

**MONTANA FISH, WILDLIFE AND PARKS  
FISHERIES DIVISION**

**JOB PROGRESS REPORT**

**State:** **MONTANA**

**Element 1:** **FISHERIES MANAGEMENT**

**Project No:** **F-78-R-5**

**Job No:** **3531/3561**

**Project Title:** **STATEWIDE FISHERIES  
MANAGEMENT PROGRAM**

**Job Title:** **COONEY RESERVOIR ANGLER  
SURVEY INVESTIGATIONS**

**Project Period:** July 4, 1998 – September 7, 1998

---

**ABSTRACT**

Cooney Reservoir is one of the most heavily fished waters for its size in Montana. Its close proximity to Billings, Laurel and several smaller towns, along with its two-story trout/walleye fishery draws many anglers and other recreationists. In order to better understand angling patterns, harvest success, methods and attitudes, a creel census was run during the peak period from July 4, 1998 to September 7, 1998.

The angling survey consisted of 314 on-site interviews and a mail back survey for those anglers checked prior to trip completion. Another part of the survey involved total shore and boat angler contact at randomly selected hours and days. On-site interviews and/or angler counts were done on all weekend days and holidays, and during 55% of randomly selected week days.

Ninety-eight percent of the angling use at Cooney was by residents, and 94% of the use was by anglers living within 60 miles of the reservoir. Median age of anglers was 46.5 years. Male anglers made up 93% of the interviews and average years fishing experience was 35.7 years. Anglers interviewed had fished Cooney an average of 15.5 years and made 11.7 trips a year to the reservoir.

"Fishing close to home," followed by "chance to catch large fish" and "companionship with family and friends" were selected from a list as the primary reasons for choosing Cooney as a destination. Fifteen percent of the anglers interviewed were members of at least one conservation organization. When asked to comment about overall satisfaction with their Cooney fishing experience, 49% of anglers responded. Fifty percent of these comments were related to park facilities and roads, 33% to safety and enforcement and 17% to fishing.

Four-hundred nineteen gamefish (38% trout and 62% walleye) were checked during the survey. Forty-three percent of anglers interviewed were after any fish, while 36% were seeking walleyes and 21% were angling for trout.

For the 66 day duration of this survey, boat anglers outnumbered shore anglers about three to one (76% to 24%). Boat anglers accounted for 14,716 angling days pressure while shore anglers contributed 3,744 angling days (80% versus 20%).

Shore anglers kept 35% of the total fish they caught and released 65%, while boat anglers kept 37% and released 63%. The average shore angler caught 3.84 fish per trip compared to 6.54 for boat anglers. Boat anglers were more successful at catching both trout and walleyes, taking 2.1 trout and 1.5 walleyes to every one caught from shore. Shore anglers harvested 17% of the total number of fish removed from Cooney, i.e. 17% of the trout and 18% of the walleyes. Boat anglers accounted for 83% of the total harvest, i.e. 83% of the trout and 82% of the walleyes.

During this survey, catch rates for all species combined were 0.94 fish per hour for shore anglers and 1.51 for boat anglers. Catch rates for fish actually kept were 0.36 from shore and 0.57 from boats. Combined shore and boat angler catch rates were 1.27 for all fish caught and 0.48 for all fish kept.

## TABLE OF CONTENTS

|   | PAGE  |
|---|-------|
| ABSTRACT.....   | 1-2   |
| LIST OF TABLES .....                                      | 3     |
| LIST OF FIGURES .....                                     | 4     |
| INTRODUCTION AND STUDY AREA .....                         | 5     |
| METHODS .....   | 5-7   |
| RESULTS AND DISCUSSION .....                              | 7-11  |
| Angler Residence.....                                     | 8     |
| Angler Profiles.....                                      | 8     |
| Primary Reasons for Visiting Cooney.....                  | 8-9   |
| Group Size and Anglers Per Group .....                    | 9     |
| Shore Versus Boat Anglers .....                           | 9     |
| Tackle Selection.....                                     | 9     |
| Members of Fishing or Conservation Organizations .....    | 9-10  |
| Overall Satisfaction with Cooney Fishing Experience ..... | 10-11 |
| FISH RELATED INFORMATION .....                            | 11-15 |
| Fish Data Collected During the Creel Census.....          | 11    |
| Fish Species Sought by Anglers .....                      | 11-12 |
| Tag Returns for Walleyes.....                             | 12    |
| Angling Pressure .....                                    | 12    |
| Fish Caught, Kept and Released .....                      | 13-14 |
| Catch Rates.....  | 14-15 |
| Angler Harvest .....                                      | 15    |
| CONCLUSION AND SUMMARY .....                              | 16    |
| LITERATURE CITED .....                                    | 17    |
| APPENDIX A  |       |

