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# A PLAN FOR THE RECREATIONAL DEVELOPMENT OF THE MACHIAS LAKES REGION IN WASHINGTON COUNTY, MAINE

A. Temple Bowen, Jr.





MAINE AGRICULTURAL EXPERIMENT STATION

UNIVERSITY OF MAINE

BULLETIN 614

MAY 1963

**A PLAN  
FOR THE RECREATIONAL DEVELOPMENT  
OF THE MACHIAS LAKES REGION  
IN WASHINGTON COUNTY, MAINE**

A. Temple Bowen, Jr.





## FOREWORD

The impact of recreation on the economy of Maine since World War II and its concomitant use of natural resources indicated a need for forest recreation research. In 1959 the School of Forestry initiated a forest recreation research program under the direction of Dr. Harold E. Young. With the combined support of the Appalachian Mountain Club and the Maine Agricultural Experiment Station a series of graduate student studies have been completed and several are in progress. Each constitutes a definite segment of a comprehensive program that will eventually incorporate major aspects of forest recreation.

The initial study of a reconnaissance nature of a large segment of the area in eastern Maine was conducted as his thesis by Mr. Bruce Stewart, now recreation supervisor of the Maine Forest Service. This, plus a detailed study of the recreational possibilities of the University Forest used to illustrate a comparatively small tract of land, will be published.

One of the most important portions of this study area was the recreationally interesting Machias Lakes Region. Mr. Temple Bowen, now of Saunders Brothers in Westbrook, Maine, carefully examined this tract of about 90,000 acres and planned its recreation potential. Timber management was deliberately excluded as much of the timber has been recently harvested. However, the timber potential would be fully integrated into any long range plans for the area.

ALBERT D. NUTTING, *Director*  
School of Forestry



## SUMMARY

The importance of forest land as the medium for wood fiber production has been recognized for some time. Recent developments and trends show that another function of this same forest land is that of providing a playground for millions of outdoor recreationists. This phenomena has affected some areas to such an extent that certain forest lands are now considered to be more valuable as sources of outdoor recreation than as wood fiber production units.

This plan describes one way in which a landowner might manage his holdings to more completely utilize the recreational resource. In addition, it is proposed that the service provided would be such that an income could be expected in the form of a recreation use fee.

An area of land owned by the St. Regis Paper Company was selected for this plan. This 90,000 acre tract of commercial forest land located midway between Bangor and Calais, Maine in Washington County was selected because its variable topography, accessibility and numerous lakes and streams afford

the outdoor recreationist an opportunity to pursue a multitude of activities. Also, evidence indicates that a demand for some form of overnight facilities exists in the selected area. The area is presently served by a single all-weather graveled road and several lesser roads which are passable at certain seasons. The present recreation use level is relatively low in spite of the fact that the area is open to the public free of charge. This apparent inconsistency is most likely due to the lack of what the modern outdoor recreationist considers as basic or fundamental facilities.

The development presented in this plan is designed to provide a basis for the recreation management of the area. Stage one involves the establishment of a transient campground (designed primarily for travelers who are seeking overnight facilities) approximately two miles from route nine. A second campground (primarily for those who wish to stay for three days or more) will be constructed on Third Machias Lake, the largest body of water within the boundaries of the Machias Lakes Recreation Area. A camping area providing fewer facilities but with added solitude will be designed for construction at Fifth Machias Lake. Several picnic areas will be located at appropriate sites throughout the area as well as on route nine. An entrance facility will be constructed at the point where the Recreation Area adjoins route nine. This entrance will be elaborate enough to attract the attention of the passing public without being obtrusive. General improvement of the existing road and trail system will also be undertaken during this stage.

Stage two will be initiated following a period of approximately five years but only, if at that time, it is evident that such expansion would be wise. This development stage will consist primarily of a campground on Sabao Lake and the reconstruction of the Robinson Dam road. This development will allow access to the scenic northwestern portion of the Machias Lakes Recreation Area.

The administration of an enterprise of this magnitude and nature is, admittedly, a difficult job. Although a system of administration has been outlined it must be understood that it is only a guide and that ultimate administrative success will be wholly dependent upon the flexible and reasonable application of this guide by the area personnel. A fee system

will be used as the source of income. Each car or camping use group, will be charged three dollars for each twenty-four hour period they are in the area. Day use fees of fifty cents per day will be charged for those groups who do not spend the night in the area. This fee will allow these persons to use all the facilities exclusive of the campgrounds. Once in the area, users will be allowed to select their own campsite and will be directed to this site through the use of individual maps distributed at the gate, with road signs that will be posted at all intersections and by mapboards that will be constructed at each of the major road junctions.

All facilities will be maintained on pre-determined schedules to insure a clean and pleasant environment. Fire prevention and control will be managed under the cooperation of the Maine Forest Service. The problem of safety hazards and the occurrence of accidents cannot be avoided but an active program of first aid training and outdoor recreation education will be pursued to reduce the accident frequency and to insure the proper and rapid treatment of injured persons.

The final section of this report concerns the estimated investments, operating costs and incomes that might be realized under the assumed conditions. A general unit cost estimate method was used because of the extreme variations that can be expected in the costs of individual items. The estimates indicate in a general way that a project of this nature could conceivably provide an income as well as a service to the public.







## INTRODUCTION

The use of forest land for timber production is commonly accepted by many as the primary function of commercial forest land. In recent years, however, a general trend has developed which clearly indicates a changing attitude toward the utilization of forested lands. This trend has placed many foresters, land managers and landowners in the delicate position of producing the necessary raw materials for their industry as well as satisfying the increased demands of a recreation hungry public. Most of the difficulties arise, not over the real conflicts involved, but rather from the unwillingness of some factions to maintain flexible policies and from the lack of education in the resource management field on the part of others. Here in the northeast the two phases of "multiple-use" most commonly mentioned as competitive entities are timber management and forest recreation.

Although an analysis of the compatibility of forest recreation and timber management is not the purpose of this paper, it is believed that a discussion of this subject is germane to the plan that follows. Timber management may be defined generally as the management of forest land through the application of business methods and technical forestry principles, with the ultimate goal of producing and utilizing a continuous supply of forest products. Forest recreation, on the other hand, may be functionally thought of as any recreational activity dependent upon the forest for full satisfaction. To say that these two functions are not compatible without exception is unrealistic. There are many situations where the two are complementary. The difficulties encountered are usually specific in nature rather than general. It is somewhat similar to the building of a super highway. Everyone is in agreement that it is for the best except those who own adjacent residences to the proposed location of the road. Many people who have established regular, recreational pursuits in a given region or

under certain conditions resent the disruption of this pursuit, even though it may be favorable to hundreds of other people. In addition to this, it is well known that one dissatisfied recreationist will be more vocal than a hundred satisfied ones.

The reason for these introductory remarks concerning the compatibility of recreation and timber management is to emphasize the desirability of a multiple use policy that will provide the greatest benefit to those concerned. It is not the intent of this report to advocate the allocation of 90,000 acres of commercial forest land for recreation pursuits alone. Rather, it is an attempt to illustrate the fact that the intensive recreational use of an area removes little land from timber production and increases the total satisfaction that may be realized from a specific tract of forest land.

### **Justification, Description and Location of the Machias Lakes Recreation Area**

The first step in the development of an outdoor recreation plan is to determine the general area for which the plan is to be made. After selecting the area it is then necessary to justify the existence of an intensive or extensive recreation development. If sufficient demand is not present or cannot be expected in the near future then there would be little gained by making further investigation and investment.

The area proposed for development in this example is in Hancock and Washington counties, Maine and includes most of the Machias River watershed north of route nine. The area adjoins this route at a point approximately 55 miles east of Bangor and 45 miles west of Calais.

To justify the hypothesis that this area, if developed wisely, would provide a financial return to the developer as well as fill a gap in the recreational facilities of the state as a whole, material has been drawn from two major sources. The first is the 1961 World Almanac and Book of Facts, and the second is the State Park Camper Use Survey made in 1960 by the Maine State Park Commission.

The World Almanac contains the 1950 and 1960 census data for the United States as a whole as well as by divisions, regions and states. Some of these data are adequate evidence

of our changing population. It can be seen from these data that our population is increasing rapidly. Even though the population in the northeast is not increasing at the same rate as it is in the west and the south, it is evident that the increase is of staggering proportions. In addition to this fact it is important to remember that the northeast has less land area than the other regions and consequently its population density is the highest in the country. Table I shows the population figures as well as the number of persons per square mile.

Some of the results of the statewide survey of park users in Maine are evidence corroborating the belief that the proposed Machias Lakes Recreation Area would be a socially beneficial and financially successful venture. Question 19 in the survey asked, "Where do we need additional parks?" In addition to the answers (multiple choice) specified in the questionnaire there was a significantly large group of interviewees who expressed a desire for camping areas along route nine between Calais and Bangor. Many others commented that more camping areas were needed adjacent to major highways so that transient campers could find overnight facilities without going out of their way. Question 21 was stated "Comments — what I liked least?" The greatest source of complaint was the overcrowded conditions in the camping areas during the heavy use portion of the season.

Table I  
1950 and 1960 Census Data  
for the United States

Area	1950	1960	Per cent increase	1960 density*
United States	151,325,798	179,323,175	18.5	50.4
Northeast Region	39,477,986	44,677,819	13.2	.....
New England	9,314,453	10,509,367	12.8	.....
Middle Atlantic	30,163,533	34,168,452	13.3	.....
Maine	913,774	969,265	6.1	31.1
New Hampshire	533,242	606,921	13.8	66.5
Vermont	377,747	389,881	3.2	41.7
Massachusetts	4,690,514	5,148,578	9.8	650.1
Rhode Island	791,896	859,488	8.5	798.7
Connecticut	2,007,280	2,535,234	26.3	513.3
New York	14,830,192	16,782,304	13.2	346.2
New Jersey	4,835,329	6,066,782	25.5	800.2
Pennsylvania	10,498,012	11,319,366	7.8	249.3
California	.....	.....	.....	99.2
Oregon	.....	.....	.....	18.3
Alaska	.....	.....	.....	0.4

