MINUTES OF THE MEETING
LONG-RANGE PLANNING SUBCOMMITTEE
MONTANA STATE
HOUSE OF REPRESENTATIVES

February 7, 1985

The meeting of the Long-Range Planning Subcommittee was called to order by Chairman Robert Thoft on February 7, 1985 at 8:06 a.m. in Room 420 of the State Capitol.

ROLL CALL: All members were present.

DEPARTMENT OF FISH, WILDLIFE AND PARKS, COAL TAX PARK PROPOSALS: Don Hyyppa (44:A:004), Administrator, Parks Division, Department of Fish, Wildlife and Parks (FW&P) introduced the next park proposal. He said the Prickly Pear Wetland proposal consists of 38 acres along the Prickly Pear Creek. He said it includes the best Riparian area along the creekbed. There are some old buildings on the acreage which Mr. Hyyppa said would have to be removed if the land is bought as a park.

Prickly Pear Wetland, Helena, $152,000

Proponents: Mrs. Sharon Olson (44:A:013), owner of the Prickly Pear Wetland, gave committee members various supportive documents on the park proposal (EXHIBIT 1). Mrs. Olson also submitted written testimony (EXHIBIT 2) for her husband and herself.

Representative Gene Donaldson (44:A:054), District 43, said the Helena Valley is being widely subdivided and this land is one of the few spots that is not being developed. He said the land is pretty much in its natural state, other than being used for some grazing. He said several years ago a movie called Grey Hawk was filmed at this location because of the area's uniqueness.

Mrs. Olson showed the committee the location of the park by using several maps and showed them Indian artifacts which the Olson's have found on the land. She said she would not like to see the old buildings on the property torn down, as Mr. Hyyppa had indicated earlier. She feels these buildings have historic significance.

Tom Meagher (44:A:258) said he is a proponent of the park proposal because it is important to preserve the site and not allow it to become a part of encroaching subdivisions. He submitted letters of support from various groups and individuals (EXHIBITS 3, 4, and 5). Mr. Meagher said the MAI appraisal (part of Exhibit 1) compares the land to its highest comparable value which is subdivided land. But he feels the subdivided properties used in the appraisal are not as valuable as the 38 acres because they did not boarder a streambed. The land used in the comparison is valued between $2,000 and $2,500 an acre. He said he feels the Olson's are justified in asking for a compromise price between $2,500 and $4,000 an acre. He said there

have been comments made, by people opposing the park, that the Helena sewer system runs through the property and this is a fallacy. Mr. Meagher said in addition to Coal Tax funds FW&P also has $700,000 available in fishing access money which might be used to purchase this land. He feels the timing is right to buy the land now because in two years it may be subdivided and developed.

Virginia Walton (44:A:421) submitted a letter from the Audubon Society in support of the proposal (EXHIBIT 6). She also submitted written testimony (EXHIBIT 7).

Noel Rosetta (44:A:488) said areas like the one on Prickly Pear Creek are rapidly disappearing. He has birded in the area with the Audobon Society.

Ralph Olson (44:A:517), owner of the proposed park site, said he was born on the site forty-four years ago and has enjoyed fishing and recreating in the area himself. He says many people come out to the site to do the same things and he feels they enjoy getting away from town. The area is developing so rapidly, a site for recreational use will be needed in the valley.

Senator Tveit (44:A:558) asked how long the length of property is along the creekbed. Mr. Olson said about 1/4 of a mile. Senator Fuller asked how many times the Olson's have made this proposal to the Legislature. Mr. Olson said this is the second time the park proposal has been presented for acquisition. Senator Fuller asked what is the total size of the Olson's ranch. Mr. Olson said 285 acres.

Representative Bardanouve (44:A:577) asked if the land is subject to high water. Mrs. Olson used a map to show Representative Bardanouve the land and said the ground north of Prickly Pear Creek is not subject to high water. Representative Bardanouve (44:A:594) said the Olson's compromise price between $2,500 and $4,000 an acre does not seem to be a compromise when the appraisal said high value of the land is $2,500 an acre. It would appear that they are asking for more than fair market price. Sharon Olson said the appraiser did not take into account the historic value of the buildings on the site. The appraiser only placed a value on the land. Senator Fuller (44:A:671) said he just sold 10 acres west of this site for $3,200 an acre and the land was not nearly as nice as what the Olson's have. He also said Representative Donaldson is selling land to the north and east of the Olson property for $3,500 an acre. He said he felt the appraisal of the property is misleading in terms of the value of the ground.

White Sandy Beach, Hauser Reservoir, Helena, $420,000

Don Hyyppa (44:B:031), introduced the White Sandy Beach proposal to the committee. He said the proposal is for 89 acres on Hauser Lake and is immediately adjacent to the Black Sandy Beach Recreation Area. The department presently has a five year lease on the area at no cost. The lease expires in May of 1987. He said the park proposal is being offered for a price of $420,000 which is its appraised value two years ago.

Proponents: Randy Poulsen (44:B:050) spoke as a proponent of the project. He was representing his father, Harold Poulsen, who is the owner of White Sandy Beach. Mr. Poulsen gave committee members a handout which describes the project proposal and which also contained his written testimony (EXHIBIT 8).

Chairman Thoft (44:B:212) asked that the record reflect Representative Gene Donaldson as a proponent of the project.

Senator Fuller (44:B:222) asked if there is any access to the property from the east. Mr. Poulsen said no, the access is from the west unless you boat across the lake from the east.

Senator Van Valkenburg (44:B:234) asked Mr. Hyyppa how long the department has been leasing the ground. Mr. Hyyppa said the department has been leasing the ground since 1982 and the no cost lease will expire in 1987. Senator Van Valkenburg asked Mr. Hyyppa to describe the use of the property from the department's perspective of managing it. My Hyyppa said Mr. Poulsen very accurately describe the use of the property in his testimony. The department is now managing and would continue to manage the property by utilizing the existing recreational facilities at Black Sandy Beach. He said at a later date the department will want to make some improvements to the sight because it is in a raw and uncontrolled condition. He said he feels it will be an efficient addition to park faciities because it is next to the developed recreational area of Black Sandy Beach.

Senator Van Valkenburg (44:B:252) said he is of the impression that there is a substantial number of public access sites to the lakes in the Helena area and he wondered who will use this site. Mr. Hyyppa said there are a number of access sights available to lakes in this area, however, access is limited on Hauser lake. He said the demand for access is high because people from communities surrounding Helena also use the lake. He said the department does not encourage use of White Sandy Beach because it does not own the land, but inspite of this fact the area is being utilized.

DEPARTMENT OF FISH, WILDLIFE AND PARKS, WILDLIFE MANAGEMENT AREAS

James Flynn (44:B:279), Director, FW&P said on Monday, February 4, 1985 the department made a presentation to the subcommittee on Wildlife Habitat Acquisition. At that time Senator Van Valkenburg asked the department to make a presentation on why there is a need for more Wildlife Management Areas. Mr. Flynn introduced Mike Aterhold, Information Officer, Kalispell Regional Headquarters to give the presentation on the history and need for Wildlife Management Areas.

Mr. Aterhold (44:B:315) said he has worked for FW&P for 12 years and is familiar with about 2/3 of the wildlife management areas. He said the department is asking for authorization to spend $1,000,000 for the purchase of big game habitat and small game areas. He said the areas best for big game habitat are generally those that serve the animals at this time of the year. He used elk as an example to illustrate the migratory pattern of some big game animals in the winter. Mr. Aterhold said at this time of the year cows are carrying well developed embryos, bulls are in their worst physical condition, and last year's calf crop is still growing and has little in the way of fat reserves. Starting in September with the first snow the animals begin to migrate back to areas which are 10 percent or less of the areas which serve them during the summer months. Prime big game habit is land which is in this 10 percent category and which carrys the animals through the most critical part of their life.

Mr. Aterhold then described the history of the Wildlife Habitat Management Program. A portion of the movie The Bridge was shown which illustrated the number of elk which migrate into winter feeding sites.

Mr. Aterhold (44:B:515) said Montana's elk population today is worth $58 million a year to Montana's economy. He gave committee members material which detailed this information (EXHIBITS 9, 10, 11, 12, 13, AND 14). Mr. Aterhold (44:B:561) used a map of Montana to show the committee existing Wildlife Management Areas in the state. Next he presented a slide show on the various management areas. Mr. Aterhold closed his presentation by saying he felt big game ranges are an asset to Montana's economy.

Chairman Thoft (45:A:168) asked how much of a problem the wildlife management areas are to neighboring land owners. Mr. Aterhold said some associated problems do exist, however, the department feels the damage is much less than it would be if the management areas did not exist. He said the department has alot of problems with big game animals just north of Yellowstone Park and part of the $1,000.000 request will probably be used to purchase land in this area.

Chairman Thoft (45:A:208) asked if wildlife management is the only use for these areas. Mr. Aterhold said the department presently has a logging operation and rest rotation grazing at the Mount Haggin area. The department also allows haying and share cropping on other sites.

James Flynn (45:A:228) said a variety of public or private concerns do exist about the management of wildlife areas. He said some of them deal with taxation of the land, weed control and fencing. He said in the past the department's philosophy on management of these areas was not terribly consistent. In some instances the department was lax about maintaining weed control and fencing, which did lead to complaints from neighboring land owners. He said he feels these problems have now been corrected and if one of these areas were to be closed, the proposal would meet with a great deal of local opposition.

Representative Ernst (45:A:277) asked if the deer population lends itself to the same type of management as elk. Mr. Aterhold said deer are more adaptable and able to live in more places. They also are browsers and not grazers like elk. He said the light winters experienced in Montana over the past 5 years have cause an explosion in the deer population. He said the department has tailored its hunting program to help decrease the deer population. Representative Ernst asked if there has been any winter loss this year. Mr. Aterhold said losses are spotty but it appears last year's faun crop is being lost in Eastern Montana. In Western Montana the animals are in very good condition and winter kills are not significant.

James Flynn (45:A:350) gave committee members information on federal and state recreational sites (EXHIBIT 15 AND 16), maps (state-wide and detailed) on Montana game ranges (EXHIBIT 17 AND 18) and information on the Glen Lake Park acquisition (EXHIBIT 19).

There being no further business before the subcommittee the meeting was adjourned at 10:02 a.m.

Robert Thoft

ROBERT THOFT, Chairman

DAILY ROLL CALL

LONG RANGE PLANNING SUB COMMITTEE

49th LEGISLATIVE SESSION -- 1985

Date February 7, 1985

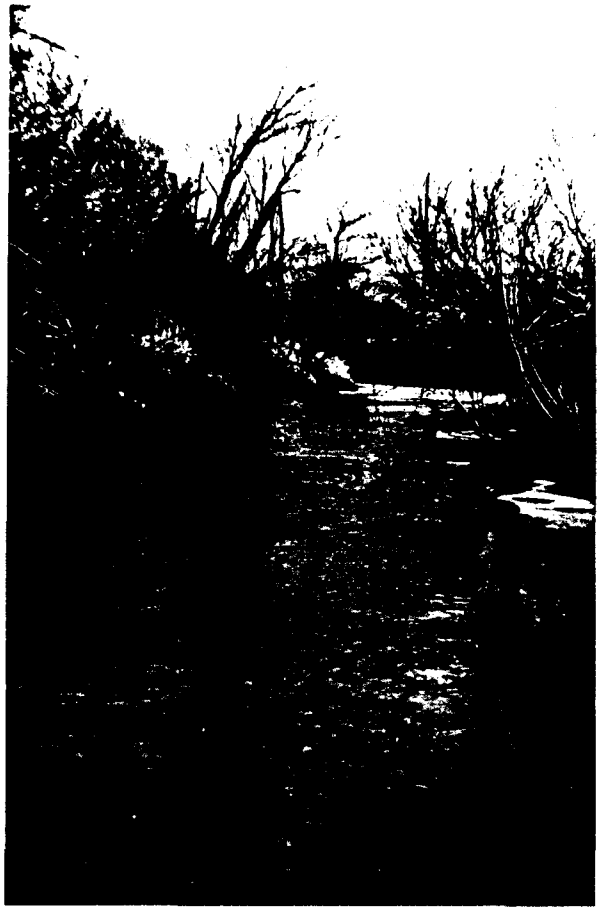
NAME	PRESENT	ABSENT	EXCUSED
Rep. Robert Thoft, Chairman	X		
Sen. Fred Van Valkenburg, Vice Chair	X		
Sen. Dave Fuller	X		
Sen. Larry Tveit	X		
Rep. Francis Bardanouve	X		
Rep. Gene Ernst	X		

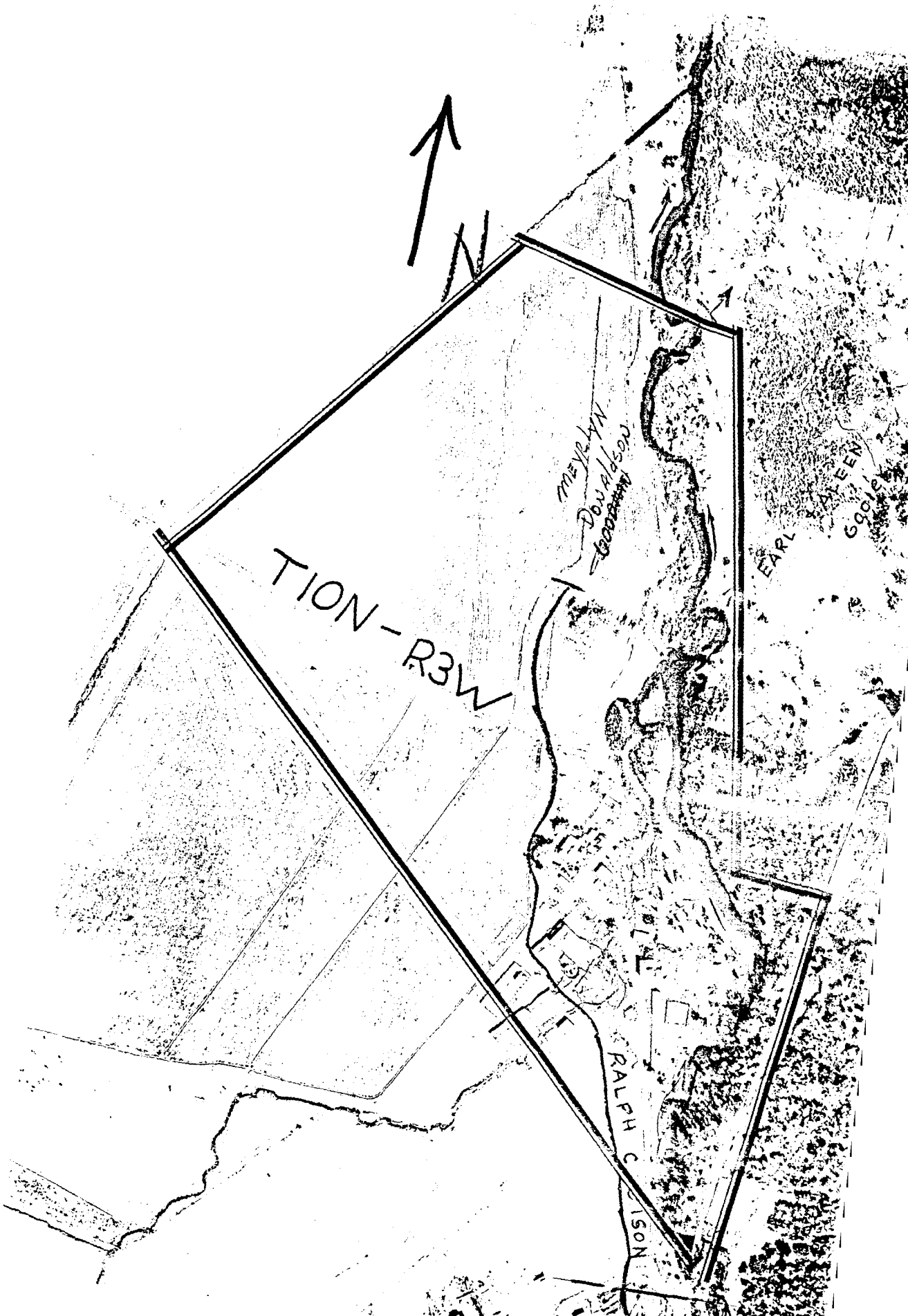
CS-30

Exhibit #1
2-7-85

Prickly Pear Creek State Park Proposal

February 1985

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PRICKLY PEAR CREEK
STATE PARK

RATIONALE:

This proposed 38 acre acquisition for Montana's State Park System meets as many or more of the criteria and amenities requirements as any other nominee in the 1985 booklet published by the Montana Department of Fish, Wildlife and Parks. This choice piece of parkland is consistantly being used all year round by local wildlife identifiers and photographers such as the Audubon Society and the Carroll College Orinthology Classes. Prominent painters such as Robert Morgan and Dr. Clem Shafer have used this site for many many years for background and subject matter for their paintings. It meets the purpose of the Department of Fish, Wildlife and Parks charge by Montana law to conserve the scenic, historic, archaeologic, scientific, and recreational resources of this state. Preserving this area will contribute to the health and cultural, recreational, and economic life of people. Restoration of native vegetation to the streambank will retard the effects of mass erosion that currently plague this creek system.

REFERENCES:

PRICKLY PEAR CREEK, a report on man's debilitation impacts, for use by the Prickly Pear Task Force, by the Water Quality Bureau, Department of Health and Environmental Sciences, Helena, Montana, July 1981.

Prickly Pear Creek Montana--A STREAM CORRIDOR MANAGEMENT PLAN, by STREAMWORKS, 614 Hollins, Helena, Montana, April 1984.

Federal Law #92-500. A 10 to 15 year effort to rehabilitate the Prickly Pear Creek system.

Testimony on the Historical, Archaeological and Migratory Waterfowl significance of the Olson Ranch area.

THE INDEPENDENT RECORD, Articles/studies of the Prickly Pear Creek

RIPARIAN VEGETATION SURVEY of Prickly Pear Creek, prepared for the Lewis and Clark County Conservation District, by OEA Research, Peter Husby and Gerald Moore, August 1982.

MONTANA OUTDOORS, Battleground at Prickly Pear, July/August 1981.

MONTANA ENVIRONMENTAL SCIENCES, Treasure State Health, Vol. 29, No. 1, 1974 and Vol. 2, 1979.

SPONSORS:
Representative Gene Donaldson
Senator Ed Smith

ENDORSEMENTS:
Last Chance Audubon Society
Virginia Walton 443-1552
Director
Cary Lund 443-4117
President
Sue Near 442-4898
Secretary

Arnold Quale
Lewis & Clark County Conservation District
Letter quote to Fish, Wildlife & Parks dated January 23, 1985
"Attention: Prickly Pear Acquisition Program, Don Hyppa, Administrator, Parks Division----------Certainly the retention of these lands in a Parks system will be beneficial toward the accomplishment of goals in the riparian vegetation improvements."