**LIST OF TABLES**

| <b>TABLE</b> |   | <b>PAGE</b> |
|--------------|---|-------------|
| 1            | Angling pressure and average number of boats, party size, hours fished and anglers per day for Cooney Reservoir from July 4, 1998 through September 7, 1998 | 12          |
| 2            | Comparison of fish caught, kept and released for anglers fishing from boats and shore throughout the Cooney creel survey                                    | 14          |
| 3            | Catch rates and harvest information for Cooney Reservoir from July 4, 1998 through September 7, 1998  | 15          |

**LIST OF FIGURES**

| <b>FIGURE</b> |                                | <b>PAGE</b> |
|---------------|--------------------------------|-------------|
| <b>1</b>      | <b>Map of Cooney Reservoir</b> | <b>6</b>    |

## INTRODUCTION

Cooney Reservoir is a 778 acre on-stream irrigation storage project located at the confluence of Red Lodge, Chapman, and Willow creeks (Figure 1). Cooney Reservoir State Park is located within 60 miles of the majority of people living in Montana, including Billings and Laurel and the smaller towns of Red Lodge, Columbus, Bridger, Belfry, Fromberg, Absarokee, Joliet, Park City, Shepherd, Huntley and others. With more individual leisure time devoted to fishing and the use of boats and personal watercraft, recreational use at Cooney has grown steadily, making it the most heavily used lake or reservoir in the area. Recent improvements to roads and recreational facilities at Cooney have also contributed to increased use. Fishing pressure estimates collected from our statewide mail survey (MFWP, 1997 and 1999) increased 40%, from 30,670 angler-days in 1995 to 42,835 angler-days by 1997, and decreased 8% to 39,386 angler-days by 1999.

The two-story trout/walleye fishery in Cooney Reservoir is another reason the water receives so much fishing pressure. Walleyes, first planted in 1984 to help control a large sucker population, have done well. Many large walleyes have been harvested, including the former state record fish (16.38 lb) caught in 1996. Many anglers seeking walleyes at Cooney fish at night to avoid the daytime overcrowding, and because fishing for walleyes is usually better after dark. This night fishing results in additional fishing pressure not found on most state waters.

In order to help understand the unique set of circumstances that have made the two-story fishery in Cooney a qualified success, we decided to collect creel census information during the summer peak use period. With funding help provided by the statewide roving creel fund, the survey was run from July 4, 1998 through September 7, 1998 (Labor Day weekend). The five primary objectives of the Cooney creel survey included: collecting creel and angler use information, determining the ratio of trout versus walleye anglers, collecting harvest information on stocked rainbow trout and tagged walleyes, collecting information on walleye predation on stocked rainbow trout (stomach samples), and determining the ratio of shore versus boat anglers. The Cooney creel questionnaire (Appendix A) was also designed to gather information on angler demographics including age, sex, residence and additional information on gear preference, angling satisfaction, fishing experience, conservation club affiliations and reasons for selecting Cooney for fishing.

## METHODS

Sampling protocol involved surveying only angling visitors to Cooney, and not those who were there only for other water-based recreation. In the 66 days from July 4 through September 7, 314 interviews were collected, which included ten from non-anglers. Anglers were interviewed in person by the creel clerk. Sequentially numbered questionnaires (Appendix A) were filled out for each angler actually fishing that day. Shore anglers were checked on site, whereas boat anglers were checked at the three boat ramps or, in a few cases, on the water with a boat. Because catch statistics

can only be generated from completed trip information, the creel clerk made a special attempt to interview anglers who were done fishing for the day. Anglers interviewed prior to completing their fishing trip were given a numbered mail-in card (Appendix A) for them to fill out when their trip was complete. Completed trip cards could be left in boxes placed at several locations around the lake or mailed back. The additional catch information from these cards was then matched with the corresponding numbered survey questionnaire forms to give completed trip data. Return rates for these completed trip cards was relatively low at 32% (48 returns from 152 cards issued). Completed trip information was collected outright for 164 interviews. With the additional 48 completed trips derived from the cards, 212 total completed trip surveys were obtained out of the 314 interviews (68%).