\* Number of persons per square mile

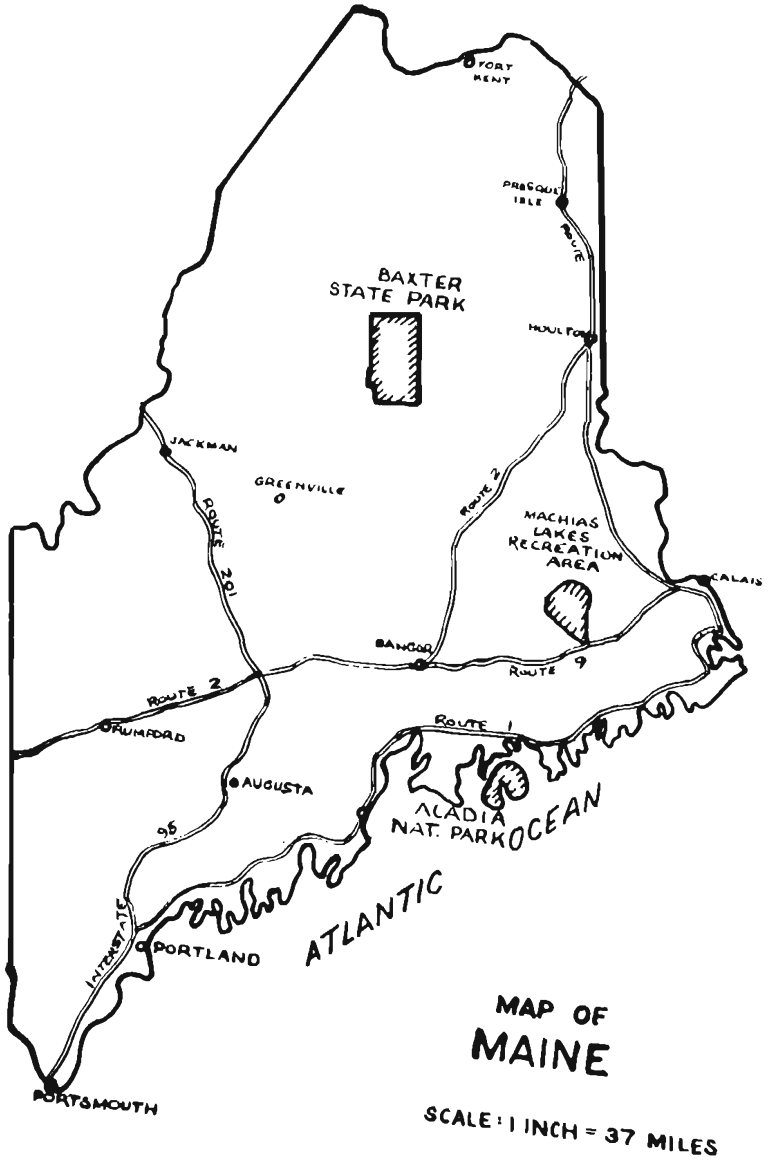
Evidence of increasing demand for recreation facilities on a national and statewide level has been presented. Local trends are also of importance in supporting a plan of this nature. The nearest area which has clearly shown the local demand for recreation facilities is the Mt. Desert-Acadia National Park area. Only 72 miles away by auto, this scenic park has had its campgrounds, picnic areas and beaches filled to capacity for several years. In spite of the expansion of the federal sites and the addition of at least five private campgrounds the demand for overnight accommodations still exceeds the supply during the heavy use periods in the summer. Realizing that this popular area can be reached in less than two hours again indicates the need for and the value of the Machias Lakes Recreation Area.

The preceding information seems to be adequate in supporting the hypothesis that some form of outdoor recreation facilities in the designated area would fulfill the needs of many recreationists as well as the hundreds of transients passing this area every day. One measure of the potential transient demand for camping is the total volume of traffic passing this point on route nine during the summer months. According to a 1960 traffic survey of this road conducted by the Maine State Highway Commission the average annual traffic on this route was 720 cars per twenty-four hour day. During a five day period from August 18 through August 23, an average of 1,100 cars per twenty-four hour day was recorded. The report indicated that this volume closely resembles the July and August average for this route.

The Machias Lakes Recreation Area is located adjacent to route nine, approximately half way between Calais and Bangor. This is on the western border of Washington county and includes a small portion of Hancock county. A map of Maine with the recreation area denoted on it is shown in figure I. Other places in the United States at this same latitude are Minneapolis-St. Paul, Yellowstone National Park and Portland, Oregon.

The mileage and travel time relationships of this area to the local towns and cities are shown in table II. Data for more distant points of recreational importance and for certain urban centers are also included in this table. These data show that the area is within a one-day drive by car from points as

**FIGURE 1**



distant as Boston and Quebec. Tourists could be expected to travel to the area in one day from points as far away as Portland, Baxter State Park, Fredericton, St. John, N. B. and Fundy National Park. Weekend and day users could be expected to travel from Augusta, Bangor, Calais and Fredericton.

The Machias Lakes Recreation Area forms the shape of an inverted cone with the vertex on state route nine. The boundaries generally follow the height of land delineating the Machias River watershed with the exception of the boundary on the north. This line extends west-southwest from the tip of Third Machias Lake to the summit of Horseshoe Mtn. Fourth Machias Lake was omitted from the area because of the numerous access points to it from Grand Lake Stream and state route six. Appendix A shows the boundaries of the area and their relationship to the topography.

The area encompassed by these boundaries is approximately 90,000 acres. This total acreage may be divided into 6500 acres of water surface and the remainder in land.

The land area varies in elevation above sea level from

Table II  
Distances and Travel Time to Local Communities, Points of Interest and Regional Population Centers

Area	Distance	Travel Time (hours) <sup>o</sup>
Bangor	55	1.3
Calais	42	1.0
Beddington	12	0.3
Wesley	12	0.3
Cherryfield	32	0.8
Machias	32	0.8
Lubec and Campobello I.	62	1.5
Bar Harbor (Acadia Nat. Park)	72	2.0
Baxter State Park	150	3.7
Fredericton, N. B.	123	3.0
St. John, N. B.	133	3.2
Fundy Nat. Park, N. B.	217	5.5
Halifax, N. S.	433	11.0
Gaspe, N. B.	575	14.5
Quebec City, Quebec	280	7.0
Montreal, Quebec	400	10.0
Augusta	123	3.2
Portland	180	4.2
Boston, Mass.	300	7.5
New York, N. Y.	500	12.0

<sup>o</sup> Based on an average overall speed of forty miles per hour including stops.

190 feet at the extreme southeast corner to 1087 feet on the summit of Sabao Mountain. The surface of the land is generally flat or rolling throughout the area. The mountain range composed of Washington Bald Mountain, Slewgundy Ridge, Fifth Lake Mountain, Sabao Mountain and Horseshoe Mountain extends from Third Machias Lake in the northeast to Horseshoe in the northwest. In this area gentle slopes are prevalent at the lower elevations with steeper grades near the summits. Precipitous slopes are found on the three major peaks in this range. Isolated peaks found to the south of this general area are Fletcher Peak, Elwell Ridge, Knox Mountain and Cranberry Mountain. Appendix A shows the major topographic features of the area.

There are twenty-two separate bodies of water (either ponds or lakes) amounting to approximately seven per cent of the total surface area. The largest lake has an area of 2,716 acres in contrast to the smallest lake which has only seven acres. Table III shows the approximate acreages of each lake listed in alphabetic order. Detailed descriptions of some of these lakes and ponds are shown in appendix B.

Table III  
The Area of Water and the Length of Shoreline for each of the  
Lakes and Ponds on the Machias Lakes Recreation Area

	Surface area in acres	Miles of shoreline
Burnt Land Lake	70	1.8
Campbell Lake	33	1.0
Fifth Machias Lake	1083	7.1
First Machias Lake	140	3.1
The Getchel Lakes	139	3.1
Green Lake (north)	47	1.4
Green Lake (south)	83	1.8
Horseshoe Lake	202	3.7
Kerosene Pond	7	0.4
Knox Lake	48	1.3
Little Machias Lake	463	4.1
Lower Cranberry Lake	263	4.1
Lower Sabao Lake	755	8.2
Lower Sabao Pond	48	1.4
Peep Lake	34	1.1
Pughole Pond	59	1.7
Salmon Pond	11	0.5
Second Machias Lake	184	2.7
Stiles Lake	51	1.3
Third Machias Lake	2716	22.0
Upper Cranberry Lake	111	3.5
Total	6547	75.3

Table IV  
Length in Miles for each of the Major Streams and Rivers in the  
Machias Lakes Recreation Area

	Length in miles
Cranberry Stream	1.4
Crooked River	9.8
Fifth Lake Stream	6.0
Fletcher Brook	6.1
Fourth Lake Stream	2.6
°Machias River	13.1
Sabao Stream	2.2
West Branch	8.5

These streams are canoeable at certain times of the year and local inquiry should be made concerning stream conditions.

° This is only for the section north of route nine.

The major streams, rivers and brooks are listed in table IV. Some of these waters are navigable at certain times of the year. The location of each stream is shown in appendix A.

The present transportation system consists of approximately 21 miles of auto roads, a number of jeep roads and 36 miles of well marked hiking trails. The road and trail designations with approximate mileages are shown on table V. The location of these access routes may be determined from the map in appendix A. A fine, high speed, gravel road presently provides access to the entire eastern portion of the area. This road is maintained regularly and is kept open for almost the entire year. A second major access route leading to the western portion of the area is not being maintained regularly and is passable only by jeep or truck.

The trails that extend through the northern half of the area have evolved from the regular maintenance program followed by the Maine Forest Service along their telephone lines. These trails generally follow the most direct route possible from one point to another without taking advantage of any nearby scenic vistas or other natural attractions. All of the trails may be hiked by anyone who is in normal health. No special hiking equipment or knowledge is necessary to enjoy this form of recreation.

The Machias Lakes Recreation Area extends in a north south direction for approximately 15 miles. The elevations on the area vary from less than 200 feet to more than 1000 feet above sea level. Soil types range from sand to clay and slopes range from level to precipitous. Considering this environment heterogeneity, it is not strange that there are great



Table V  
Map Symbols and Length in Miles of the Roads and Trails on the  
Machias Lakes Recreation Area

Symbol	Length in miles
°1-A Machias River Road	11.5
2-A Washington Bald Mountain Road	1.2
3-A Third Machias Lake Road	3.0
4-A Midland Flats Road	1.7
5-A Second Machias Lake Road	0.7
6-A Robinson Dam Road (from entrance to Elwell Dam)	2.5
°1-J Fourth Lake Tote Road	3.0
2-J Second Lake Tote Road	0.6
3-J Robinson Dam Tote Road (beyond Elwell Dam)	9.0
4-J Stiles Lake Road	1.0
5-J Green Lake Road	1.8
°1-T Washington Bald Lookout—Road 2-A	2.0
2-T Wash. Bald Lkt.—Third Machias Lake	3.1
3-T Wash. Bald Lkt.—Fourth Machias Lake	6.3
4-T Wash. Bald Lkt.—Fifth Machias Lake	6.0
5-T Fifth Machias L.—Lower Sabao Lake	2.8
6-T Fifth Machias L.—Lower Sabao Pond	5.0
7-T Lower Sabao Lake (inlet)—Sabao Mountain Lookout	4.5
8-T Fifth Machias Lake (east end)—Fletcher Field	3.6
° The symbols indicate the following:	
A. auto road—a road that may be traveled by car without causing damage.	
J. jeep road—a road or track that may be traveled by four-wheel drive vehicles.	
T. trail—clearly indicated paths well suited to hiking.	

differences between sections as far as vegetation is concerned. Three well defined cover types are evident and these will be generally and briefly described.

