MONTANA
AND GAME COMMISSION

BIENNIAL REPORT

MAY 1, 1964 – APRIL 30, 1966

The Honorable Tim Babcock
Governor of Montana
Helena, Montana

Dear Governor Babcock:

The Montana Fish and Game Commission respectfully submits its biennial report for the period of May 1, 1964 through April 30, 1966.

During the biennium the commission was drawn into the mainstream of outdoor recreation with the additional responsibility of state parks and as the official outdoor recreation administrative body for Montana. Therefore, for the first time this document will report on various phases of outdoor recreation not related with hunting and fishing.

Legislative measures that we feel are desirable for the perpetuation and management of Montana's outdoor recreation resources are briefly outlined in the report.

An accounting of income and expenditures over the last biennium has been included.

Respectfully submitted,

E. G. Leipheimer, Jr., Chairman,
Montana Fish and Game Commission
Lyle H. Tauck, Vice Chairman
John T. Hanson, Member
Walter E. Staves, Member
Robert H. Weintz, Member

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DIRECTOR'S MESSAGE

During the past biennium, the Fish and Game Department saw changes probably greater than any experienced since its inception. The transfer of State Parks to the department and legislative assent to the Land and Water Conservation Fund Act gave impetus to the department's designation as the official state recreation agency. The added responsibilities have been welcomed.

Every effort has been made to effect the transition to a full-fledged recreation agency smoothly. The department's philosophies have necessarily been broadened to place in proper perspective all phases of outdoor recreation. The division of Recreation was expanded to include parks. This division is charged with operation of state parks, the purchase and development of fishing access and other recreational lands, and administration of the Outdoor Recreation Fund in Montana.

As one would expect, the widening scope of operations has been accompanied by new and additional problems. For example, the increasing interest in Montana's waters is being viewed anxiously. The department's interest now lies not only in the maintenance of quality fish habitat, but also in quality outdoor recreation. Without well-conceived, well-defined guidelines, Montana's water picture could become one of complete chaos. Since water is inseparably tied to much of the state's recreation potential, the Fish and Game Department has a great stake in any major decisions that will affect water use. A Water Resources Development Section has been established to serve the public interest in water oriented recreation.

Another possible problem which I foresee, and one which I'm sure we will want to avoid, has developed in at least one eastern state. The mounting storehouse of information being gained through research, the conflict of public use on private lands, and pressures from national and local interests have all tended to make hunting and fishing regulations progressively more complicated. There is a real danger of overcomplicating regulations to a point where hunters and fishermen become so discouraged that they lose interest in the sport. This has apparently been a major factor in the decline of hunters and fishermen in some parts of the United States.

One tendency toward overcomplication is severely restrictive firearms legislation. A rising tide of anti-gun sentiment among the nonhunting public could push through legislation which represents a stumbling block to legitimate hunters.

I would like to thank the Fish and Game Commission, the Montana legislators, and all other Montanans for the support given the department during the past biennium. The department will continue striving to provide high quality outdoor recreation for the future.

Frank H. Dunkle
Director
Montana Fish and Game Department

ADMINISTRATION

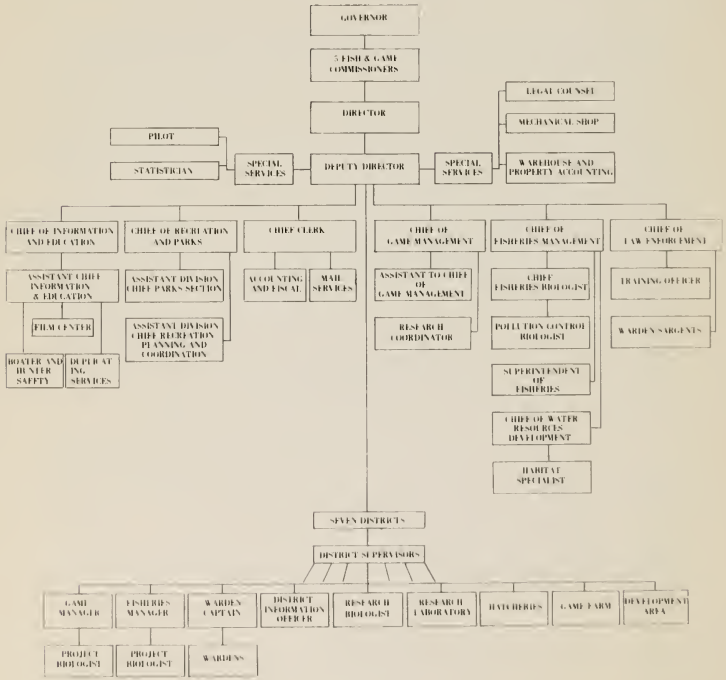
During the past biennium, major changes in Fish and Game Department administration included the addition of State Parks to the Recreation Division and a Water Resources Development Section to the Fisheries Division.

The Fish and Game Department remains organized essentially the same as it was when the last biennial report was published. For administrative purposes, the state is diivded into seven supervisory districts with headquarters in Kalispell (District 1); Missoula (District 2); Bozeman (District 3); Great Falls (District 4); Billings (District 5); Glasgow (District 6), and Miles City (District 7).

Each supervisor has day to day supervision of all persons assigned to his district and is responsible to the Department Director or, in his absence, the Deputy Director.

Division chiefs compose the director's staff. The staff plans, coordinates, and budgets for various activities of the department under direct supervision of the director. District supervisory personnel see that programs planned by the staff and approved by the director are carried out.

ORGANIZATION CHART

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COMMISSION

1 Chairman E. G. Leipheimer, Jr.
2 Vice Chairman Lyle H. Tauck
3 Member Walter E. Staves
4 Member John T. Hanson
5 Member Robert H. Weintz

DEPARTMENT

6 Director Frank H. Dunkle
7 Deputy Director Keith A. Fresemon


6


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Montana Fish and Game Commissioners—Department Director and Deputy Director.

RECOMMENDED LEGISLATION

In order to keep pace with additional responsibilities and with a changing society, it is necessary to periodically up-date law codes as they relate to fish and game and other phases of outdoor recreation.

Montana Fish and Game Laws were last recodified during 1955. The legislature will be requested to consider recodification of game laws during the 1967 legislative session.

INFORMATION AND EDUCATION

Essentially, the Information and Education's major job is one of public relations. Public relations has been defined as an attempt to form public opinion. This is done by making available to all persons information on department happenings in a manner that is understandable. I & E and public relations are not entirely synonymous, however, since information provided is often more closely tied to actual resource management than it is to public relations. For example, information stations located at sites of special hunting seasons and provision of hunting and fishing information are basically management with public relations a by-product of good service.

Public relations to many is a vague term. Unfortunately, its somewhat scurrilous beginnings has tainted the meaning so that many persons regard it with suspicion and associate it with propaganda, a word which bears overtones of deceit. Nevertheless, public relations as a profession is a very important cog in the machinery of our modern society.

Some authorities see the growth of public relations as having passed through three basic periods. The first period pre-dated World War I and was characterized by very little but lavishly colored information. As Douglas Gilbert stated, "Medicine shows and P. T. Barnum methods were the order of the day." Information portioned out by both government and business was carefully selected, grossly exaggerated, and techniques of influencing the public were often unscrupulous. The first planned public relations effort was probably initiated when John D. Rockefeller was depicted as a kindly old man who lovingly tossed dimes to street urchins. The PR was scattergunned with hopes that the shot would find many marks. One of its important uses was to recruit for the armed services and to spur the sale of Liberty Bonds.

The third period, to which we currently ally ourselves, was honed to perfection during the second world war when mass psychology became a weapon of warfare and barrages of propaganda whipped nations into a belligerent state of mind.

The business of professional public relations has since matured and is now utilized by near

A youth group on tour sees fisheries workers shocking fish and taking data.

ly every phase of business, be it government or private. In the private business world, about 75% of the employees are engaged in management and about 25% in selling and public relations. Figures from a 1964 publication indicate that about 1% of natural resource agencies personnel are employed full time in the field of public relations and selling. The same publication states also that at that time there were an average of 11 I & E personnel in each state conservation agency.

Whereas business is mostly concerned in selling goods and services, a conservation agency's biggest selling job lies in the field of **ideas** and services. This is a basic difference. Without the sale of new ideas to the public in an understandable and palatable manner, research soon pulls far ahead of management—stagnation is bred. Management cannot conceivably catch up with public acceptance and continued support. Ideas are elusive though—far more difficult to comprehend and sell than are tangible products. It is often difficult to determine whether ideas have been sold or not.

In the field of resource management, wildlife agencies are faced with more difficult selling jobs than are other agencies. The interest in wildlife is inherently greater, but sentiment is more apt to run high and override logic. The product (wildlife) is a common user of private as well as public land. This relationship cannot help but result in conflict among private landowners, recreationists, state agencies, and government agencies.

This leads to the question of what can an I and E Division do to bring understanding to these various interests? Just how much can an I and E Division accomplish in selling the varied and complex ideas that go into management programs? To many persons I and E, or public relations, implies a Pandora's box—a magic wand which when waved properly will transform the most adamant critic into a loyal supporter. If this were true, it would certainly be a different world in which we now live. An I and E Division can do a great deal toward fostering public understanding and acceptance of its parent agency. This acceptance is generally termed as "image"—the attitudes of the public toward the agency. An I and E Division helps form the image by making information available to the public. News services including radio and television presentations as well as written news releases are important information outlets. Information is also made available through feature articles, pamphlets, brochures, and various other written media. Some of these publications are aimed strictly at answering commonly asked questions, while others cover highlights of the department's programs. Technical information gathered at great expense can be presented in a fashion that is understandable to the layman, thereby acquainting the public with some of the more technical aspects of resource management.

I and E Divisions also handle a great deal of the agency's correspondence. This includes not only the filling of routine information requests, but also letters of more intimate nature, such as answers to complaints and special inquiries. Such correspondence is probably second only to personal contact in effective public relations, but on a comparatively small scale. Other methods of effective public contact are through movies, school programs, teacher workshops, field trips, and youth camps. An I and E Division is, then, basically an instrument of mass media, though personal contact is made wherever possible.

Information presented through mass media in an honest, straightforward manner without gimmicks is lifeblood of a public agency. This is the only means of contact with a large portion of the public, but it cannot be depended upon entirely to do the public relations job. The image of an agency is the sum total of each and every individual agency contact plus the abilities, knowledge and prejudices of the public. Before the ideas or programs of an agency are publicly accepted, the agency must first be considered creditable, progressive, dedicated, and enlightened. One wrong act, one misinterpretation, one misunderstanding by a single individual will be considered by the public as an act or deed of the entire agency. It is axiomatic that a program which pleases

one interest group or one individual will displease others. Some groups and some individuals are dedicated to being disgruntled with agency programs no matter what. Still other persons make their stands, pro or con, ill-informed even though information is readily available. Conflict is an inescapable occupation of any wildlife agency.

I and E, or public relations, is no magic wand, but it is an agency's front line of contact on a mass scale. In order to be effective, however, it must be backed by each individual within the agency. It has been correctly stated that public relations is everyone's job.

News Services

News releases are issued from the Helena office to all the wire services, daily and weekly newspapers, and radio and television stations within the state. They are also sent to fish and game personnel, to legislators, and to a number of sports writers out-of-state. The releases are issued most weeks and mailed on Fridays. This seems to be the best date to accommodate most newspapers, though some would prefer other release dates. News releases are not issued every week, because fresh newsworthy material is not always available. If special situations arise, special releases are prepared for wire services or to cover local areas. During the summer months, a weekly roundup of fishing conditions is included with the news report. In addition to Helena office coverage, district information officers provide news and feature services within their respective districts. Assistance is also given to editors in preparing special features.

In general, the departments' relationships with the news media are excellent. From time to time we get criticism from laymen in regard to the news release format. Most of the critics feel that the news releases should be printed on both sides of a page and be single spaced in order to conserve paper and postage. News releases are, however, prepared for the convenience of news media. This requires easy to read print, and printing on one side only. It would be desirable to save on postage and print, but not at the expense of news usage.

Stereotype mats covering bird seasons and other special regulations are prepared for newspaper use on occasion. These are popular, but the expense of preparing them precludes their use excepting in cases where maps are required to explain seasons, etc.

Film Center

The I and E Division's Film Center has several major responsibilities, among which are: researching, writing and producing movies in color and black and white which illustrate resource management; radio programs, TV and radio spots such as hunter and water safety; TV and radio news releases on film and tape about special items such as special hunting seasons; making special slides and prints, color and black and white for field use, publications, reports and studies; storing, shipping and receiving department loan-library films; consultation services for outside producers making programs about resources and outdoor recreation.

The distribution of all films and tapes produced at the Film Center are to all radio and TV stations in Montana and adjacent where coverage extends into Montana. After TV showings, films are placed in the department's loan-library for clubs and groups. Where a subject is strictly of local interest, programs are distributed in that area only.

The Film Center also provides upon request, films, stills and tapes to District Information Officers to assist them in producing their own local live TV and radio programs.

In the last year and a half the Film Center has produced 50 films, spots and releases on film audio tape and video tape amounting to three hundred separate items.

Major films produced have been: Missouri River Recreational Waterway; Deer Facts of Life; Setting the Seasons; The Land and You; Montana Wild Trout Waters; Upland Game Birds—The Sage Grouse; After the Shot; Pesticides and Telemetry; The Paddlefish; Yellowstone River Recreational Waterway; Montana Outdoors (a 13 program TV series, some of which use all or parts of the foregoing films). Spots include hunter and water safety series, conservation week, special permit deadline reminders, special elk season releases, etc. It has been calculated that in advertising trade parlance, department materials produced by the Film Center received upwards of 30 million impressions in the last 18 months in Montana.

The Film Center is staffed and maintained to provide information for educational purposes to the public by TV and radio in order that that the public has access to the most up-to-date facts about the basics of wildlife and habitat management. Television and radio are economical ways to reach the majority of the general public with the frequency necessary to keep them informed on department programs.

Direct Mail

Thousands of inquiries come in to the Fish and Game Department each year, requesting information on all phases of outdoor recreation and management. The larger part of these requests are filled by using prepared materials such as parks brochures and hunting and fish-

ing regulations. The efficiency in which these can be handled has a side benefit of good public relations.

Special requests and inquiries that require unusual information or demand unusual explanations must be given individual attention. No piece of mail goes unanswered regardless of how trivial it may seem or despite the vehemence of some complaints. These letters, time-consuming as they are, are a very important part of public contact.

Each year there are a few complaints of letters not having been answered. This is entirely possible, for some letters are not addressed legibly and a number are received with no return address at all.

Wildlife Exhibit

The I and E Division is also in charge of a live animal exhibit which attends as many of the county fairs each summer as is practicable. Animals for the exhibit are collected each year and mainly comprise pets which persons pick up and eventually wish to dispose of. At the end of each fair season, early September, the animals are relatively domesticated and would have difficulty fending for themselves in the wilds. As a means of disposing of them, they are given to better municipal zoos in the U. S.

The live animal exhibit has always been one of the most popular features of county fairs. Because of the manner in which the animals are collected and the facilities required for maintaining and transporting them, it is not possible to display at all fairs. Any expansion of this service would be extremely costly, especially in view of the short fair season and the difficulty in obtaining enough animals for varied and adequate exhibits.

District Information Officers

During the past biennium, district information officers were assigned to six of the department's seven administrative districts. Because of their knowledge of local situations and local availability, these men can provide better services within their respective areas than could be offered from central state officers.