Creel surveys were conducted on most weekends and all holidays, whereas weekday sampling was done on a pre-determined random schedule. Forty days during the 66-day creel period were surveyed, 45% weekend days and 55% week days. The daily creel surveys were a sub-sample because it was not possible to sample all anglers during most days. In addition to the 314 creel survey questionnaires, counts were made of total shore anglers and boats at predetermined random hours. With a few exceptions, these counts were made on the same days creel information was collected. Forty-nine percent of these counts were made on weekends and holidays, while 51% came from weekdays. Although we concentrated on making the majority of angler counts during peak use periods, counts were also distributed throughout the 24-hour day. This distribution of effort was particularly important on Cooney due to the amount of night fishing that it receives. Actual angler counts per day ranged from one to five depending on the random schedule. Shore anglers per count period ranged from 0 to 22, while boat counts ranged from 0 to 28. The daily and hourly counts were then averaged to give a total average daily boat (8.5) and average daily shore angler (6.5) figure for the 66 day creel duration. To estimate total daily anglers per boat the 8.5 boats per day was multiplied by the average number of anglers per boat (2.3) derived from the creel questionnaire data.

## **RESULTS AND DISCUSSION**

During the day, boat anglers normally slightly outnumbered bank anglers. The survey was unable to accurately quantify night shore angling because it was not practical to cover the entire shoreline at night. Night shore angling did occur, but appeared to be a very small component of use on Cooney. Highest counts of shore anglers were usually made between 10:00 a.m. to 11:00 a.m., whereas highest counts of boat anglers were made from 9:00 p.m. to 11:00 p.m. Thursday appeared to be the favorite day for serious shore anglers. Many of these anglers were retired, senior citizens who were there to avoid the crowds and boat traffic. For this group of anglers, Thursday was normally the quietest most relaxing and enjoyable time to use Cooney.

### **Angler Residence**

Resident anglers (98%) outnumbered non-resident anglers (2%) by a large margin. These percentages are almost identical to those provided by the 1997 statewide fishing mail survey. Ninety-four percent of this use was by anglers living within 60 miles of Cooney. Seventy-four percent of this use was from Billings residents (61%) and Laurel (13%). Anglers from other areas of Montana made up only 4% of the use. The non-resident users represented the states of California, Florida, Washington and Wyoming. Clearly, Cooney Reservoir is heavily used by anglers from local communities. By comparison, nonresident anglers comprised 74% of the users on the Bighorn River in a 1992-93 creel survey (Frazer & Brooks, 1997).

### **Angler Profiles**

The median age for anglers using Cooney Reservoir was 46.5 years with a range of 10-86 years. Male anglers made up 93% of those interviewed while 7% were female. Anglers interviewed had been fishing for an average of 35.7 years with a range of 1-81 years. Years of experience fishing Cooney ranged from 1 to 60 years with an average of 15.5 years. In an average year, anglers interviewed visited Cooney 11.7 times with a range of 1 to 100 trips. The average angler fishing at Cooney is a resident, middle-aged male with a lot of years fishing experience, who has considerable experience fishing Cooney and makes numerous trips each year.

### **Primary Reasons for Visiting Cooney**

Seventy-four percent of people interviewed gave fishing as the primary reason for visiting Cooney that day. (Only angling visitors to Cooney were interviewed, not those there only for other water-based recreation.) Other reasons given included boating (8%), camping (10%), water sports (6%), and various other activities (2%). Many visitors interviewed were at the reservoir for a combination of recreational activities.

A closely related question gave six general reasons for selecting Cooney as a place to fish that day and asked anglers to select the top two. The general reasons and the anglers responses listed in order of importance follows:

|   |            |
|---|------------|
| 1) Fish close to home                   | <u>44%</u> |
| 2) Chance to catch large fish           | <u>14%</u> |
| 3) Companionship with family/friends    | <u>13%</u> |
| 4) Chance to catch several fish species | <u>11%</u> |
| 5) Other                                | <u>9%</u>  |
| 6) Public access and good facilities    | <u>8%</u>  |
| 7) Liberal fish limits                  | <u>.3%</u> |



Responses listed by anglers under "other reasons" (number 5) included: to catch lots of fish, catch walleyes, catch trout, enjoy natural setting relaxing location, water-ski, and teach kids to fish.