In the southern sector of the area there exists a cover type usually described as blueberry or pine barrens. It is characterized by scattered stands of red (Norway) pine with a ground cover of lowbush blueberry and associated brush species. The soil is of the sandy type. At one time these areas were repeatedly burned but with modern fire protection techniques this situation has changed. With a continued effort towards better fire protection these areas will most likely develop heavier stands of pine. Present timber management consists of scattered harvesting of red pine for pilings and sawlogs where the volume is sufficient to allow a commercial operation.

The most prevalent timber type on the area is the coniferous complex largely composed of white pine, red and white

spruce and balsam fir. This cover type is common to much of eastern Maine. It is generally found at the intermediate elevations and is quite dense with the exception of recently logged areas. Because of the value of the species associated with this cover type, pulpwood harvesting has been made over much of the type within the last 30 years resulting in stands that are primarily immature.

A third distinct cover type is found at elevations usually exceeding 500 feet above sea level. This cover is of a deciduous nature and is common on the ridges and knolls of the northern sector. These tree species are of less value than are the conifers and consequently have been utilized to lesser degree. For this reason the hardwood stands are composed of trees in all age classes. The exception to this rule occurs in stands that have suffered severe burns and the hardwood stumps and roots have produced sucker growth or, as in some cases, such light seeded species as aspen and birch have invaded the burn and produced extremely dense stands.

Many other vegetative types may be found on the area. Examples of these lesser types are the grassy plateaus on Washington Bald and Sabao Mtn., the black spruce bogs and the old growth hemlock stands that are scattered throughout the area.

Weather is a primary factor affecting the satisfaction derived from all of the recreation activities available on the Machias Lakes Recreation Area. Table VI shows some data that were collected at the Woodland observation point of the United States Weather Bureau. Woodland is located 20 miles east of the area but is within the established weather zone.

The long term means for temperature and precipitation by months are shown in column one under the appropriate heading in table VI. Monthly recordings for the year 1959 are shown next to indicate the possibility of extreme variations from the long term means. In general the data show that three inches of rain per month accompanied by mild daytime and cool nighttime temperatures are the rule for the summer months. Since nighttime temperatures may drop to nearly the freezing level any month of the year it is essential that campers have warm sleeping gear. Precipitation exceeding one tenth of one inch is likely to occur during one day in every four days in an average year.

Table VI

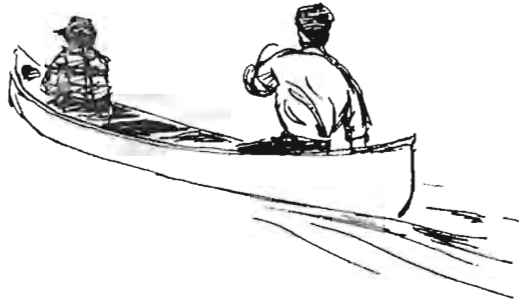
1959 and Long Term Temperatures (in degrees fahrenheit) and Precipitation (in inches) for the Machias Lakes Recreation Area

Month	Temperatures					Precipitation		
	Long term	1959				Long term	1959	No. of days in 1959 with 0.1 in. or more
	mean	max.	min.	High	Low	Mean	Total	
January	17.3	30	7	51	-12	3.4	4.7	8
February	18.5	28	3	46	-15	3.1	3.2	10
March	28.5	38	16	55	-3	3.5	5.0	7
April	40.5	54	32	77	23	3.6	2.5	5
May	52.1	68	43	90	31	3.3	1.4	5
June	61.4	67	48	84	41	3.4	8.1	11
July	68.0	85	58	96	45	3.1	5.2	7
August	55.3	78	56	95	41	3.1	3.4	9
September	57.6	72	48	89	32	4.1	3.0	6
October	50.0	57	40	75	18	4.2	7.4	9
November	35.4	44	30	67	16	4.7	7.9	14
December	21.8	35	19	52	1	3.8	5.0	5
Average	42.9					43.3		
Range		85	3	96	-15		1.4-8.1	

The Machias Lakes Recreation Area is lightly used for recreation purposes at the present time. During the winter season a few individuals engage in a limited amount of bounty hunting and fur trapping. In spring the bulk of the use is by fishermen who flyfish the numerous streams in the area. Camping and picnicking during the summer is light with heavy use concentrated at the small beach on the south end of Second Machias Lake. There are several summer camps located on leased lakeshore lots. The fall season use is limited primarily to deer hunting. This area is very popular for this type of recreation use because the open stands of timber provide good shooting, there is a plentiful supply of deer and the access route through the area is usually in good condition. Several hunting camps are also found on leased lots throughout the area.

No recreation facilities are provided on the area at the present time. The existing road system is open to the public free of charge. Camping and picnicking are allowed anywhere on the area providing the user has obtained a campfire permit from the Maine Forest Service.

**EDITOR'S NOTE:** From this point on the reader should bear in mind that, while the author is positive in his statements as to what will be done to create the Machias Lakes Recreation Area, actually the owners of the land have no plans for such a development; what follows is merely a proposal.



## **PROPOSED DEVELOPMENT—STAGE I**

The development of the Machias Lakes Recreation Area can best be accomplished in two major stages. Initially the present road system must be modified at a reasonable cost to allow utilization of a large portion of the area. The section that will remain relatively inaccessible during stage one will provide some forms of recreation not available on the rest of the area. If stage one proves to be successful then further exploitation of the natural assets in the northwest section may be made. The developments that would allow general use of this northwest section are described in stage II, page . The plans for stage II are less well defined than the plans for stage I because of the longer planning period and the dependency of the second stage on the first.

The following discussion concerns the initial development program planned for the Machias Lakes Recreation Area. It includes separate divisions on entrance facilities, a transient campground, recreation campgrounds, picnicking facilities and road and trail improvements.

In developing an area for public use it is extremely important to present a favorable image to the general public. In this case it is essential that the transients on route nine are favorably impressed with the appearance of the entrance facilities. In addition to the appearance, the size and location of the entrance are also of great importance. The entrance

should be large enough to allow safe ingress and egress and should be situated to allow visitors ample time to reduce the speed of vehicles.

The entrance way to the Machias Lakes Recreation Area will consist of two, twenty foot wide, gravelled roadways designed to accommodate two way traffic. These entry roads will form a junction with route nine at obtuse angles eliminating the usual congestion associated with right angle turns. Each entrance will be bridged by a log archway constructed of timbers exceeding twenty inches in diameter. The uprights will be treated below the surface of the ground and stained above the ground level. Signs constructed from two inch plank will be mounted between the posts and the names of both the area and the landowner will be prominently displayed.

The entry roads will lead directly to a parking area large enough to accommodate fifty cars. This area will be rectangular in shape and have a gravel surface. The parking lot will be surrounded by a low log barrier that will serve to confine the traffic. The purpose of the parking area is to eliminate congestion on the state highway from cars that may be waiting in line to enter the area.

The entrance gate will be constructed of timbers similar to the gates on the highway. A chain will be strung across this gate permitting control of traffic by the gatekeeper. A twelve foot square gatehouse will be constructed at the entrance to house the gatekeeper while he is fulfilling his various duties. A large opening in the building on the side towards the roadway will serve both as a counter over which the public may be served and as a window through which the gatekeeper may maintain constant surveillance of the entrance. The gatehouse will contain all the necessary equipment needed by the gatekeeper to do his duty.

Separate living quarters will be provided for the gatekeeper and his family. Separate quarters are believed to be more satisfactory from the standpoint of increased safety for children. Since a large number of cars is anticipated it is desirable to have the living quarters distant enough to be out of range of the associated problems of dust and noise. At the outset the gatekeeper will also serve as the chief ranger or supervisor. If this position requires too much time for one man then someone will have to be hired to tend the gate.

In this case the supervisor will be provided with living quarters and the gatekeeper will live with him or with the storekeeper. The living quarters will be provided with gas or electric power, whichever is available, and with the normal complement of household furnishings.

A store will be constructed in addition to the house and the gatehouse. This store would probably not be constructed until the second or third year at which time it could be determined whether use of the area justified such a facility. As planned, this store would sell such basic items as dry goods, fishing and hunting gear, gasoline, oil and possibly some perishables such as milk and butter. The storekeeper would live in a portion of the building planned for this purpose.

A sketch of the arrangement of the entrance facilities is shown in appendix C.

*Transient campground.* The transient campground is designed to accommodate those travelers whose primary interests are in overnight facilities as opposed to recreational facilities. An important criterion to consider in planning a transient campground is proximity to a heavily used public highway. Such items as adequate water supply, level terrain, sufficient space for expansion, pleasant surroundings and swimming facilities are also important factors to be considered.

Peep Lake Campground will be located just northeast of Peep Lake approximately two miles from the main entrance to the Machias Lakes Recreation Area. This site was selected because it has all the favorable characteristics previously noted. The present access route can be improved at a reasonable cost, water is plentiful, the mature stands of white and red pine provide a restful and pleasant environment, the area is level and two small but adequate beaches are located on the north and south shores of the lake.

Development will consist of 200 camping units. Each unit will include a gravelled driveway, a sand or gravel tent site, a granite fireplace and a sturdy picnic table. Every four units will have a common trash barrel and a common cold water tap. Four toilet units will be located at strategic points through the area. Each toilet unit will consist of four flush toilets, two for men and two for women. These units will be of an architectural design complementary to the natural attractions of the area.

The water supply for this campground will be obtained from drilled wells. Water storage will be accomplished through the use of a single 10,000 gallon water tank erected on Indian Ridge where gravity flow may be used to carry the water from the tank to the outlets. The tank will be refilled at regular intervals by an automatically controlled gas or electric water pump.

In addition to the 200 camping units there will be space for twenty travel trailers. These trailer spaces will have five trash barrels, five cold water taps and one flush toilet unit centrally located. The only special accommodation for trailers that will be available initially will be a pit where the trailers can be towed and their self contained chemical toilets may be emptied. The spaces for the trailers are arranged so that the trailer units may always be towed in a forward direction.

A building will be constructed at the entrance to the campground to provide housing for the ranger. The duties of this ranger as well as the others are described in the section on administration, page .

Swimming facilities will be available at Peep Lake. Each of the beaches will be provided with a diving float, water depth markers, enclosed shallow areas for non-swimmers and a rope and life preserver. A trail will be constructed from the campground to the beaches. A sign will be erected along that portion of the trail leading from the north beach to the south beach where the cold spring is so that bathers may obtain cold drinking water if they wish. This spring will be walled off to prevent contamination of the fine water presently available.

