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SOME BASIC CHARACTERISTICS OF RECREATION AND THE  
RECREATIONIST, STILLWATER STATE FOREST, MONTANA

by

Frederick Charles Low

B.S.F. University of Georgia, 1965

Presented in partial fulfillment of the requirements for  
the degree of Master of Forestry

UNIVERSITY OF MONTANA

1969

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## CHAPTER I

### INTRODUCTION

#### The Problem

An increasing demand for public recreation on lands owned by the State of Montana has resulted in the planning of additional recreation areas and facilities, as evidenced by the Montana Statewide Outdoor Recreation Plan (16). The need for recreational development on any particular tract of state-owned land, however, might be quite low at present, because it is in an isolated location or is close to recreational developments of the U. S. Forest Service or National Park Service. Such is the case with the ninety-one thousand acre Stillwater State Forest in northwestern Montana. Recreation development on the Stillwater has been limited not only because of the presence of federal developments, but also due to higher priority land management objectives and fiscal limitations. Consequently, present recreational use of the Stillwater State Forest is small.

Under the laws controlling the operation of the State Forester's Office, the Stillwater Forest (like other state forest lands) is managed to provide a continuing revenue to the state educational trust fund through the sale of forest products, grazing fees, special use permits, and private summer home site leases. In addition to a sustained yield, the Stillwater is managed for the maintenance of watersheds and the protection of recreational and wildlife values.

Possibly, at some future date, the demand for recreation on the Stillwater Forest will reach a level sufficient to warrant recreational

land management and capital expenditures. If and when this occurs, descriptive material on recreation resources on that forest and adjacent lands, an indication of past recreational use, and a descriptive analysis of the recreation user will be needed. The report that follows attempts to provide this information.

### Study Objectives

The four objectives of this study are listed below:

1. To describe the recreation resource on the Stillwater Forest and nearby ownerships.
2. To make an estimate of present recreational use of the Stillwater State Forest.
3. To learn characteristics, attitudes, and activities of Stillwater Forest visitors.
4. To determine if existing campgrounds on the Stillwater Forest and nearby ownerships are of adequate size to accommodate present visitor pressure.

### Literature Review

This literature review contains studies that were of considerable help in deriving investigational procedures. Two principal procedures were used: (1) estimating recreational use with traffic counters and (2) interviewing recreationists with a structured questionnaire. The first part of the review contains studies in which pneumatic traffic counters were used to estimate recreational use. The second part of the review contains studies in which interviewing of recreationists occurred, or comments were made in regard to the interviewing of recreationists.

Recreation Use Estimation with Traffic Counters. James and Ripley (12) have reported the use of pneumatic traffic counters and systematic observation to determine ratios between axle counts and camping visits, swimming hours, etc. by simultaneously measuring both. In their study a traffic counter placed at a campground entrance was operative the entire recreation season. Ten randomly-selected twelve-hour subsampling periods provided recreation use estimation with a sampling error of twenty-five per cent at the sixty-seven per cent level of probability.<sup>1</sup> Half the sampling days occurred on weekdays and half occurred on week ends or holidays. In a later publication by James (11), it was reported that this procedure was used successfully on seventy-five developed recreation sites on national forest.

Cushwas and James (6) reported on the same procedure of estimating recreation visits on developed sites, but suggested a variable subsampling intensity ranging from four weekend-days or holidays and four weekdays, to eight weekend-days or holidays and eight weekdays. The authors gave no error of estimate or reasons for a variable sampling intensity.<sup>2</sup>

It should be noted that these studies have dealt with estimation of use on developed recreation sites such as campgrounds which are small

---

<sup>1</sup>A sampling error of twenty-five per cent at the sixty-seven per cent level of probability means that if the estimate of camping use was 1,000 visits for the season, the true value of camping visits would lie between 750 visits and 1,250 visits two out of three times.

<sup>2</sup>It would appear, however, that sampling intensity and error of estimate are dependent upon the physical characteristics of the recreational site, particular type and accuracy of the traffic counter, type of use, intensity of use, weather, and length of season.

in acreage. There is, however, no reason why this method of recreation use estimation cannot be applied on large land areas. When used to estimate the use of a large area such as an entire forest, the procedure would be designed to separate recreation traffic from non-recreation traffic. In small areas such as developed campgrounds, the procedure would be designed to separate different kinds of recreational activity.

Interviewing Recreationists. Recreationists are usually interviewed through the use of a formal, structured questionnaire such as was used in this study (4, 13, 14, 23). Burch (2), a sociologist, feels this technique has many weaknesses:

1. Responses are usually those of the male head of family and are often a poor indicator of the attitudes of the wife and children.

2. Responses are often dependent upon recall ability.

3. Questionnaires employ simple responses when a complex response is often more accurate.

4. Different social groups interpret identical questions differently.

5. Socially unaccepted responses are never recorded (e.g., questionnaires have no categories for drinking or illicit sex relations).

6. Questionnaires assume respondents give rational answers.

All of these factors tend to lessen the value of a questionnaire.

In addition to the human bias that undoubtedly enters into interviewing, Lucas and Schweitzer (13) have brought attention to a systematic bias that results from varying lengths of visitor stay. For example, campers that stay two days are only one-tenth as likely to be sampled as campers that stay twenty days. Generally, people living further from a

particular recreation area stay longer (13).<sup>3</sup> If their attitudes, tastes, and preferences are different than local, short stay visitors, the data will be biased in the direction of longer staying visitors. This bias may not appear if sampling is to determine visitor days of various activities. However, if sampling is to determine characteristics of visitors, bias correction is desirable. Since bias is a function of length-of-stay, it can be corrected by weighing each interview by the inverse of length-of-stay of ten days counts only one-tenth as much as a party that stays one day.

Burch (3) has suggested there are four main elements that enhance or detract from enjoyment of a particular recreation site: (1) setting (access, scenic atmosphere, arrangement of units); (2) activity (activities available, fish supply, entrance fees); (3) comfort (firewood, toilets, insect control); and (4) social (adherence to group standards, number of people, kinds of people). By stratifying responses from applicable questions into the above four categories, it is possible to obtain a better indication of visitor likes and dislikes.

---

<sup>3</sup>Assuming this statement is true as Lucas and Schweitzer have, it is quite possible that people living further from a particular recreation area also visit the recreation area less often, thus reducing the effect of the length-of-stay bias.

## CHAPTER II

### DESCRIPTION OF THE STUDY AREA

#### Physical and Cultural Characteristics

The 91,489 acre Stillwater State Forest is located in Flathead and Lincoln counties approximately 150 miles north of Missoula, Montana (Map 1, page 7). The northern boundary is 15 air miles south of Canada, and the eastern boundary is 20 air miles west of Glacier National Park.

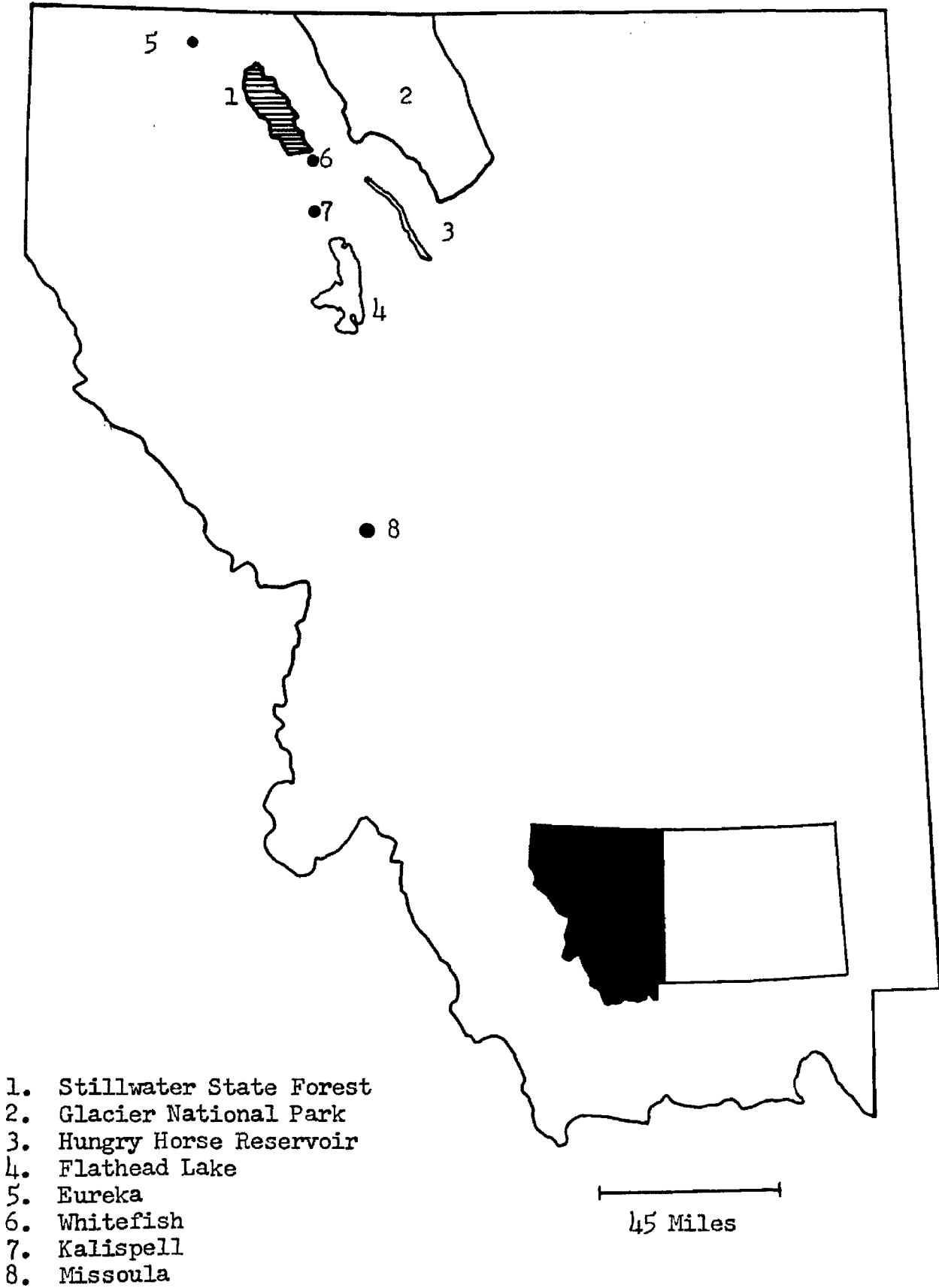
The northern half of the forest is almost entirely state owned, while private holdings of the Glacier Park Company predominate in the southern half. Land to the north, east, and west of the forest boundary is in public ownership and administered by the U. S. Forest Service. Whitefish Lake is located to the south. Ownership of the Stillwater State Forest and the location of major access roads are shown on page 8.

The Stillwater Forest has a relatively small human population surrounding it. Within a 45 mile driving distance from the forest headquarters at Olney, Montana, there is a total population of only 19,700 (18). In addition to the low population level from which to draw recreationists, there are several million acres of public forest land available to this same population within similar traveling distances. It thus might be expected that any major increases in Stillwater Forest visitors,<sup>1</sup> not visits necessarily, would come from other parts of the state or other states.