Lewis and Clark County Commissioners
Linda Stoll-Anderson
Jim Campbell
Bob Decker (see letter)

Henry E. Neils, M.A.I./Real Estate Appraiser
19461 Rocky Mt. Road
Belgrade, MT 59714
388-1340

Jean Smith, Ph.D., Professor of Biology (see letter)
Carroll College
Helena, MT 59601

City of Helena--Lewis & Clark County/Areawide Planning Organization
442-9920 Ext. 378 (see letter)
Gus Byrom
Kathy Masefield

Lewis & Clark Park Board
Nancy Johnson/Chairman 444-6597

STREAMWORKS
Lisa Bay 443-7084
"Prickly Pear Creek, A Stream Corridor Management Program, Jefferson & Lewis & Clark Counties, prepared for the Jefferson and Lewis & Clark Conservation districts, April, 1984."

Bob Morgan, Artist, Helena, MT.
Dr. Clem Shafer, Artist, Helena, MT.

HENRY E. NEILS, M.A.I.

REAL ESTATE APPRAISER

19461 ROCKY MT. RD. BELGRADE, MT 59714 • TEL. (406) 388-1340

February 5, 1985

Long Range Land Use Committee
Capitol Station
Helena, Montana 59624

Attention: Chairman Robert Thoft

Re: 38 acres along Prickley Pair Creek, Helena, MT

Gentlemen:

At the request of Tom Meagher, we have made a preliminary study and inspection of the subject 38 acres. The purpose of our study is to estimate a range of market values for sale as of February 4, 1985. It should be clearly understood that this letter constitutes a preliminary opinion and should not be construed as an appraisal.

Market Value is defined as:

> "The highest price estimated in terms of money which a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser who buys with knowledge of all the uses to which the property is adapted and for which it is capable of being used."

1. No survey or legal description of the subject land was available. However, the subject 38 acres is situated in the E½ of the SE¼ Section 9, T10N, R3W. We were guided by an aerial photo on which the property was outlined by owner, Mr. Olson.

2. A general description of the subject land based on personal inspection and public records is as follows:

Location:	Along the west side of Prickley Pair Creek, and North of York Road.
Neighborhood:	Mixed agricultural and suburban single family residential
Access:	Via gravel county road from paved York Road
Size:	Approximately 38 acres, irregular shape
Topography:	Mostly level
Soil:	Mostly Villy Silt Loam
Water Table:	Mostly 48" to 60" per county data

Utilities: Electric power and telephone

Zoning: Partially in Flood Plain per county data

Current Use: Livestock ranch. The subject land is part of a 300 acre ranch.

3. Highest and best use of the subject 38 acres would be for single family residential. This assumes that 2 acres could be added to meet the legal requirement for two 20 acre residential tracts. Our opinion recognizes that the soil type and high water table pose some problems regarding adequate septic systems. Our analysis considers the additional development cost involved in residential use.

4. In order to estimate current market value we examined land sales information in our confidential files. We specifically searched for land sales that were similar in location, size, and soil type. We relied to a large degree on 3 comparable sales in 1983 and 1984, ranging in size from 12 to 30 acres. Acre prices of these transactions ranged from $1800.00 to $2500.00.

5. Our preliminary conclusion based on a limited investigation is that the current market value of the subject 38 acres ranges from $2000.00 to $2500.00 per acre. Thus the total value range for the subject 38 acres is approximately $76,000.00 to $95,000.00

6. Our opinion is based on certain assumptions and limiting conditions which are attached. In addition, our opinion assumes that the subject land would be cleared of all existing delapidated buildings, corrals, other improvements, and that all trash and personal property would be removed.

We appreciate the opportunity to be of service to you in this matter.

Sincerely,

Jack B. Moore, I.F.A.S.

Henry E. Neils, M.A.I.

HEN/m

cc: Representative Gene Donaldson
Senator Ed Smith

CONTINGENT AND LIMITING CONDITIONS

The value estimates and conclusions in the appraisal are made subject to these assumptions and conditions:

1. The property has been appraised as free and clear of all indebtedness under responsible ownership and good management unless otherwise set forth in the appraisal.

2. No responsibility is assumed by the appraiser for matters which are legal in nature; the title is assumed to be good.

3. The furnished legal description is assumed to be correct.

4. The plot plan in this report is included to assist the reader in visualizing the property. We have made no survey of the property and assume no responsibility for its accuracy.

5. No right is given to publish all or part of the appraisal report without the appraiser's consent. No part of the appraisal shall be used in conjunction with another appraisal.

6. Information in the appraisal relating to comparable market data is more fully documented in the confidential file in the office of the appraiser.

7. The information contained in this report is not guaranteed, but it has been gathered from reliable sources. The appraiser certifies that, to the best of his knowledge and belief, the statements, information and materials contained in the appraisal are correct.

8. The appraiser has neither present nor contemplated interest in the property appraised. His employment is not contingent upon the value reported.

HENRY E. NEILS, MAI

FEE APPRAISER

QUALIFICATIONS

EDUCATION

Educated in Minneapolis Public Schools and Blake School, Hopkins, Minnesota. Obtained a B.S. degree at the University of Minnesota in 1947.

APPRAISAL EDUCATION COURSES

Commercial and Industrial Real Estate University of Minnesota - 1964
Graduate of Realtor's Institute - 1971
NAREB Course, Taxation, Investment and Exchange
NAREB Course #I, Commercial Property
NAREB Course #I, Property Management
Society of Real Estate Appraisers Course #101 - 1972, Course #201 - 1973
AIREA Course #IA - 1972
AIREA Course II - 1974, Litigation Valuation - 1980, Rural Valuation - 1983
Also participates in appraisal seminars

BUSINESS EXPERIENCE

Flour City Ornamental Iron Co., Minneapolis, architectural metal fabrication and engineering from 1946 through 1956. Cost estimating, sales, and production from 1957 through 1961. Flour City Division of Hupp Corporation as production Manager and Divisional President, 1961 through 1966. Frederick Herfurth Real Estate, Inc., salesman and broker of commercial properties, 1967-1971. Independent Fee Appraiser, 1972-1973. Patchin Appraisals Inc., 1973 to 1983. Independent Fee Appraiser 1983 to date.

PROFESSIONAL AFFILIATIONS

Member, American Institute of Real Estate Appraisers, M.A.I. designation

COURT EXPERIENCE

Has qualified as an expert witness in various Commissioners' hearings and in District Court.

APPRAISAL EXPERIENCE

Specializes in the appraisal of industrial, commercial and special-purpose properties, primarily to estimate market value of sites and improvements.

His appraisal experience includes commercial sites and buildings, industrial sites and buildings, factory lofts, parking lots, service stations and sites, residential sites, lakeshore properties, school buildings, farms, mobile home parks, redevelopment properties, tax assessment analysis, condemnations and feasibility studies.

Coal Tax Park Proposals

1985

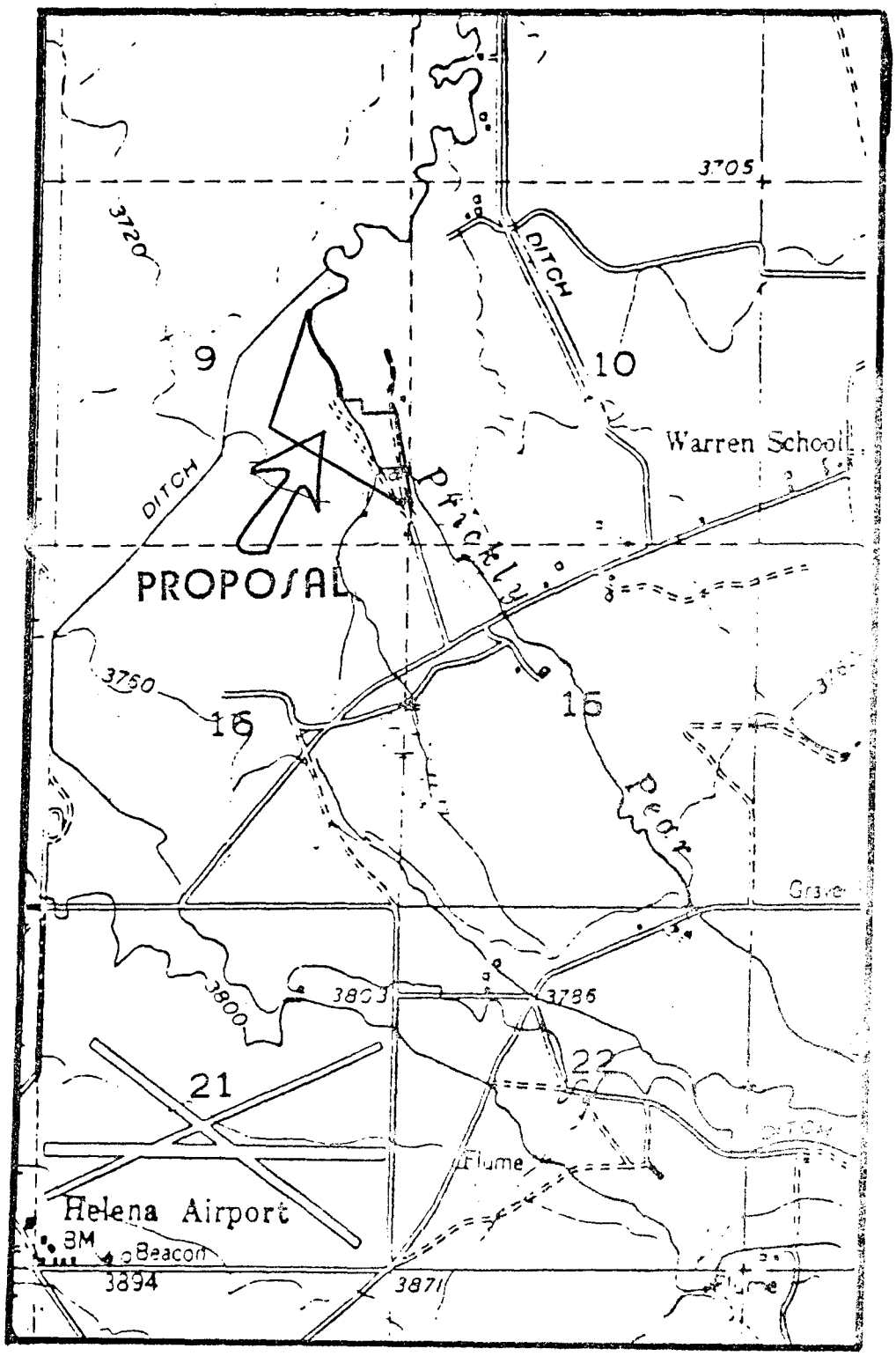
A report on proposed Coal Tax Acquisitions for the Montana State Park System

Prepared by the Montana Department of Fish, Wildlife & Parks.
Submitted by the Montana Fish & Game Commission
to the 1985 Legislature
in accordance with Section 23-1-108 MCA.

PRICKLY PEAR CREEK

The Ralph and Sharon Olson Ranch lies in the Helena valley, just two miles from Helena. A choice piece of Prickly Pear Creek flows through the property providing excellent bird and wildlife cover as well as a scenic wetland suitable for nature walks and school field trips. Flat pasture ground borders the wetland on which parking and more traditional park land development could be accommodated. Ranch buildings are not to be included in the proposal.

The Prickly Pear corridor has been considered in the past for preservation as a green belt. This acquisition could mark the beginning of this realization.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3720
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Warren School
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Pear
Grave
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3803
3786
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21
Flume
Helena Airport
BM
Beacon
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Flume

COAL TAX PARK PROPOSAL

To be completed by Department of Fish, Wildlife and Parks personnel by means of a personal interivew with the sponsor.

Interview Date November 5, 1984

Department Interview Personnel:

Don Hyyppa

Paul Pacini

Sponsor's Name Ralph and Sharon Olson

Sponsor's Mailing Address

2220 York Road

Helena, Montana 59601

Sponsor's Phone Number...

Day 444-6440/443-2220

Evening 443-2220

Site Description

1. Site Name: Prickly Pear Creek

2. Site Location:

County Lewis and Clark

Township 10 Range 3 Section 9

3. How many acres comprise the proposal? 38

4. Does legal access to the property now exist?

X Yes ____ No

If yes, describe the access route from the nearest federal, state, county or city highway/road.

Starting at the north edge of the City of Helena, at the I-15 - York Road overpass, travel east 2 miles to Prickly Pear Creek and left down County Road ½ mile to the Ralph Olson home, 2220 York Road and junction with Prickly Pear Creek. An abandoned section of County Road proceeds within the east boundary of the proposal. The Olson Ranch would provide a no-cost easement from the end of the County Road to a ranch road (less than 100 feet) proceeding through the through the center of the proposal.

5. Include two maps:

   a) a location map showing the proposal's boundary, and

   b) a vicinity map showing the proposal's relationship to a nearby community.

6. Include black and white photographs or color slides of the proposed site depicting the features which would affect its propriety as an addition to the State Park System.

Site Amenities

7. Check the recreational activities that would be popular at this site.

x	Picnicking		Motor boating
	Camping		Water Skiing
X	Trail Walking	X	Swimming
X	Bicycling	X	Fishing
X	Canoeing or Rafting	X	Hunting (Waterfowl)
X	Other: specify A variety of bird species would lend itself well to bird watching.		
X	Other: specify Artists Bob Morgan and Dr. Clem Shafer have used the site as the subject matter for some of their paintings.		

8. During what season(s) would this site receive significant use?

   X Spring; X Summer; X Fall; X Winter

9. What incorporated cities or towns are located within 25 driving miles of the proposed site?

   Helena (city, town) _____ (city or town)

10. How many miles is it to the nearest Interstate, State or U.S. numbered highway?

    2 miles (miles) I-15 (I, State, or U.S. number)

11. Within 25 driving miles of the proposed site, what federal, state or local government owned recreation sites exist which would provide the same kind of recreational opportunities as this proposal?

Causeway FAS (site name)

Helena Valley Reservoir FAS (site name)

White Sandy Beach FAS (site name)

Black Sandy Beach FAS (site name)

12. Does the proposed site have historic or archaeological value?

X Yes

____ No

If yes, please explain: Indian relics such as arrow heads and rock hammers have been found by the property owners.

13. Does the proposed site have scientific value? ie: unique geological or ecological features

X Yes

____ No

If yes, please explain: The natural ecology of the riparian area is ideal for school field trips. Carroll College ornithology classes have used the area for field trips and local Audubon Society members use the site regularly.

14. Name any lake, pond, river or stream which is contiguous with or contained within the proposed site:

Prickly Pear Creek, Spring Creek

15. Indicate the predominant type of vegitative cover found on the proposed site. Check more than one if appropriate.

_____ Coniferous Trees
__x__ Deciduous Trees
__x__ Brushy
__x__ Grassland
_____ Barren

16. If there are other features of the proposed site which should be taken into consideration, please describe them here.

Various wildlife species such as raccoon, beaver, and deer inhabit the area. Some game animals (mountain lion, moose, bear) have been sited moving through the proposed site.

Site Cost

17. It is strongly urged that an appraisal accompany this proposal. The appraisal must be completed by a certified MAI (Member Appraisal Institute) of the American Institute of Real Estate Appraisors. The sponsor is responsible for any costs incurred.

Appraised value of this site: $ NA
Date of Appraisal: _____
Name of Appraisor and Company: _____

18. For what price is the owner willing to sell? $_____

I, R. Yph C. Olson Shawn L. Olson resident of
(owner's name)
Helena Montana, owner of
(city, state)
the property described by this proposal, on 12-4-84
(today's date)
verify by my signature that the information in item number 18 is correct.

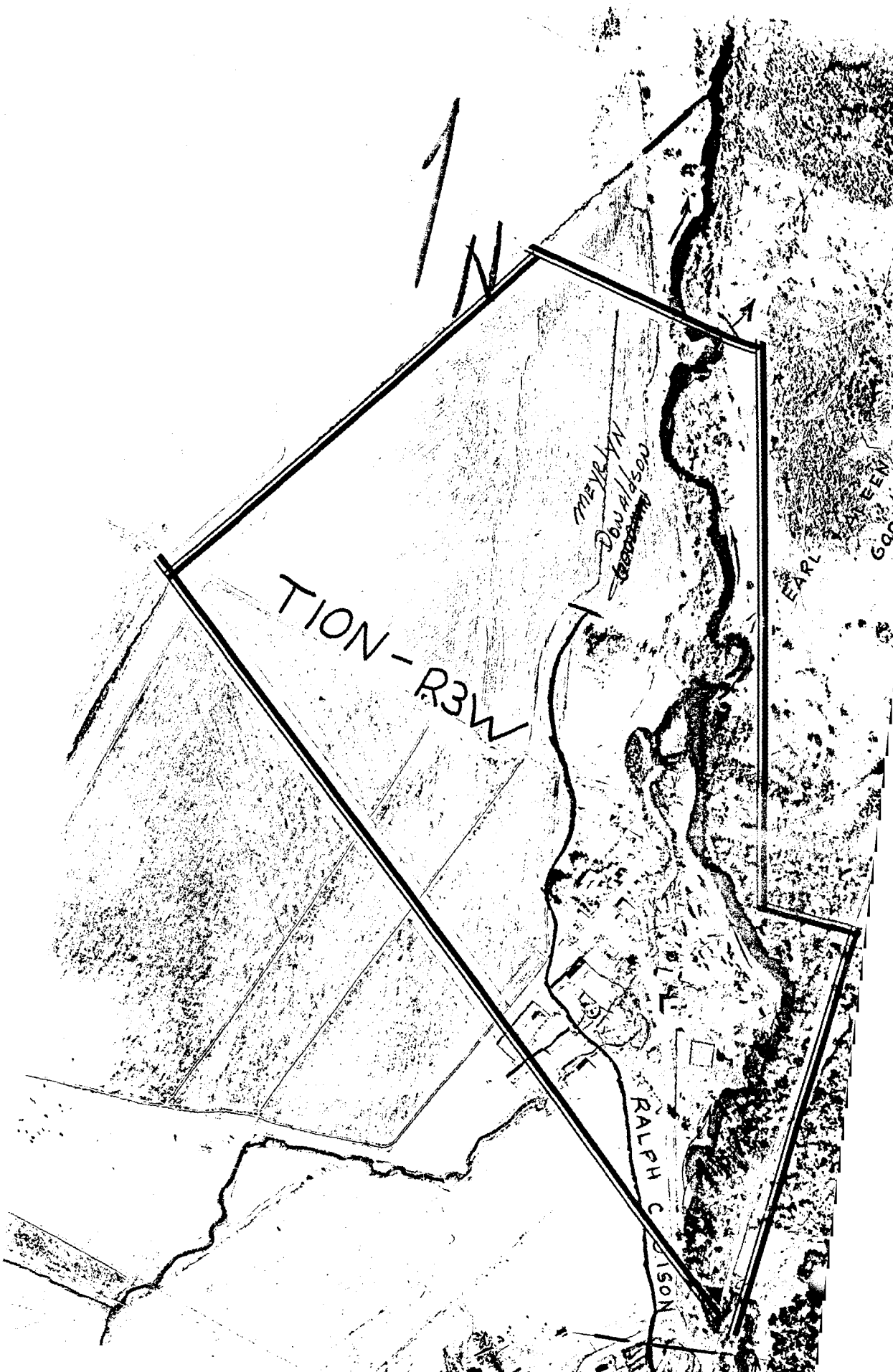
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Exhibit #2

2-6-85

TESTIMONY: PRICKLY PEAR PARK PROPOSAL

Sharon and Ralph Olson 444-6440
Olson Ranch 443-2220 (evenings)
2220 York Road
Helena, Montana 59601

February 7, 1985

Mr. Chairman Thoft and members of the Long Range Land Use Committee, good morning.