By a margin of over three to one anglers selected fishing close to home as number one, followed by chance to catch large fish, companionship with family/friends and chance to catch several fish species as the primary reasons for selecting Cooney as a place to fish.

### **Group Size and Anglers Per Group**

Group size of people interviewed ranged from 1 to 25 members with an average of 3.05 people per group. Anglers in a group interviewed ranged from 1 to 5 with an average of 2.27 anglers per group. On average, one person per group interviewed was a non-angler.

### **Shore Versus Boat Anglers**

Anglers fishing from shore comprised 47% of those interviewed while boat anglers made up 52%. A small group (1%) fished from both shore and a boat.

### **Tackle Selection**

Most Cooney anglers contacted during the survey used bait (57%) for fishing with a combination of bait and lures (26%) next followed by lures (17%).

### **Members of Fishing or Conservation Organization**

One question asked anglers if they were members of any fishing or conservation organization, and if so, to list which ones. Forty-seven anglers interviewed (15%) were members of at least one organization and 2% belonged to more than one group. Individual organizations belonged to by a single angler ranged from 0-4. The thirteen fishing or other conservation organization affiliations reported during the survey are listed below along with the number of anglers who responded.

| <u>Organization</u>            | <u>Responses</u> |
|--------------------------------|------------------|
| Walleyes Unlimited             | 14               |
| North American Fishing Club    | 13               |
| Rocky Mountain Elk Foundation  | 6                |
| Bass Anglers Sportsman Society | 5                |
| Ducks Unlimited                | 4                |

| <u>Organization</u> | <u>Responses</u> |
|---------------------|------------------|
|---------------------|------------------|

|                            |   |
|----------------------------|---|
| Laurel Rod & Gun Club      | 4 |
| Billings Rod & Gun Club    | 2 |
| Pheasants Forever          | 2 |
| National Rifle Association | 2 |
| Trout Unlimited            | 1 |
| Nature Conservancy         | 1 |
| Izaak Walton League        | 1 |
| Wildlife Forever           | 1 |

Five anglers belonged to more than one organization.

### **Overall Satisfaction with Cooney Fishing Experience**

This question on the survey, "Are you satisfied with your overall fishing experience on Cooney or do you feel there are problems that need to be addressed?" Yes \_\_\_\_ No \_\_\_\_, was poorly worded. It should have been broken into two separate questions. As worded, it is unclear whether people answering "yes" are satisfied with their fishing experience or they feel there are problems to address.

As worded, 96% of respondents answered yes with 4% answering no. Because of the poor wording, objective interpretation of these responses is impossible. Another part of this question, which gave space for people to make specific comments, provides a much better view of overall angler satisfaction. Forty-nine percent (143) of the people who responded to this question provided additional comments. Following is a list of the fifteen most prevalent comments to this question along with the number of responses.

| <u>Responses</u> | <u>Comments</u>  |
|------------------|--|
| 33               | Jet skis: rude/inconsiderate; too many; should be outlawed.      |
| 11               | Fishing poor: no/few fish; fishing not as good as in past years. |
| 11               | Lights for boat ramp area  |
| 9                | Outhouse problems; no toilet paper; small; improve sanitation.   |
| 9                | Park too crowded.  |
| 7                | Too much water in reservoir; hampers access.                     |
| 6                | Good facilities; nice improvements to park.                      |
| 5                | Inconsiderate boat drivers; coming too close to anglers.         |
| 4                | Fees too high.   |
| 3                | Plant more trees; create more shade.                             |
| 3                | Need more docks.   |
| 3                | Riprap eroding bank in Willow Creek arm.                         |

| <u>Responses</u> | <u>Comments</u>   |
|------------------|---|
| 3                | Add handicap access.  |
| 3                | Establish no wake zone in Red Lodge Creek arm.                |
| 3                | Need more safety enforcement: boating safety; jet ski safety. |
| 2                | Stock bass.   |
| 2                | Spray knapweed.   |
| 2                | Stock more 12 lb-14lb walleye.                                |
| 2                | Implement size limits for keepers                             |
| 2                | Waive park fee to fish.                                       |
| 2                | Place picnic tables at more day-use areas.                    |
| 2                | Add cleaning station.   |
| 2                | Pave roads all the way to lake.                               |
| 2                | Need more campsites.  |
| 2                | Some boats running at night without lights.                   |
| <u>2</u>         | Allow live minnows.   |
| 135              |   |