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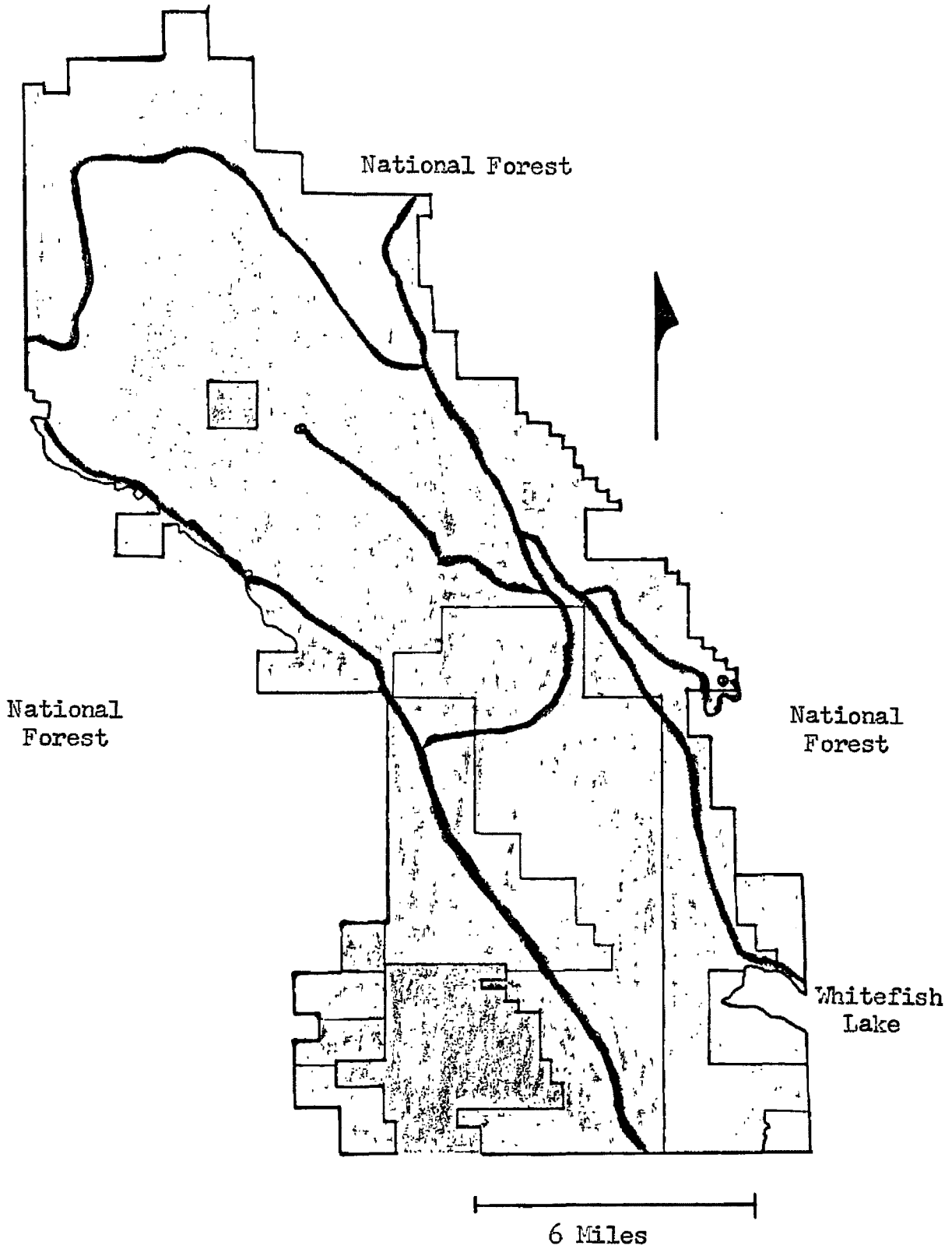
<sup>1</sup>A visitor is an individual that uses a recreation area. Visits are the number of time periods a visitor uses a recreation area. Consequently, one visitor may account for several visits during a summer.


Map 1. Location of Stillwater State Forest, Montana.








Map 2. Ownership and Roads of Stillwater State Forest



 Stillwater State Forest

 U. S. Highway 93

 National Forest

 Major Forest Roads

 Boundary of Township

The land configuration of the Stillwater consists of mountains and ridges separated in a north-south direction by linear valleys. Some of these mountains rise above timberline and are quite rugged and picturesque. Elevations range from 3,160 to 7,331 feet above sea level, resulting in a local relief of 4,171 feet (for comparison, the local relief of Glacier National Park is 7,288 feet).

#### The Recreation Resource

The Stillwater Forest contains many accessible fishing lakes. There are thirteen major lakes larger than twenty-five acres (Table I). There are also twenty-one minor lakes ranging in size from three to twenty acres. Many of these smaller lakes support game fish populations and several have natural boat ramps. There are also approximately ninety miles of trout streams throughout the forest.

Fishing is a major activity on the forest throughout the entire year. Periodic stocking keeps up the fish supply in those lakes without natural regeneration. Such lakes include: Murray, Upper Beaver, Beaver, Wood, Dollar, Dog, Stryker, and Bull.<sup>2</sup> All of these lakes with the exception of Stryker and Bull have been rehabilitated and/or stocked since 1964 with three-inch or eight-inch rainbow trout.<sup>3</sup>

In Montana, the Fish and Game Department has authority to control the water of any lake, stream, or pond that is completely enclosed by state land if the water is used for breeding or propagating game fish (17).

---

<sup>2</sup>Hanzel, Laney. 1966. Fisheries Biologist. Montana Fish and Game Department. Personal Interview.

<sup>3</sup>Demrose, Robert. 1966. Fisheries Biologist. Montana Fish and Game Department. Personal Correspondence.

TABLE I  
 MAJOR LAKES OF THE  
 STILLWATER STATE FOREST

Lake Name	Acreage <sup>a</sup>
Beaver . . . . .	186
Boyle . . . . .	36
Bull . . . . .	134
Dog . . . . .	124
Lower Stillwater . . . . .	304
Murray . . . . .	42
Smith . . . . .	26
Stryker . . . . .	40
Upper Beaver . . . . .	35
Upper Stillwater . . . . .	702
Upper Whitefish . . . . .	115
Whitefish . . . . .	b
Wood . . . . .	28

<sup>a</sup>Area of Lakes computed from a planimetric map (1:31,680) by use of a dot grid containing forty-nine dots per square inch.

<sup>b</sup>Whitefish Lake is several thousand acres. However, poor access and small frontage excludes the lake as a resource of the Stillwater State Forest.

It also controls all wildlife and fish populations on all lands within the state with certain exceptions (e.g., Glacier National Park). Therefore, the Fish and Game Department and not the State Forester controls several recreation resources on the Stillwater Forest. As the water, fish, and game resource is quite important, coordination between these departments will become more important if use of the forest increases.

The Office of the State Forester has done little direct management of wildlife habitat other than browse stimulation, as a side-effect of timber harvesting. However, as funds become available, the Office of the State Forester plans to expand activities in this field.<sup>4</sup>

Wildlife of the Stillwater includes moose, whitetailed deer, mule deer, elk, black bear, grizzly bear, and several species of grouse and migratory fowl.<sup>5</sup> No harvest data is available for the Stillwater Forest itself, as records are maintained on a district basis. Table II shows harvest statistics from 1960 to 1965 for District Eleven of which the Stillwater Forest comprises approximately 15 per cent of the land area.

Applying the Outdoor Recreation Resource Review Commission's<sup>6</sup> land classification system, the entire Stillwater is Class III land (23). Class III land is natural forest environment. The land has no unusual

---

<sup>4</sup>Salmonson, Earl. 1966. District State Forester. State of Montana, Office of the State Forester. Personal Interview.

<sup>5</sup>Cusick, Maurice. 1965-1966. Repair and Maintenance Supervisor. State of Montana, Office of the State Forester. Personal Interviews.

<sup>6</sup>The Outdoor Recreation Resources Review Commission, commonly referred to as ORRRC, was appointed by the President of the United States. From 1958 to 1962 the Commission studies outdoor recreation and made various recommendations.

TABLE II

BIG GAME HARVEST AND HUNTER SUCCESS  
DISTRICT ELEVEN, 1960 - 1965<sup>a</sup>

Year	Moose			Whitetail and Mule Deer			Elk			Black Bear <sup>b</sup>		
	Hunters (Permit.)	Kill	Success (%)	Hunters	Kill	Success (%)	Hunters	Kill	Success (%)	Hunters	Kill	Success (%)
1960	20	18	90	1803	835	46	1130	49	4	762	142	19
1961	25	25	100	1024	482	47	922	191	21	557	92	17
1962	30	29	97	1282	631	49	834	94	11	619	86	14
1963	45	34	76	688	305	44	872	136	16	560	46	8
1964	45	32	71	854	356	42	935	79	8	330	80	24
1965	30	24	80	690	244	35	555	59	11	230	14	19

<sup>a</sup>Figures based upon returned questionnaires from hunters and expansion.

<sup>b</sup>No data available of grizzly bear kill.

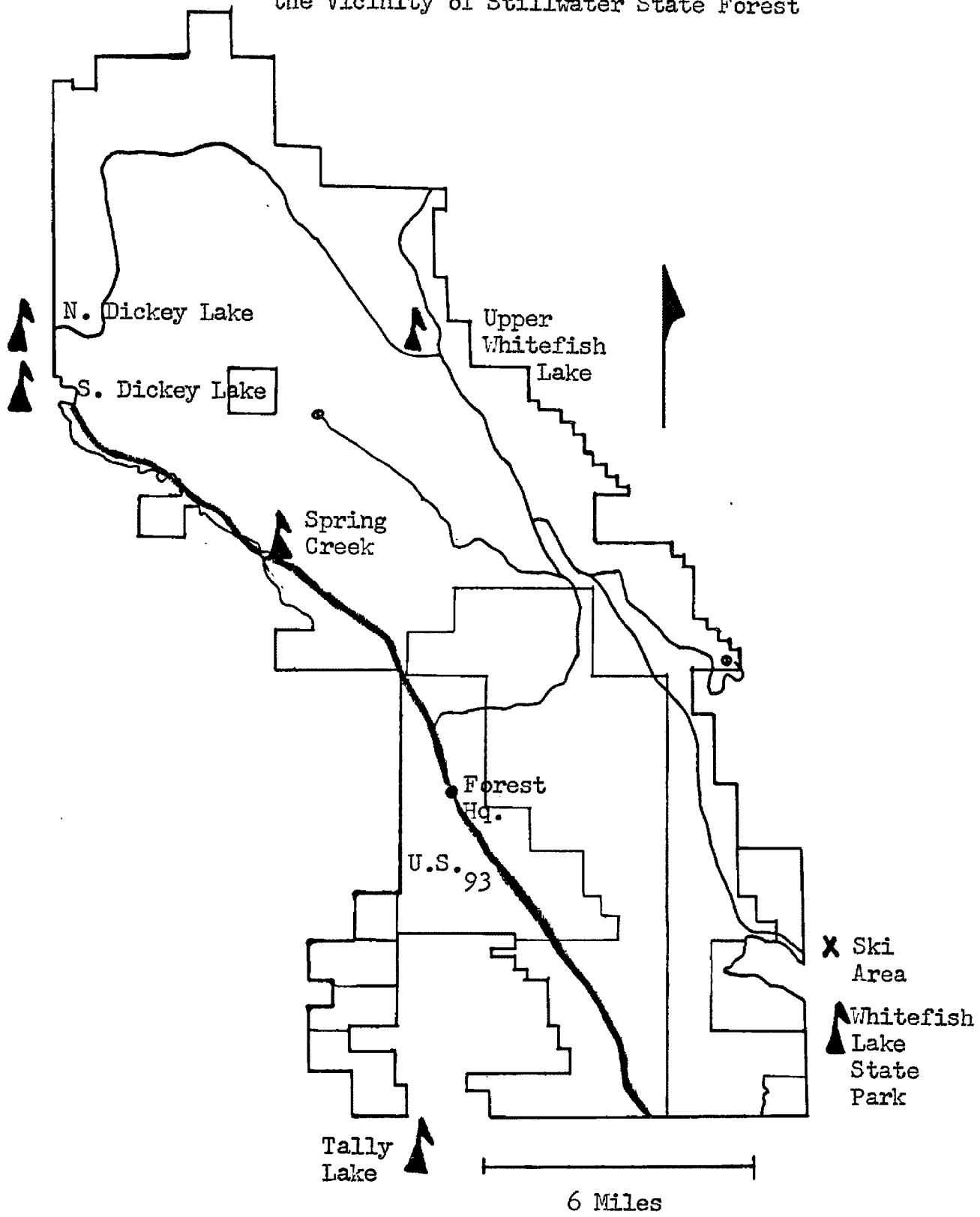
Source: State of Montana, Fish and Game Department, 1966.