We are Ralph and Sharon Olson representing the Prickly Pear Creek--Olson Ranch State Park. We have for you this morning supportive documents, maps and pictures as visual aids to help you visualize the Park.

The proposal that we are offering to you today is 38 acres located right in the middle of Helena Valley, just two miles from Helena at appraised value. This choice piece of Prickly Pear Creek flows through the property providing excellent bird and wildlife cover as well as a scenic wetland suitable for nature walks and school field trips. Flat pasture ground borders the wetland on which parking and more traditional park land development could be accommodated. This is also part of the proposed stream bank corridor program for recreational use in the area and provides natural cover for large game traveling from one set of mountains on the north end of the valley to the other on the south, as it is a part of the National Fly Way System.

The Prickly Pear Corridor has been considered in the past for preservation as a green belt. This acquisition could mark the beginning of this realization. The Park includes trees and both stream banks, some meadow and parking area. This 38 acres will provide natural vegetation and cover for the bird and wildlife inhabitants, such as the Sand Hill Crane, Bald and Golden Eagle, deer and occasional lion crossing. Over the years, this area has provided many hours of enjoyment for local residents. We want this to stay a reality in our ever changing world.

We are submitting the ground for a park, as we have our entire ranch up for sale. This ground has belonged to four generations of Olsons that have loved the land and protected it. We want to preserve this land for the use and enjoyment of the people of the State of Montana.

The Park is accessible to the public by walking or biking from Helena and any of our surrounding land developments. We draw many of the local children to swim and play in the area.

In setting up this park we are making it possible to create memories today in our children for tomorrow. Help us to preserve the future memories today--now--so we won't have to look back and say we really should have done something way back when....

We thank you for your interest and hope that someday you too will have time to come down and enjoy the Prickly Pear Creek State Park and animal preserve.

Respectfully submitted,

Ralph C. Olson

Ralph and Sharon Olson

Exhibit 3
2-7-85

carroll of montana

February 6, 1985

Montana Legislature
Long Range Land Use Committee
Robert Thoft, Chairman
Capitol Station
Helena, Montana 59624

Dear Members of the Long Range Land Use Committee:

I have been taking ornithology classes to the Olson Ranch along Prickly Pear Creek for many years. It is, in my opinion, the finest riparian habitat for birding in the Helena area. This small acreage containing just the right mix of stream bottom, shrubs of various species, mature cottonwoods, wet meadows, marsh, and edges seems to be a magnet for an amazing diversity of Montana's birds as well as other wildlife species. The narrow lane along the creek affords students an easy walk and excellent viewing. About one-third of my students in this class are senior citizens, and they appreciate the easy access. They always enjoy this field trip so much that they ask if they can return on their own to observe birds. Thanks to the interest of the Olsons in conservation education, their ranch has been open to the public for this purpose.

It is increasingly difficult to find wild areas within a reasonable drive from Helena. It would be a great loss to wildlife and the public that enjoys this resource to have the Olson Ranch riparian area sold, cleared, and posted "No Trespassing" as has happened to so many parts of the Helena Valley.

I strongly support the purchase of this land for a state park and wildlife preserve.

Yours sincerely,

Jean E. Smith

Jean E. Smith
Biology Department

carroll college • helena, montana 59625 • 406/442-3450

Exhibit 4
2-7-85

The Lewis & Clark County Park Board believes that the proposed Prickly Pear Creek State Park would be an asset to the state park system.

In addition to currently providing diverse wildlife habitat and riparian vegetation, this area could also provide a wide spectrum of recreational activities in the future. Its close proximity and accessibility to residents of the Helena valley and urban area are positive attributes.

The Park Board continues to support maintenance and further development of existing parks within the state park system. If the committee decides to allocate funds for further acquisitions to the park system, the Lewis & Clark County Park Board supports this proposal.

Nancy Johnson
Chairperson
Lewis & Clark County
Park Board

February 5, 1985

Exhibit 5
2-7-85

City-County Building
316 North Park
Helena, Montana 59623
Telephone 406/443-1010

LEWIS AND CLARK COUNTY

Board of County Commissioners

February 5, 1985

Representative Bob Thoft, Chairman
Long-Range Planning Committee
Montana Legislature
Capitol Station
Helena MT 59620

Dear Representative Thoft:

I have read the Olson proposal for acquisition as a state park of 38 acres on Prickly Pear Creek in the Helena Valley.

I am familiar with the site and believe that its best use would be as a bird and wildlife sanctuary. In addition, property just downstream from this tract could someday become an excellent park annexation to the Olson tract.

The Olson tract would be a good park purchase, if the price is reduced to a reasonable level. The Olson proposal asks for $152,000 or $4,000/acre. This is too high and would not warrant purchase by the state. You undoubtedly require appraisals to be made for such transactions; that would be a good way to reach a reasonable price for the land.

Thank you for your attention.

Sincerely,

Bob Decker

Bob Decker
County Commissioner

c APO

bd/ck

Exhibit 6
2-7-85

Last Chance Audubon Society
P.O. Box 924
Helena, Montana 59624

February 6, 1985

Dear Montana Legislators,

At the last monthly meeting of the Last Chance Audubon Society (held on January 21, 1985), the Board of Directors voted unanimously to support the Prickly Pear land acquisition by the State of Montana.

This acreage on Stanfield Lane in the Helena Valley is the home of a large variety of bird species. Excellent ground cover for birds is provided by low, thick scrub brush which runs along the Prickly Pear. If one looks around the Valley there are few areas where this natural habitat survives. Development of the area in question would destroy the home of hundreds of birds. We must keep this established sanctuary for maintaining and tracking our bird populations.

The 200 members of Last Chance Audubon recognize the educational, scientific, recreational and environmental opportunities this area has to offer because it has been made available to us many times in the past for our use. We would like to urge the State of Montana to acquire the Prickly Pear acreage to maintain it as a wild area open to all citizens for their enjoyment.

Respectfully Submitted,

Susan R. Near

Susan R. Near
Secretary, Last Chance Audubon Society

Exhibit #7
2-7-85
Prickley Pear
Creek
Wetland

Virginia Walton, 18 S. Montana Ave., Helena

I am a member of National Audubon Society and the Last Chance Audubon. In the previous session of the Legislature Last Chance Audubon had supported the purchase of the Olson parcel of land along Prickly Pear Creek, and this year our group, of chich I am a Board member, again renewed its support.

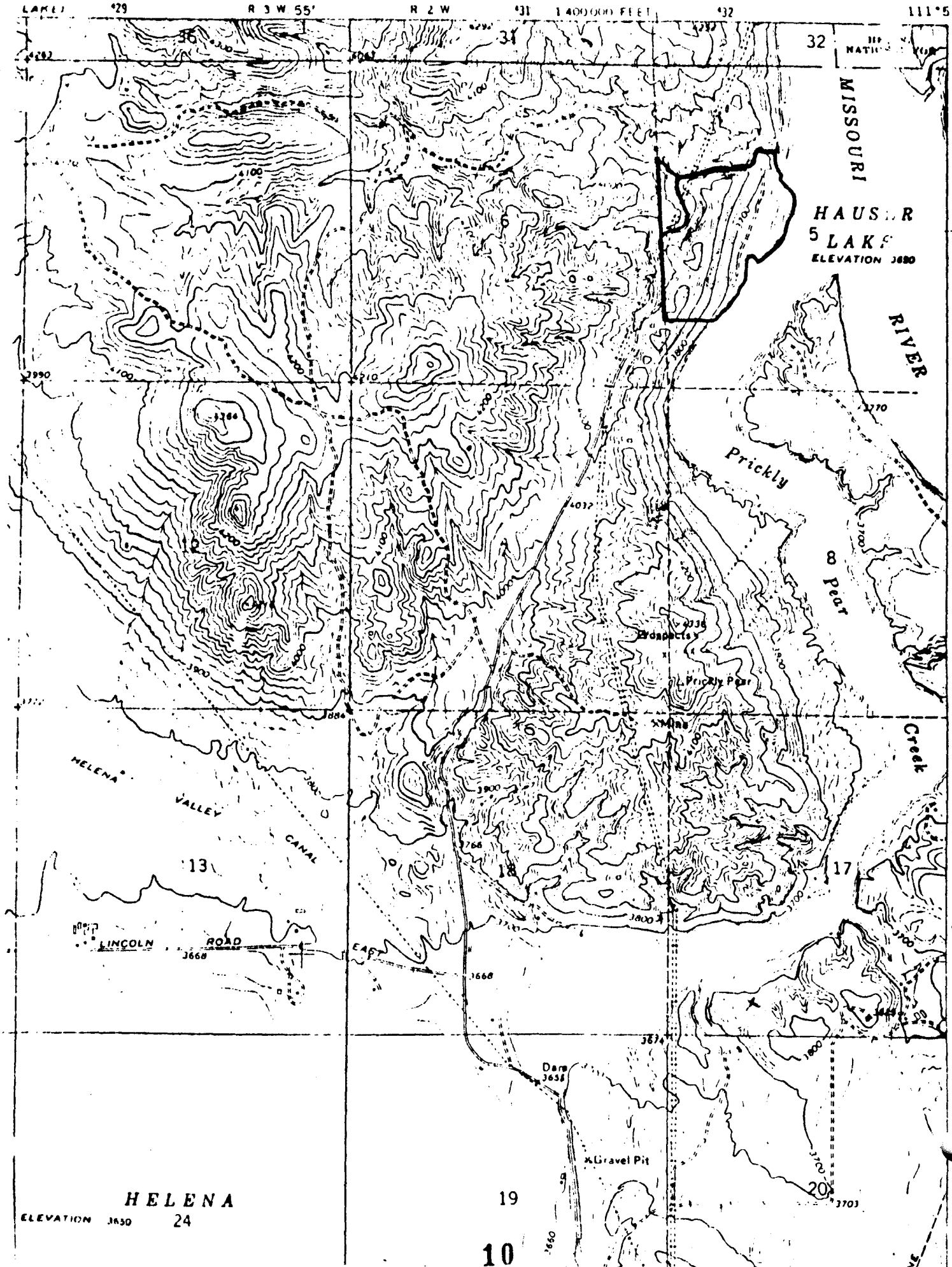
As conservationists we see the need for securing pristine areas teeming with wildlife and protecting them for our children and our children's children. Such areas are disappearing at a fearsome rate. The availability of this 38-acre parcel is an opportunity we do not wish to let slip through our fingers.

The area has long been a favorite place for bird watchers and those interested in the ecology of the Prickly Pear's banks. Its purchase would be a most worthwhile investment in the future.

WHITE SANDY BEACH

STATE PARK

Exhibit #8
2-7-85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Gravel Pit
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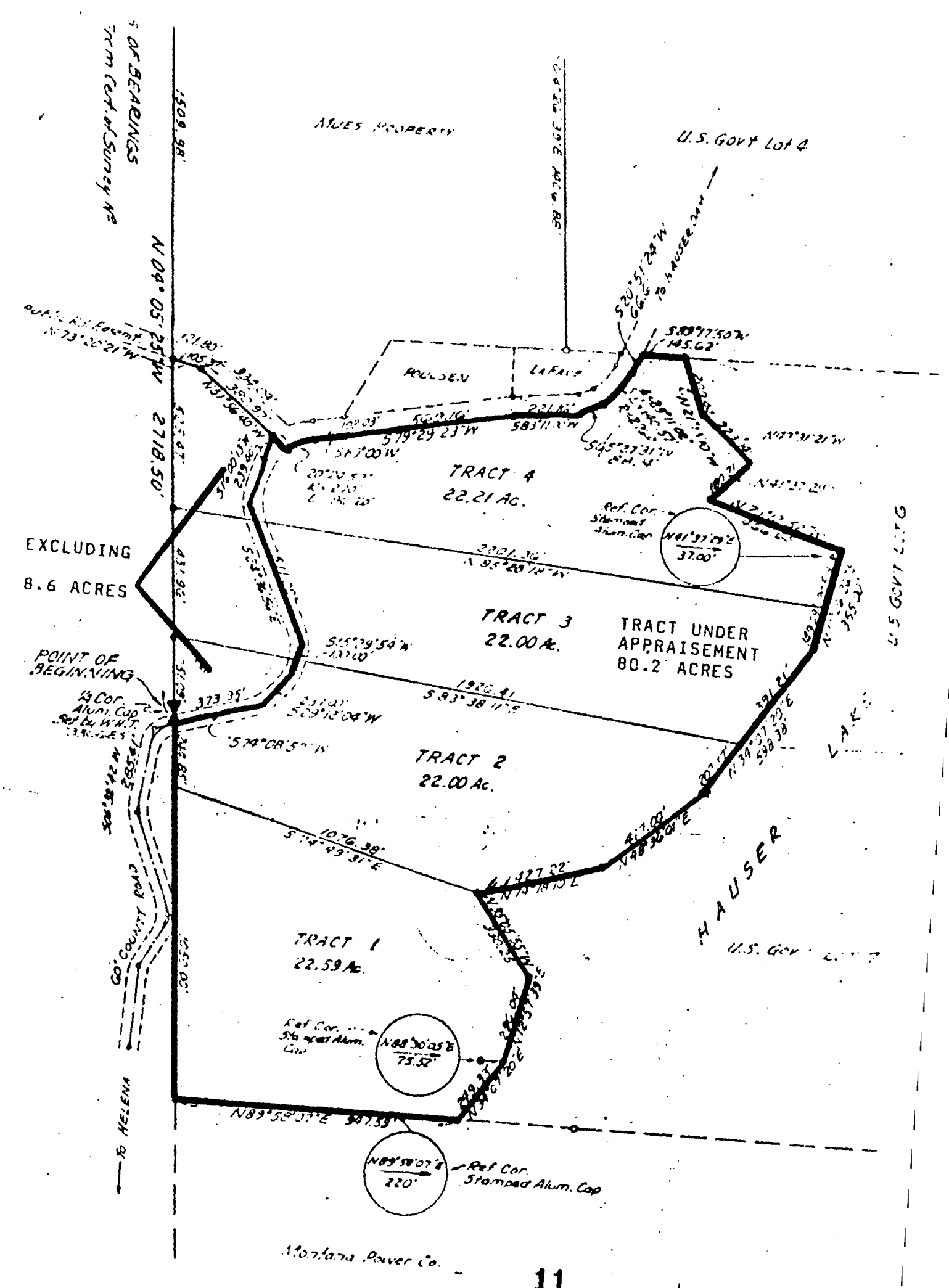

MUES PROPERTY
U.S. GOVT LOT 4
POULSEN
LAFACE
TRACT 4
22.21 AC.
TRACT 3
22.00 AC.
TRACT UNDER
APPRAISEMENT
80.2 ACRES
TRACT 2
22.00 AC.
TRACT 1
22.59 AC.
EXCLUDING
8.6 ACRES
POINT OF
BEGINNING
N 04° 05' 25" W
2718.50'
HAUSER
LAKE
U.S. GOVT LOT 6
TO HELENA
Montana Power Co.

James L. McKay and Associates INDEPENDENT APPRAISER

P.O. Box 1101 • 600 6th Street N.W. • Great Falls, Montana 59403 • Phone (406) 452-2282

January 5, 1983

Harold Poulsen
1527 Meadowlark Drive
Great Falls, Montana 59404

APPRAISAL REPORT

White Sandy Beach
Lewis and Clark County, MT

In accordance with your request and for the purpose of estimating the Fair Market Value of the subject property, I have personally inspected the property and have made a careful and thorough investigation and analysis of the subject and available data.

By reason of this investigation it is my opinion that the Fair Market Value of the subject property, as of December 1, 1982, is indicated at:

$420,000

Description of the property appraised and an explanation of the appraisal procedures used are contained in this report.

Employment in and compensation for making this report are in no way contingent upon the value reported.

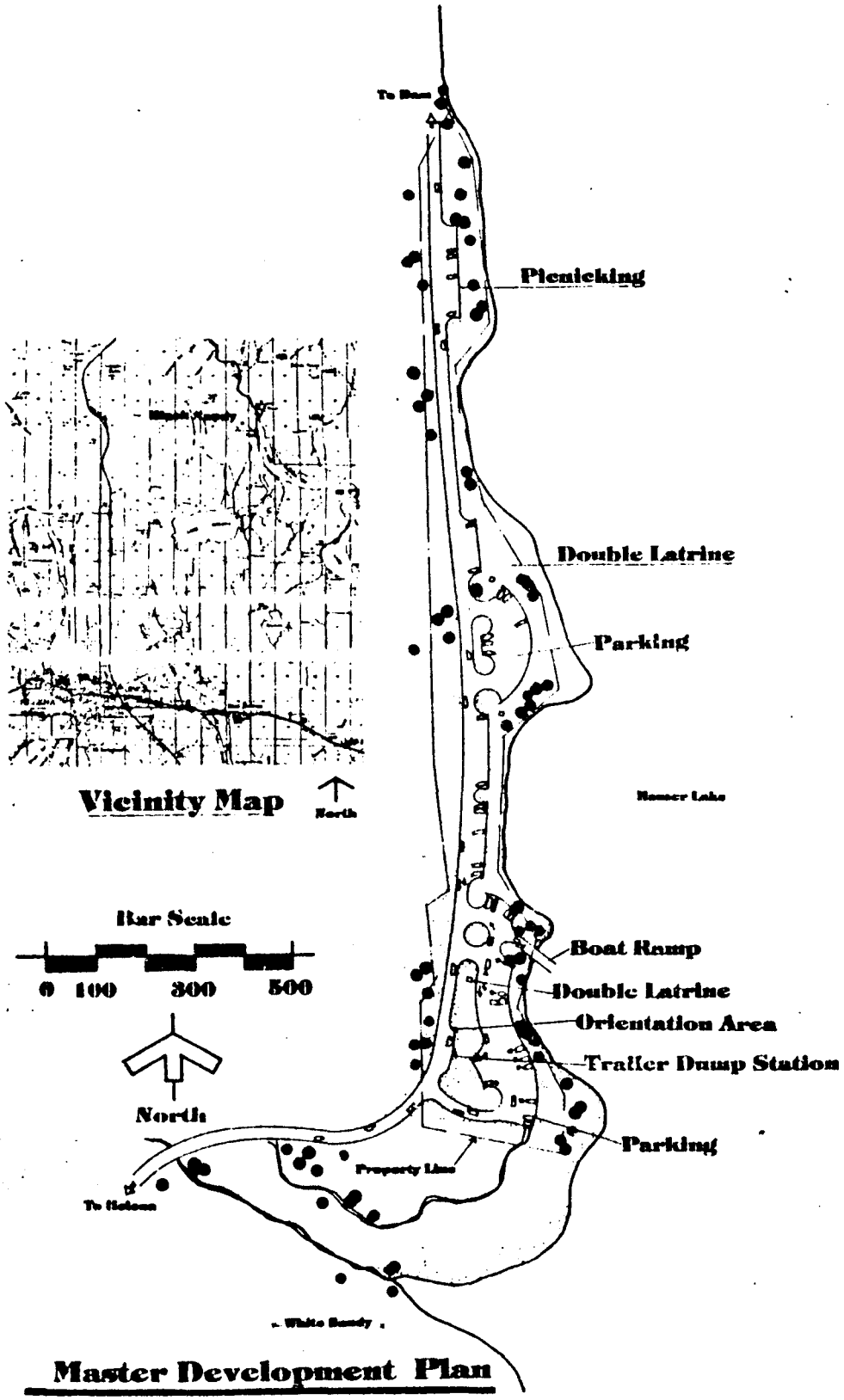
I certify that I have not, nor do I contemplate in the future, any financial interest in the subject property.