Details of the layout of the Peep Lake Campground are shown in the sketch in appendix C.

*Mutton Cove Campground.* A recreation campground is designed for purposes that go beyond those of a transient campground. Users of recreation campgrounds generally stay longer and expect a wider selection of available activities. Recreation campgrounds should be selected and designed to provide as many various outdoor activities as is consistent with the satisfaction of all the recreationists. Such activities as swimming, hiking, canoeing, boating, fishing, hunting, nature studying and picnicking are all very desirable.

Mutton Cove Campground, located at the southern tip of

Third Machias Lake, will be developed as a recreation type campground. This area has several characteristics that make it well suited for development. It is located on the largest lake in the area where the opportunities for boating, canoeing, fishing and swimming are all excellent. It is at the foot of Washington Bald Mountain and provides an excellent access point to the miles of hiking trails in this portion of the area. Extended canoe voyages may be started here into such famous bodies of water as the Sysladobsis and Grand Lake chains.

Mutton Cove Campground is accessible by the Machias River Road and the Third Machias Lake Road. It is approximately fourteen and one half miles from the main gate. Initially it will be designed to accommodate 200 camping units and twenty trailer units with associated facilities similar to those enumerated for Peep Lake Campground.

Two fine bathing beaches are located adjacent to the campground on an anvil shaped peninsular northeast of Mutton Cove. A foot bridge, 75 feet in length, will be constructed to allow easy access to the beaches during periods of high water when there is a narrow strip inundated in this area. Picnic tables will be erected along the ridge on this peninsular and will be for the exclusive use of the campers at Mutton Cove.

A boat launching ramp will be constructed on the east side of the outlet, and a parking area for the accompanying cars and boat trailers will be leveled on the same side of the river but south of the dam. A dock, extending out 60 feet into the lake, will be erected at the ramp area. It will be of a portable type and will be removed from the water each fall to avoid any damage that might be caused by ice.

An area at the north end of Midland Flats will be leveled for automobile parking. Boats that can be handled manually may be launched at this point. Swimming will not be allowed here because of the dangerous pitch of the sand beach.

A boat rental concession will be operated at the outlet of Third Machias Lake. Boats, motors and gas will be available at this concession as well as a limited amount of other items associated with water sports and fishing.

A building will also be provided here for the ranger who will be supervising the area.



Details of this development are shown in a sketch in appendix C.

*Fifth Lake Campground.* This campground is of the recreation type but it differs considerably from either of the other campgrounds. It is located about four miles from the parking lot in Fletcher Field. The only access to Fifth Machias Lake at the present time is by foot via several well marked trails or by float plane.

Facilities at this campground will be at a minimum but the overnight charge made for the use of the area will be the same as on the other campgrounds. The reason for this is the high cost of maintaining a campground of this nature at considerable distance from the road and used by relatively few people.

The area designed for camping at Fifth Machias Lake is at the west end of the lake. A long ridge rimming the lake will be available to those who wish to bring their own shelters with them. This area will be provided with fireplaces and enclosed pit toilets located along the ridge about 150-200 feet back from the lake. An area south of this ridge will be designated for use by those who do not bring tents or other shelters. This area will be provided with Adirondack type lean-tos, fireplaces and enclosed pit toilets. A hand water pump will be erected that will draw water from the lake. A rustic bridge will be constructed over the low ground separating the beach from the camping area. Camping will not be allowed at any other points along the shoreline of the lake.

The details of this campground layout are shown in a sketch in appendix C.

*Picnicking Facilities.* Two picnic areas of great importance will be located on route nine on either side of the main gate. These areas will be supplied with picnic tables, fireplaces, trash barrels and enclosed pit toilets. The use of these areas will not be restricted to those who pay the charges at the Machias Lakes Recreation Area. The picnic areas will be free from any fees and will serve the function of advertising the recreation area. Large signboards describing the facilities, the open hours, the entrance fees and the natural attractions of the recreation area will be constructed at each site.

Other picnic areas within the area itself will be located at Lower Sabao Lake, Upper Cranberry Lake, Salmon Pond,

Fifth Machias Lake, West Branch Bridge, Second Machias Lake and First Machias Lake. Each of these picnic sites will be provided with tables, trash barrels, fireplaces and pit toilets.

Initially, picnickers who do not anticipate the use of fire may picnic at any place on the area they desire. It is recognized that this is a lenient policy to express to the general public. It is believed, however, that this also provides much better picnicking for those who wish to get away from the roads and people. This policy and its continuation will depend greatly upon the acceptance by the public of the associated responsibilities that go along with unrestricted picnicking.

*Hiking Facilities.* The present trail system should satisfy the anticipated demands during the initial stages of development. Many miles of woods roads complement the existing trails to provide hiking for the most ardent hiker. The major problem concerning the trail system is its maintenance. This problem cannot be outlined adequately this far in advance, but it is sufficient to say that the trail system would require regular maintenance and inspection during the summer season.

The road network that presently serves the Machias Lakes Recreation Area is adequate under the existing level of use, but with intensive recreation development planned for the immediate future some changes are going to be necessary on practically all of the roads.

The success of this venture depends heavily upon the existence of a road system that will enable the recreationists to travel within the area itself at speeds that are reasonable and safe. A road system that will allow this will also benefit the landowner and timber operator. More efficient supervision, better fire protection and more efficient log transportation are all possible with a well designed and well maintained road system.

The Machias River road is the major access route to the entire eastern portion of the area. In the future this road will maintain its important function. Plans to improve this road include (1) widening the roadway to 18 feet, (2) resurfacing the road at points where heavy wear may be anticipated, (3) replacement of the bridge over Kerwin Brook and (4) realignment of several curves north of Fletcher Brook.

Modification of the Third Machias Lake road will require a great deal of new construction. At present this road is in

very poor condition because of poor alignment, lack of adequate surfacing material and excessively steep grades. The road will be reconstructed to a uniform width of 18 feet, the alignment will be improved at several points and the surface will be a minimum of 4 inches of gravel. Even though the cost of improving this road, to the extent described, is high, it is also necessary if recreationists can be expected to utilize the facilities at Mutton Cove Campground.

The Robinson Dam road that leads from the main gate to Peep Lake Campground is in reasonably good condition at the present time. Under heavy use, such as that anticipated, this road would not last very long. The road will be widened to twenty feet and a 4 inch minimum gravel surface will be applied. The extra two feet of width on this road is planned because of the extra traffic associated with transient campgrounds as opposed to recreation campgrounds. The approach to the first bridge over the Crooked River will have to be modified to improve the alignment and the slope. No reconstruction north of Elwell Dam will be done during stage one.

A small parking area will be constructed at Fletcher Field to allow the users of the Fifth Lake Campground to leave their cars in a safe place. This area will be bulldozed at a place in Fletcher Field where additional surfacing will not be necessary.

The road to Second Machias Lake will be improved slightly. Some surfacing will be done along the road at points of excessive wear. The road width will be a uniform twelve feet with turn-outs located at intervals that are determined at the time of construction. Twelve feet of width should satisfy the demands under the use level anticipated.

Estimated costs of the improvements and construction described in this section are shown in the section on expenditures and income, page 31.

Although the first development has been presented as a unit, it would most likely evolve in at least two and possibly three phases. Initially, the development would probably be limited to the minimum investment that would (1) be expected to return a profit to the investor and (2) that would indicate whether or not further development would be practical. A discussion of the phases that might be separated in stage one is included in the next section as stage II.

## PROPOSED DEVELOPMENT—STAGE II

This development stage of the Machias Lakes Recreation Area depends wholly upon the acceptance and success of the initial development. If the venture is not successful in its early years, it would be unrealistic to proceed further. The stage II plan is not designed to foresee any expansions that may be required even though this situation is anticipated. Problems of overcrowding and overuse must be handled at the time they occur by those in charge of the area. A reasonable time period should elapse between stages so that a true estimate of the success of the development may be made. This period will probably be in the vicinity of five years.

*Sabao Lake Campground.* This campground will be of the recreation type. Its site is on a slope at the south end of Lower Sabao Pond in an area of scattered hardwood trees. The view from this site is very attractive with Sabao Mountain providing a scenic background behind the lake and its numerous islands. Other reasons for selecting this site are adequate water supply, proximity to the rugged northwest portion of the area, excellent sand beaches and interesting canoeing areas.

Initial development will consist of a 100 camping unit campground with the associated equipment similar to those described for Peep Lake. The reason only 100 units are being planned is to test the demand for a campground in an area where the water areas are limited to motorless craft.

A parking area will be constructed at the beach on Sabao Lake and a foot bridge will be raised over the outlet to allow hikers to travel north along the shoreline. The channel from there to the dam on Lower Sabao Pond will be cleared of any debris that might hinder canoe travel.

A second parking area will be leveled at the dam to accommodate the cars of those people using the campground. A concession for boat rentals will also be located at the dam but motors will not be leased. A building will be erected here to house the area supervisor.

A foot path will be blazed from the campground to the beach at Sabao Lake which will allow the campers to reach the beach in a few minutes. The beach will be provided with

a diving float, water depth markers, an area designated for use by non-swimmers and several lifelines and preservers.

Semi-wilderness type camping will be available on the islands in Sabao Lake. The only facilities that will be provided in conjunction with these areas are open pit toilets. Each island will be reserved for a single camping group with the exception of Ambersand Island. This island is large enough to accommodate five groups at a single time without appearing overcrowded.

*Picnicking facilities.* New picnic areas that may be constructed during this stage will be located at points that seem to be heavily used during the first stage by picnickers who did not use regulation sites. These new facilities will probably be similar in type to those described in stage one. Unless the public has demonstrated the acceptance of their moral obligation of keeping clean picnic sites the right of unrestricted picnicking will be removed at this time.

*Trail improvement.* The additional trail work to be concluded during stage two will consist of clearing and blazing a trail from the inlet of Fifth Machias Lake to the summit of Fletcher Peak. A second trail will be constructed from the outlet of Fifth Machias Lake to the summit of Sabao Mountain via the east summit of the mountain.

The Robinson Dam road is the major access route to the area that is to be developed in stage two. This road will be reconstructed during stage one as far north as the second bridge. Further reconstruction will be necessary from there to the end of the road at the beach on Sabao Lake. The road shall be widened to twelve feet initially. This width may be changed if there is no doubt that the campground at Sabao is going to be a success. Turnouts will be constructed at intervals that allow safe and comfortable passing of cars traveling in opposite directions. A surface of gravel will be applied to the entire road.

The existing bridge over the Crooked River at Elwell Dam is in need of repair and must be replaced if safe crossing is desired. The replacement bridge will be twenty feet in width to allow for future expansion of the road and it will be constructed of wood.

