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RECREATION PLANNING AS AN ECONOMIC PROBLEM

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We are confronted on all sides these days with projections showing the immense scale of our future needs for outdoor recreation. There can be little doubt that in the coming years many millions of dollars will be invested in space and facilities for outdoor recreation—many more millions than have been invested in the past. Much of this, as in the past, will be public investment. We have a right to wonder if these immense quantities of new funds will be allocated among alternative recreation facilities in a way leading to the highest achievable social satisfaction. Assuming that society knows how much of a limited public budget it wants to assign to outdoor recreation development, the question is whether the agencies in charge of spending the funds can allocate them with optimal results. The answer depends on how well the decision makers can perceive the values to society of different amounts and kinds of recreation areas and facilities.

In a market economy the market process serves as an information medium in transmitting to producers the qualitative and quantitative desires of consumers; these desires influence, in turn, the variety and amount of products marketed.

Where public expenditures produce consequences having value in the market, money measures of value are used to express the social values of the end products of the expenditure. In such cases primary benefits of an expenditure are the beneficiaries' willingness to pay for its immediate consequences. Conceptually, each beneficiary will pay an amount not exceeding the value of the project to him. Total project benefits are the beneficiaries' willingness to pay summed over all beneficiaries.

The burden of this exposition is that market measures of project evaluation, as summarized in benefit-cost analysis, are the most useful of ranking functions for most classes of recreation planning problems. Use of this efficiency ranking function is stymied by a virtual absence of ready-made market prices, but this need not dissuade us from attempting to approximate market indicators. The remainder of this article will discuss the virtues and uses of economics in recreation planning and suggest some approaches to getting needed data.

Economics is useful at all levels of choice, from allocating the total share of public funds to recreation programs or choosing kinds and locations of areas, down to detailed decisions about developing a particular recreation tract. We

* Resources for the Future, Inc. The opinions expressed in this article do not necessarily reflect those of the organization.

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shall use the ultimate level of decision-making in an economic approach to recreation planning.

I

MARKET AND NON-MARKET CRITERIA

Consider the plight of a resource manager who receives funds to be spent for the development of recreation areas on his timber management unit. Whereas the relative market prices of the kinds and grades of timber, together with the producing capacity of the tract, determine what species are to be favored and how much effort goes into their production, he must find other sources of guidance in deciding what kinds and grades of recreation areas to produce. He has several choices. He may follow his own professional notion of what is best—a combination of his professional training, administrative standards and personal tastes. Secondly, he may decide there are no real differences in social value between different kinds of development and then proceed to produce the greatest amount of capacity possible with the funds allocated. Thirdly, he may try to find out what the market would tell him, if one existed, and act accordingly.

Let us make the example concrete. Suppose there are three possible combinations of location and type of development. *A* costs \$800 per unit, *B* costs \$1300, and *C* costs \$1900. Clearly, maximum capacity from a given budget can be secured by investing in *A*. Stretching the budget to serve as many persons as possible may be consistent with the vote maximizing nature of the political process.¹ We can have little comfort that *A* provides the best satisfaction for the money without knowing something about its results.

Considering the effects of *A*, *B*, and *C* on the ecology of the area, or their efficacy in concentrating people to minimize management problems, or their acceptability to a strong interest group, may lead our decision maker to favor *B* as the best choice. Without more information there is no assurance that this professional-administrative judgment is in the best interests of society.

The needed information is how many users will patronize each alternative and how much each user will pay for his visit. The total volume of use and user willingness to pay, projected over the life of each investment and discounted by some acceptable rate of interest, gives us product values comparable to the costs (which also account for the present value of all annual maintenance costs). If total willingness to pay or gross benefits are \$1000, \$1300, and \$2800 for *A*, *B*, and *C* respectively, a little calculation will show that *C* produces the highest social profit per unit.

We can say we have observed results from three different ranking functions: a capacity function, an administrative function and an economic function. Their

1. See Downs, *An Economic Theory of Democracy* (1957).

different performances are a reflection of real world differences. While all have sought rationally to maximize something, only one maximizes social value. Only a few simple conditions regarding the rationality and knowledge of users and preferences in the price system need be accepted to make benefit-cost analysis a desirable framework for recreation planning.²

II

UNDERSTANDING RECREATION ECONOMICS

Before going further it is necessary to clear out some conceptual weeds that have grown up (and gone to seed) in the outdoor recreation movement over the irrelevance of economics to decisions in recreation planning. It is commonly charged that recreation values are "priceless," that recreation is an esthetic pursuit having unique personal and spiritual values, that economic worth implies commercialization, and that economic processes serve only mass tastes. Such views are clearly erroneous in the present context and deserve refutation.³

No goods are priceless in the sense of having an infinite price. There is a limit individually and collectively to how much real and personal wealth we would sacrifice to obtain any recreational experience or preserve any scenic resource. This limit is defined by the incremental social gain to be realized from a unit of expenditure on recreation and from the alternatives. It would be illogical to continue pumping expenditures into recreation development if the funds could produce greater satisfaction in another purpose.