It has been a privilege to serve you.

Sincerely,

James L. McKay, CRA
Appraiser

JLM:dlc



Master Development Plan

Black Sandy State Recreation Area

Helena, Montana

Prepared by Parks Division Department of Fish and Game

R. Hayes
January 1979

Mr. Chairman and Committee Members:

Much of this presentation will be familiar to you because essentially the same presentation was made before this committee last session. Similarly, our desire to see this unique recreational site preserved for the public use has not changed.

The name White Sandy Beach is truly descriptive: what we offer is an extensive beach on the west shore of Hauser Lake, covered by a large amount of fine, white sand of unknown geological origin. There is nothing comparable to White Sandy on any of the state's other lakes.

As you know, Hauser is the middle of a string of three man-made lakes on the Missouri River. These lakes, Holter, Hauser and Canyon Ferry, receive extensive recreational use by people from across the state. However, Hauser is probably the least heavily used of the three lakes.

White Sandy is located 14 road miles northeast of Helena. Access from Interstate 15 consists of 5 miles of paved road and 3 miles of county-maintained gravel road.

The proposed site consists of 88.8 total acres. The beach area proper is relatively flat and, of course, sand-covered. It encompasses about 18 acres and includes over 3,500 feet of shoreline. Immediately west of the beach is a steep ridge line that lies between it and the road. Thus, the terrain provides for privacy, wind shelter and access control.

White Sandy lies immediately south of the Black Sandy State Recreation Area. This is a seven acre site leased by the state from the Montana Power Co. that is extremely popular and suffers from limited space. In 1982 the Department of Fish, Wildlife and Parks completed a program involving $195,000 worth of improvements to the Black Sandy Recreation Area. Black Sandy provides recreationists with improved camping sites, potable water, sanitary facilities, a boat ramp and trailer parking.

White Sandy Beach presents a remarkable opportunity in several respects. First, this natural sand beach would be a one-of-a-kind park ideally suited for boating, swimming and all other water-related activities.

Second, it presents the only accessible site on the under-utilized Hauser Lake which is suitable for development for intensive recreational use.

Thirdly, its proximity to the developed Black Sandy Recreation Area provides the state with a remarkable opportunity. State ownership of White Sandy would mean that the benefits of money already spent for development could be spread over a much greater usable area, making those improvements currently in place much more cost effective. Those improvements also mean that White Sandy could be a useful park <u>immediately</u> without any additional funds required for development.

In short, White Sandy Beach is the one proposed park acquisition that you can be certain that the public wants and will use. This is because they are currently using it under a lease arrangement between Mr. Poulsen and the Department. In fact, Department figures show that approximately 25,000 vehicles visited White Sandy in 1983, the latest year for which figures are available. This compares with about 58,000 vehicles at adjacent Black Sandy. Under the Department's management White Sandy has served as a day-use area and has accommodated overflow campers from Black Sandy. In this respect, it is important that Black Sandy is one of the few recreation areas that consistently is filled to capacity. Department personnel report that Black Sandy can be expected to be over capacity on Memorial Day weekend, July 4th, and every weekend from mid-July through Labor Day. The majority of those using the area come from the Great Falls, Butte and Helena areas.

While White Sandy has been designated to handle Black Sandy's overflow, many campers prefer White Sandy despite the inconvenience of being further away from the developed facilities. Future development of White Sandy could occur as usage increases and as funds come available. In fact, the Department has developed some preliminary ideas as to how the area could be developed to provide facilities for a variety of different activities. The area could become, over time, one of the state's premier parks. In the meantime it would be serving a demonstrated need. In fact, several staff members from the Department of Fish, Wildlife and Parks have indicated on many occasions that White Sandy Beach would be at the top of their list of desirable park acquisitions.

This proposal is not the pet project of any specific organization or area. But, if it were possible for you to hear from everyone who has enjoyed a weekend or a summer afternoon on White Sandy, you would be overwhelmed with favorable testimony. Instead, we would hope the merits of the proposed park and its proven popularity with the public should be sufficient testimony as to its desirability and usefulness.

Last session we were given to believe that the state did wish to acquire White Sandy and that if we were patient and brought our proposal for White Sandy Beach before the current session that it would receive positive consideration. We were happy to do that and to show good faith in allowing the public to continue to use the area just as if it were indeed a state park for the past two years. However, White Sandy will not be proposed for acquisition as a park two years from now. The parcel is simply too valuable to be allowed to lie fallow. If the state does not choose to acquire White Sandy for public use we intend to pursue private development of the site in the near future.

In summary, we offer the state an opportunity to preserve for the public a natural resource that cannot be duplicated elsewhere and one that people have demonstrated they want and will enjoy. We hope you will take this singular opportunity to preserve this unique area for the benefit of all Montanans.

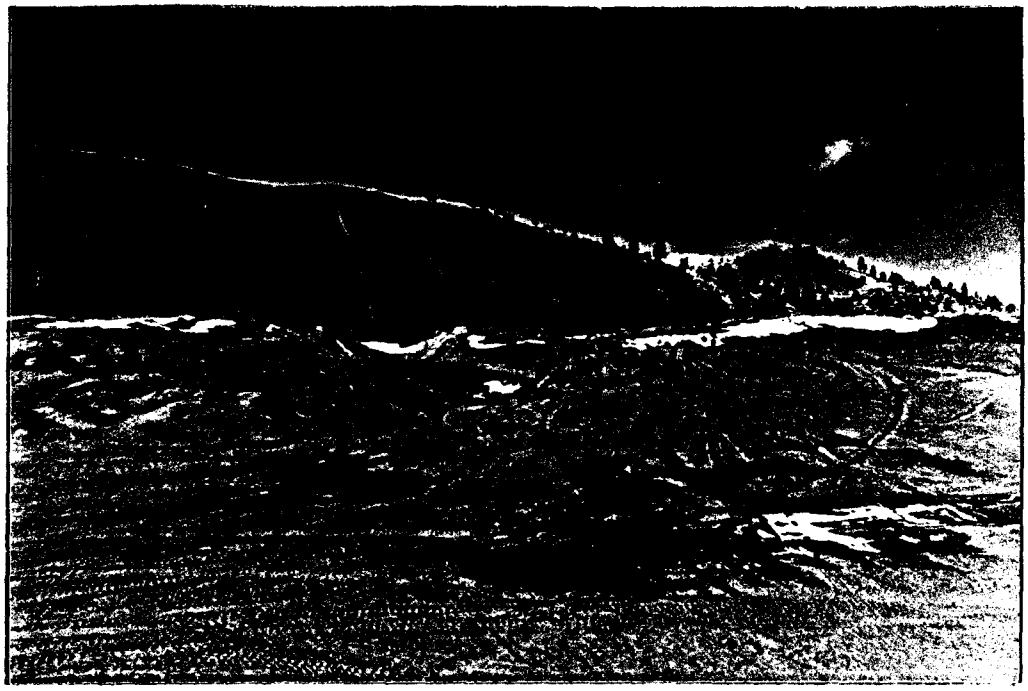
VIEW OF LAKE FRONTAGE AREA FROM SOUTH
OF PROPOSED WHITE SANDY SHORES
SUBDIVISION

SUBJECT SHORELINE FROM NORTH

SUBJECT FROM ENTRY ROAD ON NORTH END

VIEW OF NORTH PORTION OF SUBJECT FROM SOUTH

VIEW OF LAKE FRONTAGE SHOWING HILL THROUGH WEST PORTION OF SUBJECT ON RIGHT AND CENTER BACKGROUND



VIEW OF LAKE FRONTAGE AREA FROM SOUTH
SHOWING SUBJECT HILL ON LEFT AND CENTER
BACKGROUND

VIEW OF LAKE FRONTAGE AREA FACING WEST

Exhibit 9
2-7-85
FWP

August, 1984

1983 HUNTING SEASON

STATE/PROVINCE	ELK POPULATION	HARVEST	RESIDENT HUNTERS	NONRESIDENT HUNTERS
LBERTA	18,000	2,093	34,681	442
ARIZONA	10,500	412	9,954	171
BRITISH COLUMBIA	26,700	3,260	14,845	734
OLORADO	168,000	29,057	122,033	59,781
IDAHO	100,000	12,602	70,571	9,532
ONTANA	100,000	17,000	75,831	14,321
NEW MEXICO	30,000	2,239	9,020	1,289
REGON	93,000	17,041	131,086	3,711
AH	25,000	4,122	21,377	282
WASHINGTON	57,000	9,698	97,000	617
OMING	80,000	14,593	48,188	6,824

Exhibit #10
2-7-85
FWP

WINTER BIG GAME RANGES ADMINISTERED

BY THE

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

GAME RANGE	LOCATION (COUNTY)	ACREAGE (OWNED AND LEASED)
Fleecer Mountain	Silver Bow	7,309
Sun River	Lewis & Clark	19,776
Madison-Wall Creek	Madison	7,347
Blacktail	Beaverhead	17,423
Gallatin	Gallatin	10,513
Judith River	Judith Basin	4,874
Blackfoot-Clearwater	Missoula-Powell	49,510
Bull Mountain	Jefferson	3,553
Mount Haggin	Silver Bow-Deer Lodge	54,257
Madison-Bear Creek	Madison	3,456
Ear Mountain	Teton	3,047
Blackleaf	Teton	8,116
Bitterroot	Ravalli	2,215
Haymaker	Wheatland	1,360
Kootenai	Lincoln	2,444
Kuhns	Flathead	1,604
Nevada Lake	Powell	1,340
Beartooth	Cascade - Lewis & Clark	31,798
Garrity Mountain	Deer Lodge	1,760
Alberton	Mineral	666
TOTAL ACREAGE ADMINISTERED		232,368

Exhibit #11
2-7-85
FWP

DIRECT EXPENDITURES

FROM HUNTING AND FISHING IN MONTANA

(1983)

SIDENT HUNTERS

SPECIES	DAYS AFIELD	$/DAY	TOTAL $
Elk	557,364	63.98	35,660,148
Deer			
Deer "A"	809,792		
Deer "B"	75,056		
Total	884,848	45.69	40,428,705
Antelope	50,128	85.56	4,288,952
Moose	3,348	83.24	278,688
Sheep	2,925	96.16	281,268
Goat	1,116	83.00	92,628
Bear	54,449	5.26	286,402
Upland Birds	365,318	28.06	10,250,823
Turkey	10,541*	58.19	613,381
Waterfowl	325,985*	28.06	9,147,139
Total Dollars			101,328,134

* includes resident and nonresident hunters

NONRESIDENT HUNTERS

Elk	112,940	205.45	23,203,523
Deer			
Deer "A"	95,907		
Deer "B"	12,487		
Total	108,394	118.54	12,849,024
ntelope	7,287	182.84	1,332,355
oose	88	186.42	16,405
Sheep	707	336.76	238,089
Goat	33	190.00	6,270
ear	28,715	20.82	597,846
pland Birds	13,982	38.14	533,273
Turkey	*	131.52	
aterfowl	*	38.14	
Total Dollars			38,776,785

* included in resident figures

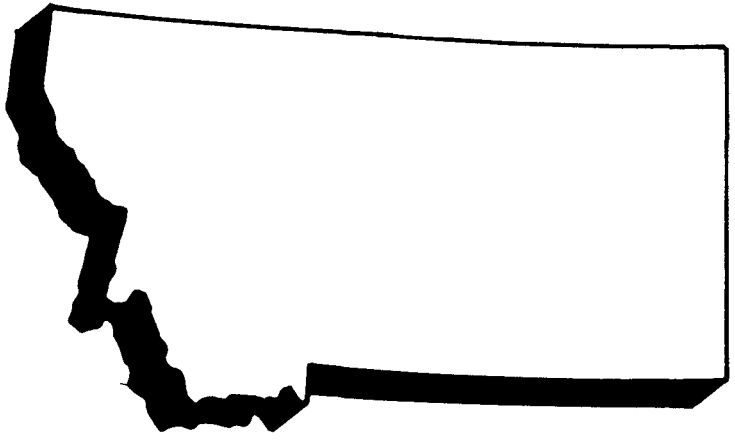
SHING

Resident	2,104,398	34.75	73,127,830
nresident	618,825	23.17	14,338,175
Total Dollars			87,466,005
AND TOTAL DOLLARS			227,570,924

(over)

1. The direct expenditures listed on the front do not consider expenditures by bowhunters.2.The fact that economists estimate any nonresident expenditures should be multiplied by 2.2 as each nonresident dollar expended generates 2.2 additional dollars.

3. Nonconsumptive use. We don't have good information for nonconsumptive users, but using the same information that Wyoming used to determine direct expenditures by hunters and fishermen, we should multiply the total dollars spent by consumptive users by between 3 and 4 to come up with expenditures by nonconsumptive users. In other words, approximately $800 million generated as a direct result of nonconsumptive users.



1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

MONTANA

U.S. Department of the Interior
FISH AND WILDLIFE SERVICE

U.S. Department of Commerce
BUREAU OF THE CENSUS

Exhibit 12
2-7-85
FWP

1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

MONTANA

U.S. Department of the Interior
James G. Watt, Secretary
FISH AND WILDLIFE SERVICE
Robert A. Jantzen, Director

U.S. Department of Commerce
Malcolm Baldridge, Secretary
BUREAU OF THE CENSUS
Bruce Chapman, Director

As the Nation's principal conservation Agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure their development in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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Foreword

This is the second survey of fishing and hunting conducted by the U.S. Fish and Wildlife Service that has produced a State report. In addition to a broad range of information on fishing and hunting, this 1980 survey provides data on nonconsumptive wildlife-associated activities such as wildlife observation. Publication of the survey results includes a national report and 50 individual State reports.

The survey results illustrate that fishing, hunting, and other wildlife-related activities appeal to all kinds of people: male and female, Black and White, urban and rural. Millions of Americans get outdoors to enjoy these activities, spend billions of dollars in the process, and enjoy hundreds of millions of days at these pastimes.

Fish and wildlife have a special importance for us, and that importance is being more clearly recognized as we intensify our efforts to preserve, restore, and improve our environment. Fish and wildlife are needed, not only because of the recreation they provide, as described in this report, but also because of their important ecological role. To a considerable extent, fishermen and hunters pay their own way by financing fish and wildlife programs through fees for licenses and tags and through excise taxes on equipment purchased. As with previous national surveys, the 1980 survey was paid for by proceeds from excise taxes on sporting arms, ammunition, and fishing tackle. The States, which share the tax proceeds through the Federal Aid in Fish and Wildlife Restoration Programs, requested this survey.

The survey provides a national perspective for Federal agencies and also directly serves the needs of State fish and game agencies. Information provided by this study will be used by fish and wildlife resource planners and managers at all levels of government. The survey will assist them in establishing the programs and priorities necessary to assure the continued availability of the recreational opportunities provided by our fish and wildlife resources, both now and in the future.

In this day and age, we need fish and wildlife more than ever before, both as an integral part of our environment and for traditional recreational uses. This is a study of the human uses of fish and wildlife. The results reported here reflect some of the values we place on these resources and the important role they play in American life.

Robert A. Jantzen, Director
Fish and Wildlife Service
United States Department of the Interior

Survey Background and Method

The 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation is designed to gather information about American participation in fishing, hunting, and other forms of wildlife-associated recreation. The national survey of fishing and hunting has been conducted every 5 years since 1955 and represents one of the oldest and most comprehensive continuing recreation surveys. The purpose of the survey is to gather information on the numbers of fishermen and hunters in our country, as well as how often they participate and how much they spend on these activities. The 1980 survey is the first to also gather extensive information about those who observe, photograph, or feed wildlife.

The planning process for the 1980 survey began in 1978 when the International Association of Fish and Wildlife Agencies (IAFWA) passed a resolution asking the U.S. Fish and Wildlife Service to conduct a national survey of fishing and hunting in 1980. As with previous national surveys, funding for the survey came from the administrative portion of revenues produced by excise taxes on fishing and hunting equipment under the Dingell/Johnson and Pittman/Robertson Federal Aid for Fish and Wildlife Restoration Acts.

In early 1979, the IAFWA was asked to help ensure that fish and game agencies of the 50 States had an opportunity to participate in all phases of planning and design of the survey. Four regional technical committees were set up under the auspices of the IAFWA. Made up of representatives of State fish and game agencies, the committees served as a point of contact for the survey between the States and the Fish and Wildlife Service. They provided initial suggestions and comments about what information the survey should produce and how it should be conducted. The technical committees reviewed alternatives for survey design, draft questionnaires, and, finally, preliminary tabulations of survey results. Reviews of draft materials were also solicited from State fish and game directors and a cross-section of sportsmen's and conservation organizations.

After reviewing comments and suggestions received from those sources about the type of survey to be conducted, the Fish and Wildlife Service in early 1980 made a tentative decision on the nature and estimated cost of the survey to be conducted and once again asked the State agencies for their reaction. No dissenting responses were received.

The 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation produced both a national report and individual State reports for the 50 States. The survey was conducted by the U.S. Bureau of the Census in two phases. In the first phase, a sample of more than 116,000 households nationwide was screened, mostly by telephone, to determine who in the household had hunted, fished, or engaged in some nonconsumptive wildlife-associated activity in 1980. The screening was done in January 1981. Information about all household members 6 years old and older was obtained from an adult member of each household. A 95-percent response rate was achieved for the screening.

The second phase of the survey consisted of detailed in-person interviews conducted in spring 1981 with subsamples of fishermen, hunters, and nonconsumptive users identified in the screening phase. Participants in this detailed phase were limited to those at least 16 years old because of the length and complexity of the questionnaires. Sample sizes were designed to provide statistically reliable results at the State level for fishing and hunting and at the Census geographic division level for nonconsumptive activities. A total of 30,300 fishermen and hunters and 6,000 nonconsumptive users were interviewed. A sample of those who had fished or hunted and engaged in nonconsumptive activities were interviewed with both questionnaires.

In the State of Montana, 2,110 households were screened for participants in wildlife-associated activities. A total of 680 sportsmen were later interviewed in person.