The District I and E programs are coordinated on important projects that are statewide in nature. An example would be the recreational water system which is of such importance and extent that a coordinated effort is necessary to accomplish established goals. News services and other information media are served by district I and E personnel, work with youth programs and schools, and fill many other information and educational needs. Assistance is also given to other divisions in

The growing popularity of boating results in a need for more water safety knowhow.

preparation of field trips, manning of field information centers, etc.

Hunter and Boater Safety

Hunter Safety

Hunting is a relatively safe sport, but because hunting accidents, like automobile accidents, are dramatic they get more than their share of publicity. Home accidents such as slipping on rugs, falling off of stepladders, etc.; farm accidents, skiing, bicycling and many other accidents make less spectacular reading and therefore do not come so forcibly before the scrutinizing eye of the public. Consequently rather elaborate programs have been devised to decrease firearm accidents.

Many programs lend themselves very nicely to statistical analysis. Progress can be accurately charted or gains and losses accurately plotted. Unfortunately, a tabulation of firearm casualties cannot be used to assess the progress of hunter safety training. There are no complete figures to show the incidents of hunter-oriented firearm accidents prior to the enactment of mandatory firearms training legislation in Montana. Accordingly, accident rates and related information can be compared only among a few years. Even if complete statistics were available, for say 15 years or more, this alone would not give a complete picture. The hunting public is changing, their psychology is changing, methods of hunting and hunting equipment and many other pertinent factors are changing. Some form of wizardry would be needed to pull all of the causative factors together into one meaningful picture.

The bare statistics available on hunter accidents aren't especially impressive. Looking back over the past four years, the following hunter accidents are recorded for Montana:

Year	1962	1963	1964	1965
Fatal	9	5	4	8
Non-fatal	33	23	13	19
Age of Hunter				
to 11 years	0	0	0	1
12-17	19	12	11	8
18-plus	15	14	7	17

There have been a number of suggestions as to what additional steps should be taken to bring the firearms accident rate down. One popular suggestion is to demand eye examinations of all hunters. Acuteness of vision appears to play a far less important role than the manner in which a hunter sees—his psychological vision, so to speak. There is no adequate test for this type of vision, and certainly no corrective glasses. Moreover, mistaking a man for a game animal is only one of many kinds of firearm accidents.

Another suggestion has been to require hunter safety training for all adult hunters as well as juveniles. It is in the adult age group where most of the accidents occur. Men of considerable experience, safety conscious, and some with hunter safety training in one form or another rank among accident victims and accident causers. The snags and problems of putting over a mandatory adult training program are immediately apparent.

A third suggestion, and one which proponents of the archaic game laws pursue, is to go back to the old buck law, thereby making hunters more careful because they have to look more carefully at their targets when hunting deer. New Mexico has come up with some recent results of a study which refutes this philosophy overwhelmingly. Their figures show that in areas under their study, there were actually a higher rate of accidents in buck only areas than in either sex hunts. The study showed also that an increase in the density of hunters does not increase the chance of one hunter being shot by another.

The whole matter seems to boil down to the fact that there is still little known about the basic causes of hunting accidents. Perhaps many of them are related to the same basic drives and desires that go into making careless drivers. It would be interesting to review the life history of each person who was involved in a firearms accident and see how prone they are to accidents other than hunting. Hopefully, psychologists and educators will eventually arrive at formulas that will make every gun user a safe user.

In the meantime, we must do the best we can with our present knowledge. The Montana hunter safety program has received national recognition many times during the nine years it has been in operation. Approximately 850 volunteer instructors are giving freely of their time and talents to make hunting a safer sport in Montana. Although the hunter safety course is required to be taken only by those youngsters between 12 and 18 who wish to purchase a hunting license, many other youths and some adults are voluntarily taking this instruction. Notably, the course is being given to military personnel at many of the military establishments in Montana. Also, many women are voluntarily taking the course.

In addition to the safe handling of firearms, which is the basic core of the course, students are being given instruction in such related fields as survival training, first aid, game identification and landowner-sportsman relations.

The program is supervised by the Boater and Hunter Safety Section of the Information and Education Division but much of the field work with the volunteer instructors is done by the warden force.

Boater Safety

Each year sees more boaters, fishermen and water skiers on Montana waters and more divers under the water. With this increased competition among water users comes increasing opportunities for water accidents, and the problems of enforcement of water safety laws continue to increase. More ample funds and a more clear cut responsibility for administration is needed to cope with these expanding problems. At present, there is no clear cut responsibility nor are there funds for such things as posting of speeds at dock areas, designation marking and maintenance of swimming areas, placement of buoys, etc. The Information-Education Division is now carrying on a public education program relative to boating safety, but other types of water safety are not clearly the responsibility of any particular department.

Adult Education

Since 1954 the Fish and Game Department has annually aided in financing an extension type, adult education program in cooperation with Montana State University at Bozeman and the University of Montana at Missoula. Known statewide as the wildlife extension program it has as its objectives (a) development of a better understanding of management of the natural resource base, (b) to secure public acceptance of the scientific approach to wildlife management, (c) to help orient public thinking on the entire subject of wildlife management and (d) to develop the best possible working relationship among agricultural, livestock, and wildlife interests.

As originally conducted the program centered about a series of educational, forum-type programs on resource management presented in from 8 to 10 Montana communities each year. The procedure remains an integral part of the current adult education program. In addition, the activities of the two wildlife extension specialists have expanded to include areas of liaison, coordination and advisory functions appropriate to the educational forces. These latter activities include, but are not limited to, representation of the wildlife interests on state and federal land management agency multiple use advisory boards and committees, agricultural agency land bank and policy committees, committee assignments within state stock growers and sportsmen's organizations, assignment to state government committees relating to wildlife or associated resources, and activities on university councils relating to natural resources areas.

Activities of the wildlife extensionists also include work with civic groups, schools, youth groups and active liaison with the department's education, research and management divisions.

Wildlife Extension Education

The Montana Fish and Game Commission has expanded its public information and education program by allocating funds to the University of Montana and Montana State University for the purpose of developing stronger educational services in the various communities of the State centered around wildlife management and the conservation of those natural resources upon which the production of wildlife depends.

The commission recognizes that sportsmen groups have memberships made up of people from all walks of life and that many other groups are vitally interested in conservation and in improving wildlife management. Consequently, these services are not limited to the sportsmen groups, but to such other organizations as may be interested in any community.

It is the duty of the wildlife extension specialist at each of the above-mentioned institutions to provide the educational services. The objectives of the program are:

(1) To promote adult educational services in the field of land and wildlife management.
(2) To secure public acceptance of a scientific approach to wildlife management.
(3) To help orient public thinking on the whole subject of wildlife management.
(4) To develop the best possible working relations between the state Fish and Game Department, agriculture, livestock, wildlife, federal and state agencies concerned with wildlife management.
(5) To secure better public understanding of the dual responsibilities between state and federal governments concerning land management and fish and game resources.

The tagging of fish is important to many phases of fisheries management and research programs. This cutthroat trout sports a jaw tag.

FISHERIES MANAGEMENT

Montana has a wide variety of fish habitat ranging from 1-acre ponds in eastern counties to 126,000-acre Flathead Lake in the northwestern part of the state—from small, slow moving creeks to the mighty Clark Fork of Columbia River.

The state fisheries program is a two-fold endeavor. First it is aimed at providing high quality fishing for today. At the same time, the continuing loss of trout stream habitat through pollution, sedimentation, channel alteration and dewatering is a major problem in Montana as in other states. Therefore the second and equally important part of the program is aimed at preserving Montana's unexcelled trout streams. If this can be accomplished, Montana's trout streams will ever be a source of pride and enjoyment for her citizens and visitors alike. In future decades they will be an increasingly valuable asset to the State's economy.

The following is a discussion of some Montana fishing highlights during the biennium.

Stream Channel Preservation

Stream channel preservation was given overwhelming approval by the 1965 legislature when the Stream Preservation Law enacted in 1963 was reviewed and given permanent status. Beside being permanent, the new law differed from the old in the method of selecting an arbitration committee. The committee, when required, will be appointed by a district judge in the area where there is a conflict regarding construction.

During the first 18 months under the old law, decisions were not reached on three projects. In 1965 satisfactory agreements were reached on two of these projects. At the end of the biennium the controversial Rainbow Bend project was the only one not yet resolved. Recently negotiations were reopened with the State Highway Department on this project.

During 1965 and the first four months of 1966, the Fish and Game Department received 62 legal notices of projects affecting fishing

waters. It was necessary to ask for special consideration on 20 of these. On certain projects the department asked that a length of roadway be moved to avoid irreparable damage to a stream. On other projects new meanders were requested to replace those cut off from the natural stream. In other situations the department asked that channels with pools and riffles be built to replace those eliminated and that brushy stream-bank vegetation be replanted to replace some which had been destroyed. Apparently these requests were considered reasonable for not one was denied. It was not necessary, therefore, to submit any project to arbitration.

Of the 62 legal notices received and reviewed, 52 came from the Highway Department. The remaining 10 were sent in by cities or counties.

It would be ideal if all streamside construction were covered by the law; however, the law is limited to agencies of the state government, municipalities, counties and other subdivisions of the state. Since 1963, through cooperative agreements, several federal agencies have followed the intent of the law. These agencies include the Soil Conservation Service, Bureau of Public Roads, Bureau of Reclamation, Bureau of Sports Fisheries and Wildlife, Forest Service, and Bureau of Land Management. The Fish and Game Department also has fairly satisfactory working arrangements with the three major railroad companies in Montana—Northern Pacific, Great Northern and Milwaukee. More inclusive legislation would be most beneficial to the stream preservation effort; however, much has been accomplished with the laws provided.

Pollution Control

The State Board of Health administers Montana's stream pollution law. The Fish and Game Department's pollution control biologist works as a member of the Board's pollution control team.

The pollution control picture is brighter than it was a decade ago. There are relatively few instances of gross industrial or domestic pollution. Also, considerable progress has been made by agencies involved in extensive pest control programs. The trend is leading to less persistent pesticides which are more specifically aimed at the target organisms. Nevertheless, fish kills still occur from use of pesticides. No doubt some kills are unreported. Existing legislation does not provide for adequate control of these recurring pesticide caused fish kills.

Silt from soil erosion is the most serious widespread pollutant in Montana's waters. It lowers overall water quality and has a great effect on both plants and animals living in the water. Department research on Bluewater Creek near Fromberg has shown that stream bed siltation causes a heavy loss of trout eggs. The silt reduces percolation of water through stream bottom gravels. This reduces the amount of oxygen available to the eggs. The eggs are literally smothered as are stream dwelling insects that adult trout feed upon. On the other hand, sucker eggs survive nicely in silty streams. In other words, when the bottom of a trout stream is covered with silt, game fish numbers will decrease and trash fish will increase and dominate.

Research is continuing in an effort to determine if ditch lining and streambank fencing will control soil erosion to an extent that a stream can be restored to conditions favorable for game fish.

Water Resources Development Section Established

The review of other agencies proposed water development construction projects and determination of their effect on Montana's fishery resources has been an important Fish Division activity during the biennium. This has included negotiations to insure the best possible water conditions for fish in reservoirs and in the streams below reservoirs. The work has been largely connected with projects of the Bureau of Reclamation and U. S. Army Corps of Engineers. In addition, some work has been concerned with Federal Power Commission licenses and with projects of the Soil Conservation Service, Bureau of Land Management and U. S. Forest Service.

The Fish Division is also involved in the construction of fishing lakes and, as the opportunity arises, in helping others construct fishing lakes. In addition the division helps set up plans for the statewide recreational waterway system.

Montana is entering a new era of water resources planning and development as exemplified by the proposed Water Conservancy Law. It is obvious that if the department does not intensify its own planning in the water resources field, fish and game interests will continue to be on the outside of planning groups and their decisions. Without a voice in planning, the department's position too often becomes a position of opposition after the planning is done. In order to meet the challenge, the Fish and Game Commission has authorized the establishment of a Water Resources Development Section in the Fish Division. Starting in September 1966 programming and project review responsibilities will be assigned to this section.

This is a portion of the North Fork of the Teton River following the June, 1964 flood.
(Photo by U. S. Forest Service)

The Centennial Flood

During 1964, the year of Montana's Territorial Centennial, a June flood devastated the state from northern Lewis and Clark County to Glacier Park on both sides of the Continental Divide. This, the largest flood ever recorded for the area, resulted from rainfall which approached the theoretical amount possible for a given period. It came at a time when the streams were already full with water from melting snow. Sixteen inches of rain fell in 36 hours in one area. Water swept down the Flathead, Marias, Teton, Sun, Dearborn and other rivers taking 34 lives, leaving thousands homeless, and causing damage in excess of 60 million dollars.[1]

Concern was expressed for fish in the flood area. It can be assumed that newly hatched fish-of-the-year in flood streams fared badly and that some older fish were killed from various causes such as being stranded. No doubt, stream scouring played havoc with trout food insects which dwell on stream bottoms.

Fish, however, have for eons survived repeated onslaughts of nature—too much water, too little water, and temperature extremes during crucial periods. Losses of year classes and other catastrophies are common to fish populations. Due to the tremendous reproductive capacity of fish—an average female trout lays 1,500 eggs annually—the loss of a year class is only a minor disaster and even decimated fish populations soon recover. Consequently, after the 1964 flood, fishing soon returned to normal except on those streams where the necessary environment for fish survival and reproduction was destroyed.

Destruction of stream channels was the real cause for concern, for if basic fish habitat is destroyed or partly destroyed, the carrying capacity for fish is lost. Some streams were hit much harder than other. The Middle Fork of the Flathead River and its tributaries, Sun River and its tributaries, Dearborn River and Teton River were badly damaged as were Cut Bank,

[1] A complete report on the flood will be published by the U. S. Geological Survey as a water supply paper.

Two Medicine, Badger and Birch Creeks—tributaries of the Marias River.

On these streams, trees and other protective vegetation were stripped from miles of streambanks and later deposited as piles of debris. Tons of gravel and sediment carried by the torrents tore up stream channels and filled in pools which had been the lair of lunker trout. Three-foot wide stream channels were extended to 100 feet or wider as overflowing streams chewed up their flood plains. Too often the receding flood left streams in new channels far from their original beds.

Restoration and stabilization of such stream channels is costly. Work so far has been limited almost entirely to waters on Lewis and Clark National Forest. These include tributaries of Sun River in the Bench Mark area and tributaries of Teton River. This work was accomplished by the Forest Service. Fish Division personnel gave technical assistance. Considerably more work should be done on both public and private lands if funds ever become available.

Except for the washing out of Swift Dam on Birch Creek and Two Medicine Dam on Two Medicine Creek, the effect of the flood on lakes was less dramatic than on streams. The most common problem was excessively muddy water carried in by sediment-laden tributaries. For example, during a normal spring prior to the flood, turbidity from inflowing streams extended only halfway down Flathead Lake and soon cleared. In 1964, after the flood, muddy water extended from one end of the lake to the other. The lake did not entirely clear that year but did return more nearly to normal in 1965. In 1966, two years after the flood, spring high water still carried in an unusually large amount of sediment from flood-damaged Middle Fork of Flathead River.

Highly turbid water blocks off the sunlight essential for growth of tiny plants and animals at the lower end of the food chain of game fish,

A fisheries crew lifts gill nets after an overnight set in Fort Peck Reservoir.

and there are indications that turbidity changes the behavior patterns of fish. Excessive sedimentation smothers game fish eggs and bottom dwelling insects.

Northern Pike, Paddlefish and Brown Trout

Although Montana is known primarily as a trout state, northern pike and paddlefish as well as one of the trout species (brown trout) made history during the biennium.