Along with these 26 categories of most frequent comments made by 135 individuals, an additional eight comments were provided covering a number of other issues. Further analysis of the entire 143 comments shows 50% relating to Cooney Park facilities and roads, 33% relating to safety and enforcement issues, and 17% concerning fish and fishing issues. Twenty-five percent of the comments were directly related to issues involving jet skis.

## **FISH RELATED INFORMATION**

### **Fish Data Collected During the Creel Census**

Four hundred nineteen gamefish were weighed and measured during the creel survey. One hundred sixty rainbow trout (38%), averaged 11.5 in and 0.74 lb with the largest 19.4 in and 2.90 lb. Two hundred fifty-nine walleyes (62%), which averaged 10.9 in (no average weight) with the largest 30.89 in and 12.90 lb. The smallest rainbow trout kept by an angler was 4.0 in. Anglers reported catching and releasing up to 50 small walleyes (fish less than 11.0 in) in a day. Only sixteen walleyes over 15.0 in were kept by anglers during the creel survey.

### **Fish Species Sought by Anglers**

Thirty-six percent of anglers interviewed were specifically seeking walleyes, while 21% were fishing for trout. Forty-three percent of anglers said they were fishing for any species they could catch. Only one angler said he was specifically fishing for crappies, a species present in Cooney in limited numbers. Anglers fishing from shore were more likely to be seeking trout than walleyes, 60% versus 40%. Just the opposite was true of boat anglers who were more likely to be after

walleyes than trout, 78% versus 22%. This difference is understandable because walleyes are generally more easily caught from a boat than from shore, and most serious walleye anglers have a boat. Conversely, trout are often easier to catch from shore than walleyes and a boat is not usually necessary to catch trout at Cooney. Cooney Reservoir has always been a popular location to catch trout, particularly for older anglers who generally have good access from shore.

### **Tag Returns for Walleyes**

Using electrofishing equipment and nets, 383 larger walleyes were taken in Cooney and tagged with individually numbered tags from 1996 to 1998. These walleyes averaged 23.8 in and 6.26 lb. One objective of the Cooney creel was to collect harvest information on those tagged walleyes, but none were reported taken during the survey. Through 1998, total angling returns from Cooney have accounted for 30 (8%) of these tagged walleyes.

### **Angling Pressure**

For the 66 day duration of the creel survey on Cooney, boat anglers outnumbered shore anglers about three to one (76% to 24%) (Table 1). Average party size and average hours fished for boat and shore anglers were comparable. During the creel survey, boat anglers accounted for 80% (14,716 days) of the total angling pressure (18,460 days), with shore anglers making up 20% (3,744 days). During this 66 day period, Cooney received nearly 24 angling days pressure for each acre of lake surface. When you consider that for much of the year the surface acres of Cooney is often much less than the 778 at full pool due to irrigation drawdown, the actual pressure per surface acre is really much higher.

**Table 1. Angling pressure and average number of boats, party size, hours fished and anglers per day for Cooney Reservoir from July 4, 1998 through September 7, 1998.**

| CATEGORY                                | BOATS  | SHORE | TOTALS |
|---|--------|-------|--------|
| Average number of boats per day         | 8.5    | N/A   | 8.5    |
| Average group size                      | 2.3    | 2.1   | N/A    |
| Average hours fished per completed trip | 1.9    | 2.4   | N/A    |
| Average number of anglers per day       | 19.9   | 6.3   | 26.2   |
| Angling pressure (angling hours)        | 27,465 | 8,912 | 36,377 |
| Angling pressure (angling days)         | 14,716 | 3,744 | 18,460 |

**Fish Caught, Kept and Released**

Anglers fishing from shore kept 75% of trout they caught and only 16% of the walleyes (Table 2). Shore anglers kept 35% of the total fish they caught while releasing 65%. The average Cooney shore angler caught 3.84 fish per trip.