Highlights

In-State activities by participants 16 years old and older	
Total fishermen	314,700
Total days of fishing	4,024,900
Average per fisherman	13
Total expenditures	$75,852,500
Travel-related	$45,767,100
Equipment and other	$30,085,400
Average per fisherman	$292
Average travel-related per fisherman	$145
Average equipment and other per fisherman	$147
Average per day	$20
Average travel-related per day	$11
Average equipment and other per day	$9
Total hunters	192,700
Total days of hunting	2,247,600
Average per hunter	12
Total expenditures	$75,621,700
Travel-related	$37,967,700
Equipment and other	$37,654,000
Average per hunter	$442
Average travel-related per hunter	$197
Average equipment and other per hunter	$245
Average per day	$36
Average travel-related per day	$17
Average equipment and other per day	$19

Note: "Total expenditures" includes "travel-related" expenditures of residents and nonresidents and "equipment and other" expenditures of residents only.

Activities by State residents	
Total State-resident sportsmen	
16 years old and older	254,000
6-15 years old	60,900
Resident fishermen (16 years old and older)	205,000
Freshwater (including Great Lakes)	204,000
Great Lakes	–
Saltwater	–
Resident hunters (16 years old and older)	153,900
Big game	143,800
Small game	55,400
Migratory birds	30,500
Other animals	30,500
Total nonconsumptive participants (6 years old and older)	579,900
Primary	294,900
Nonresidential	157,600
Residential	217,700
Secondary	564,000
Nonresidential	463,700
Residential	451,000

– Estimates based on samples of fewer than 25 respondents have been deleted.

Statistical Tables

Symbols Used in Tables

NA	Not available
X	Not applicable
Z	Less than .1 percent
B	Base is zero

Definitions of terms used in this report are found in appendix A. All estimates are based on a sample; as such, they should be interpreted with standard errors (appendix B). In tables 8-11, 26, 28, 30, and 41, rows under major categories may be aggregated, resulting in a combined estimate with a smaller relative standard error. (For example, household incomes under $5,000 and $5,000-$9,999 may be added to make a less than $10,000 category with a smaller standard error.) In some tables, detail may not add to total because of multiple responses or nonresponse.

Table 1. Participants in Fishing and Hunting, by Resident Status: 1980

(Population 16 years old and older.)

Activity	Total (hundreds)	Percent of sportsmen	Percent of population
RESIDENT IN-STATE			
EITHER FISHED OR HUNTED	2494	64.1	43.5
FISHED ONLY	966	24.8	16.9
HUNTED ONLY	506	13.0	8.8
FISHED AND HUNTED	1022	26.3	17.8
NONRESIDENT IN-STATE			
EITHER FISHED OR HUNTED	1400	35.9	(X)
FISHED ONLY	1000	25.7	(X)
HUNTED ONLY	242	6.2	(X)
FISHED AND HUNTED	158	4.1	(X)
RESIDENT OUT-OF-STATE			
EITHER FISHED OR HUNTED	345	(X)	6.0
FISHED ONLY	299	(X)	5.2
HUNTED ONLY	*34	(X)	0.6
FISHED AND HUNTED	12	(X)	0.2

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 2. Fishermen, Trips, Days, and Hours of Participation, by Type of Fishing and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	All fishing	Freshwater			Saltwater
		Total	Great Lakes	Other	
PARTICIPANTS					
TOTAL IN-STATE	3147	3147	(X)	3147	(X)
RESIDENT IN-STATE	1988	1988	(X)	1988	(X)
NONRESIDENT IN-STATE	1158	1158	(X)	1158	(X)
TOTAL RESIDENT	2050	2040	8	2040	*85
OUT-OF-STATE	311	252	8	244	*85
TRIPS					
TOTAL IN-STATE	33918	33918	(X)	33918	(X)
RESIDENT					
TOTAL	29698	29698	(X)	29698	(X)
TRIPS FOR PRIMARY PURPOSE	27138	27138	(X)	27138	(X)
NONRESIDENT					
TOTAL	4219	4219	(X)	4219	(X)
TRIPS FOR PRIMARY PURPOSE	3487	3487	(X)	3487	(X)
TOTAL RESIDENT	31132	30989	13	30976	*143
OUT-OF-STATE					
TOTAL	1434	1291	13	1278	*143
TRIPS FOR PRIMARY PURPOSE	1167	1061	(X)	1061	*106
DAYS OF PARTICIPATION[1]					
TOTAL IN-STATE	40249	40249	(X)	41539	(X)
RESIDENT IN-STATE	32497	32497	(X)	33699	(X)
NONRESIDENT IN-STATE	7752	7752	(X)	7840	(X)
TOTAL RESIDENT	34575	34219	22	35414	*361
RESIDENT OUT-OF-STATE	2078	1723	22	1715	*361
AVERAGE DAYS					
RESIDENT IN-STATE	16.3	16.3	(B)	16.9	(B)
NONRESIDENT IN-STATE	6.7	6.7	(B)	6.8	(B)
RESIDENT OUT-OF-STATE	6.7	6.8	2.7	7.0	*4.3
AVERAGE HOURS					
RESIDENT IN-STATE	5.0	5.0	(B)	4.9	(B)
NONRESIDENT IN-STATE	4.3	4.3	(B)	4.3	(B)
RESIDENT OUT-OF-STATE	6.1	6.1	6.3	5.8	*6.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

[1]Days for all freshwater fishing is based on the number of days that a participant fished chiefly in freshwater whereas days for Great Lakes fishing and other freshwater fishing are based on the total number of days that a participant fished in the Great Lakes or other freshwater.

Table 3. Freshwater Fishermen and Days, by Type of Fish Sought and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of fish	Participants									
	Total in-State		Resident in-State		Nonresident in-State		Total resident		Resident out-of-State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL	3147	100.0	1988	63.2	1158	36.8	2040	100.0	244	11.9
BASS	238	100.0	122	51.0	117	49.0	167	100.0	*45	27.2
PANFISH	209	100.0	193	92.2	16	7.8	232	100.0	*44	18.8
CATFISH	170	100.0	162	95.3	8	4.7	177	100.0	18	9.9
WALLEYE, SAUGER	251	100.0	217	86.4	34	13.6	250	100.0	*53	21.3
NORTHERN PIKE, PICKEREL, MUSKIE	207	100.0	189	91.3	18	8.7	213	100.0	*35	16.5
TROUT	2830	100.0	1743	61.6	1087	38.4	1768	100.0	126	7.1
SALMON, STEELHEAD	296	100.0	255	86.2	41	13.8	284	100.0	*29	10.0
STRIPED BASS	39	100.0	6	14.7	34	85.3	10	100.0	4	40.5
ALL OTHER FRESHWATER FISH	345	100.0	155	44.8	*190	55.2	163	100.0	9	5.3
ANYTHING[1]	280	100.0	194	69.2	86	30.8	198	100.0	5	2.3

Type of fish	Days of participation									
	Total in-State		Resident in-State		Nonresident in-State		Total resident		Resident out-of-State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL	41539	100.0	33699	81.1	7840	18.9	35414	100.0	1715	4.8
BASS	1447	100.0	1293	89.4	153	10.6	1546	100.0	*253	16.4
PANFISH	1974	100.0	1853	93.9	121	6.1	2055	100.0	*202	9.8
CATFISH	930	100.0	881	94.7	49	5.3	1234	100.0	353	28.6
WALLEYE, SAUGER	1766	100.0	1396	79.0	370	21.0	1788	100.0	*392	21.9
NORTHERN PIKE, PICKEREL, MUSKIE	1805	100.0	1534	85.0	271	15.0	1769	100.0	*235	13.3
TROUT	37201	100.0	29859	80.3	7342	19.7	30761	100.0	903	2.9
SALMON, STEELHEAD	2651	100.0	2455	92.6	195	7.4	2563	100.0	*108	4.2
STRIPED BASS	161	100.0	127	79.1	34	20.9	139	100.0	12	8.5
ALL OTHER FRESHWATER FISH	4331	100.0	3393	78.3	*938	21.7	3421	100.0	28	0.8
ANYTHING[1]	2506	100.0	2072	82.7	434	17.3	2077	100.0	5	0.2

(See footnotes at end of table.)

Table 3. Freshwater Fishermen and Days, by Type of Fish Sought and Resident Status: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Type of fish	Days per fisherman		
	Resident in-State	Nonresident in-State	Resident out-of-State
TOTAL	16.9	6.8	7.0
BASS	10.6	1.3	*5.6
PANFISH	9.6	7.4	*4.6
CATFISH	5.4	6.1	20.1
WALLEYE, SAUGER	6.4	10.9	*7.4
NORTHERN PIKE, PICKEREL, MUSKIE	8.1	15.1	*6.7
TROUT	17.1	6.8	7.2
SALMON, STEELHEAD	9.6	4.8	*3.8
STRIPED BASS	21.9	1.0	3.0
ALL OTHER FRESHWATER FISH	21.9	*4.9	3.3
ANYTHING[1]	10.7	5.0	1.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25. Species were identified by the respondent. Misclassification because of local or regional common names may occur. For example, white bass are sometimes locally known as striped bass.

[1]Respondent indicated fishing for no particular species.

Table 4. Great Lakes Fishermen and Days, by Type of Fish Sought and Resident Status: 1980

(NOT APPLICABLE TO THIS STATE)

Table 5. Saltwater Fishermen, by Resident Status: 1980

(NOT APPLICABLE TO THIS STATE)

Table 6. Hunters, Trips, Days, and Hours of Participation, by Type of Hunting and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	All hunting	Big game	Small game	Migratory bird	Other animals
PARTICIPANTS:					
TOTAL IN STATE	1927	1764	632	320	354
RESIDENT IN STATE	1528	1434	544	299	301
NONRESIDENT IN STATE	399	331	*88	21	53
TOTAL RESIDENT	1539	1438	554	305	305
RESIDENT OUT OF STATE	*46	17	22	14	3
TRIPS:					
TOTAL IN STATE	20652	9751	4324	2379	4198
RESIDENT TOTAL	19577	9134	4165	2143	4136
PRIMARY PURPOSE FOR TRIP	16164	8742	3576	1323	2522
NONRESIDENT TOTAL	1075	617	*159	236	63
PRIMARY PURPOSE FOR TRIP	883	528	*111	227	18
TOTAL RESIDENT TRIPS	19767	9162	4275	2178	4152
OUT OF STATE TOTAL	*190	28	110	35	16
PRIMARY PURPOSE FOR TRIP	*139	28	67	31	14
DAYS OF PARTICIPATION:					
TOTAL IN STATE	22476	13912	4750	1905	4076
RESIDENT IN STATE	19201	11335	4434	1611	3908
NONRESIDENT IN STATE	3275	2577	*316	293	168
TOTAL RESIDENT	19557	11508	4545	1678	3926
RESIDENT OUT OF STATE	*356	174	111	66	18
AVERAGE DAYS/HUNTER:					
RESIDENT IN STATE	12.6	7.9	8.1	5.4	13.0
NONRESIDENT IN STATE	8.2	7.8	*3.6	13.9	3.1
RESIDENT OUT OF STATE	*7.7	10.3	5.1	4.7	5.3
AVERAGE HOURS/DAY :					
RESIDENT IN STATE	5.6	6.8	4.1	4.1	3.7
NONRESIDENT IN STATE	7.3	8.1	*5.0	3.4	4.1
RESIDENT OUT OF STATE	*7.9	11.0	4.6	5.6	4.2

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 7. Hunters and Days, by Type of Hunting and Game Sought and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of game	Participants									
	Total in-State		Resident in-State		Nonresident in-State		Total resident		Resident out-of-State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ALL BIG GAME	1764	100.0	1434	81.3	331	18.7	1438	100.0	17	1.2
DEER	1591	100.0	1334	83.9	257	16.1	1338	100.0	6	0.5
ELK	1019	100.0	823	80.8	*196	19.2	827	100.0	6	0.7
ANTELOPE	246	100.0	223	90.6	23	9.4	223	100.0	0	0.0
MOOSE	19	100.0	19	100.0	0	0.0	21	100.0	2	9.4
BEAR	156	100.0	89	57.2	*67	42.8	95	100.0	6	6.2
WILD TURKEY	24	100.0	20	83.3	4	16.7	20	100.0	0	0.0
MOUNTAIN GOAT	7	100.0	7	100.0	0	0.0	7	100.0	0	0.0
MOUNTAIN SHEEP	8	100.0	8	100.0	0	0.0	12	100.0	5	38.2
OTHER	5	100.0	5	100.0	0	0.0	11	100.0	6	55.7
ALL SMALL GAME	632	100.0	544	86.1	88	13.9	554	100.0	*22	4.0
RABBITS, HARES	138	100.0	129	93.6	9	6.4	134	100.0	6	4.6
QUAIL	9	100.0	9	100.0	0	0.0	10	100.0	1	5.9
GROUSE	380	100.0	344	90.5	36	9.5	346	100.0	8	2.3
HUNGARIAN/CHUKAR PARTRIDGE	156	100.0	143	91.5	13	8.5	147	100.0	8	5.2
SQUIRREL	20	100.0	13	67.4	6	32.6	15	100.0	2	12.3
PHEASANT	345	100.0	295	85.6	50	14.4	300	100.0	11	3.8
OTHER	32	100.0	32	100.0	0	0.0	32	100.0	0	0.0
ALL MIGRATORY BIRD HUNTING	320	100.0	299	93.4	21	6.6	305	100.0	14	4.6
GEESE	221	100.0	201	91.0	20	9.0	211	100.0	14	6.7
DUCKS	295	100.0	274	92.8	21	7.2	280	100.0	14	5.0
COOTS, RAILS, GALLINULES	4	100.0	4	100.0	0	0.0	4	100.0	0	0.0
WOODCOCK	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
DOVES	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
BAND-TAILED PIGEON	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
OTHER	13	100.0	3	26.2	9	73.8	3	100.0	0	0.0
ALL OTHER HUNTING	354	100.0	301	85.0	53	15.0	305	100.0	3	1.1
CROWS	6	100.0	6	100.0	0	0.0	6	100.0	0	0.0
WOODCHUCK	*59	100.0	*44	74.1	15	25.9	*44	100.0	1	3.3
RACCOON	31	100.0	31	100.0	0	0.0	32	100.0	1	4.4
FOX	*84	100.0	*80	95.3	4	4.7	*80	100.0	0	0.0
COYOTE	255	100.0	223	87.5	32	12.5	223	100.0	0	0.0
OTHER	114	100.0	95	83.9	18	16.1	97	100.0	2	2.0

(See footnotes at end of table.)

Table 7. Hunters and Days, by Type of Hunting and Game Sought and Resident Status: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Type of game	Days of participation									
	Total in-State		Resident in-State		Nonresident in-State		Total resident		Resident out-of-State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ALL BIG GAME	13912	100.0	11335	81.5	2577	18.5	11508	100.0	174	1.5
DEER	11181	100.0	9073	81.1	2108	18.9	9097	100.0	24	0.3
ELK	7653	100.0	6536	85.4	*1117	14.6	6559	100.0	23	0.3
ANTELOPE	977	100.0	862	88.1	116	11.9	862	100.0	0	0.0
MOOSE	113	100.0	113	100.0	0	0.0	127	100.0	14	10.9
BEAR	1406	100.0	946	67.2	*461	32.8	991	100.0	45	4.6
WILD TURKEY	103	100.0	51	50.0	51	50.0	51	100.0	0	0.0
MOUNTAIN GOAT	19	100.0	19	100.0	0	0.0	19	100.0	0	0.0
MOUNTAIN SHEEP	21	100.0	21	100.0	0	0.0	77	100.0	57	73.1
OTHER	33	100.0	33	100.0	0	0.0	94	100.0	61	65.0
ALL SMALL GAME	4750	100.0	4434	93.3	316	6.7	4545	100.0	111	2.4
RABBITS, HARES	1473	100.0	1461	99.2	12	0.8	1517	100.0	56	3.7
QUAIL	636	100.0	636	100.0	0	0.0	638	100.0	2	0.3
GROUSE	2916	100.0	2679	91.9	236	8.1	2700	100.0	20	0.7
HUNGARIAN/CHUKAR PARTRIDGE	1715	100.0	1527	89.0	189	11.0	1581	100.0	55	3.5
SQUIRREL	70	100.0	70	100.0	0	0.0	108	100.0	37	34.6
PHEASANT	2627	100.0	2373	90.3	254	9.7	2404	100.0	31	1.3
OTHER	829	100.0	829	100.0	0	0.0	829	100.0	0	0.0
ALL MIGRATORY BIRD HUNTING	1905	100.0	1611	84.6	293	15.4	1678	100.0	66	4.0
GEESE	1087	100.0	1027	94.5	60	5.5	1074	100.0	47	4.3
DUCKS	1536	100.0	1433	93.3	103	6.7	1471	100.0	37	2.5
COOTS, RAILS, GALLINULES	9	100.0	9	100.0	0	0.0	9	100.0	0	0.0
WOODCOCK	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
DOVES	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
BAND-TAILED PIGEON	0	(B)	0	(B)	0	(B)	0	(B)	0	(B)
OTHER	211	100.0	21	9.9	190	90.1	21	100.0	0	0.0
ALL OTHER HUNTING	4076	100.0	3908	95.9	168	4.1	3926	100.0	18	0.5
CROWS	135	100.0	135	100.0	0	0.0	135	100.0	0	0.0
WOODCHUCK	*684	100.0	*592	86.6	92	13.4	*594	100.0	1	0.2
RACCOON	528	100.0	528	100.0	0	0.0	529	100.0	1	0.3
FOX	*809	100.0	*805	99.5	4	0.5	*805	100.0	0	0.0
COYOTE	2486	100.0	2418	97.2	69	2.8	2418	100.0	0	0.0
OTHER	1906	100.0	1812	95.0	95	5.0	1825	100.0	14	0.7

(See footnotes at end of table.)

Table 7. Hunters and Days, by Type of Hunting and Game Sought and Resident Status: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Type of game	Days per hunter		
	Resident in-State	Nonresident in-State	Resident out-of-State
ALL BIG GAME	7.9	7.8	10.3
DEER	6.8	8.2	3.9
ELK	7.9	*5.7	4.0
ANTELOPE	3.9	5.0	(B)
MOOSE	6.0	(B)	7.0
BEAR	10.6	*6.9	7.7
WILD TURKEY	2.6	13.0	(B)
MOUNTAIN GOAT	2.8	(B)	(B)
MOUNTAIN SHEEP	2.7	(B)	12.0
OTHER	7.0	(B)	10.3
ALL SMALL GAME	8.1	3.6	*5.1
RABBITS, HARES	11.3	1.3	9.0
QUAIL	68.6	(B)	3.0
GROUSE	7.8	6.6	2.6
HUNGARIAN/CHUKAR PARTRIDGE	10.7	14.2	7.2
SQUIRREL	5.3	0.0	20.0
PHEASANT	8.0	5.1	2.8
OTHER	25.8	(B)	(B)
ALL MIGRATORY BIRD HUNTING	5.4	13.9	4.7
GEESE	5.1	3.0	3.3
DUCKS	5.2	4.9	2.7
COOTS, RAILS, GALLINULES	2.0	(B)	(B)
WOODCOCK	(B)	(B)	(B)
DOVES	(B)	(B)	(B)
BAND-TAILED PIGEON	(B)	(B)	(B)
OTHER	6.2	20.0	(B)
ALL OTHER HUNTING	13.0	3.1	5.3
CROWS	22.1	(B)	(B)
WOODCHUCK	*13.6	6.0	1.0
RACCOON	17.2	(B)	1.0
FOX	*10.1	1.0	(B)
COYOTE	10.8	2.2	(B)
OTHER	19.0	5.2	7.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25. Species were identified by the respondent. Misclassification because of local or regional common names may occur. For example, grouse are sometimes locally known as partridge.