The success on **northern pike** was scored at Fort Peck Reservoir and was made possible by rising water levels from 1962 to 1965. Northerns are spring spawners that seek vegetation in shallow water or marshy area on which they spread their eggs. Conditions were just right in the springs of 1963, 64 and 65 for northern pike spawning and for the production of forage fish which they feed upon. The northerns thrived and fishing was excellent during the biennium. Twenty-pounders were not uncommon in the catch.

Shoreline seining was used to assess northern pike reproduction in the reservoir. In an October 1965 sampling, an average of one young-of-the-year northern was taken for each 30 feet of shoreline seined. It is not known if this was the average for the entire 1,600 miles of shoreline, but there is no question that nature was bountiful. It is predicted that Fort Peck Reservoir will be one of the hottest spots in the west for northern pike for several years to come.

Montana records for **paddlefish** were broken during the biennium. In fall of 1964 the smallest paddlefish ever reported to the Fish and Game Department as being taken from Montana waters was netted from Fort Peck Reservoir by commercial fishermen. This diminutive "paddler" was about 8 inches long and nearly half of that was proboscis. The following spring, a 129-pound paddlefish, the largest recorded for Montana, was taken by snagging from the Missouri River south of Malta by a Billings sportsman.

Paddlefish are not newcomers to Montana. In fact they may be the "most native" of the state's native fish as their remains were found in 63-million-year-old fossil beds north of Jordan. Knowledge about the species is scarce considering it has been around so many years and most of the life history information we have is from other states.

A study was launched at the start of the biennium to answer questions about paddlefish in Montana — their migrations, age and growth rate, and extent of fisherman harvest. A total of 1,146 paddlefish were tagged. The capture and release site for most of these was the Yellowstone River near Intake. Tag returns show that they moved considerable distances both up and downstreams.

The age study showed paddlefish taken near Intake were 4 to 25 years with the majority being 7 to 12. Fort Peck Dam blocks the upstream migration of paddlefish from below on the Missouri and it was found that the paddlefish population in the Missouri River above the reservoir had an older age structure than those on the Yellowstone. On the Missouri, most were 18 years old or older. Since male paddlefish do not usually mature until they are 7-8 years old and females until 10-12, the population being harvested at Intake is comparatively young.

The combination of tag returns and age data leads investigators to surmise that Garrison Reservoir, North Dakota, is the source of paddlefish caught at Intake. This large impoundment was finished in 1953 and while filling it probably provided ideal habitat for young paddlefish. The filling of Garrison Reservoir and the formation of the large group of 7-to-12-year-old paddlefish at Intake correspond exactly. If this conjecture is correct, future paddlefishing at Intake depends upon the continued suitability of Garrison Reservoir as a nursery area. If conditions remain favorable the runs will occur each spring. If conditions become unfavorable the runs will gradually fade out.

The Montana record weight for **brown trout** was broken during the biennium when a fisherman from Three Forks caught a 29-pound brown trout at Wade Lake near West Yellowstone. Many of the "bragging" size fish caught in Montana are brown trout. They have proven their ability to withstand continuous fishing pressure and to maintain their populations through natural reproduction.

Alva Lake and Inez Lake Rehabilitation

During the biennium the fourth phase of the management plan for the Clearwater River Drainage was completed. Phase 1, construction of a fish barrier at the outlet of Rainy Lake, was completed in 1957. Phase 2, chemical treatment of waters above this barrier to eradicate non-game fish, was completed in 1958. The waters were restocked with native cutthroat trout and excellent fishing resulted. Phase 3, construction of a fish barrier between Alva and Inez Lakes was essentially completed in 1963 with finishing touches added in 1964. Phase 4, chemical treatment of Alva and Inez Lakes and the drainage, demarcated by the two fish barriers, was completed in September 1965. Initial restocking of this area with cutthroat trout was accomplished in December 1965.

The Clearwater is the only drainage in

Montana on which fish barriers have been built specifically to create fish management units. This management approach appears to have real merit on drainages where undesirable species have overrun waters that are otherwise suitable for game fish.

Montana Cooperative Fishery Unit

The Montana Cooperative Fishery Unit at Montana State University, Bozeman, is jointly supported by Montana Fish and Game Department, Montana State University, and U. S. Bureau of Sport Fisheries and Wildlife. The Unit Leader and Assistant Leader are on the staff of Montana State University and as a result additional courses in aquatic biology are offered. During the biennium, the research program of the Unit emphasized ecology of trout streams.

Fish Hatcheries

An integral part of Fisheries Division operations, the Montana fish hatchery system, ranks as one of the most progressive in the nation. During the past biennium a number of changes and improvements have been made in the fish hatchery system. At Arlee a new and ultra-modern brood handling and spawning facility has been completed and put into operation. Basically, the new unit consists of five concrete ponds and a spawning house. The spawning house incorporates electrically operated push-button crowders to move the fish, a vertical fish lift or elevator and fish return pipes; all in a well-lighted, heated and ventilated building. Egg takers stand on a dry floor beside a waist-high concrete raceway into which the desired numbers of fish have been moved by the mechanical crowder. The fish are raised on the vertical lift so the workers never need reach below the surface of the water during the spawning operations.

Each of the five concrete brood ponds or raceways is so constructed that it can be divided into halves or thirds to hold separate the various groups of fish sorted as to age, sex, spawning maturity, etc. From the spawning house, fish may be returned to any pond or pond section through a system of pipes.

The new unit has resulted in faster, more efficient spawning operations and actually benefits the brood fish since they receive a minimum of handling. Arlee furnishes all of the rainbow trout eggs used in the state. In addition to the fall spawning rainbow at Arlee, a spring spawning strain is being developed. This will give the state hatcheries greater flexibility in producing fish of desired sizes for stocking.

In the interest of economy and efficiency in the fish hatchery system, operations were discontinued at the Emigrant station in July 1965. Production at the Emigrant hatchery was low because of the colder water temperatures. The rainbow trout program from Emigrant has been ably and easily handled by the fish hatchery at Lewistown. Yellowstone cutthroat production at Emigrant has been shifted to Big Timber where these fish are doing very well.

The fish hatchery at Anaconda began operations in 1908—the first state fish hatchery. Although it is the oldest station, Anaconda has been kept modern and up-to-date over the years and is a very important part of the state fish hatchery system. In 1965 all of the old outmoded electric wiring at the Anaconda hatchery was replaced with new wire, eliminating a fire hazard. An old wooden pipeline bringing water from the spring to the hatchery has been gradually deteriorating. In the fall of 1965 a portion of the wooden line was replaced with concrete-asbestos pipe—the balance of the line will be replaced in the fall of 1966. New fish distribution tanks and pumps have improved distribution units at Anaconda.

The largest of the state fish hatcheries at Lewistown assumes the bulk of the planting program. A large diesel-powered distribution truck at the Lewistown hatchery helps get the large numbers of fish raised into the designated waters at the proper time.

In the time available between feeding and caring for the fish during the winter months, Lewistown hatchery personnel constructed several fiberglass tanks and troughs. Besides items for their own use, some construction was done for other hatcheries. Built for definite needs, the fiberglass tanks and troughs are durable, light and easy to keep clean.

At the Bluewater fish hatchery near Bridger, Montana, the department traded surplus hatchery lands for fisherman access to Bluewater Creek. Remaining hatchery lands have been fenced to keep livestock out. A new 1800-gallon distribution tank at the Bluewater station has made it possible to transport fish to the planting sites well within time limits.

At the Libby and Somers fish hatcheries, good progress has been made in the development of the westslope strain of cutthroat trout. Some of the diseases encountered in earlier years in the westslope cutthroat are not present in the fish now being held. Survival rates are considerably improved and prospects are very good of soon having all of the westslope cutthroat required for stocking in its native waters.

Practically all of the state fish hatcheries utilize the hatching box developed at Arlee. The box, through a unique method of water flow from a manifold in the bottom, can handle large numbers of eggs in a small space with-

A unique trough, devised by Vern Campbell at the Arlee Hatchery, affords return of spawned fish to various raceways from a central spawning point.

out requiring large volumes of water. Other state and federal hatcheries throughout the country are adopting the hatching box and find it much more efficient and easy to use than the old hatching baskets or jars.

Work is being done on the development of a lightweight, completely disposable shipping case for fish eggs. Older cases now in use are heavy and hard to handle. In addition, the cases in traveling to and from various hatcheries can pick up and transmit various fish diseases. This problem will be eliminated by the disposable case. Tests have shown that fish eggs are able to withstand relatively severe conditions and are quite hardy. The new cases will take advantage of this hardiness in lighter weight construction.

At the Great Falls fish hatchery, a fish loader has been constructed which is a great improvement over the old bucket method. The loader saves valuable time and the fish are in better condition for hauling.

The fish hatchery personnel will continue as they have in the past, to seek better and more efficient methods of operation wherever the methods may apply—fish food and feeding, treatment or prevention of disease, hatchery equipment, and distribution units. The end result will be a better product for Montana fishermen.

Commercial Fisheries

The increasing need for protein has resulted in a growing market for the so-called rough fish from Montana's waters. This can be a boon to sport fishermen in that in some waters, if enough of the rough fish can be removed, the more desirable species will have less competition for food and space and will thrive better.

Commercial fishing utilizes a resource that would otherwise go to waste. Also, in the process of the fishing a certain number of men are employed, adding a small part to the general economy of the state. Just recently cooperative agreements were completed between Montana and the Bureau of Commercial Fish-

eries whereby federal funds are made available to assist in commercial fisheries investigations. One project, approved in April 1966, provides for research into the species of fish with commercial potential, their numbers, rate of growth, concentrations, etc.—information designed to help the commercial fisherman do a better job. The other project approved in September 1965, called for the construction of a 35-foot research vessel to be used in the Fort Peck Reservoir investigations. The boat was to be delivered in May 1966, but construction problems have delayed delivery.

A commercial fisheries marketing research study is in the planning stage at present. Basically this project will investigate the commercial fisheries market potential in the state; offering perhaps as a result, suggestions on just what fisheries products can be used in Montana, where, when and how.

Outlook

Our efforts must be continued on a well-rounded fisheries program. Individual accomplishments could include: a modern, efficient hatchery with quality fish stocked where anglers can benefit from them; a lake restocked after the chemical removal of rough fish; a pollution source eliminated; a new access area opened to fishermen; or a good section of stream saved from the bulldozer. The value of the biological investigations which have provided us with the knowledge to achieve these things is not as easy to see. However, without these studies and the knowledge they have furnished, our present program would have been far less effective.

We cannot rest on our present knowledge. As an increasing human population demands more water for industries, municipalities and agriculture, fishery resource managers will be faced with ever increasing problems in maintaining quality sport fishing. There are still many unanswered questions. What harvest of fish can this recreational waterway provide and still sustain quality fishing? How much dewatering for how long a period of time can this stream sustain without permanent damage to its fish population? What water level fluctuation will provide the best population of native game fish in this reservoir? What size of stocked fish will give the best return per dollar spent in this lake? What effect will this proposed water development project have on our fishery resource? Answers to these questions will be even more important in the future than they have been in the past. Studies designed to provide the answers must continue to be the basis for the best fisheries program we can provide.

Summary of Commercial Fisheries Catch

May 1, 1964 through April 30, 1965	210,564 Lb.
Canyon Ferry & Lake Helena	
Carp	80,500 Lb.
Suckers	200 Lb.
Fort Peck Reservoir	
Carp	3,320 Lb.
White Carp (Carpsucker)	8,810 Lb.
Drum	780 Lb.
Catfish	3,463 Lb.
Buffalo	113,491 Lb.

* * * *

May 1, 1965 through April 30, 1966	354,184 Lb.
Nelson Reservoir	
Carp	159,750 Lb.
Suckers	200 Lb.
Goldeye	200 Lb.
Buffalo	14,200 Lb.
Fort Peck Reservoir	
White Carp (Carpsucker)	12,930 Lb.
Drum	740 Lb.
Catfish	12,297 Lb.
Buffalo	153,867 Lb.

Fish Planted by Montana State Fish Hatcheries

Rainbow

5/1/64 - 4/30/65		5/1/65 - 4/30/66	
Fry	351,700	Fry	225,000
2"	251,390	2"	43,212
3"	1,815,525	3"	1,789,941
4"	1,073,696	4"	1,518,987
5"	239,463	5"	135,228
6"	218,616	6"	116,624
7"	418,311	7"	285,447
8"	376,838	8"	344,314
9"	426,328	9"	282,306
10"	127,706	10"	270,243
11"	62,369	11"	27,792
12"	8,730	12"	2,644
		13"	400
Total	5,370,672	14"	2,652
		Total	5,044,790

Cutthroat

1"	74,483	1"	24,231
3"	61,120	2"	168,550
4"	13,212	3"	119,816
		4"	19,767
Total	148,815	5"	8,770
		6"	21 307
		11"	2,340
		12"	386
		14"	1,180
		Total	366,347

Brook

3"	108,935	3"	2,135
4"	72,752	4"	21,380
5"	1,000	5"	64,675
7"	10,485	6"	2,000
Total	193,172	Total	90,190

Brown

		2"	121,360

Kokanee

Fry	3,345,556	Fry	2,070,972
1"	472,939	1"	3,260,650
Total	3,818,495	Total	5,331,622

Grayling

Fry	290,000	Fry	742,000
9"	5,235	2"	30,000
		14"	4,613
Total	295,235	Total	776,613
Grand Total	9,826,389	Grand Total	11,730,922

Fish Planted by National Fish Hatcheries in Montana

Rainbow

5/1/64 - 4/30/65		5/1/65 - 4/30/66	
2"	1,500	3"	354,994
4"	300	4"	263,970
5"	270,152	5"	311,561
6"	28,518	6"	159,007
7"	120,766	7"	279,616
8"	808,066	8"	16,663
9"	35,312	9"	113,017
10"	152,622	10"	252,963
11"	194,387	12"	3,582
12"	84,804	14"	2,867
		15"	400
Total	1,696,427	Total	1,758,640

Cutthroat

2"	40,718	6"	10,564

Brook

2"	3,000		
3"	6,600	2"	21,000
4"	1,170	3"	96,553
Total	10,770	Total	117,553

Largemouth Bass

1"	180,300	1"	19,750
2"	11,400	2"	6,050
Total	191,700	Total	25,800

Walleye

1"	292,000	Fry	1,519,000

Northern Pike

1"	105,000	1"	2,000
2"	8,100	2"	389,750
3"	8,600	3"	1,000
Total	121,700	Total	392,750

Channel Catfish

1"	1,600	1"	800
2"	207,620	2"	25,496
Total	209,220	Total	26,296

Flathead Minnow

3"	1,000		

Yellow Perch

		6"	520

Grayling

		1"	63,287
Grand Total	2,563,535	Grand Total	3,914,410

Photo by Eldon Smith

GAME MANAGEMENT

The game management program of the Montana Fish and Game Commission is geared to provide the necessary background and scientific management information necessary for season setting. The basic premise towards which this program is aimed is to provide the maximum hunting opportunity based on the information obtained from forage surveys, population surveys, harvest surveys and research. We are continuing this program as rapidly as we can obtain public acceptance for participation in additional sport hunting which does not affect the basic resource.

For example, through the use of sound biological information, the area of Montana placed in the Pacific Flyway was increased more than twofold during this biennium. This adjustment was based on migration patterns of the birds involved and band returns indicating that this portion of Montana was, in fact, part of the Pacific Flyway complex. Through this program, additional sport hunting was permitted for Montanans.

Big Game Harvest

The numbers of big game animals killed by hunters decreased during the biennium. The greatest drop in harvest was for antelope, deer and elk in 1965. There are a number of reasons for the decline in kill of these species.

