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MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS  
FISHERIES DIVISION

PROGRESS REPORT

State of: Montana NAME: Fishery Management Support Services

Project No: F-4-R-31 TITLE: Inventory of Resource Status and  
Fishing Opportunity

Job No.: I-c

Period Covered: May 1, 1981 to June 30, 1982

ABSTRACT

License formats were reviewed and recommendations were made for changes that would facilitate the angler mail survey. Questionnaires were mailed to a sample of the nonresidents who purchased the combination Fish, Bird and Big Game License to determine their participation in recreational fishing. A phone survey of local anglers was conducted to determine the feasibility of using phone calls in lieu of mailouts for the statewide angler survey.

OBJECTIVES

- 1) To compile data that will aid resource managers in the decision making process and the allocation of funds.

A statewide angler mail survey has been used in past years to estimate angler use. That method requires a list of current licensees for sampling. That information is not available from existing records. Modification of the license formats were investigated to facilitate the angler mail survey.

- 2) To compile an inventory of the waters that have the potential to support recreational fishing and to determine the trends that are occurring in these fisheries.

There was no activity related to this objective during the report period.

- 3) To determine the trends in availability of the various fisheries utilized by recreational anglers.

There was no activity related to this objective during the report period.

- 4) To investigate alternate methods of measuring statewide angling pressure.

A sample of the nonresidents who bought the combination Fish, Bird and Big Game License in 1980 were surveyed to determine their participation in recreational fishing.

Phone calls were made to a sample of current resident anglers to determine the feasibility of a phone survey in lieu of the mail survey.

#### PROCEDURES

License formats and data storage alternatives were reviewed with other department employees to develop modifications that would provide names and addresses of anglers on a timely basis. Survey methods employed by other states were also reviewed to determine their applicability to our needs.

A sample of the nonresident sportsmen who purchased the combination license were queried to determine their participation in recreational fishing. A systematic sample of 1000 licenses were drawn from the 1980 sale records. A questionnaire was mailed to each of those licensees asking about their recreational activities in Montana (Appendix A).

Phone calls were made to a group of resident anglers in the Bozeman area to determine response rate and the relative cost of phone contacts. Names of licensees were obtained from license sale records and corresponding phone numbers were obtained from local telephone directories. The number of potential contacts was small (52) so nine additional known anglers were added to the list. Phone calls were made during the day-time and early evening in August, 1981. That time period was selected because it was presumably a time when individuals would be least likely to be available by phone.

#### RESULTS

Information regarding exploitation of a fishery is essential to proper management of that resource. The cost of on-site creel census studies

is high and it is unlikely that many of those will be conducted in the near future. A statewide angler survey provides an acceptable and less expensive alternative. However, that type of survey requires names and addresses of current anglers. That information regarding Montana anglers hasn't been available from license records in recent years. Efforts have been made to keypunch all license data but the cost was prohibitive. Time delays in processing and keypunching also precluded mailing questionnaires during the summer months where fishing activity is highest. Late or incomplete reporting by some dealers also eliminates an undetermined number of eligible fishermen from one or more of the waves in this type of survey.

License formats were modified to reduce keypunch costs and time delays due to earlier procedures. An additional copy was added to each fishing license form. Dealers were instructed to send the additional copy to Helena with monthly remittances where it will be made available for the angler survey. These copies will be sorted by license type and used to select a sample for each wave.

A two-day permit is available to nonresident anglers. The permit is a narrow plastic strip that is affixed to the back of the conservation license. The anglers name and address are not recorded on the permits so that group of anglers will be sampled from copies of the nonresident conservation licenses. Some of those sportsmen are not anglers so a questionnaire will be developed to identify those who actually bought a fishing permit. This group of anglers will be sampled once at the end of the fishing year rather than in each one-month wave.

Several other state conservation departments utilize a mail questionnaire to estimate angler use and/or harvest. Those questionnaires are usually mailed at the end of the year but some states utilize a quarterly mailout. Presumably, memory bias would increase with longer time intervals so we have retained the one-month wave period that has been used in earlier surveys in Montana.

#### Surveys of Nonresident Sportsmen

Montana statutes provide a nonresident combination license that includes an elk tag, deer "A" tag and a black bear tag. It also authorizes fishing and game bird hunting. The license is purchased primarily for deer-elk hunting and as a prerequisite for drawings for other big game species. Annual sales are limited to 17,000.

General knowledge of the hunters' activities indicates that some of the nonresident hunters utilize the fishing privileges but information regarding their participation is limited. A sample of the 1980 licensees was queried to determine their fishing activity.

A systematic sample of 1000 licensees was drawn from the 1980 sale records. A questionnaire was mailed to each of those individuals asking about their hunting and fishing activities. The questionnaires were mailed on July 10, 1981. Ten letters were undeliverable so the usable sample was 990.