Table 8. Selected Characteristics of Fishermen and Hunters: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Population		Fished and/or hunted			Fished only			Hunted only			Fished and hunted		
	Number	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent
TOTAL PERSONS.	5734	100.0	2540	44.3	100.0	1001	17.5	100.0	490	8.5	100.0	1049	18.3	100.0
POPULATION DENSITY OF RESIDENCE														
BIG CITIES	0	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0
SMALL CITIES	1099	19.2	530	48.2	20.9	301	27.4	30.1	63	5.8	12.9	166	15.1	15.8
TOWNS AND RURAL AREAS	4635	80.8	2010	43.4	79.1	700	15.1	69.9	427	9.2	87.1	883	19.1	84.2
SEX AND AGE GROUP:														
MALE, TOTAL.	2830	49.4	1754	62.0	69.1	507	17.9	50.7	373	13.2	76.2	874	30.9	83.3
16-17 YEARS	135	2.4	90	66.8	3.5	19	14.1	1.9	32	23.6	6.5	*39	29.0	3.7
18-24 YEARS.	513	8.9	314	61.2	12.3	*65	12.7	6.5	*73	14.2	14.8	176	34.3	16.7
25-34 YEARS.	675	11.8	489	72.5	19.3	102	15.2	10.2	97	14.3	19.7	290	43.0	27.6
35-44 YEARS.	446	7.8	336	75.3	13.2	103	23.1	10.3	*69	15.5	14.2	163	36.6	15.6
45-54 YEARS.	360	6.3	185	51.5	7.3	*52	14.5	5.2	*42	11.7	8.6	91	25.3	8.7
55-64 YEARS.	346	6.0	213	61.7	8.4	100	28.9	10.0	*42	12.0	8.5	*72	20.8	6.9
65 YEARS AND OLDER . .	355	6.2	127	35.7	5.0	*65	18.4	6.5	19	5.4	3.9	*42	11.9	4.0
FEMALE, TOTAL.	2904	50.6	786	27.1	30.9	494	17.0	49.3	117	4.0	23.8	175	6.0	16.7
16-17 YEARS	141	2.5	*42	29.5	1.6	18	12.5	1.8	3	2.3	0.7	21	14.7	2.0
18-24 YEARS.	500	8.7	111	22.2	4.4	*68	13.6	6.8	28	5.7	5.8	15	2.9	1.4
25-34 YEARS.	660	11.5	247	37.4	9.7	125	19.0	12.5	*38	5.8	7.8	*83	12.6	7.9
35-44 YEARS.	442	7.7	91	20.6	3.6	*67	15.2	6.7	0	0.0	0.0	24	5.4	2.3
45-54 YEARS.	361	6.3	105	29.2	4.2	*61	16.8	6.1	33	9.3	6.8	11	3.2	1.1
55-64 YEARS.	359	6.3	107	29.9	4.2	*89	24.7	8.8	8	2.3	1.7	11	2.9	1.0
65 AND OLDER	441	7.7	*82	18.6	3.2	*66	15.1	6.6	5	1.1	1.0	11	2.5	1.0
RACE:														
WHITE.	5181	90.4	2391	46.1	94.1	969	18.7	96.8	438	8.5	89.5	983	19.0	93.7
BLACK.	6	0.1	2	40.6	0.1	0	0.0	0.0	2	40.6	0.5	0	0.0	0.0
ALL OTHERS	547	9.5	147	26.8	5.8	32	5.9	3.2	49	9.0	10.0	66	12.0	6.3

(See footnotes at end of table.)

Table 8. Selected Characteristics of Fishermen and Hunters: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Population		Fished and/or hunted			Fished only			Hunted only			Fished and hunted		
	Number	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent
ANNUAL HOUSEHOLD INCOME:														
UNDER $5,000	530	9.2	158	29.9	6.2	*73	13.8	7.3	25	4.7	5.1	*60	11.3	5.7
$ 5,000- $9,999. . . .	794	13.9	230	28.9	9.0	120	15.2	12.0	33	4.1	6.6	*77	9.7	7.3
$10,000-$14,999. . . .	674	11.7	334	49.6	13.1	137	20.3	13.7	*53	7.9	10.8	144	21.3	13.7
$15,000-$19,999. . . .	722	12.6	387	53.7	15.3	174	24.2	17.4	*69	9.6	14.1	144	19.9	13.7
$20,000-$24,999. . . .	722	12.6	335	46.5	13.2	112	15.6	11.2	*49	6.7	9.9	174	24.1	16.6
$25,000-$29,999. . . .	481	8.4	296	61.7	11.7	109	22.7	10.9	*68	14.2	13.9	119	24.8	11.4
$30,000-$39,999. . . .	366	6.4	238	65.1	9.4	111	30.5	11.1	*53	14.6	10.9	*73	20.0	7.0
$40,000-$49,999. . . .	134	2.3	*69	51.5	2.7	33	24.4	3.3	8	5.9	1.6	29	21.2	2.7
$50,000 OR MORE. . . .	251	4.4	122	48.4	4.8	27	10.8	2.7	*42	16.7	8.5	*53	20.9	5.0
NOT REPORTED	1061	18.5	370	34.9	14.6	103	9.7	10.3	90	8.5	18.3	177	16.7	16.9
EDUCATION:														
NONE	17	0.3	5	28.2	0.2	0	0.0	0.0	5	28.2	1.0	0	0.0	0.0
1- 7 YEARS	208	3.6	*57	27.6	2.3	29	13.9	2.9	4	1.7	0.7	25	12.0	2.4
8 YEARS	454	7.9	205	45.0	8.1	101	22.1	10.0	*57	12.5	11.6	*47	10.4	4.5
9-11 YEARS	857	14.9	366	42.7	14.4	104	12.1	10.4	100	11.6	20.4	162	18.9	15.5
12 YEARS	2333	40.7	1028	44.1	40.5	376	16.1	37.6	196	8.4	39.9	456	19.5	43.5
1-3 YEARS COLLEGE. . .	935	16.3	366	39.2	14.4	144	15.4	14.4	*58	6.2	11.7	165	17.6	15.7
4 YEARS COLLEGE. . . .	436	7.6	205	47.1	8.1	96	22.1	9.6	30	7.0	6.2	*78	17.9	7.4
5 YEARS OR MORE. . . .	494	8.6	308	62.4	12.1	151	30.6	15.1	*41	8.3	8.4	116	23.4	11.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 9. Selected Characteristics of Fishermen and Hunters 6-15 Years Old: 1980

(Numbers in hundreds)

Characteristic	Population		Fished and/or hunted			Fished only			Hunted only			Fished and hunted		
	Number	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent
TOTAL PERSONS	1212	100.0	609	50.3	100.0	430	35.5	100.0	57	4.7	100.0	122	10.1	100.0
POPULATION DENSITY OF RESIDENCE														
BIG CITIES	0	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0
SMALL CITIES	223	18.4	105	47.2	17.3	71	31.8	16.5	2	0.8	3.1	33	14.6	26.7
TOWNS AND RURAL AREAS	989	81.6	504	51.0	82.7	359	36.3	83.5	55	5.6	96.9	89	9.0	73.3
SEX AND AGE GROUP:														
MALE, TOTAL	619	51.1	416	67.2	68.3	260	42.0	60.4	51	8.2	88.9	106	17.0	86.5
6-8 YEARS	160	13.2	100	62.4	16.4	80	50.2	18.7	*7	4.5	12.7	*12	7.7	10.1
9-11 YEARS	221	18.2	136	61.4	22.3	111	50.1	25.7	*10	4.5	17.4	15	6.8	12.3
12-15 YEARS	238	19.6	181	76.0	29.7	69	29.0	16.0	34	14.1	58.7	78	32.9	64.1
FEMALE, TOTAL	593	48.9	193	32.5	31.7	170	28.7	39.6	*6	1.1	11.1	16	2.8	13.5
6-8 YEARS	159	13.1	55	34.7	9.0	50	31.3	11.5	0	0.0	0.0	5	3.4	4.4
9-11 YEARS	165	13.6	64	38.9	10.5	61	36.9	14.1	0	0.0	0.0	3	2.0	2.7
12-15 YEARS	269	22.2	74	27.4	12.1	60	22.2	13.9	*6	2.4	11.1	*8	2.9	6.4
RACE:														
WHITE	971	80.1	546	56.2	89.6	400	41.3	93.1	35	3.6	60.9	111	11.4	90.7
BLACK	0	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0
ALL OTHERS	241	19.9	63	26.3	10.4	*30	12.3	6.9	22	9.2	39.1	*11	4.7	9.3
ANNUAL HOUSEHOLD INCOME:														
UNDER $5,000	53	4.4	*11	20.8	1.8	4	8.3	1.0	0	0.0	0.0	*7	12.6	5.5
$ 5,000- 9,999	88	7.2	41	46.2	6.7	*27	31.3	6.4	0	0.0	0.0	13	14.9	10.8
$10,000-14,999	159	13.1	76	47.7	12.5	45	28.5	10.5	24	14.8	41.2	*7	4.4	5.7
$15,000-19,999	179	14.7	102	56.8	16.7	78	43.8	18.2	*7	3.9	12.2	16	9.1	13.4
$20,000-24,999	183	15.1	112	61.3	18.4	84	45.9	19.5	5	2.9	9.2	23	12.5	18.8
$25,000-29,999	128	10.6	71	55.2	11.6	58	45.5	13.6	2	1.2	2.7	*11	8.5	8.9
$30,000-39,999	80	6.6	37	46.3	6.1	*26	33.1	6.1	5	5.7	8.0	*6	7.4	4.9
$40,000-49,999	16	1.3	5	33.9	0.9	4	24.1	0.9	0	0.0	0.0	2	9.8	1.3
$50,000 OR MORE	94	7.8	57	60.7	9.4	*30	32.2	7.1	*6	6.0	9.8	21	22.5	17.4
NOT REPORTED	232	19.2	98	42.1	16.0	72	30.9	16.7	*10	4.2	16.9	16	7.0	13.4

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 10. Selected Characteristics of Fishermen, by Type of Fishing: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Population		Total			Freshwater		
	Number	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent of total
TOTAL PERSONS	5734	100.0	2050	35.8	100.0	2040	35.6	100.0
POPULATION DENSITY OF RESIDENCE								
BIG CITIES	0	0.0	0	(B)	0.0	0	(B)	0.0
SMALL CITIES	1099	19.2	467	42.5	22.8	467	42.5	22.9
TOWNS AND RURAL AREAS	4635	80.8	1583	34.2	77.2	1573	33.9	77.1
SEX AND AGE GROUP:								
MALE, TOTAL	2830	49.4	1381	48.8	67.4	1372	48.5	67.3
16-17 YEARS	135	2.4	*58	43.2	2.8	*58	43.2	2.9
18-24 YEARS	513	8.9	241	47.0	11.8	238	46.4	11.7
25-34 YEARS	675	11.8	392	58.1	19.1	387	57.3	18.9
35-44 YEARS	446	7.8	267	59.7	13.0	267	59.7	13.1
45-54 YEARS	360	6.3	143	39.8	7.0	143	39.8	7.0
55-64 YEARS	346	6.0	172	49.7	8.4	172	49.7	8.4
65 YEARS AND OLDER	355	6.2	108	30.3	5.2	108	30.3	5.3
FEMALE, TOTAL	2904	50.6	669	23.0	32.6	668	23.0	32.7
16-17 YEARS	141	2.5	*38	27.2	1.9	*38	27.2	1.9
18-24 YEARS	500	8.7	*83	16.5	4.0	*83	16.5	4.0
25-34 YEARS	660	11.5	209	31.6	10.2	207	31.4	10.2
35-44 YEARS	442	7.7	91	20.6	4.5	91	20.6	4.5
45-54 YEARS	361	6.3	*72	19.9	3.5	*72	19.9	3.5
55-64 YEARS	359	6.3	99	27.6	4.8	99	27.6	4.9
65 YEARS AND OLDER	441	7.7	*77	17.5	3.8	*77	17.5	3.8
RACE:								
WHITE	5181	90.4	1952	37.7	95.2	1942	37.5	95.2
BLACK	6	0.1	0	0.0	0.0	0	0.0	0.0
ALL OTHERS	547	9.5	98	17.9	4.8	98	17.9	4.8
ANNUAL HOUSEHOLD INCOME:								
UNDER $5,000	530	9.2	133	25.1	6.5	133	25.1	6.5
$ 5,000- $9,999	794	13.9	197	24.8	9.6	197	24.8	9.7
$10,000-$14,999	674	11.7	281	41.7	13.7	273	40.6	13.4
$15,000-$19,999	722	12.6	318	44.1	15.5	318	44.1	15.6
$20,000-$24,999	722	12.6	287	39.7	14.0	284	39.3	13.9
$25,000-$29,999	481	8.4	228	47.5	11.1	228	47.5	11.2
$30,000-$39,999	366	6.4	185	50.5	9.0	185	50.5	9.1
$40,000-$49,999	134	2.3	*61	45.6	3.0	*61	45.6	3.0
$50,000 OR MORE	251	4.4	*80	31.7	3.9	*80	31.7	3.9
NOT REPORTED	1061	18.5	280	26.4	13.7	280	26.4	13.7
EDUCATION:								
NONE	17	0.3	0	0.0	0.0	0	0.0	0.0
1- 7 YEARS	208	3.6	*54	25.8	2.6	*54	25.8	2.6
8 YEARS	454	7.9	148	32.5	7.2	148	32.5	7.2
9-11 YEARS	857	14.9	266	31.1	13.0	263	30.7	12.9
12 YEARS	2333	40.7	832	35.7	40.6	832	35.7	40.8
1-3 YEARS COLLEGE	935	16.3	309	33.0	15.1	309	33.0	15.1
4 YEARS COLLEGE	436	7.6	175	40.1	8.5	175	40.1	8.6
5 YEARS OR MORE	494	8.6	267	54.1	13.0	260	52.6	12.7

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 11. Selected Characteristics of Hunters, by Type of Hunting: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Population		Total			Big game			Small game		
	Number	Percent	Number	Percent of population	Percent	Number	Percent of population	Percent of total	Number	Percent of population	Percent of total
TOTAL PERSONS	5734	100.0	1539	26.8	100.0	1438	25.1	100.0	554	9.7	100.0
POPULATION DENSITY OF RESIDENCE											
BIG CITIES	0	0.0	0	(B)	0.0	0	(B)	0.0	0	(B)	0.0
SMALL CITIES	1099	19.2	229	20.9	14.9	208	19.0	14.5	97	8.8	17.5
TOWNS AND RURAL AREAS	4635	80.8	1310	28.3	85.1	1229	26.5	85.5	457	9.9	82.5
SEX AND AGE GROUP:											
MALE, TOTAL	2830	49.4	1247	44.1	81.0	1162	41.1	80.9	484	17.1	87.3
16-17 YEARS	135	2.4	*71	52.6	4.6	*64	47.1	4.4	*46	33.9	8.3
18-24 YEARS	513	8.9	248	43.5	16.1	226	44.2	15.8	97	19.0	17.6
25-34 YEARS	675	11.8	387	57.3	25.1	355	52.7	24.7	182	27.0	32.9
35-44 YEARS	446	7.8	233	52.1	15.1	228	51.2	15.9	85	19.0	15.3
45-54 YEARS	360	6.3	133	37.0	8.7	121	33.5	8.4	*45	12.4	8.0
55-64 YEARS	346	6.0	114	32.8	7.4	114	32.8	7.9	17	4.9	3.0
65 YEARS AND OLDER	355	6.2	*61	17.3	4.0	*54	15.3	3.8	13	3.6	2.3
FEMALE, TOTAL	2904	50.6	292	10.1	19.0	275	9.5	19.1	*70	2.4	12.7
16-17 YEARS	141	2.5	24	17.0	1.6	24	17.0	1.7	5	3.9	1.0
18-24 YEARS	500	8.7	*43	8.6	2.8	*40	7.9	2.8	15	3.1	2.8
25-34 YEARS	660	11.5	122	18.4	7.9	114	17.2	7.9	29	4.4	5.2
35-44 YEARS	442	7.7	24	5.4	1.6	19	4.3	1.3	15	3.5	2.8
45-54 YEARS	361	6.3	*45	12.4	2.9	*45	12.4	3.1	1	0.3	0.2
55-64 YEARS	359	6.3	19	5.2	1.2	19	5.2	1.3	3	0.9	0.6
65 YEARS AND OLDER	441	7.7	16	3.6	1.0	15	3.4	1.0	1	0.2	0.1
RACE:											
WHITE	5181	90.4	1422	27.4	92.4	1321	25.5	91.9	510	9.9	92.2
BLACK	6	0.1	2	40.6	0.2	2	40.6	0.2	2	40.6	0.4
ALL OTHERS	547	9.5	115	21.0	7.5	115	21.0	8.0	*41	7.5	7.4
ANNUAL HOUSEHOLD INCOME:											
UNDER $5,000	530	9.2	85	16.0	5.5	*77	14.6	5.4	25	4.7	4.5
$ 5,000- $9,999	794	13.9	109	13.8	7.1	104	13.1	7.2	*34	4.3	6.1
$10,000-$14,999	674	11.7	197	29.2	12.8	192	28.5	13.4	*81	12.0	14.7
$15,000-$19,999	722	12.6	213	29.5	13.8	203	28.1	14.1	*64	8.9	11.6
$20,000-$24,999	722	12.6	223	30.9	14.5	205	28.4	14.3	111	15.4	20.1
$25,000-$29,999	481	8.4	187	39.0	12.2	167	34.7	11.6	*67	13.9	12.0
$30,000-$39,999	366	6.4	127	34.6	8.2	118	32.4	8.2	*34	9.3	6.1
$40,000-$49,999	134	2.3	*37	27.2	2.4	32	24.0	2.2	19	14.1	3.4
$50,000 OR MORE	251	4.4	94	37.6	6.1	85	34.0	5.9	*36	14.4	6.5
NOT REPORTED	1061	18.5	267	25.1	17.3	254	23.9	17.6	82	7.8	14.9
EDUCATION:											
NONE	17	0.3	5	28.2	0.3	5	28.2	0.3	0	0.0	0.0
1- 7 YEARS	208	3.6	29	13.7	1.9	29	13.7	2.0	11	5.2	2.0
8 YEARS	454	7.9	104	22.9	6.8	98	21.5	6.8	23	5.0	4.1
9-11 YEARS	857	14.9	262	30.6	17.0	250	29.2	17.4	94	10.9	16.9
12 YEARS	2333	40.7	652	27.9	42.3	631	27.0	43.9	201	8.6	36.3
1-3 YEARS COLLEGE	935	16.3	222	23.8	14.5	188	20.1	13.1	110	11.8	19.9
4 YEARS COLLEGE	436	7.6	109	24.9	7.1	89	20.3	6.2	*38	8.7	6.8
5 YEARS OR MORE	494	8.6	157	31.8	10.2	149	30.2	10.4	*78	15.7	14.0

(See footnotes at end of table.)