scenic attractions, land uses other than recreation predominate (e.g., timber growing, grazing), and recreational use is generally light. Although the Stillwater Forest contains no outstanding scenic attractions when compared to western Montana as a whole, the mountains, lakes, meadows, trees, huckleberries, wildflowers, wildlife, and rock formations undoubtedly provide a pleasant and invigorating environment for recreational activity.

#### Present Recreation Developments on Stillwater Forest and Vicinity

The Office of the State Forester has two small recreation developments which were built on the Forest by the Civilian Conservation Corps (CCC) in the 1930's. Both developments are campgrounds but have no formal family unit arrangement. Spring Creek Campground is adjacent to U. S. Highway 93, 7 miles north of the forest headquarters. It contains one outhouse, four garbage cans, two tables, and one garbage pit. Water is obtained directly from a creek bisecting the development. Upper Whitefish Lake Campground is adjacent to Upper Whitefish Lake, 15 miles northeast of the forest headquarters. It contains two outhouses, four garbage cans, and one table. Water is obtained directly from a creek flowing out of the lake. This development also has a natural boat ramp and natural swimming beach. The location of these public campground facilities on the Stillwater Forest and all public recreation facilities described below are shown on Map 3, page 14. In 1958, the Office of the State Forester estimated that the use of the entire Stillwater Forest including these free public campgrounds was 500 day visits and 50 over-

Map 3. Present Recreation Developments in the Vicinity of Stillwater State Forest



night visits (21). In addition to these public facilities, there are 16 recreation land leases (cabin sites) scattered throughout the forest.

The U. S. Forest Service maintains three moderately-developed campgrounds near the Stillwater Forest. Tally Lake Campground is located 14 miles south of the Stillwater Forest headquarters on a 1,300-acre lake. This campground has 38 family units, boat launching facilities, and swimming beach. Each party, on a vehicle basis, that visits this development must include an occupant who possesses a Land and Water Conservation Card (\$7.00 per year); or they must pay a fee of \$1.00 per day (24). North Dickey Lake Campground is located on a 600-acre lake 15 miles north of the Stillwater Forest headquarters. This facility has 16 family units, boat launching facilities, and swimming beach. This campground is also under the Land and Water Conservation Act. South Dickey Lake Campground is located 2 miles south of the previously mentioned area. This campground contains 12 family units, boat launching facilities, and a swimming beach. There is no visitor charge at this federal facility.

Whitefish Lake State Park, administered by the Montana Fish and Game Department, is on Whitefish Lake 18 miles south of the Stillwater Forest headquarters. The campground here contains approximately 50 units,<sup>7</sup> boat launching facilities, and a swimming beach. There is no visitor charge.

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<sup>7</sup>It was impossible to determine the exact number of family units because there is no formal unit designation, and many parties park their trailers on the day-use parking lot. Also, the vegetation which normally separates camping parties is exceptionally sparse.



Big Mountain, a regionally known ski area, is located 22 miles southeast of the Stillwater Forest headquarters. The ski-lifts at this area operate year-round.

In summary, the present recreation resources of the Stillwater State Forest is based upon a natural forest environment, a big game population, 13 lakes of significant size, and over 90 miles of trout streams. Two small public campgrounds are present as well as 16 private summer home sites. Adjacent to the forest are 3 campgrounds administered by the U. S. Forest Service, a small state park administered by the Montana Fish and Game Department, and a privately-owned ski area.

#### Future Recreation Development on Stillwater Forest and Vicinity

The Office of the State Forester has plans for the redevelopment of the Spring Creek and Upper Whitefish Lake campgrounds, in cooperation with the Fish and Game Department. This will be financed in part by the Land and Water Conservation Act (24).<sup>8</sup> No construction date has been set. There are also plans to increase the number of summer home-site leases on the Stillwater (22).

The U. S. Forest Service has formulated long-range plans for the development of 16 additional recreation areas within 30 driving miles of the Stillwater Forest headquarters. When these are completed an additional

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<sup>8</sup>Land and Water Conservation Act projects are planned by the state and then reviewed by a federal agency. The projects are financed by the federal government and the respective state on a fifty-fifty basis. The Act is administered nationally by the Bureau of Outdoor Recreation (BOR) in the Department of the Interior and locally by the Montana Fish and Game Department. At present, Montana is deriving its funds from a marine fuel tax. Montana's funds, however, must be spent on water-based recreation developments. (9).

346 family units will be available for public use.<sup>9</sup> <sup>10</sup> Locations of these proposed areas are shown on Map 4 and listed in Table III. It should be noted that many of these recreation areas will not become a reality for some time (see "anticipated construction date"). The Forest Service now has rated developments at Hungry Horse Reservoir, North Fork of the Flathead River, and the future Libby Reservoir as top priority. These 3 locations are from 50 to 70 driving miles from the study area.

The Montana Fish and Game Department has expressed a desire to acquire and develop fishing access points in the immediate vicinity of the Stillwater Forest.<sup>11</sup>

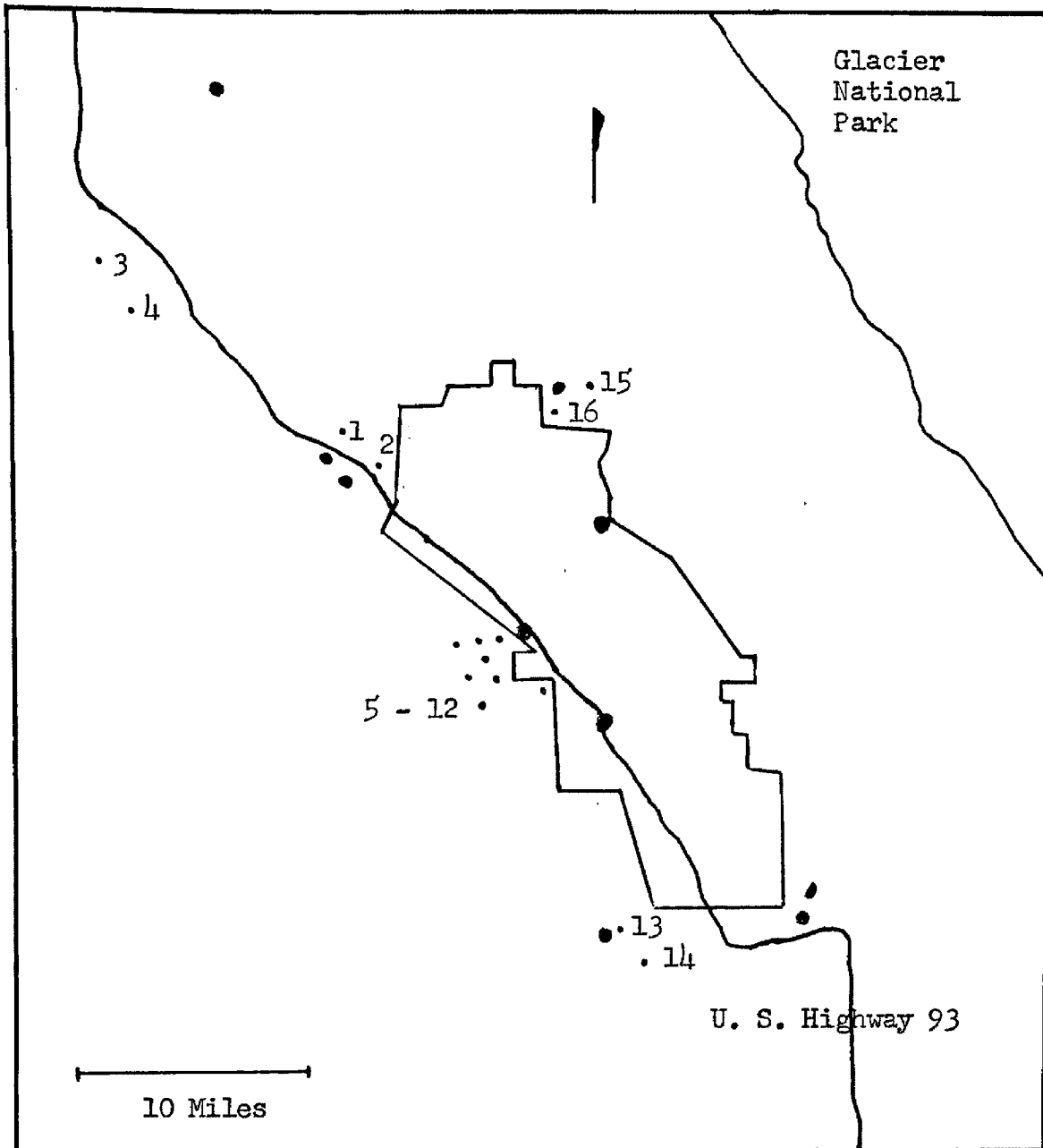
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<sup>9</sup>MacPherson, Ross. 1966. Recreation Planning Assistant. Supervisor's Office, Flathead National Forest. U.S.D.A., Forest Service. Personal Interview.

<sup>10</sup>Mahrt, G. E. 1966. Forest Supervisor, Kootenai National Forest. U.S.D.A., Forest Service. Personal Correspondence.

<sup>11</sup>Cooney, Robert F. 1966. Assistant Chief, Recreation, Parks, and Research Department. Montana Fish and Game Department. Personal Interview and Correspondence.