Boat anglers kept 56% of the trout they caught and 24% of the walleyes. Boat anglers kept 37% of the total fish they caught while releasing 63%, which compares closely with shore anglers. The average boat angler caught about two times the number of fish taken by a shore angler per trip (6.54 versus 3.84). Boat anglers were more successful at catching both trout and walleyes, taking 2.1 trout and 1.5 walleyes to every one caught from shore.

Combining catch statistics for both shore and boat anglers shows 60% of the trout and 22% of the walleyes caught were kept while 40% and 78%, respectively, were released. The average angler fishing Cooney during the creel duration, combining boat and shore anglers, caught 5.62 fish per trip, kept 37% of these fish and released 63%. The high release rate for walleyes is another indication that Cooney contains a lot of walleyes smaller in size than the average angler desires to harvest.

**Table 2. Comparison of fish caught, kept and released for anglers fishing from boats and shore throughout the Cooney creel survey.**

| Average fish for each angler for completed trips |                    |                  |                      |
|--|--------------------|------------------|----------------------|
| Angling Method                                   | Fish Caught (Mean) | Fish Kept (Mean) | Fish Released (Mean) |
| <u>Shore Anglers:</u>                            |                    |                  |                      |
| Rainbow Trout                                    | 1.26               | 0.94             | 0.32                 |
| Walleyes   | 2.57               | 0.41             | 2.16                 |
| <b>Total</b>                                     | <b>3.83</b>        | <b>1.35</b>      | <b>2.48</b>          |
| <u>Boat Anglers:</u>                             |                    |                  |                      |
| Rainbow Trout                                    | 2.66               | 1.48             | 1.17                 |
| Walleye  | 3.88               | 0.95             | 2.93                 |
| <b>Total</b>                                     | <b>6.54</b>        | <b>2.43</b>      | <b>4.10</b>          |
| <u>Combined (Boat &amp; Shore)</u>               |                    |                  |                      |
| Rainbow Trout                                    | 2.18               | 1.30             | 0.88                 |
| Walleye  | 3.43               | 0.76             | 2.67                 |
| <b>Total</b>                                     | <b>5.61</b>        | <b>2.06</b>      | <b>3.55</b>          |

### Catch Rates

Catch rates for all fish species combined of 0.94 fish per hour (fph) for shore anglers and 1.51 fph for boat anglers were quite good during the survey (Table 3). Catch rates for fish actually kept of 0.36 fph from shore and 0.57 fph from boats are still acceptable. Combined shore and boat angler catch rates of 1.27 fph for all fish caught and 0.48 fph for fish kept, are also quite good.

Because Montana waters with the trout/walleye combination are rare, several waters in Wyoming were selected for comparison of catch rates. Three Wyoming reservoirs located on the North Platte River system were chosen, including Seminoe, Pathfinder and Alcova (Maurakis & Yule, 1997). All three reservoirs have trout/walleye fisheries which have been extensively evaluated

through creel surveys. During 1996, Seminoe, Pathfinder and Alcova Reservoirs had yearly combined (boat-shore, all species) catch rates of 0.64, 0.32 and 0.48 fph respectively. For the July-August time period, which includes most of the Cooney creel duration, the catch rates were 0.78, 0.32 and 0.48 fph, respectively, for these three Wyoming reservoirs. One management objective on Alcova Reservoir is maintaining a catch rate of 0.5, which the Wyoming Game and Fish Department considers a "fast family fishery." Combined catch rates on Cooney of 1.27 for total fish caught exceeds this criterion. Even though many fish caught in Cooney are released, the combined fish kept catch rate of 0.48 fph during the survey, still meets this high 0.5 catch rate criterion.

### **Angler Harvest**

Angler harvest statistics are also presented in Table 3. Shore anglers harvested 17% of the total estimated number of fish taken from Cooney, 17% of the trout and 18% of the walleyes. Boat anglers accounted for 83% of the total harvest, 83% of the trout and 82% of the walleyes.