Table 11. Selected Characteristics of Hunters, by Type of Hunting: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Migratory birds			Other animals		
	Number	Percent of population	Percent of total	Number	Percent of population	Percent of total
TOTAL PERSONS	305	5.3	100.0	305	5.3	100.0
POPULATION DENSITY OF RESIDENCE						
BIG CITIES	0	(B)	0.0	0	(B)	0.0
SMALL CITIES	*44	4.0	14.4	*55	5.0	18.0
TOWNS AND RURAL AREAS	261	5.6	85.6	250	5.4	82.0
SEX AND AGE GROUP:						
MALE, TOTAL	278	9.8	91.2	278	9.8	91.1
16-17 YEARS	16	11.6	5.1	29	21.3	9.4
18-24 YEARS	*77	15.0	25.3	84	16.4	27.6
25-34 YEARS	107	15.9	35.1	105	15.6	34.5
35-44 YEARS	*36	8.1	11.9	31	7.0	10.2
45-54 YEARS	25	6.9	8.2	19	5.2	6.1
55-64 YEARS	11	3.3	3.8	2	0.5	0.6
65 YEARS AND OLDER	6	1.6	1.8	8	2.2	2.6
FEMALE, TOTAL	27	0.9	8.8	27	0.9	8.9
16-17 YEARS	0	0.0	0.0	0	0.0	0.0
18-24 YEARS	5	0.9	1.5	2	0.4	0.7
25-34 YEARS	11	1.7	3.6	14	2.1	4.6
35-44 YEARS	5	1.1	1.6	7	1.6	2.3
45-54 YEARS	4	1.2	1.5	0	0.0	0.0
55-64 YEARS	2	0.6	0.7	0	0.0	0.0
65 YEARS AND OLDER	0	0.0	0.0	4	1.0	1.4
RACE:						
WHITE	287	5.5	94.3	264	5.1	86.6
BLACK	2	40.6	0.8	0	0.0	0.0
ALL OTHERS	15	2.7	4.9	*41	7.5	13.4
ANNUAL HOUSEHOLD INCOME:						
UNDER $5,000	19	3.6	6.3	14	2.7	4.7
$ 5,000- $9,999	13	1.6	4.2	23	2.9	7.6
$10,000-$14,999	*57	8.5	18.8	*47	7.0	15.4
$15,000-$19,999	13	1.8	4.3	31	4.2	10.0
$20,000-$24,999	*49	6.7	15.9	*43	5.9	13.9
$25,000-$29,999	*34	7.0	11.1	*64	13.3	20.9
$30,000-$39,999	*35	9.7	11.6	15	4.0	4.8
$40,000-$49,999	17	12.7	5.6	9	6.5	2.9
$50,000 OR MORE	17	6.9	5.7	10	4.1	3.4
NOT REPORTED	*51	4.8	16.6	*50	4.7	16.3
EDUCATION:						
NONE	0	0.0	0.0	0	0.0	0.0
1- 7 YEARS	11	5.2	3.6	15	7.3	4.9
8 YEARS	2	0.5	0.8	15	3.4	5.0
9-11 YEARS	30	3.5	9.9	*42	4.8	13.6
12 YEARS	106	4.6	34.9	130	5.6	42.7
1-3 YEARS COLLEGE	*83	8.8	27.1	*54	5.8	17.8
4 YEARS COLLEGE	30	6.8	9.7	18	4.0	5.8
5 YEARS OR MORE	*43	8.7	14.1	31	6.3	10.2

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 12. Expenditures for Fishing and Hunting: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	2488	97.9	1228354	483.59
FOOD AND LODGING:				
FOOD	2004	78.8	201801	79.45
LODGING	341	13.4	12707	5.00
TRANSPORTATION:				
PUBLIC	27	1.0	7728	3.04
PRIVATE	2174	85.5	301465	118.68
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	15	0.5	4794	1.89
PACK TRIP FEES	20	0.8	4900	1.93
PUBLIC LAND USE FEES	28	1.0	253	0.10
PRIVATE LAND USE FEES	24	0.9	850	0.33
BOAT LAUNCHING FEES	32	1.2	443	0.17
EQUIPMENT RENTAL FEES	*39	1.5	*1155	*0.45
FISHING EQUIPMENT	1460	57.4	62377	24.56
HUNTING EQUIPMENT	1010	39.7	150357	59.19
LICENSES, TAGS, AND PERMITS:				
LICENSES	2284	89.9	35045	13.80
DUCK STAMPS	324	12.7	2431	0.96
TAGS AND PERMITS	536	21.0	2098	0.83
AUXILIARY EQUIPMENT:				
CAMPING EQUIPMENT	167	6.5	16178	6.37
BINOCULARS, FIELD GLASSES, ETC.	89	3.4	7057	2.78
SNOW SHOES AND SKIS	*51	2.0	*7818	*3.08
SPECIAL HUNTING CLOTHES	292	11.4	8343	3.28
SPECIAL FISHING CLOTHES	122	4.8	3450	1.36
RUBBER BOOTS AND WADERS	126	4.9	3735	1.47
MAINTENANCE AND REPAIR OF EQUIPMENT	90	3.5	2058	0.81
HUNTING BOOTS AND PACKS	208	8.1	10066	3.96
PROCESSING AND TAXIDERMY COSTS	*58	2.2	*7494	*2.95
OTHER	28	1.1	586	0.23
SPECIAL EQUIPMENT[1]	505	19.8	346261	136.32
MAGAZINES	738	29.0	13395	5.27
CLUB DUES	449	17.6	12216	4.81
LAND LEASING AND/OR OWNERSHIP	22	0.8	1292	0.51

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

[1]Special equipment items are detailed in table 21.

Table 13. Expenditures for Fishing: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	1985	96.8	393766	192.06
FOOD AND LODGING:				
FOOD	1567	76.4	125558	61.24
LODGING	277	13.5	8828	4.31
TRANSPORTATION:				
PUBLIC	12	0.6	3275	1.60
PRIVATE	1623	79.1	161245	78.65
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	11	0.5	834	0.41
PACK TRIP FEES	11	0.6	2077	1.01
PUBLIC LAND USE FEES	24	1.2	239	0.12
PRIVATE LAND USE FEES	15	0.8	364	0.18
BOAT LAUNCHING FEES	32	1.6	443	0.22
EQUIPMENT RENTAL FEES	35	1.7	1085	0.53
FISHING EQUIPMENT:				
FRESHWATER RODS	465	22.7	14587	7.12
FRESHWATER REELS	430	21.0	9873	4.82
SALTWATER RODS	8	0.4	341	0.17
SALTWATER REELS	9	0.4	365	0.18
LURES, LINES, HOOKS, ETC	1326	64.7	22489	10.97
DEPTH FINDERS AND FISH FINDERS	3	0.2	10	0.01
TACKLE BOXES	169	8.2	1823	0.89
MINNOW SEINES AND TRAPS	*40	1.9	*365	*0.18
MINNOW BUCKETS AND OTHER BAIT HOLDERS	32	1.6	222	0.11
SCALES	13	0.6	86	0.04
KNIVES	134	6.5	1845	0.90
PREPARED BAIT	406	19.8	4314	2.10
ROD HOLDERS	30	1.4	238	0.12
SPEAR FISHING EQUIPMENT	0	0.0	0	0.00
CREEL, STRINGERS, AND FISH BAGS	102	5.0	809	0.39
LANDING NET	103	5.0	596	0.29
SEINES AND OTHER NETS	14	0.7	74	0.04
ICE FISHING EQUIPMENT	*81	3.9	*2491	*1.21
OTHER	184	9.0	1849	0.90
LICENSES, TAGS, AND PERMITS:				
LICENSES	1587	77.4	13134	6.41
STAMPS, TAGS, AND PERMITS	140	6.8	191	0.09
AUXILIARY EQUIPMENT USED PRIMARILY FOR FISHING:				
CAMPING EQUIPMENT	*66	3.2	*5142	*2.51
BINOCULARS, FIELD GLASSES, ETC	7	0.3	193	0.09
SNOW SHOES AND SKIS	11	0.5	895	0.44
SPECIAL FISHING CLOTHES	*86	4.2	*2447	*1.19
RUBBER BOOTS AND WADERS	113	5.5	3309	1.61
MAINTENANCE AND REPAIR OF EQUIPMENT	*47	2.3	*1071	*0.52
PROCESSING AND TAXIDERMY COSTS	6	0.3	723	0.35
OTHER	18	0.9	335	0.16

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25. Does not include expenditures by fishermen for special equipment, magazine subscriptions, membership dues, and land leasing and ownership costs. Spending for these categories appears in table 22.

Table 14. Expenditures for Freshwater Fishing: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	1975	96.8	377587	185.10
FRESHWATER, EXCLUDING GREAT LAKES				
FOOD AND LODGING:				
FOOD	1561	76.5	119687	58.67
LODGING	242	11.9	6821	3.34
TRANSPORTATION:				
PUBLIC	7	0.3	1950	0.96
PRIVATE	1616	79.2	157980	77.45
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	9	0.4	687	0.34
PACK TRIP FEES	1	0.0	377	0.18
PUBLIC LAND USE FEES	24	1.2	239	0.12
PRIVATE LAND USE FEES	15	0.8	364	0.18
BOAT LAUNCHING FEES	18	0.9	320	0.16
EQUIPMENT RENTAL FEES	24	1.2	593	0.29
ALL FRESHWATER				
FISHING EQUIPMENT USED PRIMARILY IN FRESHWATER:				
FRESHWATER RODS	465	22.8	14587	7.15
FRESHWATER REELS	430	21.1	9873	4.84
LURES, LINES, HOOKS, ETC.	1309	64.2	22302	10.93
DEPTH FINDERS AND FISH FINDERS	3	0.2	10	0.01
TACKLE BOXES	167	8.2	1787	0.88
MINNOW SEINES AND TRAPS	*40	1.9	*365	*0.18
MINNOW BUCKETS AND OTHER BAIT HOLDERS	28	1.4	210	0.10
SCALES	13	0.6	86	0.04
KNIVES	127	6.3	1809	0.89
PREPARED BAIT	400	19.6	4280	2.10
ROD HOLDERS	30	1.5	238	0.12
SPEAR FISHING EQUIPMENT	0	0.0	0	0.00
CREEL, STRINGERS, AND FISH BAGS	100	4.9	801	0.39
LANDING NET	95	4.7	556	0.27
SEINES AND OTHER NETS	14	0.7	74	0.04
ICE FISHING EQUIPMENT	*81	4.0	*2491	*1.22
OTHER	180	8.8	1788	0.88
LICENSES, TAGS, AND PERMITS:				
LICENSES	1579	77.4	13005	6.38
STAMPS, TAGS, AND PERMITS	140	6.9	191	0.09

(See footnotes at end of table.)

Table 14. Expenditures for Freshwater Fishing: 1980 *(Continued)*

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
AUXILIARY EQUIPMENT USED PRIMARILY FOR FRESHWATER FISHING:				
CAMPING EQUIPMENT	*66	3.2	*5142	*2.52
BINOCULARS, FIELD GLASSES, ETC.	7	0.3	193	0.09
SNOW SHOES AND SKIS	11	0.5	895	0.44
SPECIAL FISHING CLOTHES	*86	4.2	*2447	*1.20
RUBBER BOOTS AND WADERS	113	5.5	3309	1.62
MAINTENANCE AND REPAIR OF EQUIPMENT	*47	2.3	*1071	*0.53
PROCESSING AND TAXIDERMY COSTS	6	0.3	723	0.35
OTHER	18	0.9	335	0.16

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 15. Expenditures for Saltwater Fishing: 1980

(NOT APPLICABLE TO THIS STATE)

Table 16. Expenditures for Hunting: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	1499	97.4	446560	290.16
FOOD AND LODGING:				
FOOD	1146	74.5	76243	49.54
LODGING	94	6.1	3879	2.52
TRANSPORTATION:				
PUBLIC	*50	3.2	*4453	*2.89
PRIVATE	1403	91.2	140219	91.11
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	12	0.8	3960	2.57
PACK TRIP FEES	17	1.1	2823	1.83
PUBLIC LAND USE FEES	19	1.3	13	0.01
PRIVATE LAND USE FEES	23	1.5	486	0.32
EQUIPMENT RENTAL FEES	16	1.0	70	0.05
HUNTING EQUIPMENT:				
GUNS AND RIFLES	196	12.8	70620	45.89
BOWS AND ARROWS	*62	4.0	*5462	*3.55
TELESCOPIC SIGHTS	122	7.9	13747	8.93
DECOYS AND GAME CALLS	*53	3.5	*4417	*2.87
GAME CARRIERS	13	0.9	130	0.08
AMMUNITION	889	57.7	30897	20.08
HAND LOADING EQUIPMENT	155	10.1	16942	11.01
EQUIPMENT CASES AND CARRIERS	*58	3.7	*2055	*1.34
HUNTING DOGS AND ASSOCIATED COSTS	23	1.5	3175	2.06
OTHER	22	1.4	2911	1.89
LICENSES, TAGS, AND PERMITS:				
LICENSES	1312	85.2	19029	12.36
FEDERAL DUCK STAMPS	311	20.2	2336	1.52
OTHER STAMPS, TAGS, AND PERMITS	320	20.8	1697	1.10
AUXILIARY EQUIPMENT USED PRIMARILY FOR HUNTING:				
CAMPING EQUIPMENT	*69	4.5	*9046	*5.88
BINOCULARS, FIELD GLASSES, ETC.	*73	4.7	*6424	*4.17
SNOW SHOES AND SKIS	27	1.7	2406	1.56
SPECIAL HUNTING CLOTHES	272	17.7	7657	4.97
RUBBER BOOTS AND WADERS	1	0.0	6	0.00
MAINTENANCE AND REPAIR OF EQUIPMENT	18	1.2	259	0.17
HUNTING BOOTS AND PACKS	163	10.6	8299	5.39
PROCESSING AND TAXIDERMY COSTS	*52	3.4	*6771	*4.40
OTHER	6	0.4	124	0.08

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25. Does not include expenditures by hunters for special equipment, magazine subscriptions, membership dues, and land leasing and ownership costs. Spending for these categories appears in table 22.

Table 17. Expenditures for Big Game Hunting: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	1418	98.6	329849	229.44
FOOD AND LODGING:				
FOOD	1076	74.8	58371	40.60
LODGING	*59	4.1	*3071	*2.14
TRANSPORTATION:				
PUBLIC	14	1.0	3535	2.46
PRIVATE	1317	91.6	100685	70.04
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	4	0.3	3960	2.75
PACK TRIP FEES	9	0.6	2804	1.95
PUBLIC LAND USE FEES	0	0.0	0	0.00
PRIVATE LAND USE FEES	9	0.6	299	0.21
EQUIPMENT RENTAL FEES	4	0.3	70	0.05
HUNTING EQUIPMENT USED PRIMARILY FOR BIG GAME HUNTING:				
GUNS AND RIFLES	137	9.5	55051	38.29
BOWS AND ARROWS	*57	4.0	*4930	*3.43
TELESCOPIC SIGHTS	110	7.7	12101	8.42
DECOYS AND GAME CALLS	8	0.5	99	0.07
GAME CARRIERS	9	0.6	65	0.05
AMMUNITION	685	47.6	16678	11.60
HAND LOADING EQUIPMENT	121	8.4	5832	4.06
EQUIPMENT CASES AND CARRIERS	*50	3.5	*1887	*1.31
HUNTING DOGS AND ASSOCIATED COSTS	0	0.0	0	0.00
OTHER	22	1.5	2795	1.94
LICENSES, TAGS, AND PERMITS:				
LICENSES	1224	85.1	17082	11.88
STAMPS, TAGS, AND PERMITS	209	14.5	1032	0.72
AUXILIARY EQUIPMENT USED PRIMARILY FOR BIG GAME HUNTING:				
CAMPING EQUIPMENT	*69	4.8	*9046	*6.29
BINOCULARS, FIELD GLASSES, ETC.	*69	4.8	*6282	*4.37
SNOW SHOES AND SKIS	27	1.8	2406	1.67
SPECIAL HUNTING CLOTHES	261	18.1	7302	5.08
RUBBER BOOTS AND WADERS	0	0.0	0	0.00
MAINTENANCE AND REPAIR OF EQUIPMENT	17	1.2	242	0.17
HUNTING BOOTS AND PACKS	161	11.2	8196	5.70
PROCESSING AND TAXIDERMY COSTS	*48	3.3	*5904	*4.11
OTHER	6	0.4	124	0.09

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 18. Expenditures for Small Game Hunting: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	458	82.8	51141	92.33
FOOD AND LODGING:				
FOOD	300	54.1	9146	16.51
LODGING	4	0.7	710	1.28
TRANSPORTATION:				
PUBLIC	2	0.3	918	1.66
PRIVATE	428	77.3	22076	39.86
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	0	0.0	0	0.00
PACK TRIP FEES	2	0.4	20	0.04
PUBLIC LAND USE FEES	3	0.6	13	0.02
PRIVATE LAND USE FEES	2	0.3	7	0.01
EQUIPMENT RENTAL FEES	0	0.0	0	0.00
HUNTING EQUIPMENT USED PRIMARILY FOR SMALL GAME HUNTING:				
GUNS AND RIFLES	14	2.5	4621	8.34
BOWS AND ARROWS	1	0.3	45	0.08
TELESCOPIC SIGHTS	2	0.3	312	0.56
DECOYS AND GAME CALLS	0	0.0	0	0.00
GAME CARRIERS	4	0.8	65	0.12
AMMUNITION	58	10.5	8281	14.95
HAND LOADING EQUIPMENT	10	1.8	133	0.24
EQUIPMENT CASES AND CARRIERS	6	1.1	75	0.13
HUNTING DOGS AND ASSOCIATED COSTS	15	2.8	2020	3.65
OTHER	0	0.0	0	0.00
LICENSES, TAGS, AND PERMITS:				
LICENSES	222	40.1	1352	2.44
STAMPS, TAGS, AND PERMITS	30	5.4	106	0.19
AUXILIARY EQUIPMENT USED PRIMARILY FOR SMALL GAME HUNTING:				
CAMPING EQUIPMENT	0	0.0	0	0.00
BINOCULARS, FIELD GLASSES, ETC.	4	0.7	142	0.26
SNOW SHOES AND SKIS	0	0.0	0	0.00
SPECIAL HUNTING CLOTHES	4	0.8	215	0.39
RUBBER BOOTS AND WADERS	0	0.0	0	0.00
MAINTENANCE AND REPAIR OF EQUIPMENT	1	0.1	17	0.03
HUNTING BOOTS AND PACKS	0	0.0	0	0.00
PROCESSING AND TAXIDERMY COSTS	4	0.7	867	1.57
OTHER	0	0.0	0	0.00