Antelope permit quotas were reduced in 1965 because lower populations were found in some areas of the state. The previous winter had been severe in north and southeastern Montana which resulted in winter losses of antelope followed by a lower spring reproduction in many antelope herds of this region. The antelope harvest is of course regulated by permit quotas and was lowered by the decrease in antelope licenses issued.

The deer harvest decreased in northwestern, southwestern, central and southeastern Montana. This was attributed partly to a lower number of hunters afield, extremely mild hunting season weather, widely dispersed deer populations due to the previous summer moisture maintaining green vegetation and to lower

MONTANA BIG GAME HARVEST—STATEWIDE[1]
1959 - 1965

Year		Elk	Deer	Moose	Sheep		Goat		Antelope	Bear
					Limited	Unlimited	Limited	Unlimited		
1959	No. Hunters	69,055	119,874	479	57	212	274	694	19,402	
	No. Killed	15,271	120,295	406	41	23	137	74	15,658	
	Percent Success	22	100	85	72	11	50	11	81	
	Licenses Issued			505	60	267	345	858	21,148	
1960	No. Hunters	56,320	122,486	535	69	243	330	662	18,853	25,402
	No. Killed	10,140	123,500	441	42	13	198	209	14,981	1,494
	Percent Success	18	101	82	61	5	60	32	79	6
	Licenses Issued			553	74	339	410	791	20,820	
1961	No. Hunters	61,470	125,011	610	71	187	359	494	24,337	27,723
	No. Killed	15,471	129,107	527	49	23	137	191	19,278	1,872
	Percent Success	25	103	86	69	12	53	28	79	7
	Licenses Issued			630	81	302	452	654	27,103	
1962	No. Hunters	69,714	126,740	811	93	271	394	712	29,026	29,815
	No. Killed	12,231	125,729	612	57	23	245	236	22,937	1,407
	Percent Success	18	99	76	62	9	62	33	79	5
	Licenses Issued			836	95	361	470	876	32,164	
1963	No. Hunters	66,622	124,831	783	72	400	420	878	27,907	28,010
	No. Killed	11,050	119,300	587	46	36	217	296	22,238	1,121
	Percent Success	17	96	75	64	9	52	34	80	4
	Licenses Issued			821	80	518	493	1,098	31,346	
1964	No. Hunters	56,904	113,990	674	70	277	443	843	33,954	9,737
	No. Killed	11,247	107,366	476	43	24	245	184	26,982	1,655
	Percent Success	20	94	71	6	9	55	22	83	17
	Licenses Issued			703	78	399	518	1,003	37,123	
1965	No. Hunters	42,350	109,828	669	78	189	536	605	25,417	7,960
	No. Killed	7,657	90,141	439	52	26	230	112	18,630	1,109
	Percent Success	18	82	66	67	14	43	18	73	14
	Licenses Issued			688	83	242	637	814	27,886	

Banded elk, two can be seen distinctly here, offer aerial observers a method of identifying individual elk. This is important for gathering various types of information.

deer populations as a result of the previous severe winter. In addition, the new law requiring landowner permission to hunt on private land, considerable posted land, and possibly the guide law, restricted or discouraged more deer hunters than previously. There were only a few extended or post-deer seasons.

The elk harvest also decreased during the biennium. The decrease was distributed among the elk districts and appeared to be related to a decrease in hunters afield.

Hunting may have been influenced by mild weather. Hunters waited for snow which did not appear until the very last week of the regular hunting season. The new law requiring non-residents to be accompanied by a resident licensed to hunt game, undoubtedly played a part in decreasing non-resident hunter license sales nearly five percent and fewer nonresident hunters were afield. A larger decrease also occurred in resident hunters. However, elk hunter success decreased only from 20 to 18 percent.

There were no postseason elk hunts which yielded significant kills as those in the Gallatin and Gardiner areas had during the 1964-65 season.

Trapping

Montana history started with fur trapping and this resource gained an early importance. Although furs taken each year are not as important to the State as in former years, the fur resource has a potential which is not fully exploited and is often overlooked.

The Montana fur harvest is greatly affected by the demand for furs and by fur prices. Mink, muskrat and beaver are still the most important species but prices have declined. The floods in Montana during June 1964 apparently affected the habitat and populations of these species which resulted in a decreased harvest the following season. The number of pelts taken and fur harvest value declined markedly for the 1964-65 season.

Small Game

Interest and participation in small game hunting remains high. In some areas the severe winters have curtailed population increases; however, there is no indication to support any curtailment in seasons as these populations respond very rapidly to habitat changes.

Research

As demands on natural resources increase with rapidly expanding human population and greater leisure time, the demands for more and better information to manage wildlife become more pressing.

New facts, concepts and techniques must be obtained to maintain or increase game populations squeezed between intensified land use and management on one hand and expanding demands for recreational use on the other. As in other fields and all new developments, this job can be best accomplished through scientific research.

Game research in Montana has been carried on in two major fields, small game research concerning game birds and big game research. Several studies are currently underway in each field. As one study is completed, another is undertaken on the basis of priority established by the needs of the Department. Recently a major project was undertaken to determine effects of sagebrush control and greater effort has been placed on waterfowl and game habitat development research.

At present, research on small game is concerned with increasing our knowledge of grouse habitat requirements and effects of land use or management practices on blue grouse, sharptail grouse and sage grouse. Information is also being obtained on the habits, life history and harvest of grouse as well as management techniques. A special study to evaluate effects of pesticides on mountain grouse is also underway. To date, the results of these studies have led to liberalized hunting seasons, as well as more efficient and effective collection of management information, and increased awareness and consideration of game bird populations habitat requirements in management of Federal lands in Montana. Continuing studies will undoubtedly lead to further refinements in game bird and land management.

Current research on big game includes studies of mule deer, white-tailed deer, antelope, elk, moose, bear and bighorn sheep. All of these are concerned with forage and habitat requirements. In addition, information is being obtained on relationships between the various big game species and between big game and livestock as well as on other habits, life history and management techniques. Recent big game research findings have played important roles in management of bear, moose, elk and deer. They have also been utilized by land management agencies in management of big game and livestock on public lands. Further refinements in harvest and other management practices will undoubtedly ensue from continuing studies.

Habitat

A program was undertaken during 1965 in cooperation with the U. S. Department of the Interior, Bureau of Land Management. Results will provide game and range managers with information on the effects of various sagebrush control techniques on all forms of plants and animals which occur on sagebrush ranges. This information is expected to be the basis for future Department and Bureau of Land Management policies on sagebrush control. Considerable information on animal habitat requirements and life history will also be obtained for use in game and range management.

Waterfowl

Research conducted under the statewide waterfowl project is continuing toward further refinements of waterfowl management in Montana. Previous findings provided basis first for placing portions of Montana west of the Continental Divide in the Pacific Flyway and later the changing of several counties lying east of the Divide from Central to Pacific Flyways. Information from studies now underway may enable sub-flyway management of mallards in portions of eastern Montana.

Deer

The problems affecting the status of the game resource have not changed. Efforts have been

made in the deer management program to adjust populations to their winter forage supply. Many deer forage problem areas still exist and seldom have deer populations been maintained at the needed low level to allow forage recovery.

Deer hunter success remains high but sufficient hunting pressure is not available from resident hunters to achieve and maintain the needed reduction of deer. It appears that Montana sportsmen do not support the lower hunting success associated with reduced deer populations needed to allow improvement in range forage conditions.

A number of deer ranges have had winter forage destroyed or suffered a great reduction in the forage supply. It is forecasted that more ranges will lose their ability to support deer and be added to this list of depleted ranges unless deer are reduced and kept at a low level. There is a great demand for deer, but the resource cannot be increased or even maintained on the growing number of deteriorated ranges. This problem must be solved and deer ranges perpetuated to have sufficient deer for future generations to enjoy.

Sheep

Some Montana sheep herds need more liberal seasons to maintain a thrifty herd and maintain good forage conditions. The Sun River sheep herd, largest in the state, has increased to a size that forage problems could rapidly develop and result in a severe die-off in the herd. Such losses have occurred in certain other sheep herds of western United States and Canada and could be threatening the Sun River herd.

Upland Game Birds

Game birds currently are not being adequately utilized. The native prairie grouse of eastern Montana have an especially high potential for greater harvests. Longer seasons and seasons concurrent with big game hunting might induce a greater exploitation of this resource. Pheasants could be hunted for longer periods and for either sex similar to other game birds and provide an increased harvest of this species without affecting production.

Game Farm

The game farm at Warm Springs was operated during the past biennium and produced pheasants at maximum capacity for introduction into the various areas of the state. The primary basis for which this game farm is operated is to supply birds for areas meeting wtih natural disasters that severely reduced the native populations. In years without natural disaster the birds are released in heavily hunted areas prior to season openings to make maximum utilization of the annual farm production.

A magnificent male sage grouse in full courting regalia.

Summary

Preserving wildlife habitat is an increasingly complex problem with intensified land use and development in Montana. Wildlife must have habitat in which to live and reproduce. Providing for the maintenance or improvement of the habitat conditions, needed by the various species of game, requires the constant attention of biologists in the field. Good land management and conservation of natural resources are usually beneficial to wildlife. However, many practices are harmful to wildlife habitat and efforts are being made to coordinate and modify land use practices when possible to benefit wildlife.

MONTANA COOPERATIVE WILDLIFE RESEARCH UNIT

The Montana Cooperative Wildlife Research Unit was established at the University of Montana on February 8, 1950. It is operated through a coordinating committee with representatives from the State Fish and Game Department, State University, U. S. Fish and Wildlife Service, and Wildlife Management Institute.

Unit Objectives

1. To provide technical and professional training on various levels in wildlife management, teaching, research, administration and demonstration.
2. To investigate and correlate the production, utilization, management, and restoration of desirable population of wildlife compatible with good land use.
3. To demonstrate research findings through extension and practical management of game and fur-bearing animals and of other desirable species of wildlife, and encourage wildlife restoration through programs with schools, youth clubs, and adult groups.
4. To make available to landowners and operators, sportsmen, conservation officials, extension workers, teachers and others, the facts, methods, and new findings discovered through research and through literature suited to local and state conditions.
5. To disseminate research findings through the publication of reports, bulletins, circulars, and journal and magazine articles. These are to include scientific and semi-popular material at all levels.

Highlights of Some Unit Studies

Grizzly Bear Population Study in Yellowstone National Park

This long-term study of the grizzly bear in Yellowstone National Park is designed to investigate all important aspects of grizzly bear ecology. The general as well as many of the specific objectives are dependent upon observations of marked, known-age animals either in the wild or when captured and placed under sedation. The procedures of capturing, marking, and then recapturing and observing identifiable individuals in the population must of necessity be carried on from year to year. The time and effort devoted to this is considerable.

A total of 37 grizzlies was captured during 1965. Of these, 19 were free-roaming animals which were captured by shooting them with drug-laden automatic projectile syringes. Eighteen grizzlies were captured in culvert traps. As in 1964, Sernylan, a fast-acting immobilizing drug was used extensively during the past season.

A drugged grizzly bear, sleepy from drugs, is weighed during the course of a unit study in Yellowstone National Park.

Thirteen new individuals were captured and marked during the year. Since the study began in 1959, 212 different grizzlies have now been captured and individually marked. Together with recaptures, these make a total of 385 grizzlies which have been handled during the seven years of research.

Eleven mortalities were recorded this year. Four grizzlies were shot by hunters outside the Park, two died from an overdose of drugs administered by National Park Service Rangers, two were sacrificed for autopsy, two cubs were killed by larger grizzlies, and one cub died of unknown causes. Other than the cubs, those bears lost from the population consisted of three two-year-olds, two three-year-olds, one four-year-old, and two six-year-olds.

Autopsies were performed on four grizzlies and representative organ and tissue specimens were preserved for future histological and pathological study. In addition, blood specimens were obtained from seven grizzlies to supplement extensive blood chemistry data obtained in 1964.

Radiotracking Grizzlies

During 1965 six different grizzlies were instrumented and tracked by radio. Two of the six were instrumented twice during the season. Five animals were radio tagged with the ex

pectation that monitoring and studying of these individuals would reveal information on denning and pre-hibernation behavior. Two were successfully tracked to their dens. The instrumented bears included a known-age sow, two weaned yearlings, a two-year-old and a large boar. The transmitters used on the grizzlies were standard continuously pulsed tracking transmitters, new extended-life transmitters employing an ON-OFF pulse pattern and temperature-sensitive transmitters with the pulse rate controlled by a thermistor.

A Study of the Elk Population of the East Fork of the Bitterroot River

This project was initiated in the fall of 1964 to evaluate the current status of the elk population in the East Fork of the Bitterroot River. In response to a noticeable decline in hunter harvest of elk since the 1960 season, a conflict with the public regarding the elk population arose. The intent of this study was to present data facilitating more accurate conclusions regarding the actual status of the elk population.

Herd numbers in the East Fork range from an estimated seven head in 1902 to 651 in 1958, a gradual increase at an average rate of 1.1 percent per year, with some short term reductions. Recent management policies (1953 to date) have been based on the maintenance of a stable population compatible with other resource uses. The desired level of herd numbers is 500 to 600 animals. Aerial trend counts from 1955 to date, excluding the year of 1963 for which an incomplete census exists, varied between 522 and 651, averaging 590. Ground observations, made during March and April from 1956 through 1965 indicated a sex ratio of 20 bulls per 100 cows and an age ratio of 51 calves per 100 cows for the Bitterroot Unit. For the years when data were recorded by separate areas, the age ratio in the East Fork has averaged 56 calves per 100 cows.

The legal harvest in the East Fork in the last 10 seasons has been 40 percent of the total harvest of the upper Bitterroot. In spite of low harvests in the East Fork in 1962, 1963, and 1964. The average annual harvest has accounted for 35.3 percent of the average annual population estimate. Prior to the 1962 season, the value was 40.4 percent. The average of 12 years' harvest composition data (1953 through 1964) is 195 bulls and 39 calves per 100 cows. Age composition determined in the 1964 harvest shows that animals 2½ years and younger constitute 75.3 percent of the total harvest, as recorded through the checking station. No old animals were observed in the harvest.

The complex of temperature and precipitation during the winter months directly affects the extent of winter range for elk. In average years, elk spend about five months on the winter range. A mid-winter trapping and tagging program at two sites in the East Fork indicates that some elk which summer along the Continental Divide (the Bitterroot-Big Hole Divide) do not return each winter to the East Fork. Tag returns from elk originally tagged in the East Fork and later shot in the Big Hole River drainage suggest intermingling of elk between the two major drainages. A tag return from the East Fork of Rock Creek, an airline distance of about 30 miles from the initial tagging site, points to movement over the Sapphire Range.

Research Projects

Aging of Fishers and Analysis of Reproductive Systems	Completed
An Ecological Study of the Grizzly Bear	Completed
An Intensive Study of Elk Behavior on the Mirror Plateau Summer Range, Yellowstone National Park	New
A Preliminary Study of the Breeding Biology of the Spruce Grouse **(Canachites canadensis franklinii)** in Northwestern Montana	New
Bighorn Sheep Population Study—Wildhorse Island	Continuing
Competition Between Big Game and Cattle in the Gird Creek Area of Montana	New
Developmental Behavior of the Pronghorn Antelope Fawn	New
Ecology of the Golden Eagle	Continuing
Economics of Wildlife Production on Private Lands	Continuing
Elk Migration Study, Yellowstone National Park	Continuing
Magpie Population Dynamics	Continuing
Movements and Behavior of the Northern Yellowstone Herd on the Winter Range	New
Mule Deer Population and Range Studies in Western Montana	Continuing
Population Study of Canada Geese in the Flathead Valley	Continuing
Quantitative Aspects of Raptor Predation	Continuing
Radiotracking and Telemetering System for Large Western Mammals	New
River Classification and Evaluation	Continuing
Study of Alpine Ecology in the Northern Rocky Mountains	Completed
Systematics of Blue Grouse in Northwestern Montana	Continuing
The Elk Herd of the East Fork of the Flathead River	Completed

Eagle Creek on the Missouri River Recreational Waterway. This was a picturesque campsite for Lewis and Clark in 1805.