Map 4. Existing and Potential Recreation Facilities  
in the Vicinity of Stillwater State Forest



- Stillwater Forest Headquarters; State land shaded.
  - Potential U. S. Forest Service Facility (listed, page 21)
  - Existing U. S. Forest Service Facility
  - Existing Office of the State Forester Facility
  - Existing State Park Facility
- Existing Ski Area

TABLE III  
 POTENTIAL U. S. FOREST SERVICE  
 RECREATION SITES IN VICINITY  
 OF STILLWATER STATE FOREST

Name and Map Number	Anticipated Construction Date	Family Units	Distance From Stillwater Hq. (miles)
1. Murphy Lake	1971	23	17
2. E. Dickey Lake	1976	24	14
3. Alkali Lake	1971	9	26
4. Frank Lake	1976	9	22
5. U. Stillwater Lake <sup>a</sup>	1970	50	7
6. Olney	after 1970	50	2
7. Fire Lake	after 1970	15	10
8. Wall Lake	after 1975	15	8
9. Lagoni Lake	after 1975	25	6
10. L. Martin Lake	after 1975	30	4
11. U. Martin Lake	after 1975	15	5
12. Martin Falls <sup>a</sup>	after 1975	10	8
13. Tally (expansion) <sup>a</sup>	after 1970	20	14
14. Tally (new)	after 1975	25	16
15. Red Meadow (expansion)	after 1970	4	21
16. Fitzsimmons Creek	after 1975	22	23

<sup>a</sup>Day use only.

Source: Sites 1 - 4. USDA Forest Service, Kootenai National Forest Recreation Files. 1966.

Sites 5 - 16. USDA Forest Service. Flathead National Forest Recreation Files. 1966.

## CHAPTER III

### INVESTIGATION PROCEDURES

#### Recreation Use Estimation

An objective of this study was to estimate recreational use of the Stillwater Forest during the 1966 summer season. In addition to providing an indication of current use, this estimate will also serve as a base year from which recreational use in subsequent years can be compared.

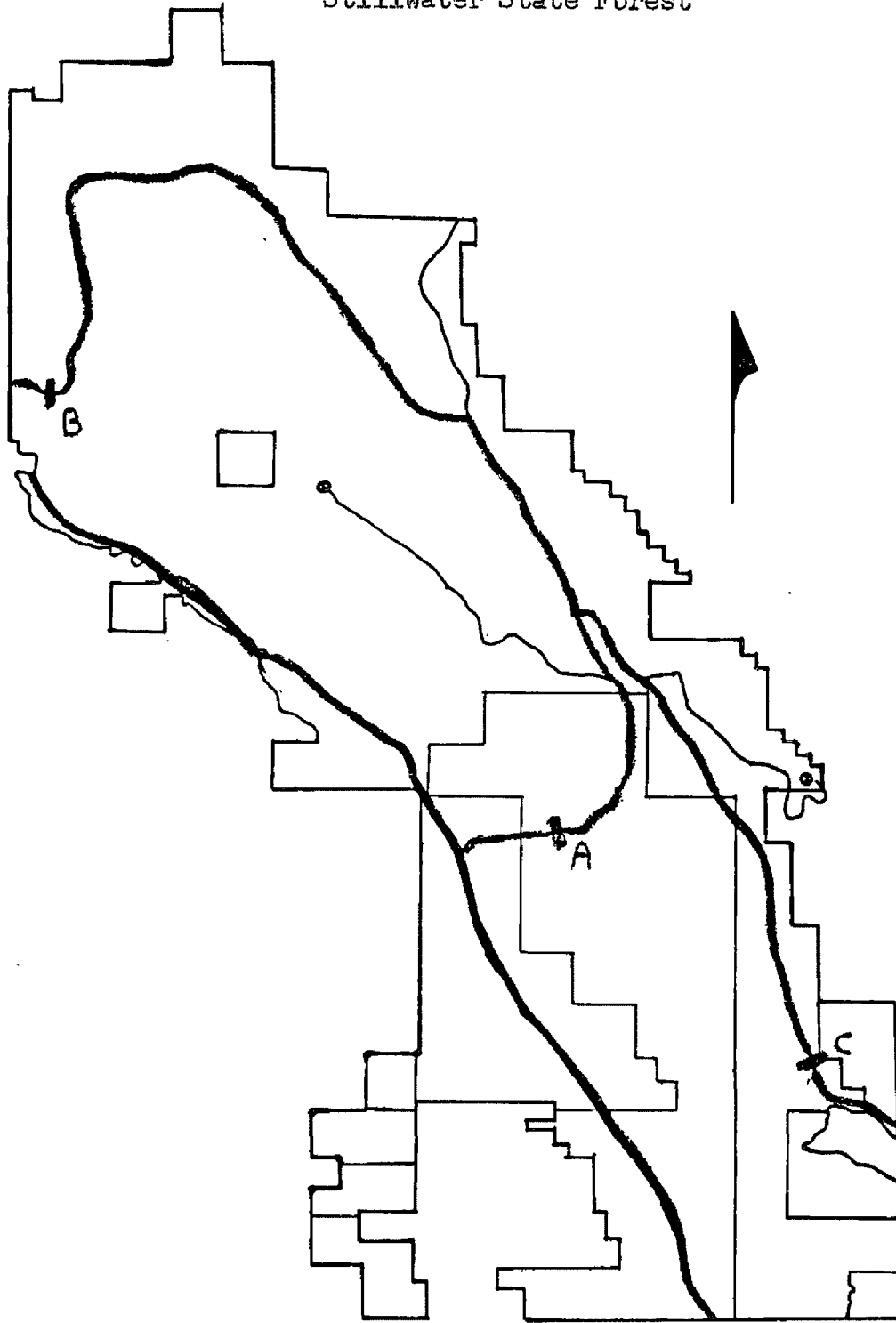
A pneumatic traffic counter was placed just inside the forest boundary on each of the three major forest roads where recreation use occurred (Map 5). The counters were to operate continuously from June 14, 1966 through September 11, 1966 thus covering the whole summer recreation season. However, several days were not counted as a result of counter failure. Traffic on days when counters were inoperative was estimated by expanding existing data.

Recreation use was estimated by developing a ratio of recreation use to total vehicle traffic crossing each counter. When this ratio is multiplied by the total number of axles<sup>1</sup> that crossed the counter, an estimate of recreational vehicle use is obtained. When this vehicle estimate is multiplied by the mean number of people per vehicle, an estimate of recreation visits is obtained for that particular location.

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<sup>1</sup>Although traffic counters used in this study converted axles into vehicles (two axles equal one vehicle), axles rather than "vehicles" must be used to develop use ratios due to multiple axle logging trucks and recreation trailers. In fact, logging trucks may enter the forest on three axles and leave on five, enter on two and leave on three, etc.

Map 5. Traffic Counter Positions  
Stillwater State Forest



6 Miles



U. S. Highway 93



Major Forest Roads  
Where Recreation  
Use Occurs



Traffic Counter Locations

To develop the recreation use ratio, "roadside interviewing" was employed. Vehicles entering the forest were stopped momentarily to determine if the occupants were on the forest for recreational purposes. The number of people per recreation vehicle was recorded. The roadside interview was also used to correct the traffic counter, since heavy vehicles such as logging trucks are frequently overcounted. For every counter an instrument error correction factor was developed by comparing actual or visually observed number of axles to the number of axles recorded by the counter. For example, a correction factor of 0.733 means that for every 1,000 axles the counter recorded, only 733 axles actually passed.

Sixteen roadside interview periods of seven hours each were conducted. Eight were conducted at traffic counter location A (Map 5) where there was considerable logging traffic. Four were conducted at each of the other two counter locations where there was no logging traffic. The number of roadside interviews was determined after reviewing the literature and discussing the matter with a U. S. Forest Service engineer<sup>2</sup> who had conducted roadside interviewing previously. After discussion of the problem with a University of Montana statistician,<sup>3</sup> it was decided that roadside interview dates would be pre-selected, rather than selected at random. This procedure was necessary because it was impossible to be on the study area during a random selection of sampling dates. Assumptions

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<sup>2</sup>Burnell, Frederick F. 1966. Transportation and Planning Officer. Region One. U.S.D.A., Forest Service. Personal Interviews.

<sup>3</sup>Reinhardt, H. E. 1966. Associate Professor of Mathematics. University of Montana. Personal Interview.

for pre-selection of sampling dates were that weather occurred at random throughout the summer, and there was no knowledge of events or variables that would influence recreation use.

The error of estimate accepted for this procedure was 0.3, that is, the estimate, or in this case the range of estimates of recreational use, has a chance of being correct seven out of ten times. This degree of confidence is similar to that used nationwide by the U. S. Forest Service for their recreation use samplings (11).

The accuracy of the traffic counting procedure was determined in three steps. 1. Counting error correction factors were applied to the number of axles counted by the traffic counter. 2. Standard statistical procedures as described by Freese (10) were used to place confidence limits on the ratio of recreation use to total road use at each counter. For example, the calculation for one counter showed the true value of the recreation use ratio lay between .023 and .037. The calculation has a chance of being correct seven out of ten times. A recreation use ratio of .023 means that for every 1,000 axles crossing the counter, 23 recreation vehicles entered the forest. Consequently, if 10,000 axles crossed the counter during the summer, the true value of recreation vehicles entering the forest would lie between 230 and 370, with a chance of being correct seven out of ten times. 3. The low estimate of recreation vehicles were then multiplied by the mean passenger number per vehicle. This figure was derived from the roadside interviewing and the interviewing of recreationists through the summer.

Traffic counters provided an estimate of total recreational use of the Stillwater Forest with the exception of three locations:



(1) Spring Creek Campground, (2) six lakes at the southern end of the forest, and (3) use on and directly adjacent to U. S. Highway 93. Spring Creek Campground was visited on thirteen pre-selected weekdays and thirteen pre-selected weekend days throughout the study period. These pre-selected sampling days were evenly spread throughout the summer. Visitor counts were then expanded to obtain an estimate of total use. The visitor counts from the thirteen weekdays were used to estimate weekday use, and the counts from the thirteen weekend days were used to estimate weekend use. Since Spring Creek Campground is a transient campground,<sup>4</sup> an effort was made to concentrate sampling in late afternoon or early morning.

Six fishing lakes at the southern end of the forest were also visited on thirteen pre-selected weekdays and thirteen pre-selected weekend days throughout the study period. These pre-selected days were the same days used to sample Spring Creek Campground. All visitors at lakes and on access roads were counted. If it was impossible to make a direct count of a particular party (e.g., empty vehicle) the "mean passenger number per vehicle" figure was assigned. This estimate of fishing lake visits was felt to be conservative since fishermen generally used the area either morning, afternoon, or evening. The estimate was conservative as one sampling period, occurring either in the morning or afternoon, was the basis for total use the entire day.

No attempt was made to estimate the number of people who enjoyed the scenery while driving through the forest on U. S. Highway 93 en route

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<sup>4</sup>A "transient campground" is located on a tourist route. Campers arrive late afternoon or evening and depart early the next morning. In contrast, a "destination campground" is located at a tourist attraction. Campers generally stay several days.

to other destinations. People who stopped for a quick picnic or leg stretch on highway turnouts were likewise not counted since they were not considered members of the recreation population using the Stillwater Forest until they left the main highway and traveled on a forest road.

### Interviewing Recreationists

The purpose of interviewing recreationists was to obtain information about visitor characteristics, attitudes, and activities. This data could be useful in planning recreation facilities and forest management plans. A structured, multiple choice questionnaire was used. Multiple answers typed on cards were viewed by respondents. However, full freedom of expression was allowed on questions pertaining to present recreation management and timber harvesting. The questionnaire was similar to that used by Conrad (4) in a recreation study of the Swan River State Forest in 1964. However, many questions were substantially modified, several questions deleted, and others added. The Stillwater Forest questionnaire is found in Appendix A.