The estimated costs involved in stage two are shown in estimated expenditures and incomes, page 35.



## ADMINISTRATION

The hypothesis originally stated in this paper has a profound effect on the administrative operations and techniques. User control is conducted much differently on areas of free use than on areas where fees are levied. As in the case of any plan, the administrative activities presented are intended to be flexible guides. That is to say, the supervisors who are employ- these guidelines should be constantly aware of their limitations and must use common sense and good judgment in their application.

The administration of an enterprise of this nature and extent necessarily becomes very complex. To simplify as well as clarify the description of the proposed administrative system each aspect will be described separately. It is important, however, to keep in mind the fact that in practice these aspects are not as distinct as it might appear from their description. The separate phases of the overall plan recognized for the purpose of this discussion are user control (internal as well as entry-exit), facility maintenance, forest fire prevention and control, safety and staff and equipment requirements.

The control of the recreationists or visitors is a most important function to assure the success of any business venture where the public is concerned. This function includes such duties as entrance-exit supervision, camping unit assignments and directional control allowing the users to find their way about the area.

Visitor entrance and exit control will be exercised at the main gate located at route nine. This gate will be open to the public between the hours of 6:00 A.M. and 10:00 P.M. A gatekeeper will be on duty continuously during these hours

and, in addition, someone will be available nearby on a twenty-four hour basis in case of an emergency. Generally this duty will be fulfilled by the area supervisor whose living quarters are located near the main gate.

The fee system will be simplified as much as possible both as a savings in administrative effort and as a convenience to the visitors. A fee of three dollars per day per car will be made for every day the car or any of its occupants remain in the area starting at six o'clock of the evening following entrance. A ticket will be given to the driver of every car entering the area. These tickets will be stamped with the day and hour of entrance and the intended destination of the occupants as well as whether the occupants intend to stay overnight. The fee charged for day use will be fifty cents and the occupants of day use cars will be allowed to use all the facilities available in the area. Every overnight party that leaves the area with the intention of returning must leave its card at the gate along with a monetary deposit sufficiently large to cover the existing bill. Upon their return they will be reissued their old card which will be repunched on the new entrance date. The cards will be constructed of sturdy, waterproof cardboard and a new color will be used each week. In addition to this ticket each visitor will be required to submit a short registration blank that will be retained by the gatekeeper. The information on these cards will be used to maintain accurate and complete records of the type of visitor as well as the number of visitors each season.

No definite campground or campsite assignments will be made at the main gate or at the campgrounds themselves. The gatekeeper at the main gate will keep a running tally daily on each campground as the visitors indicate their expected destination. In this way he will be able to tell the relative number of people at each campground and he can relate this information to the users. In addition he will have radio contact with the campground rangers who will know exactly how many campsites are vacant at a certain time. After a visitor has chosen his campsite it is his responsibility to notify the local ranger. This will be accomplished by taking a small tag that is found at each campsite with the campsite number on it, writing his name and address on this tag and depositing it through the slot in the door of the rangers camp. It will be the responsi-

bility of the ranger to return to his camp at designated intervals and report to the supervisor as to the situation in his area.

Even with the limited road system that exists on the area an adequate method of directing the tourists is essential. Three methods will be employed to keep the visitors aware of their location. Each visiting group will receive a brochure as they enter the area which will describe the area and will have a map similar to the one in appendix A. Next, there will be road signs posted at every road intersection with the proper road names noted. Mileages to various facilities and areas will also be shown on these signs. Finally, the major road junctions, as well as the campgrounds, will be supplied with permanent mapboards. These mapboards will be displayed in a prominent place so that they may be readily seen. They will display a colored map of the area as shown in appendix A and the map will be covered with heavy plastic to prevent deterioration. The location of the signboard and consequently the observer will be prominently marked with a large red circle. Although the system presented seems quite elaborate it is believed that it will perform the task admirably and if it prevents excessive personal attention by the rangers in orienting users then it is worthwhile.

The importance of facility maintenance cannot be over emphasized. No one enjoys staying in an area that is not clean and neat. Then too, if people are paying for transportation facilities, they expect and deserve well maintained roads.

Well defined road maintenance schedules cannot be fixed in advance without knowing the use that the roads are going to get. It can be said that the road system will be maintained in a condition that will allow safe and comfortable travel at legal speeds. Trails will also be regularly traveled, inspected and maintained if and when necessary.

Campgrounds and picnic areas will be inspected and cleaned daily. All refuse will be burned during safe burning periods in places specified for this purpose. The remaining non-flammable material will be hauled away and deposited in specified dumping areas.

The hazard and risk of forest fire is a serious problem to all forest landowners. With intensive recreation development this problem is even more serious. One advantage gained in this case, however, is the fact that the use of fire is limited



to certain areas and to safe fireplaces.

All the known methods of presenting the fire prevention theme to the public will be employed. A cooperative program with the Maine Forest Service should result in keeping fire prevention uppermost in the minds of the visitors. In spite of this, some fires, man caused or otherwise, are bound to occur. Realizing this fact it is obvious that some precautions and preparations should be taken concerning forest fire control. A fire tool cache will be located at each campground and at the entrance. All personnel, both permanent and temporary, will receive several hours of intensive, on-the-ground training in fire suppression techniques. Again, cooperation with the Maine Forest Service will be stressed. Forest fire detection will also be primarily a job of the Forest Service.

Safety is always of concern to any business enterprise. This is especially true of those enterprises catering to the general public. A multitude of hazards present themselves to the recreationists, particularly those who are inexperienced in outdoor living. Education is, of course, the most effective means of combating these hazards. As in the case of forest fires, however, accidents will and do happen. All personnel who are employed will be required to take and pass the standard ten hour first aid course given by the Red Cross. Another course of action that will be taken to facilitate the rapid and safe treatment of injured persons will be that of providing a telephone at each campground and one at the entrance. The campground phones will be connected to the Maine Forest Service guard station at Main River and will be for emergency use only. The phone at the entrance will be a public payphone and may be used for all types of phone calls.

#### Staff and Equipment Requirements

The personnel that would be required to fulfill the duties prescribed in this plan would include one gatekeeper, one supervisor, three rangers (one for each major campground), three maintenance men (recreation aides) and a storekeeper. Their major equipment requirements would include three one-half ton pickup trucks, one four-wheel drive vehicle, one central radio unit, three portable radio units, one heavy-duty flat bed truck and one small crawler type tractor. A large number of lesser items would also be required but are too numerous to be mentioned in detail.

## Estimated Expenditures and Incomes

The costs of establishing this recreation area depend upon a multitude of items, each varying simultaneously with changes in facilities, terrain, location and ground cover. It is impossible to predict accurate detailed costs without making an investigation much more intensive than the extensive type utilized in this study. If the plan was thought to be practical and reasonable it would then be appropriate to make an intensive study of the actual costs that would be expected. The costs that are related in this section are based on other projects of this nature and on information gathered from various sources such as the Maine State Park Commission. Such items as tables, fireplaces and toilets may be closely evaluated, but they constitute such a small proportion of the total development cost that it seems immaterial to include the cost of each of these individual units. The purpose of this study is to achieve an overall estimate rather than to ascertain detailed cost figures. For these reasons the detailed costs of each campground and picnic area have been deleted in favor of a unit cost per site.

Tables VII, and VIII show the estimated initial investments and annual operating costs for the area if it was developed in its entirety. Although this situation is improbable for reasons stated previously the tables serve to show the costs for all the units in one place. This will allow the analysis of partial development to be made more easily. The total possible income under certain basic assumptions is shown in table IX for the complete development of the Machias Lakes Recreation Area. The assumptions used for this study are (1) a season of 120 days (although it is realized that the area will be open for the entire year), (2) a 50% average capacity for each of the campgrounds, and a daily charge of three dollars per party.

There are three combinations or development sequences that might be followed under the conditions presented in this plan. The first would entail a minimum initial investment sufficient to provide facilities that would provide a profit under the conditions of the plan. The purposes of this sequence are to keep the initial investment comparatively low and to determine the acceptance of such a development by the public. Table X shows the investment necessary to accomplish these goals and also indicates the possible income. This development would include the construction of Peep Lake Campground, two picnic

Table VII

Estimated Total Initial Expenditures for the Complete Development of the Machias Lakes Recreation Area	
<b>ENTRANCE FACILITIES:</b>	
gatehouse and home	7,000.00
storehouse	3,000.00
roads, parking lot, gates, etc.	4,000.00
	<hr/>
	14,000.00
<b>CAMPGROUND DEVELOPMENT:</b>	
Peep Lake 200 units @ 150.00	30,000.00
Mutton Cove 200 units @ 225.00	45,000.00
Fifth Lake — —	3,000.00
Sabao Lake 100 units @ at 200.00	20,000.00
	<hr/>
	98,000.00
<b>PICNICKING FACILITIES:</b>	
route nine sites 2 @ 2,000.00	4,000.00
other sites 7 @ 1,500.00	10,500.00
	<hr/>
	14,500.00
<b>TRANSPORTATION SYSTEM:</b>	
Machias River Road	10,000.00
Third Machias Lake Road	10,000.00
Robinson Dam Road:	
south end	8,000.00
north end	20,000.00
Fletcher Field Parking Area	200.00
Second Machias Lake Road	1,800.00
	<hr/>
	50,000.00
<b>MAJOR EQUIPMENT:</b>	
pickup trucks 3 @ 1,500.00 each	4,500.00
four-wheel drive truck 1	2,500.00
central radio unit 1	1,500.00
mobile radio units 3 @ 600.00	1,800.00
portable radio units 2 @ 350.00	700.00
2-ton flat bed truck (used)	1,500.00
crawler tractor (small)	6,000.00
	<hr/>
	18,500.00
<b>MINOR EQUIPMENT</b>	5,000.00
	<hr/>
<b>GRAND TOTAL</b>	200,000.00

areas on route nine and an entrance gate at the campground. This small development would not require the construction of an elaborate entrance such as the one described in the plan.

The second possible sequence would involve an investment considerably greater than the one just described. The advantage that this sequence would have over sequence one is that it would return a greater income to start with and if the venture became successful a greater profit might be realized. This se-

quence would involve all of stage one as described in the plan. The investment and income possibilities of this sequence are shown in table XI.

The third sequence would entail complete development of both stages at the outset. This option would require a very high initial investment. Since this venture could be considered quite speculative it is unlikely that such a large investment would be wise without first making some form of test development.