The dichotomy between economic and esthetic pursuits is a false dichotomy if the esthetic pursuits are pursued rationally, *i.e.*, for the purpose of attaining the best state of satisfaction available to the pursuer. All rational behavior can be worked over with the tools of economics.⁴ It is difficult for an economist to believe that consumption behavior involving investments of hundreds of dollars in equipment and expenditures of major sums of money and leisure time

2. The conceptual framework of benefit-cost analysis is discussed in Krutilla and Eckstein, *Multiple Purpose River Development* (1958).

3. Most of the preceding points are made in Brockman, *Recreational Use of Wildlands*, ch. 7 (1959). Aldo Leopold holds to the dichotomy of esthetic and economic activities and also shows apprehension about the dominance of mass tastes. See Leopold, *A Sand County Almanac* (1949). Luna B. Leopold and Holland B. Kennison perpetrate the notion of unique personal values in Leopold and Kennison, *Water for Recreation: Values and Opportunities*, ORRRC Special Study No. 10 (1962). For a curious ambivalence toward economics and measurement see Carhart, *Planning for America's Wildlands* (Published by Nat'l Audubon Soc'y, Nat'l Parks Ass'n, The Wilderness Soc'y, Wildlife Management Institute, 1961). In Douglas, *My Wilderness: East to Katahdin* (1961), opposition of recreational and dollar values is repeatedly emphasized.

4. For the meanings of economizing and rational behavior see [Dahl and Lindblom, *Politics, Economics and Welfare* 38-88, 164-68 (1953)].

in travel and actual pursuit of the recreation is not guided by the norms of rationality. All that is missing is an organized market to give us rational valuations of the land areas and facilities which are important inputs in recreation processes. If, as asserted, recreationists know the relative amounts of satisfaction attained on their recreation products in comparison with other goods, the only problem which remains is to elicit these evaluations from them.

Outdoor recreation as a form of consumption is not unique in having personal, spiritual and psychic values which vary from person to person. The capacity to enjoy a wild river, or a symphony, falls in a category of wealth which Marshall called personal, internal, non-material goods.⁵ This is a quality found in any type of consumption where esthetic temperament counts. What it means is that personal valuations of the good with important esthetic aspects will exhibit greater variance than is associated with bids for a pair of ordinary shoes or a loaf of bread. The notion of consumer's surplus captures all such individual variation. So long as we deal with total consumer willingness to pay for a good we are recognizing personal variations in value, for the concept implies, contrary to the common meaning of price as one value reigning in the marketplace, a unique price for each consuming unit in the market. In this way the entire area under the demand curve, including consumer's surplus, is captured for analytical purposes.

It may be objected that it is not enough to recognize individual monetary valuations because these are limited by one's ability to pay—in short, by his income and wealth. There are two points here. It would be irrelevant to claim that recreation products would be valued higher, and thus show up better, if recreationists were wealthy. We are only searching for a relative value; the relative values of all goods are affected equally by our limited ability to pay.

The other point enters a troublesome area of equity. Certain classes of recreationists, or certain kinds of recreation, may be slighted by market processes because some users are at a financial disadvantage. If we decide that some market results are wrong for this reason, then all markets are wrong and the entire schedule of prices must be reshuffled.⁶ Fortunately, most kinds of outdoor recreation attract a clientele whose ability to pay is not lacking; for the others, they can be isolated and treated.

Economic evaluation of recreation is not equivalent with commercialization of recreation. To value a good by money measure does not mean that its value should be captured in the private economy. Economic values can serve as guides

5. In Marshall, *Principles of Economics* 54-62 (8th ed. 1949), these definitions are set forth, and the "personal, internal, non-transferable" goods are excluded from the genus of economic goods. It is another matter to exclude these goods from affecting the value of economic goods, and therefore from being reflected in the market place.

6. For more on the income question see Scitovsky, *Welfare and Competition* 59-60 (1951).

to social choice even though they are not registered in the commerce of the nation. If recreational use of a given bundle of resources has social value superior to its commercial alternatives, it is possible to demonstrate this by economic measures. In this regard the value of recreation is not what consumers spend each year on recreation hardware, rather it is how much recreation adds to the real income or welfare of the nation.