The first five interviews of the regular summer sampling period served to test the questions. This pilot study, the results of which were not included in the main study, resulted in the inclusion of one additional question and the clarification of the wording of several others.

Responses were stratified into two groups -- "local" and "non-local." All recreation users living within forty-five driving miles of the Stillwater Forest headquarters (Olney, Montana) were designated local users; all others were non-local. This separation was used because

the author suspected that two distinct recreation use groups were using the forest. An understanding of these groups and their similarities and differences might be helpful in recreation planning. Any differences, however, would have to be fairly obvious to be of value in actual planning.

Interviewing guidelines, as set forth by Adams (1), were used to establish rapport with respondents. Such items as the introduction and purpose of interview, the importance of the interview, the interviewer's manner of dress and speech, etc. were considered. The average interview was approximately six to eight minutes. Informal, post interview discussion was sometimes longer.

The following criteria were used as a basis for conducting the formal interviews:

1. Each party was interviewed only once.
2. Parties engaged in eating, making camp, or breaking camp were not interviewed. Parties that were inaccessible were not interviewed (e.g., boat fishermen).
3. Respondents were to look as though they were at least sixteen years old.
4. Employees of the State Forester and those engaged in earning a living (loggers) were not interviewed.
5. In parties containing more than ten members, interviews were attempted at a ratio of one interview to five people, but never more than two interviews per party. It was planned that only one individual be interviewed at a time. Occasionally, however, a husband and wife or a small group would respond collectively.

6. When possible interviewing was done in privacy.
7. All interviews occurred on the Stillwater State Forest.
8. Interviewing was conducted between 8 a.m. and 6 p.m.

No correction was made for the bias resulting from length of stay. This bias was undoubtedly small because the vast majority of all users were on the study area less than one day. The stratification of responses also reduced bias, since it is generally believed that more distant visitors (non-local) occupy recreation areas longer (13).

Two routes were driven to visit all known areas where recreationists gathered. It was impossible to cover the entire forest in one day, but within two successive interviewing days all areas were visited at least once. This was done to obtain a wide distribution of interviews; however, it resulted in a reduction of the total number of interviews. This method of collecting interviews also tended to concentrate interviewing in the local user group. Most non-locals were not aware of the recreational opportunities away from main forest roads, whereas the author spent considerable time interviewing off the main roads. Thirteen weekdays and thirteen weekend days throughout the summer were pre-selected for interviewing.

In summary, characteristics, attitudes, and activities of Stillwater Forest visitors were obtained by interviewing recreationists with a formal, structured questionnaire. The questionnaires were tabulated into two groups of recreationists -- those living within forty-five miles of the forest and those living more than forty-five miles from the forest.

## Size Adequacy of Campgrounds on Stillwater

### Forest and Nearby Ownerships

The purpose of estimating the percentage of campground occupancy was to learn if existing campgrounds of the Stillwater Forest and nearby ownerships are of adequate size to accommodate present visitor pressure.

The six campgrounds, previously described on pages 13-16, represent three campground types on the Stillwater Forest or in the vicinity of the Stillwater: (1) the Office of the State Forester controls two slightly-developed, low-density campgrounds; (2) the Montana Fish and Game Department operates one highly-developed, high-density campground; and (3) the U. S. Forest Service maintains three moderately-developed, moderate-density campgrounds. These three different types of campgrounds were compared separately, for each type may attract a different clientele.

On fourteen pre-selected days the six campgrounds were each visited and a measurement of use taken. The number of family units occupied was counted rather than the number of people in the campground, for it is possible that a twenty-family unit campground can be completely full with a hundred people or only half full with a hundred people.<sup>5</sup> A family unit was considered occupied if it contained any people or equipment which would inhibit other parties from utilizing the unit.

Parties occupying family units were also separated into two groups-- "local" and "non-local." Local parties were from Flathead and Lincoln

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<sup>5</sup>The author feels that the number of people using a campground or picnic area where there is some form of unit designation is a very poor indicator of use pressure although this measurement is used by many recreation agencies. A direct count of people is better suited for recreation areas where there is no unit designation, such as ski areas, swimming beaches, hunting and fishing areas, etc.

counties and identified by car or trailer license plate;<sup>6</sup> all other parties were non-local. If it was impossible to determine origin of a unit's occupants visually, an alternating assignment between local and non-local was used. Since there was no designation of family units at Whitefish Lake State Park, the camping area's capacity fluctuated. For this reason visitor pressure was designated either "no units available," "few units available," or "many units available." Also since it was often difficult to see the occupant's car or trailer license plate, users were not separated into local-non-local groupings.

The six campgrounds were visited on five pre-selected weekdays and nine pre-selected weekend days throughout the summer. More sampling days occurred on weekends, since these days are the periods of greatest use.

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<sup>6</sup>Local stratum in this phase of the study does not precisely coincide with local stratum used elsewhere in this study, for it was impossible to determine the exact origin of Flathead and Lincoln county residents while the author was driving through the campgrounds.

## CHAPTER IV

### RESULTS

#### Recreation Use Estimation

The results of estimating recreation use with traffic counters are shown in Table IV. The table shows that from 3,896 to 8,716 recreation visits occurred. This range of estimate has a chance of being correct seven out of ten times.

From sample visual counts on thirteen pre-selected weekdays and thirteen pre-selected weekend days, it was estimated that 1,563 recreation visits were made at the six fishing lakes at the southern end of the forest, and 214 recreation visits were made at Spring Creek Campground. Although there was considerable use of the fishing lakes area, traffic counters were not used at the lakes for two reasons:

1. When the preliminary study plan was visualized in August 1965, there was little recreational use due to an extremely wet and cool month. Also, it was not known that most lake fishing use is in June and July.
2. Multiple road access in this area would have required several more traffic counters than were available.

#### Interviewing Recreationists

In this section results from selected interview questions are presented. The significance of these generally tabular results will then be discussed in Chapter V under "Conclusions." The discussion of interview results is delayed, as material from the entire study must be drawn upon for a meaningful discussion. Also, an analysis of interviewing

TABLE IV  
 RECREATION VISITS, ESTIMATED BY TRAFFIC COUNTERS  
 (SEVENTY PER CENT PROBABILITY LEVEL)

Counter	Mean Axle Correction Factor <sup>a</sup>	Corrected Axle Count <sup>b</sup>	Recreation Use Ratio <sup>c</sup>		Recreation Vehicles Entering <sup>d</sup>		Mean Passenger Number per Vehicle <sup>e</sup>	Recreation Visits	
			Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
A	.759	11,315	.023	.037	329	530	3.30	1,105	1,743
B	1.056	5,126	.058	.146	297	748	3.36	997	2,503
C	.968	4,729	.113	.283	534	1,338	3.36	1,794	4,499
Totals								3,896	8,746

<sup>a</sup>Calculated by averaging the traffic counter correction factors from each roadside interview series. A correction factor of .759 means that for every 1,000 axles tallied by the counter, only 759 axles actually passed.

<sup>b</sup>Calculated by multiplying the mean axle correction factor by the number of axles tallied by the traffic counter throughout the season.

<sup>c</sup>Calculated by placing confidence limits on the recreation vehicles to axles crossing ratios developed at roadside interview periods. A recreation use ratio of .023 means that for every 1,000 axles crossing the counter, twenty-three recreation vehicles entered.

<sup>d</sup>Calculated by multiplying the corrected axle count by the minimum and maximum recreation use ratio.

<sup>e</sup>Mean passenger number per vehicle derived from roadside interviewing and interviewing recreationists.

<sup>f</sup>Calculated by multiplying the minimum and maximum number of recreation vehicles by the mean passenger number per vehicle.



results requires personal interpretation which the author would like to separate from the more objective material.

Eighty-five local and thirty-nine non-local parties were interviewed, for a total of 124 interviews. In addition, there was one refusal and one party was approached twice.

Table V shows the origin of respondents. Over 90 per cent of the local respondents were from either Whitefish, Kalispell, or Columbia Falls, Montana. A third of the non-local respondents were from Montana, while the rest were from other Western states or Canada.

TABLE V  
VISITOR ORIGIN

Local Users (n = 85)		Non-local Users (n = 39)	
Hometown	Number of Responses by Per Cent	State	Number of Responses by Per Cent
Whitefish	46	Montana	31
Kalispell	33	California	18
Columbia Falls	15	Colorado	10
Olney	2	Washington	10
Stryker	1	Canada	5
Columbia Heights	1	Oregon	5
Kila	1	Nevada	5
Rexford	1	Utah	5
		Four other states	11
Total	100	Total	100

Table VI shows the principal destination of the recreationists interviewed. Over two-thirds of the local respondents and one-third of the non-local respondents listed either Upper Whitefish Lake or the six fishing lakes at the southern end of the forest as their destination.

TABLE VI  
PRINCIPAL DESTINATION

Local Users (n = 85)		Non-local Users (n = 39)	
Principal Destination	Number of Responses by Per Cent	Principal Destination	Number of Responses by Per Cent
Upper Whitefish Lake	38	Upper Whitefish Lake	10
Six Southern Lakes	34	Six Southern Lakes	23
Anywhere	5	Anywhere	10
Eleven other places	23	Twelve other places	44
		Town of Whitefish	13
Total	100	Total	100

Several items affected people's choices for traveling through the forest (Table VII). Almost three-fourths of the local respondents listed "previous use" or "only way to reach destination," whereas almost half of the non-local respondents relied upon a recommendation from a friend or relative.

Respondents were asked how far away they would like to be from the highway when: (1) picnicking and (2) camping (Table VIII). When both picnicking and camping, local respondents would like to be further away from the highway than non-local respondents.

TABLE VII  
ITEMS AFFECTING ROUTE THROUGH FOREST

Items Affecting Choice	Local Users (n = 105)	Non-local Users (n = 45)
	Per Cent	
Previous Use	55	18
Only way to Reach Destination	18	4
Friends' or Relatives' Recommendation	13	42
Road Map	2	4
Guide Service	0	7
Other	12	25
Total	100	100

TABLE VIII  
PREFERRED DISTANCE FROM HIGHWAY  
WHEN PICNICKING AND CAMPING

Distance	Local Users (n = 85)		Non-local Users (n = 39)	
	Percent			
	Picnic	Camp	Picnic	Camp
Less than 100 yards	8	1	10	3
100 yards to 1/4 mile	11	2	10	9
1/4 mile to 1/2 mile	8	8	26	13
1/2 mile to 1 mile	7	4	8	15
1 mile to 3 miles	8	2	0	3
3 miles to 5 miles	8	11	8	5
5 miles to 10 miles	7	16	5	8
More than 10 miles	39	53	23	36
Don't know	4	2	8	8
Total	100	100	100	100

The vast majority of all respondents were on the forest less than a day (Table IX). However, the table also indicates that many non-local respondents were on the forest several days or a week. Although a long stay was indicated by many non-locals, they actually had a short stay. This discrepancy occurred as non-locals often interpreted the question as to the length of stay in nearby communities or northwestern Montana.