RECREATION AND PARKS

The two years covered in this report have been especially eventful in the field of outdoor recreation throughout the nation. This increased emphasis has been felt in Montana in many ways. A Division of Recreation was organized in the Fish and Game Department in 1963 and was expanded to Recreation and Parks in mid-1965. This broadening of scope and increased responsibility was brought about by a series of important events.

Early in 1964 the Montana Fish and Game Department was designated by the Governor as the official state recreation agency. This action was further spelled out by the State Legislative Assembly in the passage of the assent to the Land and Water Conservation Fund Act of 1965. (Sec. 62-402, 62-403, Fish and Game Codes, State of Montana). This legislation charged the Fish and Game Department with the responsibility of preparing a comprehensive Statewide Outdoor Recreation Plan and representing the State in the implementation of the Land and Water Conservation Fund Act (1965).

Additional legislation (Sec. 62-301, Fish and Game Codes) moved the administration of State Parks from the Highway Commission to the jurisdiction of the Fish and Game Commission as of July 1, 1965. Also the Powers and Duties of the Fish and Game Commission (Sec. 26-104) were amended to clarify the handling of surplus lands as well as making possible the acquisition of recreation lands by easement in addition to the already existing authority of purchase or lease.

The state's spaciousness, coupled with a wealth of scenic resources and a wide variety of recreational opportunities, has moved outdoor recreation into a position of major importance. The proper coordination of recreation with other natural resource programs of Montana is highly important and requires careful planning.

State Parks

At the time the State Parks Division was transferred to the State Fish and Game Commission, there were in existence 26 State Parks, State Monuments and State Recreation Areas. New units are being added to the system and by the fall of 1966 the total number of areas will be in the neighborhood of 30.

The 1963 Session of the Legislature enacted a law making possible the use of one percent of Montana's gas tax for the acquisition, development, operation and maintenance of water-based State Parks and Recreation Areas. This legislation was re-enacted by the 1965 Session of the Legislature.

The enactment of this legislation has made it possible to initiate substantial improvement programs in the water-based State Park units. In addition, the Land and Water Conservation Act of 1965, administered by the Bureau of Outdoor Recreation, has doubled the potential development of these areas by reason of 50-50 Federal funding.

Listed in the Appendix are the projects, by district, that have been approved for development on water-based units in accordance with currently developed site plans.

Because of a lack of funds, there have been no projects, other than routine operation and maintenance for the land-based parks. Most of the land-based parks are badly in need of rehabilitation and it is hoped that this situation will be carefully considered at the next session of the Legislature. If funds were made available at the next session, many planned site developments for the land-based parks could be carried out under the 50-50 Federal funding available under the Land and Water Conservation Act.

Statewide Outdoor Recreation Plan

The Montana Fish and Game Department prepared a Statewide Outdoor Recreation Plan for Montana in the fall of 1965. This represented the first inclusive plan of this kind prepared for the state. It was submitted for approval to the Bureau of Outdoor Recreation as a prerequisite to participation in development and acquisition aspects of the Land and Water Conservation Fund program. The Plan was approved in late November of 1965.

The work of assembling the plan was carried out by the Fish and Game Department, with the help of the Bureau of Outdoor Recreation and with financial assistance from the Highway Commission. Much of the information included was obtained from various other state and federal agencies as well as cities, counties and private groups and individuals.

The plan represents a broad guide for recreation developments at all levels throughout the state. It is comprised of several major sections:

Inventory

The first section is made up of an **Inventory** of outdoor recreation facilities presently available to the public. These are provided in Montana by federal and state agencies, counties, cities and private enterprises. They consist of campgrounds, picnic facilities, play fields, swimming pools, marinas, outfitting services, etc.

Demand

The next section presents the **demand** for outdoor recreation by Montana residents and visitors at the present time and by the year 1975.

Need

This section lists recreation **need** obtained by relating supply with demand, and provides guidelines for future recreation development in Montana in the broad category of outdoor recreation.

Action Program

This section expresses the need for continued up-dating of the plan as additional information is obtained. Master plans for site development of State Parks, recreation areas and fishing access sites were recommended for immediate attention.

Planning for the preservation and recreational development of selected sections of Montana's free-flowing rivers was also stressed in the action program. This has been implemented by the newly developed State's Recreational Waterways System (see section VI on the State Recreational Waterway System for further detail).

In general, the development of areas dedicated to recreation was demonstrated as a statewide need of high priority. The following specific recommendations were made for an overall program delineating responsibility from the Federal level to the individual.

1. The rehabilitation of existing State Parks and recreation areas.
2. The complete development of urban parks and play fields.
3. The development of rest areas and adequate wayside camping and picnicking facilities adjacent to the state's travel system.
4. The development of recreation facilities associated with water based activities.
5. The recreation development of the state's fishing access sites.
6. The Plan indicates the need for further acquisition of carefully selected key recreation tracts. Those acquisition projects meriting high priority consideration are as follows:
   - land for city and or county parks and playfields;
   - land for the development of new state parks and recreation areas to round

out the state's system;

land providing access to water (lakes, rivers or streams) for the public enjoyment of a variety of water-based recreation activities;

land required to further develop the rest area and wayside camping and picnicking programs associated with the state's highway system.

Summary

The general lack of recreation facilities was pointed out in the plan. This could well be listed as the present most serious problem, statewide. While the most evident need is for camping and picnicking facilities as well as park and playfield developments, boat launching ramps, swimming pools, etc., this does not necessarily rule out the need for additional key lands. These tracts although not necessarily large in size would be highly important in supplying additional space for badly needed recreational developments.

The lack of camping and picnicking facilities were found to be most serious adjacent to highway systems throughout the state.

A balanced program of recreation development was stressed in the plan. Emphasis was placed upon providing a variety of high quality recreation opportunities. Of primary importance would be those available to the public, near home, for day-to-day enjoyment. In such cases, most of the responsibility would rest with the communities. At greater distances, but easily reached for over-night and week-end trips would be the type of facility largely developed by counties and state agencies. Vacationing opportunities emphasized by camping, hiking, fishing and back country experiences would be for the most part under the administration of state and federal agencies.

Land and Water Conservation Funding Program

The Land and Water Conservation Fund Act of 1965 (Public Law 88-578), was signed into law in September 1964. This national legislation provides funds to the states on a 50-50 basis for the development of outdoor recreation programs. For Montana, the apportionment amounts to somewhat less than a million dollars per year. These funds are collected in the federal treasury from the sale of entrance and user fees at developed federal recreation sites and from other sources.

In each state, one of the existing agencies has been designated to administer the program. In Montana this administering state agency is the Fish and Game Department. On the federal level the newly created Bureau of Outdoor Recreation within the Department of Interior, is the administering agency. A close coordination is maintained between this Bureau and the State of Montana.

Funding is authorized for outdoor recreation acquisition or development projects on a state, county and city basis. All projects are, however, processed through the Montana Fish and Game Department. The program provides for use of 50 percent of the funds by state agencies with the remaining half being available for county and city projects. A 3 percent surcharge is levied on the projects to defray processing costs.

Included in the Appendix is a list of projects which have been processed for 50-50 financing through the Land and Water Conservation Fund.

Fishing Access Acquisition and Development

The Montana Fish and Game Department has acquired a number of fishing access sites. These vary in size. They are for the most part relatively small. However, their location rather than size makes them immensely important for public enjoyment. They represent key access points for fishing and associated recreation activities. These sites are located along lakes and rivers and are quite broadly distributed across the state.

Although their chief function is for public access, it has been found that recreational development greatly enhances their value. The type of development being carried on by the Fish and Game Department through its Division of Recreation and Parks includes the construction of sanitary facilities plus the installation of picnic tables and fireplaces, boundary fences and cattle guards.

It has been found that these developed sites, carefuly selected, benefit the recreation public and the adjacent landholders as well. The availability of sanitary facilities eliminates the accumulation of trash and garbage which is often characteristic of undeveloped areas. Boundary fences indicate the location of adjacent private lands as well as the public fishing sites. Careful location and the presence of fireplace facilities tend to cut down the fire hazard frequently associated with indiscriminate camping and picnicking.

In the development of these areas, it has been found that a site plan represents an essential first step. In this way, orderly planwise developments can be established taking full advantage of the physical characteristics of each of these areas. This work is being carried out prior to the recreational development of each site. (See Appendix for list of the areas.)

State Recreational Waterway System

The State Recreational Waterway System was approved by the Montana Fish and Game

This massive sign marks the destination of many tourists. Lewis and Clark State Caverns remains one of Montana's favorite attractions.

Commission August 18, 1965. The objectives of this system are threefold:

1. The maintenance and improvement of Montana's prime streams as free-flowing productive waters.

2. The improvement of potentially important streams to prime condition so that they may eventually be considered for the system.

3. To encourage and obtain multiple recreational use through the development and maintenance of the recreational features of waterways in the system. High quality fishing, as well as outstanding scenic, historic and scientific values are features to be especially considered in this regard.

In brief, high quality recreational potential represents the key to the selection of free-flowing waters for possible inclusion under the system.

Portions of three major river systems in Montana have presently been placed within the system:

1. The **Yellowstone River** from the Yellowstone Park boundary down to Pompeys Pillar

This river is characterized by superlative (Blue Ribbon) trout fishing, particularly in its upper reaches. It is scenically endowed by great sweeps of cottonwood bottom lands, remote islands and a relatively undisturbed river edge. The Yellowstone played an important part in the return journey of a portion of the Lewis and Clark Expedition. It also is remembered for a variety of river travel during the subsequent exploration of this region. Presently the river is being enjoyed by an increasing number of fishing and boating enthusiasts.

2. The **Missouri River** from Fort Benton down to the headwaters of the Fort Peck Reservoir.

This is nationally recognized as the "Wild Reach" of the Missouri. Nowhere else on this, the longest river in the United States, is there a significant portion relatively unchanged from the days of the first explorations into the northwest.

Here, perhaps more by accident than design, remains approximately 180 miles of remote, free-flowing river presenting a unique beauty and steeped in the history of exploration, the

fur trade, the gold rush and the lusty epoch of the river steamer.

This reach of the river yields itself ideally to high quality recreational adventure by boat travel through this superb waterway.

3. A recreational waterway designation has been made for that portion of the **Flathead River** above Flathead Lake and including the North and Middle Forks and the South Fork above the Hungry Horse impoundment.

Game fishing in the main Flathead River from the Glacier Park area down to the lake is of a quality that designates this reach as a "Blue Ribbon Fishery." The aspect from the river is particularly pleasing as this major water course winds through the upper Flathead Valley.

The North Fork, bordered on the east by Glacier Park and on the west by Flathead National Forest, presents an outstanding scenic quality and yet is rather easily accessible to outdoorsmen for bank or float type fishing. The Middle Fork of the Flathead, originating in the Bob Marshall Wilderness Area, presents a challenging opportunity for the retention of one of the few truly wild stretches of river in North America.

The South Fork of the Flathead above the Hungry Horse Reservoir is largely within the Bob Marshall Wilderness Area. Its free-flowing status is therefore essential to the wilderness aspect of this nationally famous area. In addition to the present outstanding river fishing provided, the presently unimpounded river complex of the main Flathead, and the North and Middle Forks make up essential spawning waters for the tremendously important sport fishery of Flathead Lake.

Carefuly prepared recreation plans are being drawn up for each of the three waterways presently included in the system. High quality fishing opportunities represent an important aspect of the program. Float trips and associated recreation activities are also being given high priority in these plans.

In all cases only those developments in keeping with a quality experience are being considered.

The Recreational Waterway System is particularly fitting in Montana where a fair share of free-flowing waters are still available for the consideration of such classification. This is a situation becoming increasingly rare throughout the nation.

The preservation of free-flowing waters, with emphasis on recreation should in no way interfere with the present agricultural economy of river valleys involved.

Lands

The 1965 Legislature passed a bill which clarified the authority and set the procedures for the Fish and Game Commission to dispose of surplus lands and to enter into land exchanges.

The provisions of this law have been put to good use during this biennium. In most cases it has been found more beneficial to exchange lands surplus to wildlife needs for lands that are badly needed, although some land has been sold to the highest bidder. Five individual sites were sold, totaling 837.18 acres for a total price of $92,443.64. About 4,000 acres were disposed of by trades for other lands and about 1,500 acres plus $35,000 in cash were received in these exchanges. During the biennium, approximately 1,600 acres have been purchased at a cost of approximately $115,000. The main effort has been to obtain parks and fishing access lands, although some minor purchases have concerned blocking out existing game ranges and waterfowl areas. (See Appendix for details.)

Certain state-owned lands at Flathead Lake were set aside by the State Land Board for use as State Parks. A state law permits the Board to make such dedication in special cases where state school lands are particularly suited for park use. This special Land Board action involved 48.68 acres at Flathead State Park and about 35 acres for a new park at Elmo.

State law requires the Montana Fish and Game Commission to make **payments in lieu of taxes.** The Commission-owned lands in each county are assessed and annual payment is made in the same amount, as if the land were privately owned. These payments in lieu of taxes are not required for lands totaling less than 100 acres per county, nor for lands used as bird farms or fish hatcheries. (See Appendix for county listing.)

The Federal Government (Bureau of Land Management) has a specific law known as The Recreation and Public Purposes Act, concerning the sale of public domain lands, suitable for recreation, to state and local government agencies and non-profit groups. The Fish and Game Department, as the official state recreation agency, is eligible under this law to purchase a limited acreage and not to exceed three individual sites per year at a cost of $2.50 per acre. The Federal Government requires that any lands obtained under this law be developed and managed for public recreation.

The Fish and Game Department has now obtained six sites under this law and six more applications have been submitted. Most of the lands obtained have been either blocking in existing game ranges or obtaining new fishing access sites. The largest acreage of any one application was 640 acres and most others are under 100 acres in size.

Warden Erwin Kent prepares to take care of a beaver complaint.

ENFORCEMENT

During the past biennium, the expanded interest in outdoor recreation and the increase in the use of Montana's natural resources have added new responsibilities to the game warden's work load. The growing number of hunters and fishermen, the acquirement of State Parks, the growing popularity of our water recreation, and the need for keeping abreast of procedures and more modern techniques of wildlife law enforcement have all broadened the scope of the wardens' duties and placed further demands upon the officers' time. To help better distribute work loads, the Montana Fish and Game Commission has inaugurated two programs that should put more men in the field for enforcement and will allow the local wardens more time to administer their respective areas.

Special Investigations

Late in 1963, the Montana Fish and Game Commission inaugurated a program to help combat the increasing difficulty of enforcing fish and game regulations. A new position "Warden Sergeant" was established within the enforcement division. This position was created to promote an enforcement program capable of dealing with special enforcement problems more effectively.

In order to qualify for warden sergeant, a warden must have a general over-all knowledge of wildlife management techniques, at least two years experience as a regularly appointed game warden with above standard performance, and must have shown outstanding interest and ability in techniques of investigation, apprehension and interrogation. He must also have intimate knowledge of all laws affecting these techniques.

Duties

Montana maintains about 50 wardens to patrol over 147,000 square miles. Many of these miles are rugged back-country and wilderness areas. It is practically impossible to maintain a thorough coverage of their areas, keep current in administrative duties, keep abreast of ever-increasing work loads, and still be able to take the necessary time to investigate special enforcement problems that crop up from time to time. The local warden often is limited in his operation because of his familiarity to poachers, lack of time for continuous investigation and surveillance and other duties that keep him busy. Many of these special problems require a man in plain clothes and an unfamiliar face to bring about a prosecution. This is one of the duties where the special investigation program has proven very successful.