**Table 3. Catch rates and harvest information for Cooney Reservoir from July 4, 1998 through September 7, 1998.**

| <b>Angling Method</b>              | <b>Catch Rates for Fish Caught (Mean)</b> | <b>Catch Rates for Fish Kept (Mean)</b> | <b>Harvest (Total Numbers)</b> |
|------------------------------------|---|---|--------------------------------|
| <u>Shore Anglers:</u>              | Fish/Hour                                 | Fish/Hour                               |                                |
| Rainbow Trout                      | 0.28                                      | 0.21                                    | 1,794                          |
| Walleyes                           | 0.66                                      | 0.15                                    | 1,494                          |
| <b>Total</b>                       | <b>0.94</b>                               | <b>0.36</b>                             | <b>3,288</b>                   |
| <u>Boat Anglers:</u>               |   |   |                                |
| Rainbow Trout                      | 0.59                                      | 0.33                                    | 8,877                          |
| Walleye                            | 0.92                                      | 0.24                                    | 6,790                          |
| <b>Total</b>                       | <b>1.51</b>                               | <b>0.57</b>                             | <b>15,667</b>                  |
| <u>Combined (Boat &amp; Shore)</u> |   |   |                                |
| Rainbow Trout                      | 0.46                                      | 0.28                                    | 10,671                         |
| Walleye                            | 0.81                                      | 0.20                                    | 8,284                          |
| <b>Total</b>                       | <b>1.27</b>                               | <b>0.48</b>                             | <b>18,955</b>                  |

## CONCLUSION AND SUMMARY

Although this creel survey on Cooney Reservoir was only run for 66 days, an estimated 18,460 angling days of fishing pressure occurred during that period. This figure represents 42% of the entire year's fishing pressure estimated for Cooney from the 1999 statewide mail survey of 39,386 total angling days. With limited time and money, this "snapshot creel census" provided a good profile of the predominantly resident summer angling population using Cooney at the time of this survey.

Of the five original objectives for the Cooney creel, including: collecting creel and angler use information, determining the ratio of trout versus walleye anglers, collecting harvest information on stocked rainbow trout and tagged walleyes, collecting information on walleye predation and stocked rainbow trout (stomach samples), and determining the ratio of shore versus boat anglers, all but one were achieved. No information was collected on walleye predation on stocked rainbow trout. Rainbow trout, usually stocked into Cooney during April, grow rapidly and by early July are too large for all but the larger walleyes to prey upon.

For the duration of this survey, boat anglers outnumbered shore anglers about three to one, and boat anglers accounted for 80% of the fishing pressure on Cooney. Boat anglers were more successful at catching both trout and walleyes, accounting for 83% of the trout and 82% of the walleyes harvested during this creel survey. Combined shore and boat angler catch rates of 1.27 fish per hour for all fish caught and 0.48 for all fish kept, are good when compared to other reservoirs. Wyoming Game and Fish Department considers a catch rate of 0.5 on their reservoirs a "fast family fishery."

As recreational use at Cooney has increased so have conflicts between and among different user groups. With its close proximity to Billings and Laurel and its location in an area with limited water based recreation, Cooney gets very crowded, particularly on warm summer weekends. The most common complaint heard from anglers involved jet skis. Cooney anglers have adapted in several ways to help alleviate conflicts and avoid the crowding. Many anglers, particularly those seeking walleyes, have shifted to night fishing while others fish during the week and at hours during the day when conflicting uses are less likely. In spite of the heavy recreational use and resultant conflicts at Cooney, anglers responding to this survey still visited the reservoir an average of nearly twelve times each year.



**LITERATURE CITED**

Frazer, K. and R. Brooks. 1997. Bighorn River Anglers Opinion Survey and Creel Census. April 1992 – March 1993. Montana Fish, Wildlife and Parks, Helena, Montana.

Maurakis, P. and D. Yule. 1997. North Platte Comprehensive Fisheries Study: Creel Survey and Stocking Evaluation, 1995-1996. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, Wyoming 82006.

Montana Statewide Angling Pressure 1997. Montana Fish, Wildlife and Parks, Helena, Montana.

Montana Statewide Angling Pressure 1999. Montana Fish, Wildlife and Parks, Helena, Montana.

Prepared by: Michiel Poore

Date: April 25, 2000

## **APPENDIX A**

### **COONEY CREEL QUESTIONNAIRE AND ANGLER SURVEY CARD**