Table VIII

Estimated Annual Operating Costs for the Complete Development  
of the Machias Lakes Recreation Area

<b>SALARIES:</b>		
supervisor, 1 full time		6,000.00
ranger, 3 4 months @ 1,200.00		3,600.00
aides, 2 4 months @ 1,000.00		2,000.00
storekeeper, 1 4 months		1,000.00
		<hr/>
		12,600.00
<b>VEHICLE OPERATION:</b>		
trucks 500.00/season/truck		2,500.00
tractor 1,000.00/season		1,000.00
		<hr/>
		3,500.00
<b>ANNUAL BUILDING COSTS:</b>		
repairs, depreciation, maintenance		
200.00/building/season		1,200.00
<b>ROAD MAINTENANCE:</b>		
heavy use roads	<i>miles</i>	
Machias River Rd.	11.5	
Third Machias L. Rd.	3.0	
Robinson Dam Rd. (S)	2.5	
	<hr/>	
	17.0	
17 miles @ 25.00/mile		425.00
light use roads		
Wash. Bald Mtn. Rd.	1.2	
Midland Flats Rd.	1.7	
Second Machias L. Rd.	.7	
Robinson Dam Rd. (N)	9.0	
	<hr/>	
	12.6	
12.6 miles @ 10.00/mile		126.00
		<hr/>
		551.00
<b>TAXES:</b>		
land, improvements		500.00
<b>INSURANCE:</b>		
fire, theft, liability		500.00
<b>PUBLICITY:</b>		
		5,000.00
		<hr/>
<b>GRAND TOTAL</b>		23,851.00

Table IX

Estimated Annual Income for the Complete Development of the  
Machias Lakes Recreation Area

## BASIC ASSUMPTIONS:

average occupancy of 50 per cent  
four month season (120 days)  
3.00 per day per unit for overnight facilities  
0.50 per day for day use only

## INCOMES:

Peep Lake, 200 units	36,000.00	
Mutton Cove, 200 units	36,000.00	
Fifth Machias Lake	4,000.00	
Sabao Lake, 100 units	18,000.00	
Day use fees	1,000.00	
		<hr/>
Gross income		95,000.00

Table X

Estimated Expenditures and Income for the First Sequence of  
Development for the Machias Lakes Recreation Area

## EXPENDITURES:

## Development costs

Peep Lake Campground	30,000.00	
2 picnic sites on route 9	4,000.00	
Robinson Dam Rd. (S. end)	8,000.00	
		<hr/>
		42,000.00

## Major equipment costs

1 4-WD vehicle	2,500.00	
1 central radio unit	1,500.00	
1 mobile radio unit	600.00	
1 portable radio unit	350.00	
1 2-ton flat bed truck	1,500.00	
1 crawler tractor	6,000.00	
		<hr/>
		12,450.00

## Minor equipment

1,500.00

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55,950.00

## ANNUAL OPERATING COSTS:

## Salaries

1 supervisor	6,000.00	
1 aide	1,000.00	
		<hr/>
		7,000.00

## Vehicle operation (truck and tractor)

2,000.00

## Annual building costs

200.00

## Road maintenance

65.00

## Taxes

150.00

## Insurance

300.00

## Publicity

3,000.00

---

12,715.00

## INCOME:

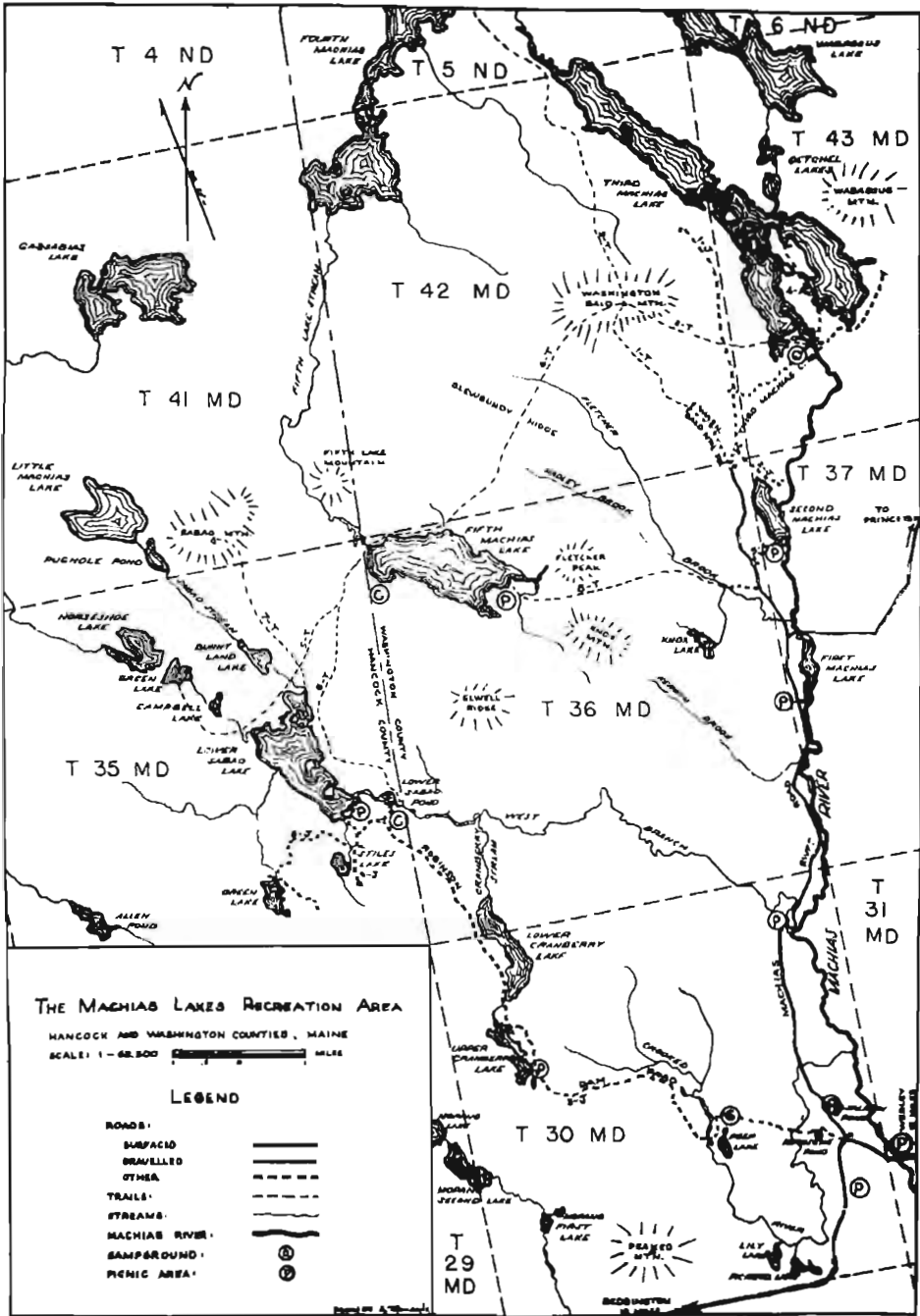
Peep Lake Campground	36,000.00
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Table XI

Estimated Expenditures and Income for the Second Sequence of Development for the Machias Lakes Recreation Area	
<b>EXPENDITURES:</b>	
Development costs	
entrance facilities (less store)	11,000.00
campgrounds (less Sabao L.)	78,000.00
picnicking facilities	14,500.00
trans. (less Rob. Dam Rd. north)	30,000.00
	133,500.00
Major equipment costs	
less one pickup truck	17,000.00
Minor equipment	4,000.00
	154,500.00
<b>ANNUAL OPERATING COSTS:</b>	
Salaries	
1 supervisor	6,000.00
2 rangers	2,400.00
2 aides	2,000.00
	10,400.00
Vehicle operation	3,000.00
Annual building costs	800.00
Road maintenance	461.00
Taxes	400.00
Insurance	400.00
Publicity	5,000.00
	20,461.00
<b>INCOME:</b>	
Campgrounds	
Peep Lake Campground	36,000.00
Mutton Cove Campground	36,000.00
Fifth Lake Campground	4,000.00
	76,000.00
Day use fees	1,000.00
	77,000.00

# APPENDIX A



## APPENDIX B

### FIFTH MACHIAS LAKE

location: NW corner, Township 36 MD  
size: 2.5 by 1.5 miles  
shape: oval  
accessibility: by foot via trails 2, 4, 5, 6 and 8 and by float plane  
scenic attractiveness: excellent  
swimming: excellent, two fine beaches extend along the west shore for  $\frac{3}{4}$  of a mile, several other smaller beaches are scattered along the shoreline.  
boating: accessible only to portaged craft, no obstructions  
comments: this lake undoubtedly affords the best swimming of any lake on the area, the beaches on both ends of the lake are superlative being both extensive and clean

### FIRST MACHIAS LAKE

location: W side, Township 37 MD  
size: 1.1 by 0.3 miles  
shape: elongate  
accessibility: car via the Machias River Road  
scenic value: fair  
swimming: poor  
boating: limited to canoes and very small boats, forms a leg in the Machias River canoe trip  
comments: this lake is formed from the widening in the Machias River, it is easily reached by car and consequently there are several camps along its shoreline, the shoreline and bottom are generally muddy making the swimming poor

### THE GETCHEL LAKES

location: NW corner, Township 43 MD  
size: 0.3 by 0.3 miles each  
shape: round  
accessibility: by boat only from the outlet of Third Machias Lake and from the dam at Wabassus Lake  
scenic value: good  
swimming: swimming is good in the lake to the south, a nice beach about 200 feet long is located on the north shore  
boating: these lakes are too small to provide good boating but they are valuable in that they provide water access between Third Machias Lake and the St. Croix watershed  
comments: in spite of the fact that these lakes are close to a main logging road they give the impression of being rather remote.