Market values stem from the free exercise of sovereignty by the mass of consumers. It is one matter to reject the wisdom of consumer sovereignty and declare certain types of outdoor recreation to be merit wants whose value can be recognized only by a select few. It is quite a different matter to conclude that economic evaluation of outdoor recreation will mean only that mass tastes will be recognized and satisfied. Quite the opposite is true. A perfect elaboration of the market for outdoor recreation would ferret out each little pocket of qualitatively different preferences, and a perfectly operating market would satisfy all preferences which could meet the benefit-cost test. Uneconomic preferences could only be met by subsidization. There may be certain outdoor recreation preferences which society desires to subsidize; this is not strictly an economic question.

It is possible to find cases where a service has social values which are not appreciated by consumers as potential purchasers, and for this reason they cannot be offered by private producers. Nevertheless, a majority may be persuaded of the merits of the service and decide to produce it publicly.⁷ In order to argue that market approximations have no relevance to resource allocation decisions in outdoor recreation, one must show that the great majority of users do not fully appreciate the value of their outdoor experiences. The position is clearly untenable for all but the most esoteric scenic experiences and the rarest and least known parts of the flora and fauna. Even in these cases it may not be current values so much as future values which go unappreciated.⁸

The market criterion for an acceptable expenditure is whether its value exceeds its cost.⁹ Rational economic decisions cannot be made on whether or not to improve the comfort and convenience of a campground, for example, unless market information is available to show the decision maker the value of the

7. For a more complete discussion of merit wants see Musgrave, *The Theory of Public Finance* (1959).

8. We do not treat the preservation question. It is best handled as an externality over time—a case in which our effects on future consumers will be disregarded in the absence of public safeguards. See, *e.g.*, Ciriacy-Wantrup, *Resource Conservation: Economics and Policies* (1952).

9. Under budgetary limitations it is necessary that benefits exceed costs by certain proportions. See Eckstein, *Water Resource Development* (1958). In Steiner, *Choosing Among Alternative Public Investments in the Water Resource Field*, 49 *Am. Economic Rev.* 893 (1959), other conditions are specified which may require the benefit-cost ratio to be greater than one.

improvement. It may be argued here that market information, in the sense of money values, is not necessary so long as we have other information on what people want.¹⁰ There is a serious error in this argument unless we are willing to assign equal weights to all wants that people possess; for only when we know intensities of wants can we set about rationally to satisfy them. While it is conceivable that there are many tests for intensity of feeling, market measures of value expressing intensities of feeling in dollars measure an individual's intensity of desire for a service in a most relevant manner. Without information on the consumers' willingness to pay, there can be no benefit analysis of public expenditures on outdoor recreation.

III

APPROXIMATING THE MARKET FOR OUTDOOR RECREATION

It must be obvious from the above argument that we need experiments with users of outdoor recreation areas in which a range of alternative kinds of areas and facilities is made available to the public at different prices. This creation of an experimental market would provide the data for an analysis of the monetary benefits of alternative developments ranging from unimproved land to the most modern, country club-comfortable improvements. Such experiments would be inordinately complex, exceedingly costly, and time consuming. However, it is possible that enough experience has been accumulated in certain commercial areas of outdoor recreation (*e.g.*, commercial shooting preserves or private campgrounds) so that some rough conclusions about returns from certain kinds of expenditures might be formulated.

If consumers are knowledgeable and rational, it may be possible to considerably simplify the market experiment and yet arrive at useful information

10. This position is apparently taken by the purveyors of a recent number of state park user surveys whose main intent seems to be finding reassurance that users still love the state park commission, or, if not, why not.

In *The Quality of Outdoor Recreation as Evidenced by User Satisfaction*, ORRRC Study Report No. 5, an attempt to measure the quality of user satisfaction was unsuccessful mainly because there was no scale of values for making comparisons across areas, and no attempt was made to probe user preferences. Only the obvious was uncovered: users go where they have reasonable expectations of being satisfied. In Anderson and Williams, *A User-resource Recreation Planning Method* (Published by the Advisory Council on Regional Recreation Planning, 1959), the authors erected a class-structured approach to recreation planning which lacks, for all of its ingenuity, a sound empirical base and only contains potentially erroneous value orientations. In Gray, *Identification of User Groups in Forest Recreation and Determination of the Characteristics of Such Groups* (Unpublished Ph.D. Thesis, Univ. of So. Calif., 1959), division of outdoor recreationists into publics was attempted according to the type of recreation sought by distinct social classes. Although there are some correlations between a common social class scale and types of recreation, no conclusions about social values can be derived from these results without additional information.

for benefits analysis. One possibility is to interview a sample of users of an appropriately wide range of facilities.¹¹ This method, in order to approximate the market, would put the interviewer in the position of a seller who elicits the highest possible bid from the user for the services being offered.

