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New Approaches to Forest Recreation Planning in Canada

by C. S. Brown

Abstract

The steadily increasing demand in Canada for opportunities for outdoor recreation will be satisfied largely on forest lands. Foresters must play the lead role in the allocation and development of lands for recreation use, and should be aware of new tools becoming available. Among these is the recreation capability mapping program of the Canada Land Inventory, which will classify all land in the designated area — some 1,000,000 square miles — according to its natural capability to engender and sustain outdoor recreation use. A parallel program is classifying and mapping wildlife capability. In addition, plans are underway for commencement in 1968 of a co-ordinated, searching analysis of the demands for outdoor recreation across Canada. Several federal agencies and the provinces will take part in associated surveys to assess present opportunities for recreation, present use of them and the preferences and habits of users and non-users.

In spite of the lack of an evident national direction, and of national leadership in outdoor recreation, informal and semi-formal liaison ensure a reasonable degree of inter-

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government and interdepartment co-ordination in the development of these new tools and in making them available to land use planners.

Sommaire

La demande croissante de loisirs en plein air qui se fait actuellement sentir au Canada, trouvera sa solution dans l'utilisation des terres forestières à cette fin. Les forestiers sont appelés à jouer un rôle de premier plan dans la désignation et l'aménagement des terres propres aux loisirs et devraient se tenir au courant des nouveaux instruments disponibles dans ce domaine. Parmi ces instruments, on compte le programme de tracé de cartes des terres propres aux fins récréatives dans le cadre de l'Inventaire des terres du Canada qui classera toutes les terres d'une région désignée (environ un million de milles carrés) en fonction de leurs aptitudes naturelles à faire naître des activités récréatives et à les soutenir. Un programme parallèle consiste à classer les terres propres à la protection de la faune et à en tracer les cartes. On a également établi un plan d'analyse coordonnée et détaillée des demandes de loisirs en plein air dans tout

le Canada, plan qui sera mis en application en 1968. Les provinces et plusieurs organismes fédéraux collaboreront à l'exécution d'un relevé des lieux propres à la création, accompagné d'une étude de leur utilisation actuelle ainsi que des préférences et des habitudes des usagers et des non-usagers.

En dépit du manque évident d'un programme et de direction à l'échelle nationale, des rapports officiels ou semi-officiels assurent une mesure raisonnable de collaboration intergouvernementale et interministérielle dans le perfectionnement de ces nouveaux instruments et dans leur distribution parmi les aménagistes.

Introduction

National Forestry Conference speakers at Montebello in 1966 looked ahead to the year 2000 to predict demands on Canada's forest land (11). They found good evidence to indicate major increases in demands for practically all its products, including outdoor recreation. This paper will explore briefly the role forest lands must play in meeting the growing demand for recreation. It will then report on significant new tools becoming available in Canada to assist in planning forest recreation land use. It will conclude with a few comments on the present state of intergovernmental and federal interdepartmental organization for coordination in the use of these tools.

The Role of Forest Lands

Although the nation's total land area of 3.8 million square miles provides 121 gross acres per person, its geography makes this figure meaningless. Though wider distribution of settlement, improved means of travel northward and increasing congestion in southern areas will steadily encourage greater use of resources now relatively remote, the great bulk of the demand for outdoor recreation in Canada must be met in and adjoining the southern settled regions of the country.

If we omit occupied agricultural land, in which opportunities for outdoor recreation are relatively scarce, there remains the commercial forest zone. This area contains practically all of Canada's present 64,000 square miles of national and provincial parks, of which, incidentally, only 16,000 square miles are reserved exclusively for recreation (Wood Buffalo National Park, a remote and large wildlife refuge, is omitted from these figures) (7).

There is little accurate data available on the general pattern of outdoor recreation of Canadians. A nationwide demand analysis, which will be discussed later, will, when completed, indicate popular preferences among activities, but in the meanwhile, the attendance records of resource based parks (8) leave little doubt of the growing popularity of forest lands among Canadians and their visitors.

This dependency on forest land suggests the role professional foresters must play in managing them so that recreation benefits may be realized. It cannot be denied that foresters now play a leading role. There are roughly 65 foresters in Canada now em-

ployed more or less full time in park and outdoor recreation work. This is well over the number of any other professional group. However, the strong traditions of single purpose forest management, and the slow response of forestry schools to changing demands on forest lands and foresters have left forest land managers in this country behind the times in programming for increased use of their lands for recreation. The forestry profession as a whole must recognize the recreation fact. Recreation is a legitimate product of forest land, and adjustments in forestry practices must be made to accommodate recreation where needed (5, 6, 1).

Rather little sacrifice need be made in forest operating efficiency or in gross product for the reasonable demands of outdoor recreation to be met in most instances (1, 2). Provision for access, fire precautions, the protection of forest corridors along travel routes and waterways and protection of surface water values are the primary requisites. Add to this the withdrawal from forest extraction of a few select blocks of land, often in areas of low productivity, and recreation interests are accommodated.