### GREEN LAKE (south)

location: S side, Township 35 MD  
size: 0.3 by 0.6 miles  
shape: rectangular  
accessibility: via jeep on roads 6-A, 3-J and 5-J  
scenic value: excellent  
swimming: poor  
boating: poor  
comments: this small lake is topographically separated from the rest of the area, the rocky shoreline and bottom make boating and swimming poor, the background of Quillpig Mountain make the scenic attractiveness of the general area very high



#### KEROSENE POND

location: E side, Township 30 MD  
size: 0.1 by 0.1 miles  
shape: round  
accessibility: car via road 6-A  
scenic value: fair  
swimming: none  
boating: none  
comments: the value of this pond primarily rests upon its unique origin, it is an example of a typical bog lake or kettle hole formed by a glacier

#### LOWER CRANBERRY LAKE

location: NW corner, Township 30 MD  
size: 1.8 by 0.4 miles  
shape: elongate  
accessibility: jeep via roads 6-A and 3-J  
scenic value: excellent  
swimming: good  
boating: good for small boats and canoes  
comments: this lake has considerable potential for further development, excellent scenic value due to the proximity of Cranberry Mtn. swimming is good from the beaches but these same beaches are relatively difficult to reach

#### LOWER SABAO LAKE

location: center, Township 35 MD  
size: 1.0 by 2.4 miles  
shape: extremely irregular  
accessibility: Jeep via roads 6-A and 3-J, trails 2-T, 4-T and 5-T  
scenic value: excellent  
boating: excellent for canoes especially  
swimming: excellent from the numerous and vast beaches  
comments: this body of water affords excellent opportunity for swimming and canoeing, its irregular shoreline and numerous islands give the area the appearance of a wilderness

#### LOWER SABAO POND

location: SE corner, Township 35 MD  
size: 0.2 by 0.2 miles  
shape: round  
accessibility: same as Lower Sabao Lake  
scenic value: fair  
swimming: none  
boating: not important except as an access route to Lower Sabao Lake  
comments: this pond is a widening in the outlet stream of Lower Sabao Lake, it is the source of the West Branch which is canoeable at certain seasons, mudflats are extensive during the summer

#### PEEP LAKE

location: center, Township 30 MD  
size: 0.2 by 0.4 miles  
shape: oval  
accessibility: car via road 6-A  
scenic value: excellent  
boating: none  
swimming: excellent  
comments: this is a very small lake with excellent swimming and scenic

opportunities, the bottom is entirely sand and fine gravel, large pines rim the shoreline to the north and west

#### SALMON POND

location: E side, Township 30 MD

size: 0.1 by 0.1 miles

shape: round

accessibility: car via road 6-A

scenic value: good

swimming: fair

boating: none

comments: this extremely small pond located near route nine has been reclaimed for trout by the Maine Inland Fisheries

#### SECOND MACHIAS LAKE

location: NW corner, Township 37 MD

size: 1.1 by 0.3 miles

shape: elongate

accessibility: car via roads 1-A and 5-A, jeep via 2-J

scenic value: fair

swimming: good at the beach on the south end

boating: fair for small craft

comments: this lake is also a widening of the Machias River, the beach on this lake is presently the most popular recreation site on the area

#### STILES LAKE

location: SE corner, Township 35 MD

size: 0.2 by 0.3 miles

shape: round

accessibility: jeep via roads 6-A, 3-J and 4-J

scenic value: fair

swimming: none

boating: none

comments: this small lake has a heavily vegetated shoreline, either marsh grass or dense brush, outlet stream is not navigable

#### THIRD MACHIAS LAKE

location: W side, T 43 MD; NE corner, T 42 MD

size: 6.2 by 2.0 miles

shape: elongate and forked

accessibility: car via roads 1-A, 3-A and 4-A

scenic value: excellent

swimming: excellent

boating: excellent, some obstructions

comments: this is the largest lake on the area, it affords the greatest variety of recreational opportunities, beaches are numerous and very clean, water access to St. Croix watershed is possible, the lake is large enough for any motor boat

