CHAPTER VIII: REVIEW

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The papers presented in this chapter represent a paradox. In a technical sense they are rather simple, at least in comparison to some of the technical notes found in other chapters.. On the other hand, some are highly innovative and provide significant additions to poorly developed area of park and recreation research.

In the past, evaluation and allocation modelling has played only a minor role in Canadian park and recreation decision making. Senior administrators have often stated that much of the analysis that has taken place has been too narrow in focus and not orientated to the type of decisions which managers have to make. These critics have challenged researchers to develop simple yet meaningful measures of level of service, frameworks for evaluating alternative sites and projects, and better methods for analyzing the economic impact of parks.

In a general sense TN 5, 17 and 26 provide the policy-maker with a number of ways of determining level of recreation service available to certain populations. Implicit in these models is the concept of equity of opportunity and an interest in isolating areas which are relatively well or poorly serviced. TN 5 and 7 develop measures of opportunity potentially for different populations. These papers make no use of participation data. In contrast, TN 26 only uses participation data in developing internal standards for various areas and socioeconomic groups.

TN 5 shows how the concept of potential surfaces may be used to develop measures for evaluating the distribution of opportunities to participate in outdoor recreation. Two approaches for specifying "opportunity quotients" are developed in the article. With the first alternative, it is proposed that competition for supply is best measured at the recreation site. However, a means of measuring total pressure exerted on a site is not proposed. With the second alternative a proposal is made that competition be measured at the residence of each individual. The concept of population potential is suggested as providing a surrogate measure of this competitiveness. The "opportunity quotient" developed in the second alternative is, in some respects, suggested to be superior to the one developed in the first alternative since it more accurately reflects how a person perceives his relative opportunity. However, neither the question of which distance function to use with a specific gravity function, nor the question of how to obtain the best gravity function is answered in the article. The matter of how to measure site attractivity is also left unattended. A number of matters need to be considered before it can be accepted that either of the proposed measure reflect the recreation opportunities perceived by people living at specific locations. For example, "opportunity quotients", as defined by the two alternative methods, should be calculated for specific areas and then compared with the perceived opportunities as stated by people living in those areas. Other useful projects could investigate whether or not these measures relate to potentials as defined in the behavioural models postulated in TN 33.

TN 17 shows how policies such as those requiring that a certain per capita level of opportunity be potentially available within two hours travelling time of urban centres can be used to define a model which is appropriate for evaluating how recreation opportunities relate to populations. In this context, it is not of direct interest to know whether people use the opportunities allocated to them by the mathematical model. Rather, the concern is the number of opportunities potentially available to people living in various urban centres. Output from the model can then be used to evaluate the “potential level of service” presently provided to each urban centre in the study area against either a predetermined standard or an internal standard, such as the weighted average supply per capita for the study area. Once this evaluation is completed, expected population changes can be used as input to the model and, in the absence of

additional supply, future ratios of supply per capita can be computed for all urban centres. Alternative plans for introducing new supply into the system then can be developed and evaluated through repeated runs of the model. Eventually, a plan can be selected which best relates to an agency's objective of providing a given level of service to the agency's expected fiscal resources (e.g. available within the planning period).

The allocation and evaluation approaches described in TN 5 and 7 do not make use of information on people's behaviour. In many cases, however, a decision maker may wish to take existing behaviour into account because it is believed that behaviour reflects level of opportunity. TN 26 offers a technique which can be applied to participation data in order to develop internal standards. It is stressed in the article that the analysis of such data should be done in a disaggregated way. For example, it is suggested that better policies can be developed by looking at participation rates of age-sex groups as opposed to only looking at a crude participation rate for an entire population. A careful distinction is made among various participation measures such as incidence of participation per capita, etc. It is pointed out in the paper that the selection of a participation measure (or measures) to be used in an analysis entirely depends upon the objective of the anlaysis and the range of actions likely to be taken as a result to the findings of the analysis. In this regard it is stated that participation rates based on income differentials may not be of any interest in a program evaluation analysis, whereas they may be critically important to the master planning of a particular park.