Interviewing has been used in two studies in which willingness to pay was used as a measure of intensity. In a study by Stewart, users were questioned on their willingness to pay for certain facilities which they said an area needed.¹² The study is not useful for benefit analysis because there was no attempt to simulate market bidding behavior and because no standard consuming units were used. It was suggested that hunters were not as willing to pay for added facilities as other users; hunters do not want picnic tables and improved campgrounds. This is an encouraging accomplishment.

A study of mine had as its purpose the derivation of the benefits of outdoor recreation in a backwoods area in a framework making the values derived comparable to the values of goods priced in the market.¹³ This study has demonstrated the efficacy of interview methods in exploring the willingness to pay for recreation services. The results developed a distribution of willingness to pay for using households and some understanding of the qualities of the outdoor recreation site which are sources of value.

The essence of the interviews was asking users how their use of the area would be affected if their costs associated with use of the area were to increase by certain amounts. The cost increments were bid up until a user was excluded from the area. His willingness to pay was then taken as the mean of the excluding bid and the last including bid. The hypothetical in the interviews was held to a minimum by not asking respondents to describe the magnitude of their response to price changes but only whether responses were positive, negative, or zero. A negative response to a bid meant the user would not come to the area at all. This is a realistic set of reactions for vacationists and week-enders who typically must spend all or none of their time on one area or at least have little opportunity to trade off a day or two between areas. Obvious biases were avoided by not calling the change in price a fee, by disassociating the interviewer with landowners and management agencies, and by structuring the interview so that respondents were not rushed into their decisions.

Although it was not done in the study described, it is a simple matter to extend the interviews once a willingness to pay has been established to elicit value

11. Another possible approximation of the market is suggested in Clawson, *Methods of Measuring Demand for and Value of Outdoor Recreation*, Resources for the Future, Inc. Reprint No. 10 (1959), and has been elaborated in Knetsch, *Outdoor Recreation Demands and Benefits*, Resources for the Future, Inc. (Unpublished draft, 1963).

12. Stewart, *Recreational Use of Private Land in a Portion of Eastern Maine* (Unpublished M.Sc. Thesis, Univ. of Maine, 1961).

13. Davis, *Value of Outdoor Recreation: An Economic Study of the Maine Woods* (Unpublished Ph.d. Thesis, Harvard Univ., 1963).

reactions to changes in design or use of areas. If this could be done without creating an excess burden of hypothetical detail, some valuable insights could be gained into how planning decisions affect user values. These insights could, of course, also be gained without extra probing from a sufficient volume of cross sectional studies representing all conceivable kinds and grades of areas. But these would be gained at the risk of determining quite irrelevant causes of value. This is because probing beyond the initial response represents a chance to gain information on causality that can only be inferred otherwise from cross sectional statistical analysis.

IV

SIMPLIFIED ANALYSIS

From the moment we set out to make decisions on the basis of costs and returns, we enter a vastly complicated world in which thousands of alternatives must be costed and evaluated. The only way to navigate in such a world is by making strategic simplifications. The interview method of approximating the market is one simplification. Another kind of simplification concerns ways of eliminating certain alternatives.

Imposing constraints is a device for eliminating alternative production possibilities. Examples of constraints are minimum levels of safety, sanitation, conservation and, above all, limited funds. Natural endowment of an area also serves as a constraint. In this context constraints are judgment boundaries on the admissible set of alternatives. If judgment is used, however, to eliminate all but one possibility, the analysis has gained nothing.

Further reduction of the set of possible alternatives can be accomplished by discovering complementary relations between key features. The key features of developments are those features which determine value to users. Obviously all aspects of a development are not relevant to value. The ultimate question concerns the preferences held by the users of different types of areas. This is a question for market research to discover those constellations of features which must be associated with each other in order to yield optimal results. For example, studies of backwoods users in Maine suggest these dimensions of value: remoteness, scale, density, presence of commercialism, convenience and comfort facilities.¹⁴ There is evidence that a preference for remoteness is associated with preferences for small-scale, low-density campgrounds, which do not have flush toilets and hard-surfaced roads, and are removed from the typical small businesses surrounding recreation areas. Conversely, those who do not prefer remoteness and escape from commercialism are not adversely affected by large-scale, high-density campgrounds, and they prefer hard-surfaced roads and flush

14. *Ibid.*

toilets. These complementarities mean that no value is added to backwoods campsites by investing in modern comforts and conveniences, but such investments do add to the value of accessible, sociable campgrounds. Other examples of complementarity are associations of certain kinds of activities with each other in the preferences of users¹⁵ and of character of use with location of area.