This leads to a discussion of the Canada Land Inventory and its usefulness in forest land use planning for recreation.

The Canada Land Inventory

Background

The need for systematic nationwide inventories of land capabilities for various primary uses, including outdoor recreation and wildlife, was stressed in the deliberations of Canada's Resources For Tomorrow Conference in 1961. Subsequently, the newly born agricultural rehabilitation programme (ARDA — originally Agricultural Rehabilitation and Development Act, and now Agricultural and Rural Development Act), designed to relieve rural economic problems across Canada, appeared to be severely handicapped by the inadequacy of land resource information. Thus the Canada Land Inventory was conceived to map "the agriculturally settled parts of Canada, and adjoining areas which affect the income and employment opportunities of rural residents", and classify them "according to their physical capability for use in agriculture, forestry, recreation and wildlife management and their present use" (4).

The proposal received approval as an ARDA research programme at full federal cost late in 1963. Mapping of soil capability for agriculture was under way in 1964, a classification system was devised for forestry in the same year, and some experimental work was initiated toward recreation and wildlife land capability classifications. Early 1965 saw all programmes launched, and a completion objective set for the end of 1970.

Land unit separations and classification data in all sectors are submitted on large scale maps, normally 1:50,000, after being determined by airphoto interpretation and field work. A complex computerized geo-information system has been developed for the storage and manipulation of this huge mass of data. A second set of smaller scale maps, nor-

mally 1:250,000, is prepared for publication, together with an explanatory legend and narrative, in all sectors except present land use. The total programme in all sectors will feed some 16,000 full large scale map sheets onto computer tape, and will publish over 950 coloured sheets at smaller scales.

Wildlife Capability

Wildlife capability is dependent basically on the productivity of soil and on climatic factors, but also on spatial distributions of landscape elements such as surface water, cover types and protective features. The wide disparity in environmental requirements and behavioural attributes among wildlife species made adoption of any single classification system for all species impractical. Therefore, two systems were devised, one for ungulates and one for waterfowl (10).

Sport fishing is recognized to be an integral part of the recreation value of land, and an approach has been developed to classify inland waters for sport fish capability (12). It is designed for reconnaissance survey to provide a planning tool only.

Recreation Capability

The classification of land for outdoor recreation capability presented unique problems. Primary points of difference with other sectors are the significance of attractions rather than limitations and the relative insignificance of soils. Little help was available from earlier research or experiment; the resource requirements of different popular activities are extremely varied; conditions limiting one activity sometimes

favour another; surface water is an important consideration; and recreation is often site rather than area oriented.

Without going into detail it can be said that the objectives of the ARDA programme exerted considerable influence on the approach finally adopted. ARDA's primary interest in recreation resources relates to the new income and employment opportunities they could create for rural people if developed. The criterion most directly related to this objective appeared to be the numbers of people who could be attracted and accommodated per unit area of land per year — i.e. the capability to engender and sustain use.

The system adopted (3) comprises seven classes or levels of capability, assuming uniform conditions of demand and present access. The classes are described synoptically as follows:

- Class 1 — Land units in this class have a VERY HIGH capability for outdoor recreation.
- Class 2 — Land units in this class have a HIGH capability for outdoor recreation.
- Class 3 — Land units in this class have a MODERATELY HIGH capability for outdoor recreation.
- Class 4 — Land units in this class have MODERATE capability for outdoor recreation.
- Class 5 — Land units in this class have MODERATELY LOW capability for outdoor recreation.
- Class 6 — Land units in this class have LOW capability for outdoor recreation.
- Class 7 — Land units in this class have VERY LOW capability for outdoor recreation.

Figure 2. Big Falls area, Humber River, Newfoundland. In mapping recreation capability, air photos are first interpreted, and unit boundaries and classification data are normally noted thereon. Questionable units, and usually those of potentially high rank, are single-out for field checking before data are transferred to 1:50,000 scale map sheet manuscripts. National Air Photo Library A12773-57.

The illustrations, and the following description of three classes, may add clarification.

Class 1 lands must lend themselves to intensive use and be exceptionally attractive. They may include good natural beach areas, top quality skiing areas, and outstanding natural phenomena and historic features. They will often be mixes of features or characteristics, capable of attracting and sustaining a very high quantity of use.

Class 4 lands provide for the transition between intensive activity and dispersed activity. If the land unit is small it will contain a feature, not of particular local significance, but with capability to provide a minor focal point for recreation activity. If large, it is likely to be particularly well suited to dispersed types of activities such as hiking, camping, nature study, photography, angling, etc.

Class 7 lands, frequently muskeg or barren, are not entirely devoid of recreation capability, but may be suited to very specialized activity of little popular appeal.