The remainder of notes in Chapter VIII relate, more or less, to evaluations and allocations based on economic considerations. The next two papers commented on consider the problems of project and site selection.

A multi-dimensional scaling system for project selection is developed in TN 25. In this scoring system, intangible variables are combined to produce a single subjective score for each project on a list of candidates. Next, a procedure is described by which the intangible score can be combined with the corresponding benefit-cost ratio of the project in a way that allows the decision maker to control the amount of influence that intangible factors have on the final project score. The note includes some rather critical insights into the way intangible variables should be combined. For example, it is pointed out that the dimensions of evaluation should be independent and that the best alternative project on a dimension cannot be necessarily assigned a value of "100" while the poorest project is assigned a value of "0". These is no recognition in the paper, however, that the weight each dimension should have in determining a project's value may vary from project to project. In the paper it is assumed that an average weight for each dimension can be applied to each project in the list. This assumption is only valid when essentially similar types of projects are being compared.

The criticism just made of TN 25 is of minor importance given the more substantive problem of using intuition to specify scale values. In many cases, lack of time or money preclude thorough research being undertaken. Yet, a manager may still wish to subjectively include certain factors in the selection of a project. The scoring system described in TN 25 allows such intangibles to be included in a simple yet structured way. By keeping economic and non-economic factors separate throughout the analysis, it is possible to combine them in the final step in a controllable way. The procedure described, consequently, provides the manager with the opportunity of deciding how far he is willing to deviate from an economic optimum in order to achieve other objectives.

When an agency has used a model such as the ones described in TN 5 or TN 17 there still may be questions about making the optimal use of land. One approach to defining optimal use is

to define an objective function and then to apply linear programming to determine whether certain lands would, for example, be best used for producing forest products, agricultural products, recreation products, or some combination of these. So when, for example, growth in a recreation system has been defined using the methods described in the discussion of TN 17, it might be considered feasible to develop a catalogue of potential lands for parks in areas which will face increasing pressure. Then, at any time, linear programming incorporating contemporary budget and other price constraints can be applied to select which of the lands should be developed for park purposes.

The main point of TN 23, however, is that over-automation of planning can lead to poor decision making. The creation of a park rarely only has the objective of providing a certain number of picnic tables. One must be careful to realize that a linear programming solution which indicates that a park should be developed on a particular site does not recognize differences in the number of jobs associated with different land uses nor does it recognize that future changes may occur in the relative price of the products that may be produced on that land. Discussing the results of a sensitivity analysis of the linear programming solution then only serves to illustrate that there are many options which are not automatically pointed out or even realized when overly automated evaluations and allocation procedures are used. The authors of TN 23 note that the opportunity cost approach used for specifying the price of the outdoor recreation product in the linear programming application only permits the assignment of a minimum price. Furthermore, the opportunity cost approach says nothing about the value of the recreation product as perceived by consumers because of the absence of a demand curve.

Related to the need to have an estimate of the value of a proposed park is the discussion about time bias found in TN 31. In this article it is pointed out that estimates of the demand function that are only based on travel distances may severely underestimate the value of certain parks. The authors suggest alternative ways of incorporating a factor to correct time bias into a demand function and then they proceed to compute the effect of these alternative corrections on the estimated value of a Park. Consequently, TN 31 provides the manager with an example of how widely the estimated value of a park may vary, depending on the assumptions used in developing the demand schedule. Given the sensitivity of the linear programming solution found in TN 23, the manager may desire to have several estimates of value computed for a proposed park so that one can choose the alternative that believed most appropriate.

TN 39 is really only a focused review of traditional economic impact of park literature. The perspective presented in this paper is complemented by TN 40 where a broader view is taken on how the assessment of impact relates to the park planning process. The note leaves much to be desired because the literature on impact evaluation is now extensive and has progressed significantly since 1969. Many of the very real problems in collecting data for assessment evaluation such as the distribution of benefits and costs are generally more subtle than recognized in this paper. Consequently, the paper should only be used as an introductory guide to impact assessment.