TABLE IX  
LENGTH OF STAY

Length of Stay	Local Users	Non-local Users
	(n = 35) Per Cent	(n = 39)
Several hours	65	41
1 day, no night	11	3
2 days, or less	19	18
3 to 4 days	5	21
5 to 7 days	0	3
8 days to 2 weeks	0	5
Over 2 weeks	0	4
Total	100	100

Table X shows activities respondents participated in while on the forest. It appears that fishing was the most frequent activity for both locals and non-locals.

If fishing was indicated as an activity participated in, the respondent was asked if fishing was "good," "fair," or "poor." Sixty-six per cent of the local respondents and seventy-four per cent of the non-local respondents felt that fishing was "good" or "fair," while the remaining respondents felt that fishing was poor.

TABLE X  
ACTIVITIES OF RESPONDENTS

Activity	Local Users (n = 211)	Non-local Users (n = 118)
	Per Cent	
Fishing	31	25
Relaxation	12	12
Berry picking	10	8
Boating	10	6
Hiking or walking	9	8
Camping	9	12
Driving for pleasure or sightseeing	6	12
Swimming	6	7
Picnicking	3	2
Nature or wildlife study	3	3
Photography	1	3
Other activities	0	2
Total	100	100

Respondents were asked if they hunted on the forest. Forty-one per cent of all respondents indicated that they hunted big game or both big game and small game. When asked if hunting was "good," "fair," or "poor," seventy-six per cent of the replies were either "good" or "fair."

Respondents were asked if they visited the forest frequently, infrequently, or if this was their first visit. Less than fifteen per cent of the local respondents were on the forest for the first time, while almost sixty per cent of the non-local respondents were. All local respondents had a desire to return, and almost ninety per cent of the non-local respondents wished to return.

With regard to the adequacy of present recreational facilities, almost seventy-five per cent of the local respondents and sixty-five per cent of the non-local respondents felt that present facilities were inadequate. The improvements they suggested are shown in Table XI. The responses were placed into one of four categories -- setting, comfort, activity, social.

Respondents were asked if they were familiar with either Tally Lake or Dickey Lake Campground. These two federal campgrounds are near the Stillwater Forest.<sup>7</sup> Eighty-five per cent of the local respondents were familiar with both campgrounds, whereas only ten per cent of the non-local respondents were familiar with them.

Most respondents would accept a fee for improved and maintained picnicking and camping facilities. Recreation fees that respondents felt were fair are shown in Table XII.

One-third of all respondents indicated they were interested in obtaining a summer homesite; however, no one wanted a location removed from a water source. Table XIII shows the desired locations of summer homesites and the charge respondents were willing to pay.

Respondents were asked if they had noticed any areas where timber had been cut. Approximately fifty-five per cent of the local respondents and forty-five per cent of the non-local respondents had noticed timber cuts. Approximately thirty per cent of all respondents found logging agreeable. Sixty per cent of the local respondents and thirty per cent

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<sup>7</sup>Both of these campgrounds were sampled throughout the summer to determine if their size was adequate for present use pressure.

TABLE XI  
RECREATIONAL IMPROVEMENTS NEEDED

Improvement Needed	Local Users (n = 101)	Non-local Users (n = 34)
	Per Cent	
<u>Setting</u>		
Road Work	15	24
Road Turnouts	<u>2</u>	<u>6</u>
Subtotals	17	30
<u>Comfort</u>		
Campgrounds	22	0
Tables	15	9
Outhouses	11	15
Garbage cans	9	0
Maintenance	8	26
Fireplaces	5	0
Firewood	2	0
Water	0	3
Showers	<u>0</u>	<u>6</u>
Subtotals	72	59
<u>Activity</u>		
Trails	2	0
Swings	1	0
Signs	1	6
Fish stocking	1	3
Boating facilities	<u>1</u>	<u>0</u>
Subtotal	6	9
<u>Social</u>		
Too many facilities already	4	2
Too many people	<u>1</u>	<u>0</u>
Subtotal	<u>5</u>	<u>2</u>
GRAND TOTAL	100	100

TABLE XII  
FAIR CHARGE FOR PICNICKING AND CAMPING

Charge (Per Party)	Local Users (n = 85)		Non-local Users (n = 39)	
	Per Cent			
	Picnic	Camp	Picnic	Camp
Nothing	14	14	23	18
Below \$ .25	13	4	5	0
\$ .26 - \$ .50	26	6	18	0
\$ .51 - \$1.00	24	46	26	39
\$1.01 - \$2.00	6	12	5	15
\$2.01 - \$3.00	1	4	5	5
Over \$3.00	4	1	5	5
Sticker	8	9	10	13
Don't know	4	4	3	5
Total	100	100	100	100

TABLE XIII  
SUMMER HOME LOCATION AND  
FAIR ANNUAL CHARGE<sup>a</sup>

Annual Charge	Small Lake		Creek		Big Lake	
	No. of Resp.	Per Cent of Total	No. of Resp	Per Cent of Total	No. of Resp.	Per Cent of Total
\$ 20 - \$ 40	10	23	6	14	5	11
\$ 41 - \$ 60	6	14	0	0	2	5
\$ 61 - \$ 80	2	5	1	2	0	0
\$ 81 - \$100	4	9	0	0	0	0
\$101 - \$120	2	5	1	2	1	2
Over \$120	3	7	1	2	0	0
Total	27	63	9	20	8	18

<sup>a</sup>Eight respondents did not know a fair charge.



of the non-local respondents found logging disagreeable. Comments in regard to logging are shown in Table XIV.

Tables XV and XVI show the features of the forest which respondents felt were attractive and unattractive respectively. Again, responses are grouped into one of four categories -- setting, comfort, activity, social.

Respondents were asked if they knew whose land they were on. Fewer than one-half of the local respondents and one-third of the non-local respondents knew the land owner. The incorrect responses were the U. S. Forest Service or federal government.

#### Size Adequacy of Campgrounds on Stillwater

##### Forest and Nearby Ownership

Table XVII shows results obtained from the study of per cent occupancy in the two campgrounds on the Stillwater Forest and the campgrounds at Whitefish State Park. The table indicates use pressure during short counting periods, several of which occurred during inclement weather. The data suggest that the two campgrounds on the Stillwater Forest are seldom, if ever, full. Whitefish Lake State Park is full in midsummer if there is fair weather. State Park administrators are aware of this and are presently constructing additional facilities which will be available for the 1967 recreation season.

Table XVIII shows results obtained from counting the family units occupied at three federal campgrounds near the Stillwater Forest on the same pre-selected sampling days as above. The table suggests that these federal campgrounds are seldom, if ever, full.

The significance of these results will be discussed in the next Chapter under Discussion and Conclusions.

TABLE XIV  
LOGGING COMMENTS

Comments	Local Users (n = 56)	Non-local Users (n = 40)
	Per Cent	
<b>Neutral or Favorable</b>		
<u>Comments</u>		
Is a good idea	2	0
Explain logging	2	0
Necessary	7	3
Better than wasting	2	0
Better roads	4	0
Allows forage	0	3
Drivers are nice	<u>0</u>	<u>3</u>
Subtotals	16	8
<b>Unfavorable Comments</b>		
Don't around recreation areas	20	8
Don't like it	27	38
Looks bad	12	20
Not supervised	5	3
Logging trucks	5	8
Hurting country	4	8
Hurting little trees	5	5
Waste wood	2	0
Too much politics	2	0
Need multiple use	2	0
Dangerous	<u>0</u>	<u>5</u>
Subtotals	<u>84</u>	<u>92</u>
GRAND TOTAL	100	100

TABLE XV  
ATTRACTIVE FEATURES ON FOREST

Attractive Features	Local Users	Non-local Users
	(n = 128)	(n = 73)
	Per Cent	
<u>Setting</u>		
Trees	16	18
Wildlife	11	4
Lakes	9	16
Scenery	7	7
Beauty	5	3
Streams	4	4
Mountains	3	4
Natural	3	3
High country	2	0
Accessible	1	1
Bear grass	1	0
Unlogged mountains	1	0
Wild	0	1
Everything	<u>11</u>	<u>11</u>
Subtotals	72	73
<u>Activity</u>		
Fishing	6	10
Outdoors	5	3
Berry picking	2	4
Hunting	<u>2</u>	<u>0</u>
Subtotals	16	16
<u>Social</u>		
Private	7	4
Away from city	2	1
Quiet	2	1
Land not posted	<u>0</u>	<u>1</u>
Subtotals	11	8
<u>Comfort</u>		
Few bugs	1	0
Clean air	0	1
Allow pets	<u>0</u>	<u>1</u>
Subtotals	<u>1</u>	<u>3</u>
GRAND TOTAL	100	100

TABLE XVI  
UNATTRACTIVE FEATURES ON FOREST

Unattractive Features	Local Users (n = 57)	Non-local Users (n = 54)
	Per Cent	
<u>Setting</u>		
Logging	18	29
Condition of roads	9	17
Lodgepole pine	<u>2</u>	<u>0</u>
Subtotals	28	46
<u>Activity</u>		
- - -	0	0
Subtotals	0	0
<u>Social</u>		
Too many people	12	0
Motorcycles	<u>2</u>	<u>0</u>
Subtotals	14	0
<u>Comfort</u>		
Trash	32	29
Condition of campgrounds	12	8
Bugs	12	17
Dust	<u>2</u>	<u>0</u>
Subtotals	<u>58</u>	<u>54</u>
GRAND TOTAL	100	100

TABLE XVII  
DEMAND PRESSURE, STATE CAMPGROUNDS

Weekend Visit	Stillwater State Forest							Whitefish Lake State Park (units available)	
	Upper Whitefish				Spring Creek				
	Units Occupied		Total Units	Per Cent Occupied	Units Occupied		Total Units		Per Cent Occupied
	Local	Non-local			Local	Non-local			
1 <sup>a</sup>	1	0	5	20	0	0	7	0	Many
2 <sup>a</sup>	1	0	5	20	2	0	7	29	Many
3	2	1	5	60	1	0	7	14	Few
4	2	0	5	40	0	0	7	0	Few
5	2	0	5	40	0	1	7	14	Few
6 <sup>a</sup>	0	0	5	0	0	0	7	0	Many
7	2	0	5	40	1	0	7	14	Many
8	1	1	5	40	0	1	7	14	Many
9	1	0	5	20	0	0	7	0	Many
Mean Week-day Visits (5 visits)	0.8	0.8	5	32	0	0.6	7	8	Few too many

<sup>a</sup>Inclement weather

TABLE XVIII

DEMAND PRESSURE, U. S. FOREST SERVICE CAMPGROUNDS

Week-end Visit	North Dickey Lake <sup>b</sup>				South Dickey Lake				Tally Lake			
	Units Occupied		Total Units	Per Cent Occupied	Units Occupied		Total Units	Per Cent Occupied	Units Occupied		Total Units	Per Cent Occupied
	Local	Non-local			Local	Non-local			Local	Non-local		
1 <sup>a</sup>	0	1	16	6	1	0	12	8	2	5	38	18
2 <sup>a</sup>	0	4	16	25	2	0	12	17	5	3	38	21
3	3	10	16	81	4	2	12	50	6	4	38	26
4	1	4	16	31	3	2	12	42	4	6	38	26
5	3	3	16	38	2	0	12	17	9	7	38	42
6 <sup>a</sup>	3	8	16	69	0	0	12	0	0	1	38	3
7	3	1	16	25	0	0	12	0	1	0	38	3
8	4	3	16	44	1	0	12	8	3	0	38	8
9	4	3	16	44	2	0	12	17	7	3	38	26
Mean Wk. Day (5 Visits)	0.8	2.6	16	21	1.2	0.8	12	17	1.6	1.8	38	9

<sup>a</sup>Inclement weather

<sup>b</sup>Considerable transient use

## CHAPTER V

### SUMMARY, DISCUSSION AND CONCLUSIONS

#### Summary

The 91,000 acre Stillwater State Forest, administered by the Office of the State Forester, is located in northwestern Montana thirty miles west of Glacier National Park. Income from timber, grazing, cabin site leases, and special uses is placed in a permanent trust fund for support of Montana's educational system. Although there is legal and administrative provision for public recreation, there has been little recreation management since two small campgrounds were constructed by the Civilian Conservation Corps in the 1930's. At present, however, recreational use of the forest is quite small.