Response

Six hundred ninety questionnaires were returned for a response rate of near 70 percent (Table 1). This rate is higher than that realized in the Angler Mail Survey in previous years. This probably reflects a higher interest level on the part of nonresidents who buy this license.

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Table 1. Returns of questionnaires mailed to nonresidents.

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<u>Returns</u>	<u>Fished</u>	<u>Did Not Fish</u>	<u>Blank</u>
690	204	468	18
100%	29.6%	67.7%	2.6%

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Nearly 30 percent of the respondents had fished and a few did not answer the question about fishing activity. It could be assumed that those who left that question blank did not fish but that assumption cannot be evaluated. Without those 18 questionnaires, the data would indicate that 30.4 percent of these sportsmen fished while they were in the state. Therefore, the incomplete questionnaires have very little impact on the data.

The 204 licensees who fished spent a total of 800 days angling or an average of 3.9 days per person. Based on these data, this group of nonresidents accounted for nearly 20,000 mandays of use on Montana waters in 1980. (Table 2).

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Table 2. Estimated pressure by nonresidents who bought the combination license.

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17,000	licensees
X 30%	had fished
5,100	anglers
X 3.9	average days fished
19,890	mandays of use

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The fee for this license included \$20 for fishing privileges in 1980 so \$340,000 were collected for that portion of the 17,000 licenses or about \$17 per day of angler use. The licensees who actually fished payed about \$5 per day of use.

#### Rate of Returns

The questionnaires were mailed on July 10th and returns were recorded each day through the 45th day (Figure 1). The first returns came in on the 5th day and the numbers increased steadily through the 11th day. Lesser numbers were received from then through the 45th day with an occasional return after that time.

Reminders were not mailed to the nonrespondents in this survey but they have been used in earlier angler surveys. Reminders have usually been mailed about 2 weeks after the originals. The data in Figure 1 indicate that the 14-15 day would have been an optimal time to mail reminders to this group. A delay until the 20th day would have reduced handling and mailing costs by about 15% but would also have increased memory bias. Memory bias would probably be lower for this group than for other groups of anglers.

#### Phone Survey

Postal rates, as well as other costs, have increased substantially since the Angler Mail Survey was last done in 1976. An alternative would be to phone known resident anglers for information regarding fishing activities. Long distance rates would preclude phone calls to nonresidents so the mail survey would have to be used for the nonresidents.

The wave method used in this survey requires that calls would be made each month rather than a one-time survey conducted at the end of the season. Phone calls may be less expensive than mailouts but the practicality of contacting an adequate number of anglers was unknown. An experimental phone survey was conducted in the Bozeman area to determine the time required to contact anglers.

A sample of resident fishing licenses sold in the Bozeman area during 1981 was selected from department records and the licensees phone numbers were obtained from the local telephone directory. Approximately 21 percent of the people in this sample were not listed in the directory so apparently those people either have an unlisted number, do not have a phone, or live with other people. A substantial bias would be introduced into the data if 20 percent of the potential anglers were unavailable for the survey. In 1982, license formats include a place for a phone number so the proportion of anglers unavailable for future surveys may be less than 20 percent.

No. returned by:

5 days	3	.4%
10 days	256	37.3%
15 days	537	78.2%
20 days	608	88.5%
25 days	640	93.2%
30 days	640	93.2%
35 days	668	97.2%
40 days	672	97.8%
45 days	674	98.1%
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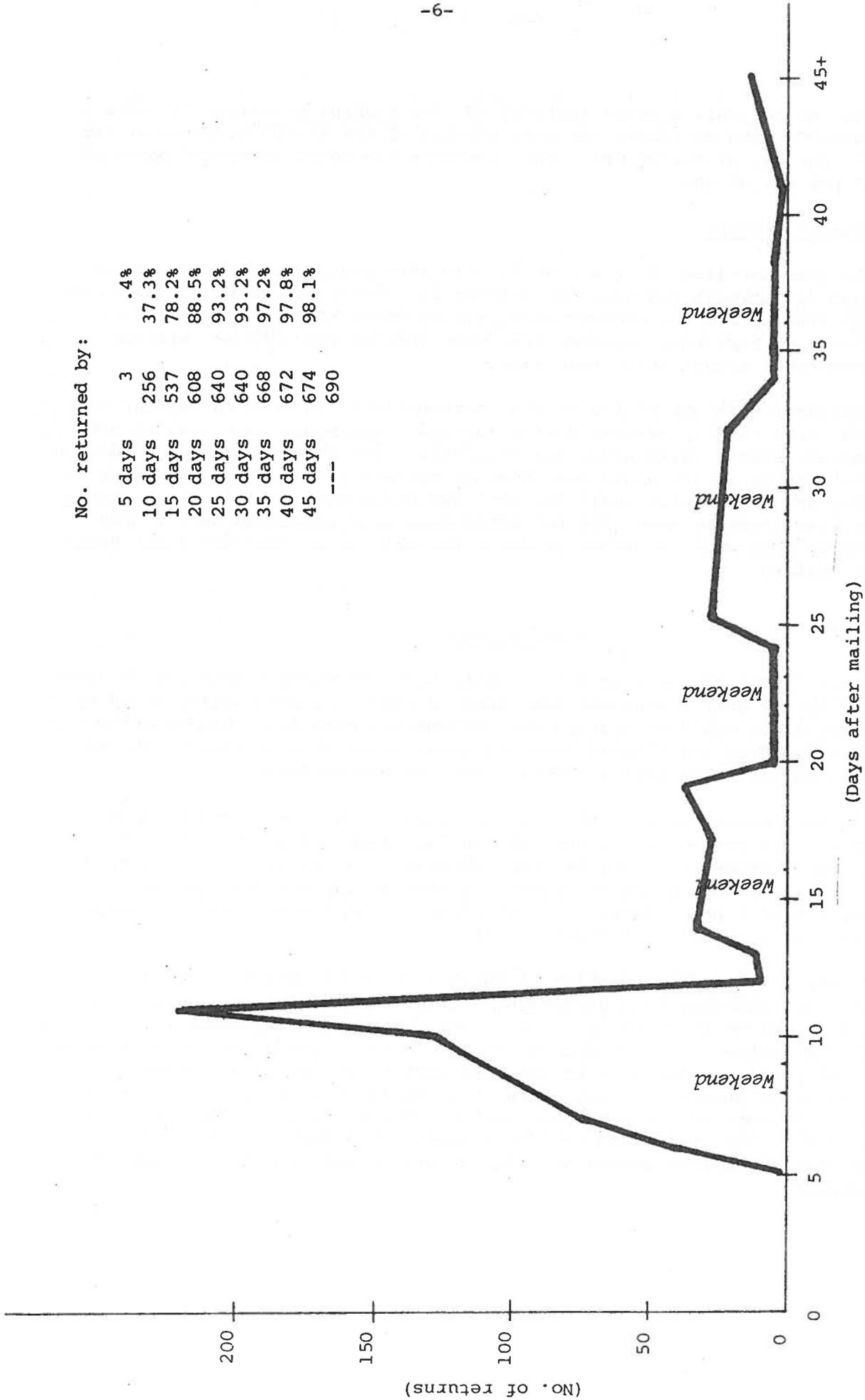


Figure 1. Returns of questionnaires.

Sixty-one names and phone numbers were provided to a contractor who made the necessary calls. Detailed instructions were provided to obtain the needed information, to make optimal use of the available time and to maintain consistency among the contacts.

A total of 133 calls were made for an average of about 2 calls per angler (Table 3). Fourteen (23%) of the 61 licensees were not available for a variety of reasons, i.e. wrong number, moved, illness or no answer in five calls. The remaining 47 anglers were eventually contacted in one to four calls.

Table 3. Time required for phone calls.

Elapsed Time	Unsuccessful Calls	Successful calls
2 hrs. 35 min.	84	49

A total of 155 minutes were required for all the calls including the 49 successful contacts or about three minutes per contact. Based upon these data, contractors located throughout the state would be able to average nearly 20 contacts per hour. This seems to be practical from a time/cost standpoint if reliable contractors were available in 20-25 communities throughout the state. A comparison of relative costs will be made after the mail survey is completed in 1982-83.

# STATE OF MONTANA



## DEPARTMENT OF FISH AND GAME

Helena, MT 59620

Dear Sportsman:

Our records indicate that you purchased a Nonresident Fish, Bird and Big Game License in Montana in 1980. We need your help to determine participation rates in several fish and wildlife activities during the 1980 season. You are one of a small group of representative license buyers that we are contacting, so please take a few minutes to answer the following questions. Please answer and return the questionnaire even if you did not fish or hunt during the indicated time period.

1. Did you fish in Montana during the period May 1, 1980 through April 30, 1981? YES \_\_\_\_\_ NO \_\_\_\_\_

If so, estimate the total number of days fished. \_\_\_\_\_ days

2. Did you hunt in Montana for any game bird or animal during the 1980-81 hunting season? YES \_\_\_\_\_ NO \_\_\_\_\_

If so, estimate the total number of days hunted. \_\_\_\_\_ days

3. How many days did you spend in Montana on trips primarily related to fishing and/or hunting? \_\_\_\_\_ days

Thank you for your cooperation.

Comments:

Sincerely,

James W. Flynn  
Director

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