TN 40 presents a broad perspective of the factors influencing the development of a park rather than a discussion of the classical economic issues related to the impact of a park. It is stated in the article that many of the impact statements prepared at the park proposal stage have not turned out to be accurate because the factors defined in the original situations have changed. Results of impact studies have frequently been invalidated because impact was not considered when the original development concept was altered during the acquisition negotiation process or during the master planning process. The main point of the article is that the assessment of impact

can only really be carried out effectively when a close linkage is retained between the impact assessment and the acquisition-planning process. If impact assessment is considered important, it is not enough to study impact at one point in time. The entire planning process from concept development through master planning and construction must be audited. Consideration must be given to the various exogenous variables that influence development, and continuing feedback between the planners designing the park and those estimating its impact must be maintained.

TN 41 provides a general description of the relations among campground characteristics and corresponding economic viability. The analysis, by its very nature, presents aggregated information and is consequently of limited value in drawing specific conclusions. Still, such studies are useful since they provide general guidance to the planner or manager who wants to consider roles that private campgrounds might play in park development schemes. Even at a general level, however, a discussion of campground economics should consider certain other factors. For example, a more detailed account of development and maintenance costs is required. It would also be useful to know the expected rates of return from the development of special attractions. Finally, the paper would be more complete if it included a discussion of how specific types of clientele can be attracted to a campground and the advantages and disadvantages of pursuing a marketing policy to particular segments.

The various technical notes found in Chapter VIII represent initial attempts at providing program planners and policy makers with technical aids to making decisions. As pointed out in this review, the most important consideration in applying these models and other techniques is that they should accurately reflect the policy on which they are supposedly based. Such techniques must, moreover, clearly describe the implications of adopting general policies or making decisions related to specific projects.

Several different types of perspectives may be taken when policies and plans are being developed for the future provision of recreation facilities. One perspective could emphasize the importance of existing patterns of behaviour and base future plans on policies either related to modifying these patterns or to encouraging them to continue. If this perspective is taken, accurate models of existing behaviour are prerequisites to effective policy analysis and development.

In contrast, another perspective can be taken in which a priori assumptions, based on policy, are made about how facilities should relate to populations. A model based on these assumptions would be formulated and used to describe the existing situation. Finally, future plans that result in a normative distribution of facilities in relation to expected future populations would be developed.

In many cases it can be argued that a policy or plan should never be developed from only one perspective. Such a view, however, should not be taken as an excuse for using a model ill-suited to the objective of the particular analysis being undertaken. Policy making is often a very complex exercise and it is the duty of the researcher or analyst to present, accurately and unambiguously, the implications associated with adopting various policy perspectives.

Future Research

From a review of the nine Technical Notes found in Chapter VIII, one cam suggest a number of lines of future research. In respect to TN 5 and TN 17, it would be useful to develop a means of prorating supply according to the factors of quality and variety. TN 26 describes how an almost infinite list of internal standards can be computed. A paper could be written that would outline how to use the results of methods described in TN 12 and TN 10 to indicate which standards should be considered when making a particular allocation. The method proposed for scoring projects, described in TN 25, could be improved by the incorporation of the concept that

a particular dimension may not be equally important to all projects on a list of the candidates.

Regarding TN 23, further research could centre on designing procedures to test the sensitivity of linear programming for the purpose of allocating land to different uses. It is doubtful, however, whether the linear programming approach will gain widespread acceptance from park planners until techniques for defining the value of a particular recreation experience are improved. Further empirical work incorporating the concepts developed in TN 31 offers some promise in this direction. Probably, the main question regarding impact assessment is the selection of the proper level of disaggregation in analysis to obtain an accurate picture of who benefits and who pays when a park is developed.

The real priorities for research on modelling and allocation must, however, be defined by those individuals working at the interface of policy making and research. It is only through continuous feedback between these people that consensus can be reached about what techniques need to be developed for specific types of analysis.