In addition to rank or class, the recreation capability of each land unit is described with up to three of twenty-five recreation feature and activity symbols. These are selected according to popular preferences and are as follows:

A. Angling	O. Upland Wildlife
B. Beach	P. Cultural Landscape
C. Canoe Tripping	Patterns
D. Deep Inshore Water	Q. Topographic Patterns
E. Vegetation	R. Rock Formation
F. Waterfalls and Rapids	S. Skiing Area
G. Glacier	T. Thermal Springs
H. Historic Site	U. Deep Water Boat
J. Gathering and	Tripping
Collecting	V. Viewing
K. Organized Camping	W. Wetland Wildlife
L. Landforms	X. Miscellaneous

In the lower right of the photo section is a falls and a salmon pool with exceptional capability for angling and viewing salmon in migration. The falls, and terrain suited to organized camping in the immediate vicinity, are attractive features complementary to angling which raise the rank of that unit to Class 2. Adjoining shoreland (S) units are rated Classes 4 and 5 for angling (A), canoeing (C), camping (K) and cottaging (N). The air photo reveals clear cutting to the water's edge where recreation values may suggest other treatment. National Topographic Map Sheet 12 H/6.

M. Small Surface Waters
N. Lodging

Y. Family Boating
Z. Man-made Features

Fairly detailed guidelines have been developed, supplemented with graphic illustrations, to assist in the ranking of land units containing each of the features or combinations of features and to ensure reasonable uniformity in ranking.

Surface water is not classified as such but its capability for outdoor recreation is reflected in the classification of land which fronts on it.

Wildlife generally, and hunting species and sport fish particularly, are recognized as recreation features, and their normal presence in an area may influence fairly strongly the ranking of a land unit for recreation capability. However, the classification system makes no pretense to evaluate land (or water) for its capability to produce or sustain such wildlife. This role is left entirely to the wildlife sector.

Applications in Forest Land Use Planning

The geo-information system of the Canada Land Inventory (13) will enable rapid area measurements and quantitative comparisons in area oriented data. Of critical importance in the recreation sector is its capability to measure linear data such as length of shoreline. Thus it will be possible to calculate the length of shoreline in the inventory area of any province or any subdivision thereof, with high or moderate natural capability for a use such as cottaging. The system will provide a comprehensive overview of the resources for outdoor recreation of any part of a province or of Canada within the area mapped. It will enable firm quantitative documentation against which resource allocation schemes can be assessed.

Figure 3. The mediocre beach of this northern Saskatchewan lakeshore is backed by extensive well drained and fairly level terrain capable of development for intensive public use for water oriented recreation. Soil conditions are suited to good quality mixed wood forest and beach gradients accommodate both family bathing and boat launching. The unit will reach ½ mile or more inland and classify 2BKY. Photo by the author.

The small scale maps being published will illustrate visually the distribution of key recreation land resources. Although the classification system does not purposefully rank groupings or clusters of recreation features, the variety, the spatial distribution or grouping and the quality of outdoor recreation resources will be evident from the small scale map to anyone familiar with the system. This map will be particularly useful in the selection of key areas for development or other special management to meet the particular needs of a region.

The large scale maps, as well as computer map print-outs at any scale, will prove useful to planners and land managers in advanced stages of selection of areas for various recreation uses, in preliminary definition of boundaries of special management units, in zoning for various degrees of protection of aesthetic values, in separation of shorelands into intensive use areas, primitive areas, commercial or industrial sites and summer home areas, and in routing forest roads in consideration of recreation values.

Other Planning Data Needs

The planning process in outdoor recreation resource development at any level is dependent upon accurate data on existing recreation opportunities, and on predictions of the volume and characteristics of future demand. The Canada Land Inventory will provide a reasonably permanent and stable record of the kind and distribution of recreation land resources across Canada; and I will describe briefly what is being done to round out the supply data and to explore future needs. These needs have been a major focus of the deliberations of the Federal-Provincial Parks Conference. Its research committee has directed considerable attention to suitable techniques for a nationwide demand analysis. The committee's work lead to a design study commissioned

Figure 4. This Cypress Hill scene in Saskatchewan illustrates a combination of rolling topography (Q), interspersed mixed wood forest and open grassland vegetation (1), (E), and normally plentiful wildlife (Q). These result in moderately high capability for dispersed forms of outdoor recreation such as riding, walking, hunting and nature study. The foreground unit of this landscape will classify 5QOE. Photo by the author.

by the federal National and Historic Parks Branch, the conclusions of which were reported to the 1967 conference (9).

A four part study is proposed, to commence this winter (1967/8).

One part will constitute an inventory of the facilities and opportunities for outdoor recreation across Canada — an inventory of present recreation land use. When mapped, catalogued and fed into the geo-information system of the Canada Land Inventory, this will give a realistic picture of the present and potential opportunities for outdoor recreation throughout the settled parts of Canada. It will indicate the present distributions of these opportunities, and the imbalances between present development and development potential.

