be considered the quantity variable in a demand relationship and the daily on-site costs a price variable. Based on the demand relation for an average visit, the aggregate demand for recreation can be derived by expanding according to the number of visits.³ For purposes of this study, it was assumed that the impact of water level on

²Recreation "visitors-days" and recreation "visits" are defined by the U.S. Forest Service as follows (1) "A recreation visitor-day consists of 12 visitor-hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons. The visitor-hours contained therein must be spent by persons in any activities, except those which are a part of, or incidental to, the pursuit of a gainful occupation;" (2) "A recreation visit is the entry of any person upon a site, or area of land or water, generally recognized as an element in the recreation population. Visits must be made in order to engage in any activities, except those which are a part of, or incidental to, the pursuit of a gainful occupation" [1].

³An alternative method of deriving aggregate demand would be to relate the number of visits to price and other relevant variables, and then solve simultaneously with the days per visit relation. This was not done due to voids in data.