During peak periods such as season openings and special seasons, when the pressure is unusually heavy at given locations, warden sergeants are shifted to these areas to help meet the situation.

Ex-Officio Warden Schooling and Training

The second program recently initiated to help alleviate the local district wardens' work load is the ex officio warden program. The last Montana legislature added "other department

personnel" to the list of those that the commission could appoint as ex-officio wardens. It was felt that an active ex-officio program would be a great benefit to the Enforcement Division. On May 3, 1966 the first ex-officio school was started in Helena. Seven department personnel who are affiliated with game ranges throughout the state attended. They receive classroom instruction pertaining to game warden duties, including "use of law book," "crime investigation," "court appearance," etc. Successful candidates will be appointed to three-year terms as ex-officio game wardens with powers the same as those of a regular state game warden.

The objective of the ex-officio program is to augment the warden force throughout the state. These appointees will work in close harmony with their local wardens when possible but with training will be able to investigate and bring about successful prosecutions of wildlife law violators on their own if needed.

It is hoped that in the future the program can be broadened, and interested city, county and government agencies can send qualified men to an ex-officio school. Only those men who have a genuine interest in wildlife law enforcement would be selected. Their appointments would be for a period of three years and only those who take an active part in the program will be retained and reappointed.

Water Safety Program

Montana has a basic boat and water safety law that sets safety regulations for boaters and other uses of water areas. With the increase in popularity of our water recreation areas, an improved water safety enforcement program is needed. Plans are underway to expand water recreation in this state. In order to do this, funds will have to be obtained through legislative enactment. These funds, if obtained, will be used for equipment, salaries and administration. Although Montana's water safety law falls within the limits that are approved by federal law, some improvements are still needed.

Warden Training

Upon passing resident, age, educational, written, oral and physical examinations and a personal investigation, a warden applicant enters a basic training school as a probationary warden. In the basic school the trainee is subject to intensive training lectures, practical training and orientation to the department's policies and programs. He is thoroughly acquainted with fish and game codes, civil rights, laws of arrest, first aid training and practical field work relating to observation, investigation, and public contact. By the end of the training school the new warden builds a reference notebook so he may review the many subjects that have been introduced during the previous few weeks.

After leaving the training school he is stationed in one of the seven fish and game district headquarters and is introduced to his Warden Development Program which is carried through the remainder of his probationary year. At the district headquarters he is under direct supervision and must complete items listed in his training plan. The plan includes all phases of fish and game practical work and the study of assigned texts related to his future work with the department.

After a satisfactory probationary year he is given a permanent warden position. From this point his training is gained through practical experience and in-service training sessions which are given throughout the state.

Firearm and Hunter Safety

The Firearm Safety Program administered by the Information-Education Division is another important part of the game warden's duties. All resident persons under the age of 18 years, by law must take a course of instruction in the safe handling of firearms and receive a certificate of competency in order to obtain a hunting license in Montana. During the past biennium a number of adult courses were held and were well attended, setting a good example for the children in the state.

Land Access Program

Much of the warden's time is spent on the land access program of purchase and development of public fishing access areas. Rules and regulations have been adopted to regulate public use of these sites. Free camping areas bordering fine trout streams or mountain lakes are a big attraction for our resident and nonresident sportsmen. Not only do these areas provide free camping facilities for recreationists but they also alleviate some of the acute sportsmen-landowner problems. Development of these areas consists of fencing, installation of picnic tables, boat ramps and sanitary facilities.

Game Damage and Bear Depredation

Each year brings many complaints by private landowners regarding game damage and bear depredation. These complaints received by the Fish and Game Department are given immediate attention by the game wardens. Cooperation of landowners in working out mutual problems and programs will help insure public access to private land in future years.

Landowner-Sportsman Relations

Much of Montana's future hunting and fishing depends upon good relations between sportsmen and private landowners. District game wardens make many contacts with ranchers and try to work out problems that

if left unattended would bring about more "No Hunting" signs.

Youth Groups

Many hours of the game warden's time are spent working with youth groups such as 4-H Clubs, Scouts and Hunter Safety classes. His assistance with community youth activities to promote wildlife conservation is an important part of his job. Each warden has available educational aids such as slides, lectures, movies and a reference library to assist him in this activity.

Game Management Data

Another important aspect of a warden's work is assistance in gathering game management data to aid in our management programs. The enforcement division helps gather information regarding game populations and trends. Wardens also assist in gathering information regarding nesting conditions, brood counts, and general range conditions.

Equipment

As the popularity of our outdoor recreation increases, better and more modern equipment is continually needed. In order to make contacts with hunters and fishermen, the commission has found that such equipment as 4-wheel drive units, modern water equipment, horse trailers, planes, and even a helicopter are needed.

All warden vehicles are equipped with two-way radios that are on the same frequency as the highway patrol and county sheriffs. This not only allows wardens to contact each other in the field when assistance is needed, but also provides more efficiency and cooperation with other law enforcement agencies and civil defense units.

Planes are used to good advantage in cases of fire, night hunting, search and rescue and patrol for out-of-season hunters and fishermen. The helicopter is also available to the enforcement division when needed.

Another piece of equipment that will be needed in the near future is the now popular over-snow vehicle.

FISH AND GAME VIOLATIONS By Type of Violation

	May 1, 1964 through April 30, 1965	May 1, 1965 through April 30, 1966
Big Game	577	552
Game Birds and Migratory Waterfowl	196	135
Fish	558	638
Fur Bearers	9	13
Water Safety	109	149
Shooting Safety	59	48
Miscellaneous	159	113
TOTAL	1,667	1,648

FISH AND GAME VIOLATIONS By Supervisor Districts

	May 1, 1964 through April 30, 1965	May 1, 1965 through April 30, 1966
District No. 1	139	158
District No. 2	332	254
District No. 3	418	404
District No. 4	260	332
District No. 5	235	203
District No. 6	138	158
District No. 7	145	139
TOTAL	1,667	1,648

FISH AND GAME FINES By Type of Violation

	May 1, 1964 through April 30, 1965	May 1, 1965 through April 30, 1966
Big Game	$23,232.50	$22,745.68
Game Birds and Migratory Waterfowl	4,229.85	2,910.00
Fish	12,154.35	12,582.86
Fur Bearers	144.50	303.00
Water Safety	922.85	1,188.80
Shooting Safety	804.00	977.00
Miscellaneous	4,124.25	2,445.00
TOTALS	$45,612.30	$43,152.34

SPECIAL SERVICES

Statistical Section

The Fish and Game Department's continuing policy of economical operation and high quality service demands that their operations be based on facts. The Statistical Section is the key element in furnishing many facts to administrators and managers.

A professional wildlife statistician is employed to obtain data and analyze trends for the department personnel. At his fingertips are science's most advanced computers. These machines produce in hours the information that was unobtainable a decade ago. The skilled resource manager can work with the statistician and analyze the trends that become apparent. From this come the recommendations for administration.

An example of this is the shift of the Pacific Flyway to central Montana. Extensive projects were set up to analyze the banding data from 1926 to the present. These facts showed trends that helped convince waterfowl managers that the flyway line should be where it is rather than the Montana-Idaho border, where it was in 1960 when the analysis of the data began. The data, carefuly collected, was studied, reanalyzed and restudied to make sure that the the recommendations were sound.

A similar service is provided to the Fish Division. Special projects needing extensive or complex analysis are submitted to the statistical section. There the fisheries personnel and statistician work as a team. Currently being developed is a system to measure the fishing pressure on lakes and streams. This will aid in water resource development reports to agencies requesting information on recreational use. In this case the computer plays a big role since over 10,000 bodies of water have been cataloged and available for reference. Correlated information on the number of fish planted in the past 10 years is available from the files stored for computer use.

A different service supplied by the statistical section is the preparation of reports on recreation demand. The report submitted to the Bureau of Outdoor Recreation required that it meet certain standards in statistical detail. These reports were prepared on a county basis, molded into a planning region and submitted in the Montana Outdoor Recreation Plan. They are essential to the planning of the activities that are needed in a given area. In addition the Statistical Section helps plan for the future by designing studies that will keep the Montana plan completely qualified for Federal Land and Water Conservation Funds.

Better facts mean better management decisions. These sometimes are presented by resource managers to the administration, or from information-education personnel to the sportsmen. A part of the team working in the background is the statistical section.

FINANCIAL REPORT

MONTANA HUNTING AND FISHING LICENSE SALES
1953 through 1965

LICENSE	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Resident Bird & Fish	181,560	186,395	189,449	191,081	188,048	187,949	185,727	186,969	185,719	188,898	195,847	111,268*	113,500
Resident Bird & Beor												104,653	98,590
Non-Resident Limited Fishing	31,295	33,231	36,671	41,328	41,869	40,933	40,522	39,252	41,589	48,714	53,896	51,263	54,585
Non-Resident Season Fishing	4,080	4,005	4,134	5,090	5,705	5,859	5,801	5,562	5,668	6,537	7,102	7,157	7,648
Fishing, Bird & Beor												34,811	38,165
Non-Resident Bird	149	201	242	268	277	309	333	327	306	283	382	449	433
Resident Big Game	117,984	121,712	124,932	121,026	118,235	121,019	118,649	120,040	121,629	122,659	122,291		
Elk												3,960	3,152
Deer "A"												12,979	13,268
Deer "B"												2,789	3,049
Elk, Deer "A" & "B"												52,731	55,294
Elk, Deer "A"												29,171	25,265
Elk, Deer "B"												309	435
Deer "A" & "B"												23,184	23,961
Non-Resident Big Game	1,607	1,547	2,180	2,974	3,774	3,923	4,088	4,279	4,541	5,537	7,183	8,114	7,615
Bow and Arrow	535	715	841	1,453	1,929	2,413	2,753	2,355	2,196	2,193	2,270	2,305	2,373
Special Antelope	23,677	20,886											
Special Moose	142	192	343	405	411	572	505	553	633	836	819	702	687
Special Mountain Sheep	30	53	58	269	195	302	327	413	380	456	518	495	551
Special Mountain Goat	50	100	225	851	1,070	1,398	1,203	1,217	1,138	1,358	1,640	1,664	1,667
Special Buffalo	3	3											
Non-Resident Deer			2,623	6,445	5,038	7,533	9,291	12,042	13,427	15,228	10,505	10,058	9,631
Non-Resident Antelope			3,495	5,033	2,895		1,237	1,043	2,778	3,714	4,260	5,037	2,249
Antelope												32,086	25,703
Turkey Permits							814	1,144	1,466	1,573	2,510	2,913	2,812
Non-Resident Bear									86	107			45
	361,112	369,040	365,193	376,223	369,446	372,210	371,250	375,196	381,556	398,093	409,223	498,098	490,678

*Resident Fishing only.

MONTANA FISH AND GAME DEPARTMENT
STATEMENT OF INCOME
May 1, 1964 - April 30, 1965

Hunting and Fishing Licenses:

Resident Fishing	111,268	@	$ 3.00	$ 333,804.00	
Non-Resident Limited Fishing	51,563	@	3.00	154,689.00	
Non-Resident Fishing	7,157	@	10.00	71,570.00	
Fishing, Bird and Bear	34,811	@	5.00	174,055.00	
Non-Resident Bird	449	@	25.00	11,225.00	
Resident Bird and Bear	104,653	@	2.00	209,306.00	
Duplicate Fishing	2,340	@	1.00	2,340.00	
Elk	3,960	@	1.00	3,960.00	
Deer A	12,979	@	1.00	12,979.00	
Deer B	2,789	@	1.00	2,789.00	
Elk-Deer A & B	52,731	@	3.00	158,193.00	
Elk-Deer A	29,171	@	2.00	58,342.00	
Elk-Deer B	309	@	2.00	618.00	
Deer A & B	23,184	@	2.00	46,368.00	
Duplicate Resident Big Game	843	@	1.00	843.00	
Non-Resident Big Game	8,114	@	100.00	811,400.00	
Duplicate Non-Resident Big Game	18	@	1.00	18.00	
Mountain Goat	1,664	@	5.00	8,320.00	
Mountain Sheep	495	@	15.00	7,425.00	
Non-Resident Deer	10,058	@	20.00	201,160.00	
Non-Resident Antelope	5,037	@	20.00	100,740.00	
Shipping Permits	86	@	.60	51.60	
Turkey	2,913	@	2.00	5,826.00	
Resident Antelope	32,086	@	1.00	32,086.00	
Bow and Arrow	2,305	@	2.00	4,610.00	
Duplicate Special Permit	2	@	1.00	2.00	
Moose	702	@	25.00	17,550.00	
				$2,430,269.60	
Less Dealers' Fees				66,544.95	$2,363,724.65
1962 Accounts Paid					300.10
1963 Accounts Paid					3,271.80
					$2,367,296.55

Miscellaneous Sales:

General Trappers	901	@	$ 10.00	$ 9,010.00	
Beaver Tags	16,325	@	.50	8,162.50	
Beaver Permits	141	@	5.00	705.00	
Outfitter	235	@	10.00	2,350.00	
Land Owner Trapper	119	@	1.00	119.00	
Resident Fur Dealer	23	@	10.00	230.00	
Fur Dealer Agent	23	@	10.00	230.00	
Non-Resident Fur Dealer	3	@	50.00	150.00	
Taxidermist	24	@	15.00	360.00	
Minnow Seining	15	@	10.00	150.00	21,466.50

Miscellaneous Revenue:

Fines	$ 46,381.80	
Sale of Fish and Meats	3,254.49	
Other Revenue	68,276.97	
Land Lease—Tiber	4,841.78	
Land Lease—Canyon Ferry	1,145.05	
Bond Interest	3,750.00	
Rough Fish—Fort Peck	1,153.06	
Rough Fish—Canyon Ferry	6.80	128,809.95
		$2,517,573.00
Pittman-Robertson Income by Federal Reimbursement		398,629.86
Dingell-Johnson Income by Federal Reimbursement		131,809.30
TOTAL INCOME TO DEPARTMENT—May 1, 1964 to April 30, 1965		**$3,048,012.16**

MONTANA FISH AND GAME DEPARTMENT
STATEMENT OF INCOME
May 1, 1965 - April 30, 1966

Hunting and Fishing Licenses:

Resident Fishing	113,500	@	$ 3.00	$ 340,500.00	
Non-Resident Limited Fishing	54,585	@	3.00	163,755.00	
Non-Resident Fishing	7,648	@	10.00	76,480.00	
Fishing-Bird	38,165	@	5.00	190,825.00	
Non-Resident Bird	433	@	25.00	10,825.00	
Resident Bird	98,590	@	2.00	197,180.00	
Duplicate Fishing	2,456	@	1.00	2,456.00	
Elk Tag	3,152	@	1.00	3,152.00	
Deer A	13,268	@	1.00	13,268.00	
Deer B	3,049	@	1.00	3,049.00	
Elk-Deer A & B	55,294	@	3.00	165,882.00	
Elk-Deer A	25,265	@	2.00	50,530.00	
Elk-Deer B	435	@	2.00	870.00	
Deer A & B	23,961	@	2.00	47,922.00	
Duplicate Resident Big Game	834	@	1.00	834.00	
Non-Resident Big Game	7,615	@	100.00	761,500.00	
Duplicate Non-Resident Big Game	19	@	1.00	19.00	
Turkey	2,812	@	2.00	5,624.00	
Baw and Arrow	2,373	@	2.00	4,746.00	
Mountain Goat	1,667	@	5.00	8,335.00	
Shipping Permit	92	@	.60	55.20	
Non-Resident Bear	45	@	20.00	900.00	
Mountain Sheep	551	@	15.00	8,265.00	
Non-Resident Deer	9,631	@	20.00	192,620.00	
Antelope	25,703	@	1.00	25,703.00	
Non-Resident Antelope	2,249	@	20.00	44,980.00	
Moose	687	@	25.00	17,175.00	
Duplicate Special Permit	1	@	1.00	1.00	
				$2,337,451.20	
Less Dealers' Fees				67,104.35	$2,270,346.85
1964 Accounts Paid					7,210.30
					$2,277,557.15