The second element of the survey will bring together all reliable data available on historic and current use of Canada's outdoor recreation areas and facilities, and the characteristics of the users. It will relate this data to park entree counts from across the country. Gaps in present knowledge will be filled in with additional surveys where possible.

The third element, a household survey, will examine outdoor recreation habits, preferences and participation rates for the people of Canada. It will explore the meaning of present participation rates and the nature of demands not now satisfied.

The fourth and final phase will be the analysis of the data gathered. An approach is being developed designed to avoid the pitfalls of many demand assumptions based primarily on user surveys. Our researchers consider it essential that use data be analyzed in relation to the opportunity factor, and that ways be found to obtain a comprehensive assessment of demand based on potential as well as present opportunities.

The demand for recreation is subject to continual change. Continuing analysis is necessary. If a realistic approach can be designed and tested, basic

Figure 5. Upper Cascade Valley, Banff National Park. Terrain of this type offers excellent opportunity for dispersed forms of recreation, but often lacks major natural focal areas for intensive use. Interspersed trees and meadow vegetation (E), rock outcrop (R), surface water (M), upland wildlife (O) and frequent viewpoints (V) combine to warrant extensive Class 4 ranking, with occasional small units of Class 3 at superior scenic viewpoints or upland wildlife viewing sites. Extensive rugged mountain slopes normally drop to Class 6 capability. Photo by R. D. Muir, National Parks Service.

data recorded, and critical indices of change defined, then continuing analysis, and special analyses in problem areas, can, afterwards perhaps, be taken in stride. The approach being adopted in Canada is new and untested at the scale proposed, but if successful, it will provide outdoor recreation planners with an extremely valuable tool.

Interagency Coordination

It will be evident that the information base for planning and decision making in the field of outdoor recreation in Canada is improving rapidly. Close cooperation among the numerous interested agencies is essential if the full value is to be derived from each major study. The comments which follow are pertinent.

The Resources For Tomorrow Conference of 1961 marked a threshold in Canada's history of resource management and study. In the recreation sector, it represented the first general recognition in Canada of outdoor recreation as a primary use of renewable resources and it gave direction to several subsequent developments of vital significance.

The Federal-Provincial Parks Conference was instituted as one result and met first late in 1962 to explore possible useful functions in intergovernmental coordination and cooperation. A technical meeting is held annually, and subcommittees on park classification, outdoor recreation terminology, education, research and land classification have acted with reasonable effectiveness. A committee established in 1966 on policy and planning promises a further contribution.

Another product of the RFT Conference, The Canadian Council of Resource Ministers, with ministerial representation from each of the eleven senior governments of Canada, with an intergovernmental technical committee and with task force subcom-

Figure 6. Trout River, Newfoundland. The mix of recreation values associated with the fishing village, the broad sand beach and the picturesque natural setting is classified 3PBQ. Because of the cold water, the beach (B), as well as the varied topography (Q), are subordinate to the cultural feature (P). Photo by R. D. Muir, National Parks Service.

mittees as needed, provided another forum for communication and cooperation among senior governments on resource matters. Only recently has the Council directed its attention to the field of outdoor recreation, but a useful contribution can be expected. The secretariat of the Council is now engaged in bringing together data from all senior government agencies for a comprehensive statement on the status of outdoor recreation in Canada in terms of legislation, jurisdiction and government organization.

Apart from the RFT Conference, no undertaking in the history of Canada has had a greater impact on intergovernment and intersector communication respecting renewable resources than has the Canada Land Inventory. The entire ARDA program has had a major impact. It has done much to encourage comprehensive regional planning, and in the future will be engaged in developing applications for recreation supply and demand data.

Coordination in research and planning within provinces appears to vary greatly across Canada. The Parks Integration Board of Ontario is a significant coordinating agency. Regional park programmes in Saskatchewan and B.C. encourage varying degrees of municipal-provincial liaison. However, a generally weak link appears to be the coordination between city and provincial governments in researching and programming to meet regional needs.

To the present, there has perhaps been better intergovernment liaison in the outdoor recreation field than interdepartment liaison as the federal level. The recent involvement of the Resource Ministers' Council has focussed attention on the need, and steps are now being taken to bring together a working committee on outdoor recreation.

The number of federal agencies interested is steadily increasing — a quick count suggests 17 at

present. Many support active programmes. Unfortunately, there is yet no one agency with a mandate to provide national leadership. The recognition given other renewable resources at the federal level, such as agriculture, forestry, water, fisheries and

wildlife, is slow coming to outdoor recreation. However, the establishment of the Bureau of Outdoor Recreation in the United States has set an example which Canada must inevitably examine.

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