The forest is endowed with many natural recreational values including thirteen lakes larger than twenty-five acres, ninety miles of trout streams, a big game population, picturesque mountains and valleys, and a natural forest environment. In addition to the two small state-owned campgrounds on the forest, the U. S. Forest Service administers three campgrounds and the Montana Fish and Game Department has one campground near the forest. The Forest Service plans to develop sixteen additional areas within thirty driving miles of the forest headquarters. However, many of these new developments will not be constructed for some time. The Fish and Game Department also plans the development of several fishing points near the forest.

Present recreational use of the forest was estimated with traffic counters and roadside interviewing. In two areas not covered by counters, visitor use was estimated visually. Results from traffic counters showed that an estimated 6,306 visits for recreational purposes were made during the summer of 1966. An additional 1,777 visits were estimated visually. Most visitors were from Montana and were within forty-five miles of their homes. If a visitor was more than forty-five miles from home, he was generally from another Western state.

User characteristics, attitudes, and activities were determined by personal interview. Responses were tabulated by a "local-non-local" stratification system. Eighty-five local parties and thirty-nine non-local parties were interviewed.

It seems that the most attractive feature of the forest is a natural setting, and the most unattractive features are the lack of simple recreational facilities and the man-altered environment (logging, road conditions).

Most visits to the Forest are for less than a day's duration. Major summer activities are lake fishing, driving, and berry picking. Hunting is probably the major fall activity. The supply of berries, fish, and wildlife is adequate.

Most users would be willing to pay a fee for developed areas for picnicking and camping; however, the recreational development should be a considerable distance from the highway.

There appears to be a demand for private cabin leases on small lakes, creeks, and large lakes, in that order of preference. Demand for cabin sites away from water appears to be low.



It is interesting to note that most recreationists interviewed on the Forest did not know who was responsible for the management of the Forest.

There were three major observable differences between local users and non-local users. Local users know of the Forest's presence and opportunities by previous use. Non-local users generally rely upon a recommendation. Local users are aware of recreational developments on nearby land areas, whereas, non-local users are not. Local users generally would like to be further away from the highway when camping than non-local users.

An estimate of the present use of campgrounds in the Forest and campgrounds near the Forest was obtained on pre-selected sampling days. Most of these days occurred on weekends and holidays. Campgrounds on the Stillwater Forest are usually empty or have very few units occupied. The highly-developed campground at Whitefish Lake State Park is crowded in midsummer, but the administering agency has plans for additional units. Three moderately-developed campgrounds on federal land near the Stillwater Forest usually have fifty per cent or less units occupied and are seldom, if ever, full.

#### Discussions and Conclusions

Recreation Use Concentration. The present major areas of summer recreation concentration are Upper Whitefish Lake and the six southern lakes.<sup>1</sup> These seven lakes are small in acreage and small in shoreline.

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<sup>1</sup>The six southern lakes which comprise a unit are Beaver, Dollar, Murray, Rainbow, Upper Beaver, and Wood.

If their presence is known and if access is not restricted by summer home sites, most small fishing lakes<sup>2</sup> will attract substantial public use. The condition of lake access roads is also important, especially to non-local users. In fact, road conditions could serve as a management tool to control fishing pressure. Use of the larger lakes (e.g., Upper Stillwater) is limited by the presence on nearby federal lands of larger, more accessible lakes where boat launching facilities are available. At present, however, boating use is also small on the large federal lakes.

Forest roads in the Stillwater State Forest are used for pleasure driving and sightseeing. The land immediately adjacent to the roads is used for stream fishing access and berry picking.

Knowledge of the Recreation Resource. Local users are aware of the forest's location and opportunities because of previous use. Non-local users seem generally to rely upon recommendations from a friend or relative. Descriptive literature at chambers of commerce, restaurants, service stations, etc. might increase use in the non-local stratum, but would probably have little influence on local users.

Degree of Isolation Preference. The forest attracts a more rugged clientele than nearby federal and state park developments which are adjacent to highways. Most Stillwater users want to be a considerable distance off the highway when picnicking and even further when camping. This is particularly true among local users.

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<sup>2</sup>As defined by the author, small fishing lakes are usually less than seventy-five acres, but never more than two hundred acres.

Length of Stay. The Stillwater is presently a day-use area; there are very few overnight visitors. Day use dominates since most users are within an hour's drive of their homes. The lack of adequate facilities discourages overnight use by non-local users. Campground development would probably greatly increase non-local use, and increase local visits to a lesser extent.

Activity Groupings. There are three major activity groupings in the summer; (1) lake fishing, (2) driving for pleasure and sightseeing, and (3) berry picking. Activities such as boating, camping, swimming, hiking and walking, relaxing, etc. are generally by-products of the major activity groupings. Although there is no supporting data, the major activity grouping in the fall is probably hunting. From the user's viewpoint there is presently an adequate supply of fish, wildlife, and berries.<sup>3</sup>

Present Recreational Experience Level. Almost all users expressed a desire to return to the forest in the future. Assuming people have an opportunity to go elsewhere for similar activity aggregations, and are therefore not a "captive audience," the Forest, at its present level of low recreational use and few facilities, is providing an acceptable recreational experience.

Recreational facilities are not adequate, however, from the user's point of view. Of the four elements (setting, comfort, activity, social) that determine enjoyment of a particular recreation area, respondents

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<sup>3</sup>Huckleberries are in such abundance that several couples from the town of Whitefish pick them on a commercial basis.

have made known a need for comfort improvements. However, they desire simple improvements such as outhouses, tables, garbage cans, fireplaces, available firewood, and maintenance. A desire for setting improvements in the form of road work, is evident among non-local users. Few respondents expressed a desire for activity improvements (fishing, things to do), and still fewer desired sociological improvements (kinds of people, numbers of people). Visitor responses imply that visitor preferences would initially be best satisfied by capital expenditure in the comfort element category. Responses also indicate that too much capital expenditure would change the present character of recreational use and clientele.

Area-wide Recreation Improvement. Local users are familiar with the moderately-developed campgrounds on federal ownership in the area, while non-local users are not. This suggests that if local users desired this type of facility, they would visit them rather than the relatively undeveloped Stillwater. This assumes: (1) that user fees in federal campgrounds do not discourage use, and (2) local users are not adverse to recreating on federal land. The former assumption appears to be valid because respondents generally accepted a fee for developments on the Stillwater. The latter also appears true since many people thought they were on federal land. Although non-local users were not aware of federal developments, their responses from interviewing (Tables VIII, XI, XV) suggest that many would rather use the Stillwater than the developed federal areas. There might be some provision, however, to inform non-local users of these moderately-developed facilities near the forest.

This study suggests there is an over abundance of moderately-developed campgrounds in the vicinity of the Stillwater. The Forest

Service also has plans for the construction of many similar campgrounds. This type of campground on the Stillwater would compete with federal developments; whereas, minimum development or "back-country" campgrounds would be complementary and would provide an opportunity presently lacking in the area.

Campground Charge Feasibility. The decision to charge for the use of recreational facilities on state land is, of course, a political decision. Respondents have indicated that a fee would be acceptable, but they have also expressed a desire to minimum development. As it is probably difficult to obtain a profit from a moderately-developed facility that contains many units, it would be even more so from a minimum development facility with few family units. A "break-even" fee is a possibility.

Logging. To most users the recent effects of logging on the landscape are a deterrent to enjoyment of the forest. Although not verified, the author suspects that most users lack knowledge of proven, reliable forestry methods and the worthwhile educational trust fund objective of state forest management. With this knowledge they might then enjoy the environment.

Some form of modified silviculture in areas of recreational use and several informative-interpretive signs at various locations in the forest might substantially increase the recreational enjoyment of many forest visitors. Modified silviculture in areas of recreational use could include: (1) reduction in cutting unit acreage. This would reduce the area of freshly cut timber, as there would be several age classes in a locality with each reaching maturity at separate times; (2) selection

cutting in areas of high recreational value; (3) shelterwood harvest cuts rather than clearcuts; and (4) artificial regeneration in clearcut areas readily observable by visitors.

Signs on turnouts at the three major forest entrances could explain the major objective of state forest management. If visitors knew that timber revenues assisted in the support of the educational system, visitors might be more receptive to logging and its appearance. Signing could also bring attention to other resource values produced by the forest, explain harvesting methods, and tell the value of long term management. An effort would be made to inform visitors of the management goals and to seek the visitor's understanding of the technically-correct methods used to obtain the goals. An attempt to alter highly personal aesthetic values might be unwise.

Summer Homes Sites. Responses have suggested that there is a large demand for summer home sites. Small fishing lakes appear to be in greatest demand with creek-side and large lake sites less popular respectively, but still important. Very few cabin sites have been platted on creeks and large lakes. Respondents have also indicated a willingness to pay a larger annual fee than is presently collected (21). In fact, the state presently charges more for large lakes than smaller lakes (21). (The Stillwater respondents indicated that small lakes are worth more money.) An increase in cabin sites and annual charge would benefit the educational trust fund. Generally, however, cabin site locations are wanted in the same areas where public recreational use occurs and could possibly increase. Since the forest's natural attributes are so important, structures would have to be placed where they

did not detract from the public's recreational enjoyment. Cabin sites would also need to be located in such a manner that unrestricted public lake access and activity is possible.

Future Over-all Recreation Management. There are five important characteristics which describe the present recreational picture of the Stillwater Forest: (1) the forest contains a natural environment, (2) most use occurs during daylight hours, (3) most use is activity oriented (as opposed to relaxation), (4) over-all recreational use of the forest is low, and (5) the type of recreational activity is of a low human density. These characteristics are more or less dependent upon each other; a radical change in one would bring about changes in the others.

There are basically two alternatives of management for this forest. The first alternative would be the retention or partial retention of the characteristics described in the above paragraph. If this alternative was selected, capital expenditures would be based solely upon the retention of the forest's present characteristics. The second management alternative would be the development of recreational facilities similar to those of the U. S. Forest Service or the Montana Fish and Game Department. Such developments would include picnic grounds, campgrounds, swimming beaches, and boat launching ramps. Selection of this second basic alternative would require rather large initial expenditures and considerable annual operating costs. U. S. Highway 93, which traverses the forest might provide the clientele needed to make these developments a success.