Miscellaneous Sales:

General Trappers	864	@	$ 10.00	$ 8,640.00	
Beaver Tags	8,566	@	.50	4,283.00	
Beaver Permits	189	@	5.00	945.00	
Outfitter	469	@	10.00	4,690.00	
Land Owner Trapper	125	@	1.00	125.00	
Resident Fur Dealer	34	@	10.00	340.00	
Fur Dealer Agent	37	@	10.00	370.00	
Non-Resident Fur Dealer	4	@	50.00	200.00	
Taxidermist	32	@	15.00	480.00	
Minnow Seining	23	@	10.00	230.00	$ 20,303.00

Miscellaneous Revenue:

Fines	$ 43,346.59	
Sale of Fish and Meats	2,926.53	
Other Revenue	42,614.32	
Land Lease—Tiber	1,810.35	
Land Lease—Canyon Ferry	895.45	
Interest on Bonds	3,750.00	
Rough Fish—Fort Peck	1,268.01	
Rough Fish—Nelson Reservoir	126.00	96,737.25
		$2,394,597.40
Refund Adjustments		—375.75
Pittman-Robertson Income by Federal Reimbursement		526,763.90
Dingell-Johnson Income by Federal Reimbursement		158,318.31
TOTAL INCOME TO DEPARTMENT—May 1, 1965 to April 30, 1966		**$3,079,303.86**

DETAIL OF EXPENDITURES

For Fiscal Years Ending April 30, 1965 and April 30, 1966

	April 1965	April 1966
ADMINISTRATIVE DIVISION:		
COMMISSIONERS		
Per Diem	$ 3,544.44	$ 3,688.78
Operation	9,180.22	10,886.61
TOTAL	$ 12,724.66	$ 14,575.39
GENERAL ADMINISTRATION		
Salaries and Benefits	$ 230,252.02	$ 242,156.34
Operation	78,833.65	97,081.86
Capital Expenditures	18,920.14	8,742.04*
Repair and Replacement	435.89	1,410.52
TOTAL	$ 328,441.70	$ 331,906.68
GRANTS		
Predator Control Grant	$ 46,090.28	$ 40,864.00
University of Montana Grant	9,500.00	8,086.42
Montana State University Grant	10,300.00	12,000.00
College Fisheries Grant	10,000.00	10,000.00
State Auditor and Controller	20,000.00	22,800.00
TOTAL	$ 95,890.28	$ 93,750.42
UNIVERSITY RESEARCH UNIT		
Salaries and Benefits	$ 8,552.68	$ 772.45
Operation	4,669.27	19,408.34
Capital Expenditures	224.86	19.67
Repair and Replacement	951.93	296.54
TOTAL	$ 14,398.74	$ 20,497.00
DISTRICT HEADQUARTERS ACCOUNT		
Salaries and Benefits	$ 179.26	$ 173.89
Operation	5,848.08*	3,542.47*
Capital Expenditures	330.86	7,540.27
Repair and Replacement	333.31	400.60
TOTAL	$ 5,004.65*	$ 4,572.29
AIRPLANE ACCOUNT		
Salaries and Benefits	$ 135.20	$ 103.42*
Operation	12,523.14	11,637.14
Capital Expenditures	225.00	218.55
Repair and Replacement	4,198.63	2,416.36
Credit for Airplane Trade-In		800.00*
Credit for Airplane Hire	14,454.16*	12,769.12*
TOTAL	$ 2,627.81	$ 599.51
VEHICLE ACCOUNT		
Salaries and Benefits	$ 87.74	$ 152.96
Operation	3,285.76	4,656.03
Capital Expenditures	63,413.71	189,770.10
Repair and Replacement	119,755.58	132,811.43
Credit for Vehicle Trade-Ins	22,345.18*	34,771.58*
Credit for Vehicle Mileage	246,856.39*	274,379.79*
TOTAL	$ 82,658.78*	$ 18,239.15

*Indicates Credit

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
OVERSNOW VEHICLE ACCOUNT		
Operation	$ 30.76	$
Repair and Replacement	303.09	
TOTAL	$ 333.85	
HELICOPTER ACCOUNT		
Salaries and Benefits	$ 164.39	$ 258.28
Operation	13,283.72	8,799.93
Capital Expenditures	14.33	163.62
Repair and Replacement	3,651.05	1,958.73
Credit for Helicopter Hire	20,662.50*	20,775.00*
TOTAL	$ 3,549.01*	$ 9,594.44*
HELENA WAREHOUSE		
Salaries and Benefits	$ 5,747.25	$ 5,063.28
Operation	1,109.27	1,975.82
Capital Expenditures	127.58	160.27
Repair and Replacement		30.89
TOTAL	$ 6,984.10	$ 7,230.26
MECHANIC SHOP		
Salaries	$ 15,522.75	$ 14,877.30
Operation	800.69	902.12
Capital Expenditures	1,052.55*	20.05
Repair and Replacement	397.12	929.27
Credit for Mileage		100.00*
TOTAL	$ 15,668.01	$ 16,628.74
STORES AND SUPPLIES		
Operation	$	$ 4.06*
Expenditures for Merchandise	37,521.63	62,000.42
Credit for Merchandise Checked Out	40,538.50*	45,552.42*
TOTAL	$ 3,016.87	$ 16,443.94
MISCELLANEOUS ACCOUNTS		
Printing Licenses - Maps	$ 20,347.61	$ 23,339.37
Refunds	4,132.00	8,702.00
Canyon Ferry Dam	978.37	132.51
Tiber Dam	1,345.69	2,176.03
Search and Rescue	2,404.39	107.00
Centennial Train	1,016.55	
Fishes of Montana		31.25
TOTAL	$ 30,224.61	$ 34,488.16
TOTAL ADMINISTRATIVE DIVISION	$ 413,064.45	$ 549,337.10
INFORMATION-EDUCATION DIVISION:		
GENERAL - INFORMATION - EDUCATION		
Salaries and Benefits	$ 61,883.32	$ 67,801.27
Operation	52,851.14	83,283.07
Capital Expenditures	1,422.00	7,774.70
Repair and Replacement		784.13
TOTAL	$ 116,156.46	$ 159,643.17

*Indicates Credit

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
HUNTER AND BOAT SAFETY PROGRAM		
Salaries and Benefits	$ 9,939.62	$ 8,362.32
Operation	5,720.83	6,247.47
Capital Expenditures	640.00	842.89
TOTAL	$ 16,300.45	$ 15,452.68
DISTRICT 1 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 6,732.30	$ 9,867.22
Operation	3,434.48	3,592.11
Capital Expenditures	72.76	290.77
TOTAL	$ 10,239.54	$ 13,750.10
DISTRICT 2 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 9,834.09	$ 10,312.03
Operation	2,880.55	1,867.94
Capital Expenditures	67.96	217.85
TOTAL	$ 12,782.60	$ 12,397.82
DISTRICT 3 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 9,469.91	$ 10,041.86
Operation	3,861.94	4,153.59
Capital Expenditures	13.60	197.34
Repair and Replacement		181.13
TOTAL	$ 13,345.45	$ 14,573.92
DISTRICT 4 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 11,478.08	$ 9,589.63
Operation	4,403.00	4,610.17
Capital Expenditures	36.19	694.66
TOTAL	$ 15,917.27	$ 14,894.46
DISTRICT 5 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 11,602.96	$ 10,994.08
Operation	4,100.98	3,471.64
Capital Expenditures	21.65	185.28
Repair and Replacement		181.13
TOTAL	$ 15,725.59	$ 14,832.13
DISTRICT 6 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$	$ 217.57
Operation	30.42	2.35
Repair and Replacement		126.30
TOTAL	$ 30.42	$ 346.22
DISTRICT 7 INFORMATION AND EDUCATION PROGRAM		
Salaries and Benefits	$ 17.63	$ 8,511.65
Operation	32.40	3,919.66
Capital Expenditures		1,260.54
Repair and Replacement		181.14
TOTAL	$ 50.03	$ 13,872.99
TOTAL INFORMATION AND EDUCATION	$ 200,547.81	$ 259,763.49
FISHERIES DIVISION:		
FISH HATCHERIES:		
ANACONDA		
Salaries and Benefits	$ 27,426.40	$ 27,654.84

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
Operation	22,802.68	20,050.92
Capital Expenditures	172.03	278.40
Repair and Replacement	63.15	16,094.52
TOTAL	$ 50,464.26	$ 64,078.68
ARLEE		
Salaries and Benefits	$ 24,024.78	$ 25,317.19
Operation	10,601.59	10,669.57
Capital Expenditures	597.02	182.24
Repair and Replacement	135.82	7.52
TOTAL	$ 35,359.21	$ 36,176.52
BLUEWATER		
Salaries and Benefits	$ 24,979.15	$ 27.757.91
Operation	18,192.56	18,843.68
Capital Expenditures	265.57	8,987.16
Repair and Replacement	88.17	751.39
TOTAL	$ 43,525.45	$ 56,340.14
BIG TIMBER		
Salaries and Benefits	$ 13,450.33	$ 13,477.37
Operation	2,838.12	2,330.85
Capital Expenditures	344.53	2.85
Repair and Replacement	18.53	
TOTAL	$ 16,651.51	$ 15,811.07
EMIGRANT		
Salaries and Benefits	$ 11,053.04	$ 1,980.24
Operation	5,504.91	885.58
Capital Expenditures	164.64	27.75
Repair and Replacement	23.15	
TOTAL	$ 16,745.74	$ 2,893.57
GREAT FALLS		
Salaries and Benefits	$ 20,404.58	$ 21,845.67
Operation	17,930.87	11,409.14
Capital Expenditures	258.94	76.16
Repair and Replacement	11.20	61.88
TOTAL	$ 38,605.59	$ 33,392.85
LEWISTOWN		
Salaries and Benefits	$ 38,845.06	$ 42,413.46
Operation	56,035.11	43,980.16
Capital Expenditures	1,648.89	1,531.67
Repair and Replacement	245.14	47.10
TOTAL	$ 96,774.20	$ 87,972.39
LIBBY		
Salaries	$ 17,395.80	$ 15,654.88
Operation	7,493.23	5,183.12
Capital Expenditures	756.27	410.32
Repair and Replacement	1,060.92	212.26
TOTAL	$ 26,706.22	$ 21,460.58
McNEIL		
Operation	$ 23.24	$ 2.30
TOTAL	$ 23.24	$ 2.30

*Indicates Credit

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
OVANDO		
Operation	$ 8.85	$
Capital Expenditures	50.00	
TOTAL	$ 58.85	$
POLSON		
Operation	$ 544.67*	$ 6.95*
Capital Expenditures		25.00
TOTAL	$ 544.67*	$ 18.05
SOMERS		
Salaries	$ 22,928.56	$ 26,895.24
Operation	6,328.00	7,435.00
Capital Expenditures	31.46*	160.12
Repair and Replacement	2,243.20	491.88
TOTAL	$ 31,468.30	$ 34,982.24
TOTAL FISH HATCHERIES	$ 355,837.90	$ 353,128.39
FISHERIES MANAGEMENT PROJECTS:		
GENERAL FISHERIES PROGRAM (Includes fish distribution, hatchery biologists, Supt. of Hatcheries and Supt. of Fisheries)		
Salaries	$ 24,888.29	$ 27,503.13
Operation	17,022.38	25,042.77
Capital Expenditures	3,807.39	514.63
Repair and Replacement	250.00	100.95
TOTAL	$ 45,968.06	$ 53,161.48
SPAWNING STATIONS		
Salaries	$ 2,776.38	$ 3,043.99
Operation	4,540.38	3,212.36
Capital Expenditures	392.70	31.52
Repair and Replacement		13.18
TOTAL	$ 7,709.46	$ 6,301.05
MISCELLANEOUS FIELD PROJECTS		
Salaries	$ 78,086.62	$ 81,926.97
Operation	44,665.37	53,842.28
Capital Expenditures	11,283.61	12,562.53
Repair and Replacement	353.66	1,893.17
TOTAL	$ 134,389.26	$ 150,224.95
DINGELL-JOHNSON PROJECTS		
Salaries	$ 114,315.81	$ 136,361.23
Operation	42,208.68	82,523.02
Capital Expenditures	1,785.94	8,584.56
Repair and Replacement	981.79	811.19
TOTAL	$ 159,292.22	$ 228,280.00
TOTAL FISHERIES MANAGEMENT PROJECTS	$ 347,359.00	$ 437,967.48
TOTAL FISHERIES DIVISION	$ 703,196.90	$ 791,095.87
ENFORCEMENT DIVISION		
ENFORCEMENT District No. 1		
Salaries and Benefits	$ 61,246.89	$ 67,824.03
Operation	21,850.77	25,091.26
Capital Expenditures	196.80	508.41

*Indicates Credit

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
Repair and Replacement	7.70	
TOTAL	$ 83,302.16	$ 93,423.70
ENFORCEMENT—District No. 2		
Salaries and Benefits	$ 62,829.43	$ 71,992.19
Operation	22,254.53	25,209.16
Capital Expenditures	93.09	522.87
TOTAL	$ 85,177.05	$ 97,724.22
ENFORCEMENT—District No. 3		
Salaries and Benefits	$ 86,766.04	$ 103,441.66
Operation	39,703.82	39,620.99
Capital Expenditures	905.64	1,708.05
Repair and Replacement	86.00*	300.00
TOTAL	$ 127,289.50	$ 145,070.70
ENFORCEMENT—District No. 4		
Salaries and Benefits	$ 82,599.03	$ 89,460.12
Operation	32,306.31	35,034.38
Capital Expenditures	343.48	1,075.64
Repair and Replacement		27.90
TOTAL	$ 115,248.82	$ 125,598.04
ENFORCEMENT—District No. 5		
Salaries and Benefits	$ 69,480.63	$ 80,942.86
Operation	26,536.04	28,012.49
Capital Expenditures	193.19	4,373.56
TOTAL	$ 96,209.86	$ 113,328.91
ENFORCEMENT—District No. 6		
Salaries and Benefits	$ 53,561.00	$ 55,872.66
Operation	21,717.22	20,066.66
Capital Expenditures	127.38	625.32
Repair and Replacement		12.00
TOTAL	$ 75,405.60	$ 76,576.64
ENFORCEMENT—District No. 7		
Salaries and Benefits	$ 46,510.77	$ 41,606.72
Operation	21,026.47	19,439.96
Capital Expenditures	126.11	442.37
Repair and Replacement	15.30	
TOTAL	$ 67,678.65	$ 61,489.05
GENERAL ENFORCEMENT PROGRAM		
Salaries and Benefits	$ 29,986.49	$ 29,653.47
Operation	33,567.65	45,059.29
Capital Expenditures	1,228.48	2,805.98
Repair and Replacement	1,075.00*	
TOTAL	$ 60,707.62	$ 77,518.74
TOTAL ENFORCEMENT DIVISION	$ 711,019.26	$ 790,730.00
GAME MANAGEMENT DIVISION		
GAME FARMS:		
FORT PECK		
Operation	$ 163.58	$ 282.43
TOTAL	$ 163.58	$ 282.43