#### UPPER CRANBERRY LAKE

location: NW corner, Township 30 MD

size: 1.1 by 0.3 miles

shape: irregular

accessibility: jeep via roads 6-A, 3-J

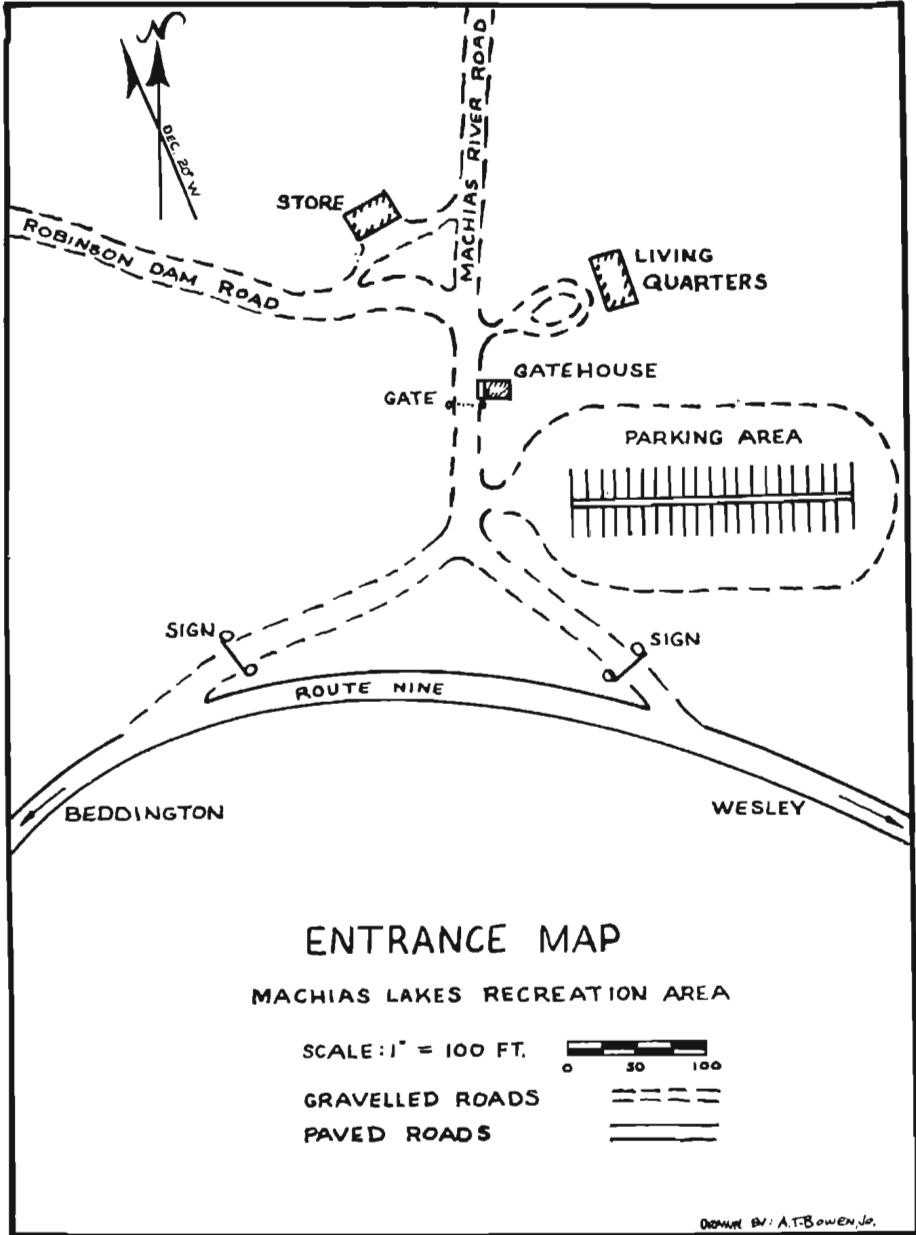
scenic value: good

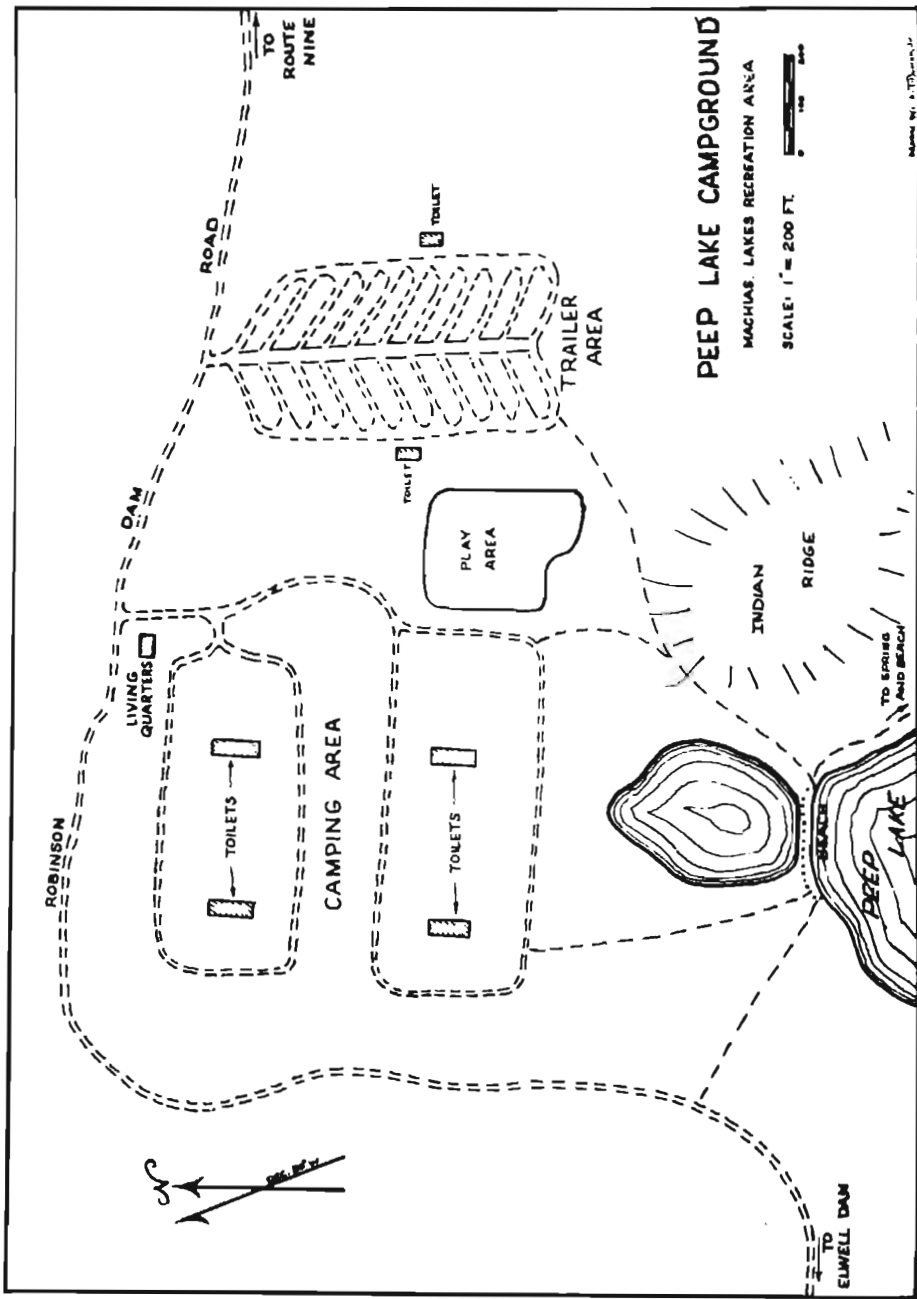
swimming: fair

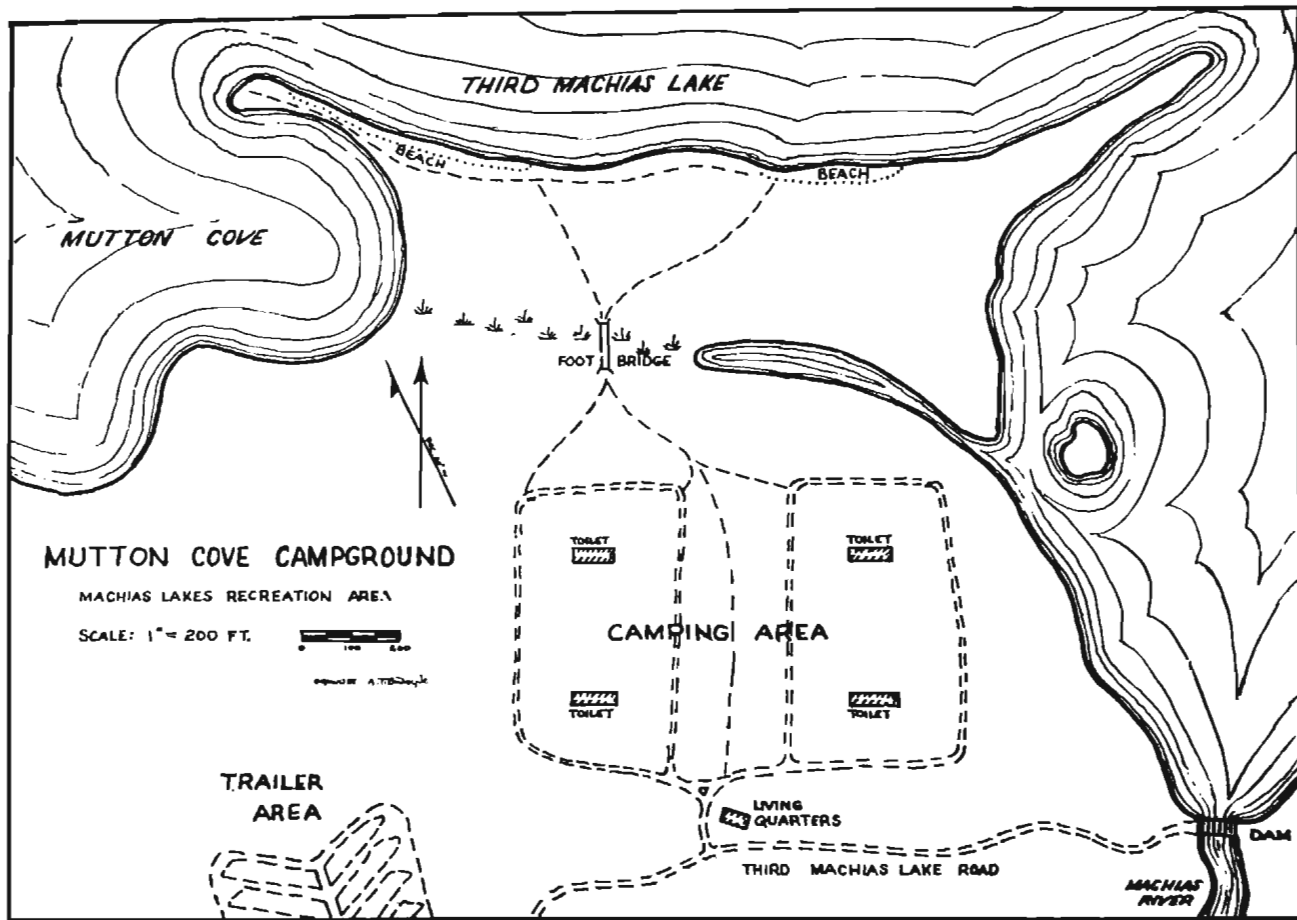
boating: good for small craft

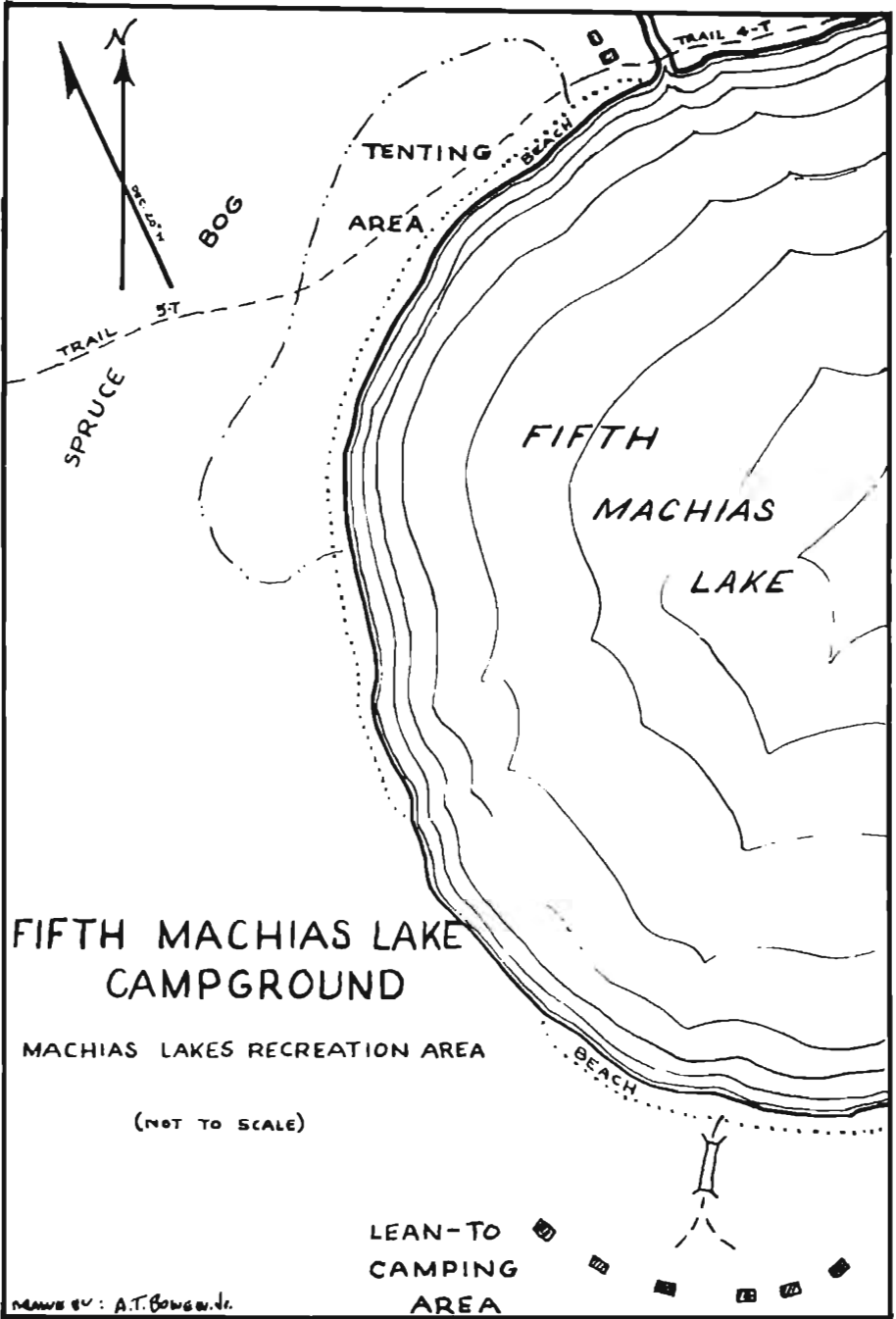
comments: this lake is south of Lower Cranberry Lake and the outlet flows north, the road follows the shoreline rather closely along the northeast side, its irregularity gives it a pleasing appearance

# APPENDIX C

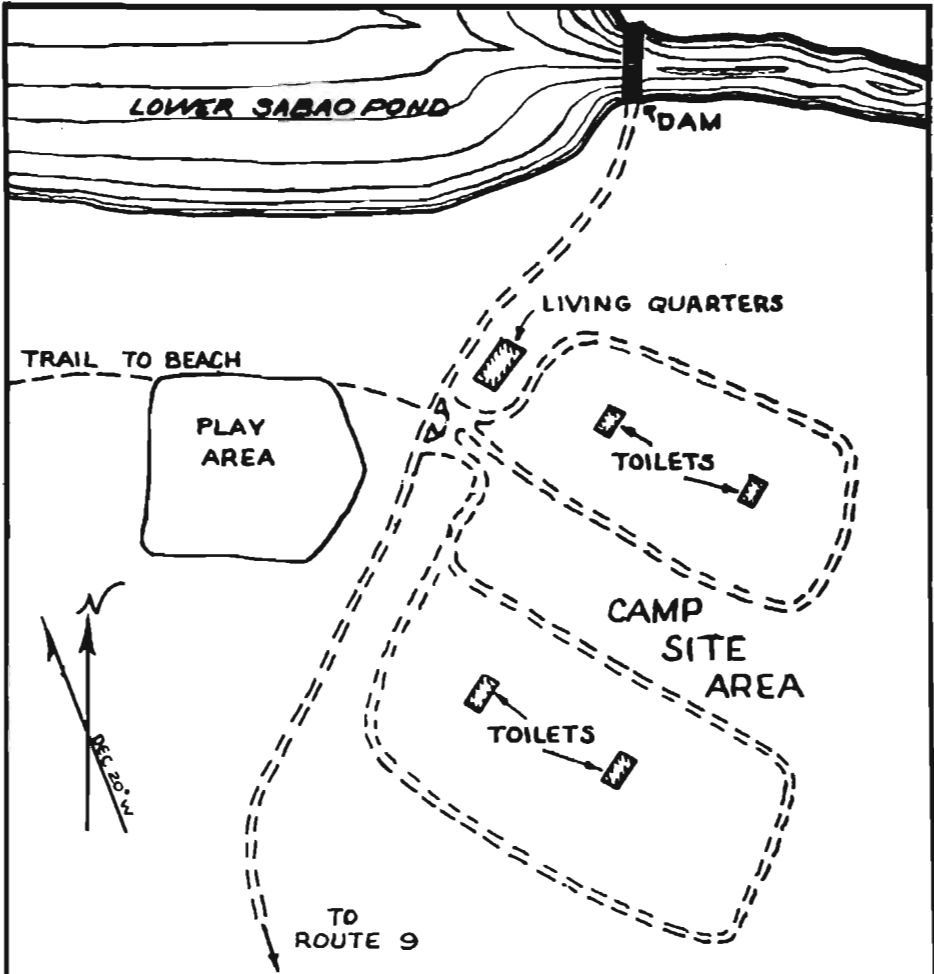








MAPS BY: A.T. Bowser, Jr.



# SABAO LAKE CAMPGROUND

MACHIAS LAKES RECREATION AREA

SCALE : 1" = 200 FT.



Designed by: A.T. Bowen Jr.