The present users of the forest would favor the implementation of the first alternative. It also appears that the State Forester's Office favors the first alternative. The state has constructed very few

recreational facilities. Also, the state's written policy explicitly mentioned the protection of recreational values, rather than development and protection of recreational values. It is, of course, possible that there has been little development of facilities due to lack of funds and/or a lack of demand.

It would appear that the U. S. Forest Service has selected an alternative similar to the state's second alternative, that being the offering of fairly-large, well-developed facilities. The Forest Service position is evidenced by present developments and their sizeable inventory of future sites.

It was not a goal of this study to learn the success of Forest Service management from the point of view of the user. However, the study results did indicate that presently the federal facilities are not completely utilized in terms of numbers of people.

Regardless of the basic management direction chosen and the degree of implementation, the Stillwater will only have a slight affect on the recreational use patterns of northwestern Montana. The Stillwater's affect is small because the U. S. Forest Service and National Park Service manage vast amounts of acreage and offer, in large quantities, a wide range of recreational opportunities. However, the Stillwater State Forest does have a very important local affect on recreational use patterns.

Perhaps, the greatest contribution to the regional recreation picture could be made by providing just simple, low-density, rather primitive developments. They serve to broaden the spectrum of recreational opportunities.



## BIBLIOGRAPHY

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1. Adams, J. Stacy. 1958. Interviewing Procedures. The University of North Carolina Press. Chapel Hill, N. C.
2. Burch, William R., Jr. 1964. A new look at an old friend--Observation as a technique for recreation research. Pacific Northwest Forest and Range Expt. Sta. U. S. D. A., Forest Service.
3. \_\_\_\_\_. 1964. Two Concepts for Guiding Recreation Management Decisions. Jour. Forestry. 62 (10): 707-712.
4. \_\_\_\_\_. Conrad, R. M. 1964. Recreation Use and the "Renewable" Resources, Swan River State Forest, Montana. Unpublished Master's Thesis. University of Montana.
5. Couey, F. M. 1966. Montana Fish and Game Department. Personal Interview.
6. Cushwa, Charles T. and James, George A. 1962. Measurement of Forest Recreation Use. Southern Lumberman 205 (2561): 150-151.
7. Cusick, Maurice. 1965-1966. Repair and Maintenance Supervisor. State of Montana, Office of the State Forester. Personal Interviews.
8. Darling, Floyd. 1966. Supervisory Engineering Technician. Supervisor's Office, Flathead National Forest. U. S. D. A., Forest Service. Personal Interview.
9. Dunkle, Frank H. 1966. Director, Montana Fish and Game Department. Talk given to Recreation Planning Conference. Missoula, Montana.
10. Freese, Frank. 1963. A Guidebook for Statistical Transients. Southern Forest Experiment Station. U. S. D. A., Forest Service.
11. James, George A. 1966. Instructions for Using Traffic Counters to Estimate Recreation Visits and Use on Developed Sites. Southeastern Forest Expt. Sta. U. S. D. A., Forest Service.
12. James, George A. and Ripley, Thomas H. 1963. Instructions for Using Traffic Counters to Estimate Recreation Visits and Use. Research Paper SE - 3. Southeastern Forest Expt. Sta. U. S. D. A., Forest Service.

13. Lucas, Robert C. and Schweitzer, Dennis L. 1965. Outdoor recreation surveys: length-of-stay bias and its correction by computer. Research Note LS - 68. Lakes States Forest Expt. Sta. U. S. D. A., Forest Service.
14. Merriam, L. C., Jr. and Ammons, R. B. 1967. The Wilderness User in Three Montana Areas. School of Forestry, University of Minnesota. St. Paul, Minnesota.
15. Montana, State of. 1965. Fish and Game Department. Unpublished records on hunter kill, District Eleven.
16. Montana, State of. 1965. Fish and Game Department. Montana Statewide Outdoor Recreation Plan.
17. Montana, State of. 1955. Revised Codes. Vol. 2. The Allen Smith Company, Indianapolis, Indiana.
18. Montana, State of. 1966. State Highway Commission, Highway Map.
19. Montana, State of. 1964. Office of the State Forester. Guides to the Administration of State-Owned Forest Land.
20. \_\_\_\_\_. 1966. Office of the State Forester. Land Use Record Cards.
21. \_\_\_\_\_. 1966. Office of the State Forester. Recreation Files.
22. \_\_\_\_\_. 1965. Office of the State Forester. Work Plan, 1965.
23. Outdoor Recreation Resources Review Commission. 1962. Outdoor Recreation For America. U. S. Govt. Printing Office. Washington, D. C.
24. United States of America. 1965. Public Law 78 Stat. 897. Land and Water Conservation Fund Act. U. S. Govt. Printing Office. Washington, D. C.

APPENDIX

APPENDIX I

INTENSIVE QUESTIONNAIRE

Stillwater State Forest

Date \_\_\_\_\_ Interview No. \_\_\_\_\_ Sex of Respond. M. F. Both

Weather: Cool Hot Raining Clear Cloudy Warm

Location \_\_\_\_\_ Time: AM PM

Type of Facility used: Tent Trailer Mobile Camper Day Use Other

1. Have you been interviewed this summer concerning recreation in this area? \_\_\_\_\_
2. Where are you from? City \_\_\_\_\_  
State \_\_\_\_\_
3. (?) Approximately how far from your home is this forest? \_\_\_\_\_ miles
4. How many are in your group including children? \_\_\_\_\_ people  
(\_\_\_\_\_ vehicles).
5. What is your principal destination in this area? \_\_\_\_\_
6. In selecting your route through the forest what items affected your choice (respondent views card A)?

_____ Speed	_____ Service station attendant or local information
_____ Only way to reach destination	_____ Road map
_____ Literature from a forestry organization	_____ Previous use
_____ Friends or relatives recommendation	_____ Other, please specify: _____
_____ Tourist guide service	

7. When picnicking how far do you like to be off the highway (respondent views card B)?

<input type="checkbox"/> less than 100 yards	<input type="checkbox"/> 1 mile - 3 miles
<input type="checkbox"/> 100 yards - $\frac{1}{4}$ miles	<input type="checkbox"/> 3 miles - 5 miles
<input type="checkbox"/> $\frac{1}{4}$ miles - $\frac{1}{2}$ miles	<input type="checkbox"/> 5 miles - 10 miles
<input type="checkbox"/> $\frac{1}{2}$ miles - 1 mile	<input type="checkbox"/> more than 10 miles

8. When camping how far do you like to be off the highway (respondent views card B)?

<input type="checkbox"/> less than 100 yards	<input type="checkbox"/> 1 mile - 3 miles
<input type="checkbox"/> 100 yards - $\frac{1}{4}$ mile	<input type="checkbox"/> 3 miles - 5 miles
<input type="checkbox"/> $\frac{1}{4}$ mile - $\frac{1}{2}$ miles	<input type="checkbox"/> 5 miles - 10 miles
<input type="checkbox"/> $\frac{1}{2}$ mile - 1 mile	<input type="checkbox"/> more than 10 miles

9. How long do you plan to stay in this forest (respondent views card C?).

<input type="checkbox"/> several hours	<input type="checkbox"/> 5 days - 7 days
<input type="checkbox"/> one day, no night	<input type="checkbox"/> 8 days - 2 weeks
<input type="checkbox"/> 2 days or less	<input type="checkbox"/> over 2 weeks
<input type="checkbox"/> 3 days - 4 days	

10. Which of the following will you or your group participate in during your visit on the forest (respondent views card D)?

<input type="checkbox"/> camping	<input type="checkbox"/> nature or wildlife study
<input type="checkbox"/> fishing	<input type="checkbox"/> driving for pleasure and/or sightseeing
<input type="checkbox"/> hiking	<input type="checkbox"/> relaxation
<input type="checkbox"/> swimming	<input type="checkbox"/> photography
<input type="checkbox"/> boating	<input type="checkbox"/> berry picking
<input type="checkbox"/> other, please specify _____	

11. (if fishing is indicated) Do you consider fishing in this area to be: Good\_\_\_\_, Fair\_\_\_\_, Poor\_\_\_\_, Haven't fished yet\_\_\_\_.
12. Do you visit this forest: Frequently\_\_\_\_, Infrequently\_\_\_\_, First visit\_\_\_\_.
13. (if respondent says frequently or infrequently) Do you hunt in this forest?\_\_\_\_. (if yes) Do you hunt: Big game\_\_\_\_, Small game\_\_\_\_, Both\_\_\_\_. Is hunting: Good\_\_\_\_, Fair\_\_\_\_, Poor\_\_\_\_.
14. Will you return to this forest?\_\_\_\_\_
15. Do you feel that the present recreational facilities on the forest are adequate?\_\_\_\_\_
16. Are any improvements needed?\_\_\_\_\_
- 
17. Are you familiar with either the Tally Lake Campground or the Dickey Lake Campground? Both\_\_\_\_, Tally Lake\_\_\_\_, Dickey Lake\_\_\_\_, Neither\_\_\_\_.
18. If it were necessary to charge a fee to provide improved facilities and the maintenance of them, what would be a fair charge, if any, for a picnic facility having a table, fireplace, outhouse, firewood, water, and a garbage can per day (respondent views card E)?
- |                                |                                 |
|--------------------------------|---------------------------------|
| _____ nothing                  | _____ \$1.01 - \$2.00 per party |
| _____ below \$.25 per party    | _____ \$2.01 - \$3.00 per party |
| _____ \$.26 - \$.50 per party  | _____ over \$3.00 per party     |
| _____ \$.51 - \$1.00 per party |                                 |
19. What would be a fair charge, if any, for improved camping facilities per night (respondent views card E)?
- |                                |                                 |
|--------------------------------|---------------------------------|
| _____ nothing                  | _____ \$1.01 - \$2.00 per party |
| _____ below \$.25 per party    | _____ \$2.01 - \$3.00 per party |
| _____ \$.26 - \$.50 per party  | _____ over \$3.00 per party     |
| _____ \$.51 - \$1.00 per party |                                 |
20. Have you noticed any areas where timber has been cut on the forest?  
\_\_\_\_\_

21. (if yes) Do you find it: Agreeable \_\_\_\_\_, Disagreeable \_\_\_\_\_, No opinion \_\_\_\_\_.

22. Do you have any comments concerning timber cutting or logging on the forest? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

23. Would you be interested in leasing summer home site on this forest? \_\_\_\_\_ (if yes or maybe) Would you like a summer home site: On water \_\_\_\_\_, away from water \_\_\_\_\_. (if water) Type of water you would desire: beside a creek \_\_\_\_\_, lake size limited to fishing boats \_\_\_\_\_, lake size suitable for power boating \_\_\_\_\_. How large of a lease would you like? \_\_\_\_\_ acres. What would be a fair charge for such a lease per year (respondent views card F)?

- |                            |                            |
|----------------------------|----------------------------|
| _____ \$20 - \$40 per year | _____ \$81 - 100 per year  |
| _____ \$41 - 60 per year   | _____ \$101 - 120 per year |
| _____ \$61 - 80 per year   | _____ over \$120 per year  |

24. What features do you find attractive on this forest? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What features do you find unattractive on this forest? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25. Do you know whose land you are on? (if yes) Who owns the land? \_\_\_\_\_  
\_\_\_\_\_

26. Are there any brief comments you would like to make? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Interviewer's comments:

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