*Indicates Credit

DETAIL OF EXPENDITURES—(Continued)

	April 1965	April 1966
WARM SPRINGS		
Salaries	$ 16,210.88	$ 17,335.30
Operation	8,751.05	7,922.30
Capital Expenditures	13.99	890.40
Repair and Replacement	786.03	1,381.06
TOTAL	$ 25,761.95	$ 27,529.06
MOIESE		
Operation	$ 75.66	$ 175.91
TOTAL	$ 75.66	$ 175.91
TOTAL GAME FARMS	$ 26,001.19	$ 27,987.40
GENERAL GAME MANAGEMENT PROJECTS		
Salaries	$ 18,286.73	$ 25,808.55
Operation	20,007.41	23,589.03
Capital Expenditures	6,980.06	2,673.61
Repair and Replacement	12.25	183.50
Credit	1,586.80*	
TOTAL	$ 43,699.65	$ 52,254.69
PITTMAN-ROBERTSON PROJECTS		
Salaries	$ 361,207.97	$ 400,486.18
Operation	242,652.95	258,535.90
Capital Expenditures	7,794.07	26,540.71
Repair and Replacement	1,998.07	12,713.97
TOTAL	$ 613,653.54	$ 698,276.76
TOTAL GAME MANAGEMENT PROJECTS	$ 657,353.19	$ 750,531.45
TOTAL GAME MANAGEMENT DIVISION	$ 683,354.38	$ 778,518.85
RECREATION AND PARKS DIVISION		
RECREATION AND PLANNING SECTION		
Salaries	$ 33,260.48	$ 51,523.95
Operation	28,172.37	19,840.18
Capital Expenditures	24,142.97	106,667.10
Repair and Replacement	2.80	11.67
TOTAL RECREATION [redacted]	$ 85,578.62	$ 178,042.90
PARKS SECTION		
Salaries	$	$ 93,959.23
Operation		50,588.54
Capital Expenditures		61,392.39
Repair and Replacement		1,921.48
TOTAL PARKS	$	$ 207,861.64
TOTAL RECREATION AND PARKS	$ 85,578.62	$ 385,904.54
GRAND TOTAL FISH & GAME DEPARTMENT	$2,796,761.42	$3,555,349.85
EXPENDITURE SUMMARY		
TOTAL SALARIES	$1,716,112.10	$1,983,704.08
TOTAL OPERATIONS	645,726.48	794,323.09
TOTAL CAPITAL EXPENDITURES	125,549.86	408,624.59
TOTAL REPAIR AND REPLACEMENT	133,193.68	193,500.25
TOTAL APPROPRIATIONS	176,179.30	175,197.84
GRAND TOTAL OF EXENDITURES	$2,796,761.42	$3,555,349.85

*Indicates Credit

APPENDIX

Montana Fish and Game Department

STATE PARKS, MONUMENTS, RECREATION AREAS AND FISHING ACCESS SITES

District 1—Northwest Montana Headquarters, Kalispell

	SITE	COUNTY
1.	Bigfork State Park	Flathead
2.	Bitterroot Lake State Park	Flathead
3.	Elmo State Park	Lake
4.	Finley Point State Park	Lake
5.	Flathead Lake State Park	Lake
6.	Lone Pine State Park	Flathead
7.	Thompson Falls State Park	Sanders
8.	West Shore State Park	Lake
9.	Whitefish Lake State Park	Flathead
10.	Yellow Bay State Park	Lake
11.	Ashley Lake	Flathead
12.	Blanchard Lake	Flathead
13.	Boot Jack Lake	Lincoln
14.	Carpenter Lake	Lincoln
15.	Flathead River (Pressentine Bar)	Flathead
16.	Flathead River (Reserve Drive)	Flathead
17.	Flathead River (Old Steel Bridge)	Flathead
18.	Flathead River (Sportsman's Bridge)	Flathead
19.	Flathead Lake (River's End)	Flathead
20.	Flathead Lake (Woods Bay)	Flathead
21.	Flathead Lake (Finley Point)	Lake
22.	Flathead Lake (Juniper Beach)	Lake
23.	Flathead Lake (Cedar Island)	Lake
24.	Crystal Lake	Lincoln
25.	Smith Lake	Flathead
26.	Whitefish River	Flathead
27.	Lake Mary Ronan	Lake
28.	Loon Lake II and Marl Lake	Flathead
29.	Loon Lake I and Horseshoe Lake	Lincoln
30.	Noxon Reservoir	Sanders
31.	Savage Lake	Lincoln
32.	Skyles Lake	Flathead
33.	Sophie Lake	Lincoln
34.	Pablo Management Area	Lake
35.	Ninepipe Management Area	Lake

District 2—West Central Montana Headquarters, Missoula

	SITE	COUNTY
1.	Fort Owen State Monument	Ravalli
2.	Hooper State Park	Lewis & Clark
3.	Lost Creek State Park	Deer Lodge
4.	Painted Rocks Recreation Area	Ravalli
5.	Blackfoot River (Ninemile Prairie)	Missoula
6.	Blackfoot River (Box Canyon)	Powell
7.	Blackfoot River (River Junction)	Powell
8.	Blackfoot River (Murphy)	Powell
9.	Blackfoot River (Cedar Meadow)	Powell
10.	N. F. Blackfoot River (Harry Morgan)	Powell
11.	Rock Creek (Tamarack Creek)	Granite
12.	Rock Creek (Welcome Creek)	Granite
13.	Upsata Lake	Powell
14.	Cottonwood Creek (B-C Game Range)	Powell
15.	Clearwater River (B-C Game Range)	Missoula
16.	Harper Lake (B-C Game Range)	Missoula

District 3—Southwestern Montana Headquarters, Bozeman

	SITE	COUNTY
1.	Bannack State Monument	Beaverhead
2.	Clark Canyon Recreation Area	Beaverhead
3.	Lewis and Clark Caverns	Jefferson
4.	Missouri River Headwaters	Gallatin
5.	Brownes Lake (West of Glen)	Beaverhead
6.	Dailey Lake (Upper Yellowstone Valley)	Park
7.	Harrison Lake (Willow Creek Reservoir)	Madison
8.	Meadow Lake (Madison Valley)	Madison
9.	Red Rock Lake (Centennial Valley)	Beaverhead
10.	Tizer Lake (Crow Creek-Elkhorn)	Jefferson
11.	Ramshorn Lake (Upper Gallatin Canyon)	Gallatin
12.	Bozeman Headquarters Pond	Gallatin
13.	Big Hole River (Sportsmen's Park)	Beaverhead
14.	Big Hole River (Glen Area)	Beaverhead
15.	Jefferson River (Parrot Castle)	Jefferson
16.	Jefferson River (Cardwell)	Madison
17.	Jefferson River (Williams Bridge)	Gallatin
18.	Madison River (Valley Garden)	Madison
19.	Madison River (Ennis)	Madison
20.	Madison River (Burnt Tree Hole)	Madison
21.	Madison River (Eight Mile Ford)	Madison
22.	Madison River (Varney Bridge)	Madison
23.	Madison River (Graycliff)	Gallatin
24.	Madison River (Madison Wall Cr. Game Range)	Madison
25.	Canyon Ferry Recreation Area	Broadwater & Lewis & Clark
26.	Yellowstone River (Emigrant)	Park
27.	Yellowstone River (Paradise)	Park

28. Yellowstone River (Mallards Rest) ... Park
29. Yellowstone River (Sheep Mountain) ... Park
30. Three Forks Ponds ... Gallatin
31. Missouri River (Fairweather) ... Gallatin
32. Gallatin River (Four Corners) ... Gallatin
33. Gallatin River (Cameron Bridge) ... Gallatin
34. Gallatin River (Gallatin Game Range) ... Gallatin

District 4—North Central Montana Headquarters, Great Falls

	SITE	COUNTY
1.	James Kipp State Park	Fergus
2.	Tiber Recreation Area	Liberty & Toole
3.	Missouri River Recreation Waterway	Chouteau, Fergus, Blaine & Phillips
4.	Devon Reservoir (High Line Area)	Toole
5.	Tiber Reservoir	Liberty & Toole
6.	Arod Lake (South of Conrad)	Pondera
7.	Ackley Lake (Hobson Area)	Judith Basin
8.	Upper Carter Pond (Lewistown Area)	Fergus
9.	Lower Carter Pond (Lewistown Area)	Fergus
10.	Bean Lake (Augusta Area)	Lewis & Clark
11.	Smith River (Fort Logan Area)	Meagher
12.	Park Lake (South of Helena)	Jefferson

District 5—South Central Montana Headquarters, Billings

	SITE	COUNTY
1.	Chief Plenty Coups State Monument	Big Horn
2.	Deadman's Basin Recreation Area	Wheatland
3.	Yellowstone River (Voges Bridge)	Sweet Grass
4.	Yellowstone River (Columbus Area)	Stillwater
5.	Boulder River (Natural Bridge)	Sweet Grass
6.	Stillwater River (Limestone)	Stillwater
7.	Stillwater River (Buffalo Jump)	Stillwater
8.	Stillwater River (Moraine)	Stillwater
9.	Stillwater River (Castle Rock)	Stillwater
10.	Stillwater River (Cliff Swallow)	Stillwater
11.	Stillwater River (Whitebird)	Stillwater
12.	Musselshell River (Selkirk)	Wheatland
13.	Stillwater River (Absaroka)	Stillwater
14.	Stillwater River (Swinging Bridge)	Stillwater
15.	Stillwater River (Fireman's Point)	Stillwater
16.	Rock Creek (Water Birch)	Carbon
17.	Rock Creek (Bull Springs)	Carbon
18.	Rock Creek (Aspen Park)	Carbon
19.	Rock Creek (Beaver Lodge)	Carbon
20.	Rock Creek (Horsethief Station)	Carbon
21.	West Rosebud River (Rosebud Isle)	Carbon
22.	Bluewater Creek (Hatchery Area)	Carbon
23.	Broadview Pond	Yellowstone

District 6—Northeastern Montana Headquarters, Glasgow

	SITE	COUNTY
1.	Chief Joseph State Monument	Blaine
2.	Nelson Reservoir Recreation Area	Phillips
3.	Rock Creek State Park	Garfield
4.	Bear Paw Lake (South of Havre)	Hill
5.	Cole Ponds (North of Saco)	Phillips
6.	Fort Peck Dredge Cut	Valley
7.	Whitetail Reservoir (North of Scobey)	Daniels
8.	Gartside Pond (South of Sidney)	Richland
9.	Cree Crossing (North of Saco)	Phillips

District 7—Southeastern Montana Headquarters, Miles City

	SITE	COUNTY
1.	Hell Creek State Park	Garfield
2.	Makoshika State Park	Dawson
3.	Medicine Rocks State Park	Carter
4.	Tongue River (Twelve Mile Dam)	Custer
5.	Tongue River Reservoir Road (Decker)	Big Horn
6.	Branum Lake (Miles City Area)	Custer
7.	Hollecker Reservoir (Glendive Area)	Dawson
8.	Rush Hall Reservoir (North of Baker)	Fallon
9.	Rustad Reservoir (North of Baker)	Fallon

MONTANA FISH AND GAME DEPARTMENT

Acquisition of Parks and Fishing Access Sites During the Biennium

SITE	Acreage
Stillwater River (Whitebird)	21.35
Stillwater River (Castle Rock)	80.00
Lake Mary Ronan	76.08
Boulder River (Natural Bridge)	40.00
Devon Reservoir	10.62
Missouri River (Fairweather)	48.00
Missouri River (State Park)	.88
Musselshell River (Selkirk)	620.00
Flathead River (Pressentine Bar)	6.26
Yellowstone River (Columbus)	20.00
Big Hole River (Glenn)	7.85
Gallatin River (Four Corners)	9.38
Gallatin River (Cameron Bridge)	55.00
Blackfoot River (Ninemile Prairie)	9.60
Blackfoot River (River Junction)	80.00
Blackfoot River (Cedar Meadow)	3.47
Blackfoot River (Box Canyon)	200.00
Elmo State Park	35.00
North Fork, Blackfoot River (Harry Morgan)	125.00
Monture Creek	125.00
Carters Lower Pond	6.23
Finley Point State Park	23.83
West Shore State Park	73.55

MONTANA FISH AND GAME DEPARTMENT

Payments in Lieu of Taxes, By County

	1964	1965
Beaverhead	$ 33.43	$ 38.09
Carbon	21.48	21.32
Cascade	49.94	58.80
Fergus	16.96	18.40
Flathead	19.52	13.01
Gallatin	536.16	585.02
Granite	19.52	21.22
Jefferson	153.21	157.47
Judith Basin	739.79	752.88
Lake	5,974.54	7,532.73
Lewis & Clark	1,310.82	1,495.34
Madison	1,374.32	1,387.41
Meagher	245.86	270.08
Missoula	1,622.22	894.80
Phillips	67.02	74.78
Powell	919.72	1,051.41
Ravalli	773.76	1,259.32
Richland	55.39	60.24
Silver Bow	552.46	576.58
Teton	4,025.07	4,239.43
Wheatland	363.80	394.74
TOTALS	$18,875.00	$20,903.07

MONTANA FISH AND GAME DEPARTMENT

State, County and City Projects for Funding Under The Land and Water Conservation Plan

	NAME OF PROJECT	TOTAL COST
1.	Statewide Comprehensive Outdoor Recreation Plan	$ 55,000.00
2.	Dist. 1 (Northwest Mont.) 9 State Parks, Rehabilitation and Additional Facilities	212,178.00
3.	West Shore State Park, Acquisition (Flathead Lake)	101,970.00
4.	Dist. 2 (West Central Mont.) State Park Rehabilitation and Additional Facilities	19,880.00
5.	Dist. 3 (Southwest Mont.) Missouri Headwaters State Park, Rehabilitation and Additional Facilities	10,300.00
6.	Dist. 4 (North Central Mont.) 3 State Parks, Rehabilitation and Additional Facilities	116,390.00
7.	Dist. 5 (South Central Mont.) State Park Rehabilitation and Additional Facilities	18,900.00
8.	Dist. 6 (Northeast Mont.) 2 State Parks, Rehabilitation and Additional Facilities	26,625.00
9.	Dist. 7 (Southeast Mont.) State Park Rehabilitation and Additional Facilities	10,609.00
10.	Statewide Development of 11 Fishing Access Sites Fish and Game Dept.	44,498.00
11.	Townsend, City Park and Swimming Pool	87,385.00
12.	Malta, City Park Development (Trafton)	13,390.00
13.	Great Falls, Construction of 2 Swimming Pools	119,892.00
14.	Billings, Development of City Park (Optimist)	33,887.00
15.	Cascade, City Park and Swimming Pool (Atkinson)	87,330.00
16.	Hill County, Beaver Cr. Park Development (3-year project), per year	44,200.00
17.	Polson, City Park Development	24,000.00
18.	Three Forks, City Park Development	6,000.00
19.	Plains, City Park Development (Ruenauver)	59,688.00
20.	Columbia Falls, Swimming Pool	95,000.00
21.	Laurel, City Park Development (Riverside)	13,390.00
22.	Billings, City Park Development (Rose)	33,990.00
23.	Billings, City Park Development (Lillis)	46,916.00
24.	State Water Conservation Board, Basic Sanitary Facilities and Access, 8 Reservoirs	21,836.00
25.	Lewis & Clark County, Outdoor Recreation Facilities at Fairgrounds Site	117,276.00
	TOTAL	$1,420,530.00

RETURN REQUESTED

Return to

INFORMATION-EDUCATION DIVISION
MONTANA FISH & GAME DEPARTMENT

Helena, Montana
ZIP 59601