The simplest rule for using economic values in planning decisions is the ranking rule: rank alternatives by the ratio of benefits to costs and proceed to allot funds from the highest ratio down until funds are exhausted or some cutoff value at or greater than one is reached. Once the basic problem of data is solved, more complex models can be entertained.¹⁶

V

INTERPERSONAL EFFECTS

One must be aware of the limitations on willingness to pay as an indicator of social value before he applies the results of market approximations to expenditure decisions. We have covered some limitations above as instances where consumer judgments cannot be accepted as social judgments. Of other limitations we deal here only with the problem of quality effects—a problem of peculiar relevance to outdoor recreation.¹⁷

This problem arises because there are both gross conflicts between different kinds of users (*e.g.*, water skiers and fishermen) and also conflicts among the same kinds of use as scale and density of use increase. Willingness to pay is affected by the quality of recreation, which in turn is affected importantly by numbers of users, among other things. We cannot project the total willingness to pay for a scheduled development in an area until we know something about this interaction among users. Theoretically we can gain at least some knowledge about interpersonal effects from the interview procedures suggested above.

In practice the existence of quality effects means planners face a choice of expanding output on a given area at constant levels of quality or of expanding output at usually diminished levels of quality. Awareness of such matters of choice leads to dealing with both quantity and quality as variables in the analysis. Too often, we fear, a shift from a 25-unit campground to a 250-unit campground has been looked upon merely as a change in quantity of output

15. *National Recreation Survey*, ORRRC Study Report No. 19 (1963).

16. For an elaboration of economic decision models see Lee, *Economic Analysis Bearing on Outdoor Recreation Development*, ORRRC Study Report No. 24.

17. We are ignoring certain problems which have some relevance to the economics of recreation planning, *e.g.*, common good aspects of recreation areas, uncertainty, and attitudes toward the future. For an excellent discussion of the limitations of market results see Kneese and Nobe, *The Role of Economic Evaluation in Planning for Water Resource Development*, 2 *Natural Resources J.* 445, 451-55 (1962).

when it is really a change in product. The question of carrying capacities too often sounds like a physical problem when its heart is really a matter of interpersonal quality effects.¹⁸ If our planning decisions are to be more perceptive to quality effects so that we might move toward an optimal mix of recreation products for a planning unit, we must have more information about the recreationists' thresholds of sensitivity to each other's actions.

VI

INVENTORY AND CLASSIFICATION

Demand analysis applied over the whole range of outdoor recreation commodities can lead to solution of the complex and confusing problem of inventory and classification of outdoor resources. Net social value is the only classificatory parameter relevant to expenditure and development decisions. The economic basis for subdividing recreation areas distinguishes differences in demand relations and cost functions. There is reason for lumping together areas that are close substitutes in use regardless of their dissimilarities in some physical or administrative respects. Classification for economic purposes recognizes only those physical attributes of an area which affect market value and costs; it is feasible only if we know the relations between physical features and economic value. Since changing technology and tastes affect cost and demand functions, it is implicit that there can be no once and for all inventory of recreation areas. Moreover, before an inventory can be usefully undertaken some economic studies must be made to determine the information to be gathered—without which inventories risk irrelevance.

CONCLUSION

We have dealt mainly with the importance of market information in recreation planning decisions on particular areas or within particular agencies; for it is at this level that the greatest amount of disaggregated detail is required. There should be little need to comment on the relevance to higher level decisions of economic criteria. We must have information on social values and costs to make rational allocations of our public budgets to recreation. The recreation budget must be allocated functionally and spatially before final planning and expenditure decisions are made. At each level a concomitant level of demand information is required. Since nearly all forms of outdoor recreation are susceptible to market analysis, it is highly feasible for responsible agencies to

18. A recent analysis of carrying capacity suggests that interpersonal effects of use are more likely to be limiting than are physical and biological limits. See Wagar, *The Carrying Capacity of Wildlands for Recreation* (Unpublished Ph.D. Thesis, Univ. of Mich., 1961).

initiate market studies to uncover the processes of demand and consumer valuation which guide user choices. Useful techniques have been demonstrated. In the absence of approximate economic criteria, we can expect the social welfare to be served by no higher criteria than pork barrel economics. There is too much at stake to permit such a default.