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 19. Expenditures for Migratory Bird Hunting: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	294	96.4	32818	107.67
FOOD AND LODGING:				
FOOD	162	53.1	5494	18.02
LODGING	3	1.1	99	0.32
TRANSPORTATION:				
PUBLIC	0	0.0	0	0.00
PRIVATE	244	80.1	9322	30.58
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	0	0.0	0	0.00
PACK TRIP FEES	0	0.0	0	0.00
PUBLIC LAND USE FEES	0	0.0	0	0.00
PRIVATE LAND USE FEES	3	1.1	179	0.59
EQUIPMENT RENTAL FEES	0	0.0	0	0.00
HUNTING EQUIPMENT USED PRIMARILY FOR MIGRATORY BIRD HUNTING:				
GUNS AND RIFLES	21	6.9	5703	18.71
BOWS AND ARROWS	0	0.0	0	0.00
TELESCOPIC SIGHTS	0	0.0	0	0.00
DECOYS AND GAME CALLS	*42	13.6	*4299	*14.11
GAME CARRIERS	0	0.0	0	0.00
AMMUNITION	*80	26.4	*2764	*9.07
HAND LOADING EQUIPMENT	9	3.1	703	2.31
EQUIPMENT CASES AND CARRIERS	0	0.0	0	0.00
HUNTING DOGS AND ASSOCIATED COSTS	6	1.9	1042	3.42
OTHER	0	0.0	0	0.00
LICENSES, TAGS, AND PERMITS:				
LICENSES	99	32.6	596	1.95
FEDERAL DUCK STAMPS	241	79.1	1808	5.93
OTHER STAMPS, TAGS, AND PERMITS	85	28.0	560	1.84
AUXILIARY EQUIPMENT USED PRIMARILY FOR MIGRATORY BIRD HUNTING:				
CAMPING EQUIPMENT	0	0.0	0	0.00
BINOCULARS, FIELD GLASSES, ETC.	0	0.0	0	0.00
SNOW SHOES AND SKIS	0	0.0	0	0.00
SPECIAL HUNTING CLOTHES	7	2.2	140	0.46
RUBBER BOOTS AND WADERS	1	0.2	6	0.02
MAINTENANCE AND REPAIR OF EQUIPMENT	0	0.0	0	0.00
HUNTING BOOTS AND PACKS	2	0.6	103	0.34
PROCESSING AND TAXIDERMY COSTS	0	0.0	0	0.00
OTHER	0	0.0	0	0.00

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 20. Expenditures for Hunting Other Animals: 1980

(Population 16 years old and older)

Expenditure item	Spenders		Expenditures	
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)
STATE, TOTAL	176	57.6	15272	50.01
FOOD AND LODGING:				
FOOD	*73	23.9	*3232	*10.59
LODGING	0	0.0	0	0.00
TRANSPORTATION:				
PUBLIC	0	0.0	0	0.00
PRIVATE	157	51.5	8137	26.65
PRIVILEGE FEES AND OTHER:				
GUIDE FEES	0	0.0	0	0.00
PACK TRIP FEES	0	0.0	0	0.00
PUBLIC LAND USE FEES	0	0.0	0	0.00
PRIVATE LAND USE FEES	0	0.0	0	0.00
EQUIPMENT RENTAL FEES	0	0.0	0	0.00
HUNTING EQUIPMENT USED PRIMARILY FOR OTHER HUNTING:				
GUNS AND RIFLES	7	2.5	1741	5.70
BOWS AND ARROWS	1	0.5	337	1.10
TELESCOPIC SIGHTS	2	0.6	310	1.01
DECOYS AND GAME CALLS	4	1.3	19	0.06
GAME CARRIERS	0	0.0	0	0.00
AMMUNITION	28	9.2	1271	4.16
HAND LOADING EQUIPMENT	4	1.2	109	0.36
EQUIPMENT CASES AND CARRIERS	0	0.0	0	0.00
HUNTING DOGS AND ASSOCIATED COSTS	0	0.0	0	0.00
OTHER	4	1.3	116	0.38
LICENSES, TAGS, AND PERMITS:				
LICENSES	0	0.0	0	0.00
STAMPS, TAGS, AND PERMITS	0	0.0	0	0.00

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 21. Special Equipment Bought or Available for Fishing and Hunting: 1980

(Population 16 years old and older)

Expenditure item	Purchased in 1980 primarily for fishing or hunting				Available or already owned in 1980	
	Spenders		Expenditures			
	Number (hundreds)	Percent of all sportsmen	Amount (hundreds of dollars)	Average per sportsman (dollars)	Number (hundreds)	Percent of all sportsmen
TOTAL EXPENDITURES	505	19.9	346261	685.41	1473	58.0
INBOARD BOAT	2	0.1	17244	9000.00	116	4.5
OUTBOARD BOAT.	31	1.2	34573	1105.64	582	22.9
OTHER BOAT	*39	1.5	*24602	*638.79	381	15.0
OUTBOARD MOTOR	29	1.2	14962	507.59	508	20.0
BOAT ACCESSORIES	*47	1.8	*5173	*110.18	536	21.1
TRAVEL OR TENT TRAILER . . .	13	0.5	20143	1495.44	245	9.7
PICK UP CAMPER OR VAN. . . .	27	1.1	30187	1122.16	585	23.0
MOTORHOME.	2	0.1	25308	13000.00	96	3.8
BOAT TRAILERS AND HITCHES. .	27	1.1	2854	105.34	433	17.1
CABINS	12	0.5	38546	3231.09	193	7.6
TRAIL BIKES, DUNE BUGGIES, AND 4X4 VEHICLES	*41	1.6	*115292	*2819.60	480	18.9
GASOLINE FOR BOAT.	417	16.4	14036	33.65	188	7.4
OTHER.	29	0.6	3341	114.88	28	0.5

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 22. Summary of Expenditures for Fishing and Hunting, by Type of Fishing and Hunting: 1980

(Population 16 years old and older. Hundreds of dollars)

Expenditure category	Fishing and hunting	Fishing				Hunting				
		All fishing	Fresh-water[1]	Great Lakes	Saltwater	All hunting	Big game	Small game	Migratory birds	Other animals
TOTAL EXPENDITURES.	1228354	604802	377587	0	15450	608688	329849	51141	32818	15272
FOOD AND LODGING.	214508	134386	126507	0	7879	80122	61441	9855	5593	3232
TRANSPORTATION.	309193	164521	159930	0	4590	144673	104220	22994	9322	8137
PRIVILEGE AND OTHER FEES. . .	12395	5042	2581	0	2461	7353	7133	40	179	0
EQUIPMENT(HUNTING, FISHING) .	212734	62377	61257	(NA)	390	150357	99438	15553	*14513	3903
LICENSES, TAGS, AND PERMITS .	39574	13325	13196	(NA)	129	23063	18114	1457	2963	0
AUXILIARY EQUIPMENT	66786	14116	14116	(NA)	(NA)	40992	39502	1241	248	(NA)
SPECIAL EQUIPMENT	346261	196743	(NA)	(NA)	(NA)	149518	(NA)	(NA)	(NA)	(NA)
MAGAZINE SUBSCRIPTIONS. . . .	13395	6949	(NA)	(NA)	(NA)	6446	(NA)	(NA)	(NA)	(NA)
MEMBERSHIP DUES	12216	6511	(NA)	(NA)	(NA)	5705	(NA)	(NA)	(NA)	(NA)
LAND LEASING AND OWNERSHIP. .	1292	833	(NA)	(NA)	(NA)	459	(NA)	(NA)	(NA)	(NA)

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

[1]Includes Great Lakes.

Table 23. In-State Expenditures for Fishing, by Type of Fishing and Resident Status: 1980

(Population 16 years old and older)

Expenditure item	Resident			Nonresident			Total		
	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)
FOOD, LODGING AND TRANSPORTATION									
ALL HUNTING.	1392	205032	133.22	321	119382	298.83	1713	324415	168.32
BIG GAME	1299	152913	106.37	292	112453	340.08	1591	265367	150.40
SMALL GAME	413	29945	54.06	45	2243	25.57	458	32188	50.93
MIGRATORY BIRD . .	219	13018	42.71	12	1309	61.88	231	14328	44.75
OTHER HUNTING. . .	155	9156	29.98	21	3377	63.47	176	12533	35.43
PRIVILEGE FEES AND OTHER FEES									
ALL HUNTING.	29	3534	2.30	74	51729	129.49	103	55262	28.67
BIG GAME	22	3341	2.32	74	51729	156.44	96	55070	31.21
SMALL GAME	5	21	0.04	0	0	0.00	5	21	0.03
MIGRATORY BIRD . .	2	172	0.56	0	0	0.00	2	172	0.54
OTHER HUNTING. . .	0	0	0.00	0	0	0.00	0	0	0.00

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 24. In-State Expenditures for Hunting, by Type of Hunting and Resident Status: 1980

(Population 16 years old and older)

Expenditure item	Resident			Nonresident			Total		
	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)	Spenders (hundreds)	Amount (hundreds of dollars)	Average per participant (dollars)
FOOD, LODGING AND TRANSPORTATION									
ALL FISHING.	1646	245894	119.94	841	191569	165.40	2487	437463	139.02
GREAT LAKES. . . .	0	0	0.00	0	0	(B)	0	0	(B)
FRESHWATER	1642	243933	119.58	841	191569	165.40	2483	435502	138.40
SALTWATER.	26	1961	26.45	0	0	(B)	26	1961	(B)
PRIVILEGE FEES AND OTHER FEES									
ALL FISHING.	*69	2154	*1.05	*154	18054	*15.59	223	20208	6.42
GREAT LAKES. . . .	0	0	0.00	0	0	(B)	0	0	(B)
FRESHWATER	*69	2154	*1.06	*140	17645	*15.23	209	19799	6.29
SALTWATER.	0	0	0.00	14	409	(B)	14	409	(B)

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 25. License Status of Freshwater Fishermen and Hunters: 1980

(Population 16 years old and older. Numbers in hundreds)

License status	Hunters		Fishermen	
	Number	Percent	Number	Percent
TOTAL	1927	100.0	3147	100.0
TOTAL LICENSED.	1745	90.5	2673	85.0
RESIDENT.	1435	82.2	1712	64.0
NONRESIDENT	311	17.8	961	36.0
TOTAL UNLICENSED. . . .	136	7.1	430	13.7
EXEMPT.	21	15.1	94	21.9
OVER AGE.	0	0.0	24	25.0
UNDER AGE	0	0.0	11	11.9
HUNTED OR FISHED ON OWN LAND. . . .	3	15.0	12	12.9
MILITARY.	0	0.0	0	0.0
DISABLED.	0	0.0	0	0.0
OTHER	16	79.6	18	18.6
NONEXEMPT	116	84.9	331	77.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 26. Selected Characteristics of Freshwater Fishermen and Hunters, by License and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Resident									
	Fishermen					Hunters				
		Licensed		Unlicensed			Licensed		Unlicensed	
	Total	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total
TOTAL PERSONS	1988	1712	86.1	234	11.7	1528	1435	93.9	*71	4.7
POPULATION DENSITY										
BIG CITIES	0	0	(B)	0	(B)	0	0	(B)	0	(B)
SMALL CITIES	447	389	86.9	*50	11.1	229	229	100.0	0	0.0
TOWNS AND RURAL AREAS	1541	1323	85.8	184	11.9	1299	1205	92.8	*71	5.5
SEX AND AGE GROUP:										
MALE, TOTAL	1334	1183	88.7	134	10.1	1239	1164	93.9	*61	4.9
16-17 YEARS	*58	*38	64.6	21	35.4	*71	*58	82.3	13	17.7
18-24 YEARS	228	199	87.4	29	12.6	246	237	96.0	10	4.0
25-34 YEARS	380	343	90.3	33	8.7	381	372	97.6	5	1.3
35-44 YEARS	260	246	94.7	11	4.3	233	211	90.8	21	9.2
45-54 YEARS	135	120	89.3	4	3.1	133	128	95.6	4	2.7
55-64 YEARS	172	150	87.1	22	12.9	114	105	92.8	5	4.1
65 YEARS AND OVER	102	*87	85.7	15	14.3	*61	*53	86.3	4	6.5
FEMALE, TOTAL	654	529	80.8	99	15.2	289	271	93.8	10	3.6
16-17 YEARS	38	32	84.1	6	15.9	24	24	100.0	0	0.0
18-24 YEARS	*83	*53	63.9	25	30.5	*40	*40	100.0	0	0.0
25-34 YEARS	203	186	91.2	18	8.8	122	109	90.0	10	8.4
35-44 YEARS	*86	*73	85.2	13	14.8	24	24	100.0	0	0.0
45-54 YEARS	*67	*61	90.3	7	9.7	*45	*45	100.0	0	0.0
55-64 YEARS	99	*70	70.5	22	22.5	19	19	100.0	0	0.0
65 YEARS AND OVER	*77	*54	70.4	8	10.8	16	10	63.0	0	0.0
RACE:										
WHITE	1891	1683	89.0	164	8.7	1411	1363	96.6	26	1.8
BLACK	0	0	(B)	0	(B)	2	2	100.0	0	0.0
ALL OTHERS	*98	28	29.0	*69	71.0	115	*69	60.2	*46	39.8
ANNUAL HOUSEHOLD INCOME:										
UNDER $5,000	131	*91	69.3	32	24.2	85	73	85.4	7	7.8
$ 5,000- $9,999	186	128	69.1	34	18.1	104	90	86.6	14	13.4
$10,000-$14,999	273	239	87.6	34	12.4	195	185	95.0	10	5.0
$15,000-$19,999	315	274	86.8	*37	11.7	213	205	96.0	4	1.9
$20,000-$24,999	274	255	92.8	16	5.7	223	219	98.5	3	1.5
$25,000-$29,999	225	205	91.4	19	8.6	184	171	93.0	7	4.1
$30,000-$39,999	168	150	89.7	17	10.3	127	122	96.3	5	3.7
$40,000-$49,999	*57	*53	92.7	2	3.5	*37	34	94.0	0	0.0
$50,000 OR MORE	*80	*66	82.4	14	17.6	94	87	91.8	3	3.7
NOT REPORTED	280	251	89.6	29	10.4	267	249	93.3	18	6.7
EDUCATION:										
NONE	0	0	(B)	0	(B)	5	5	100.0	0	0.0
1- 7 YEARS	*54	34	63.2	20	36.8	29	20	70.9	8	29.1
8 YEARS	148	104	70.7	29	19.5	104	89	85.7	9	8.7
9-11 YEARS	249	212	85.1	27	10.8	262	228	87.0	32	12.2
12 YEARS	820	683	83.2	120	14.6	650	630	97.0	13	2.0
1-3 YEARS COLLEGE	305	282	92.4	23	7.6	217	204	93.8	9	4.2
4 YEARS COLLEGE	169	167	98.8	2	1.2	105	105	100.0	0	0.0
5 YEARS OR MORE	244	230	94.5	13	5.5	157	154	97.8	0	0.0

(See footnotes at end of table.)

Table 26. Selected Characteristics of Freshwater Fishermen and Hunters, by License and Resident Status: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Nonresident									
	Fishermen					Hunters				
		Licensed		Unlicensed			Licensed		Unlicensed	
	Total	Number	Percent of total	Number	Percent of total	Total	Number	Percent of total	Number	Percent of total
TOTAL PERSONS	1158	961	83.0	*197	17.0	399	311	77.7	65	16.3
POPULATION DENSITY										
BIG CITIES	252	*165	65.5	*87	34.5	30	6	20.3	0	0.0
SMALL CITIES	384	384	100.0	0	0.0	*107	79	73.2	29	26.8
TOWNS AND RURAL AREAS	522	413	79.0	*110	21.0	262	226	86.2	36	13.8
SEX AND AGE GROUP:										
MALE, TOTAL	826	668	80.9	*158	19.1	361	277	76.6	61	16.8
16-17 YEARS	17	0	0.0	17	100.0	11	3	25.3	8	74.7
18-24 YEARS	*130	*126	96.8	4	3.2	53	46	85.7	8	14.3
25-34 YEARS	276	*198	71.7	78	28.3	*102	66	64.5	12	12.2
35-44 YEARS	*207	*195	94.4	12	5.6	73	53	72.6	20	27.4
45-54 YEARS	*102	74	73.3	27	26.7	*112	*99	88.7	13	11.3
55-64 YEARS	*86	66	76.8	20	23.2	11	11	100.0	0	0.0
65 YEARS AND OVER	8	8	100.0	0	0.0	0	0	(B)	0	(B)
FEMALE, TOTAL	332	294	88.3	39	11.7	38	34	88.4	4	11.6
16-17 YEARS	1	0	0.0	1	100.0	0	0	(B)	0	(B)
18-24 YEARS	60	33	54.5	27	45.5	31	31	100.0	0	0.0
25-34 YEARS	*99	*93	93.8	6	6.2	7	3	40.1	4	59.9
35-44 YEARS	*110	*108	97.8	2	2.2	0	0	(B)	0	(B)
45-54 YEARS	7	5	70.9	2	29.1	0	0	(B)	0	(B)
55-64 YEARS	38	38	100.0	0	0.0	0	0	(B)	0	(B)
65 YEARS AND OVER	18	18	100.0	0	0.0	0	0	(B)	0	(B)
RACE:										
WHITE	1154	961	83.3	*192	16.7	390	311	79.7	55	14.2
BLACK	0	0	(B)	0	(B)	0	0	(B)	0	(B)
ALL OTHERS	5	0	0.0	5	100.0	10	0	0.0	10	100.0
ANNUAL HOUSEHOLD INCOME:										
UNDER $5,000	*128	*128	100.0	0	0.0	0	0	(B)	0	(B)
$ 5,000- $9,999	32	30	93.4	2	6.6	14	6	45.8	8	54.2
$10,000-$14,999	*174	*144	82.8	30	17.2	84	57	68.4	3	3.2
$15,000-$19,999	65	61	93.8	4	6.2	22	22	100.0	0	0.0
$20,000-$24,999	*155	*129	83.2	26	16.8	30	20	64.9	11	35.1
$25,000-$29,999	*134	*127	95.1	7	4.9	69	66	95.7	3	4.3
$30,000-$39,999	275	*196	71.1	80	28.9	28	3	11.3	25	88.7
$40,000-$49,999	27	0	0.0	27	100.0	20	14	69.5	6	30.5
$50,000 OR MORE	*86	67	77.8	19	22.2	39	29	74.5	10	25.5
NOT REPORTED	82	80	97.1	2	2.9	*92	*92	100.0	0	0.0
EDUCATION:										
NONE	0	0	(B)	0	(B)	0	0	(B)	0	(B)
1- 7 YEARS	67	64	96.4	2	3.6	0	0	(B)	0	(B)
8 YEARS	15	15	100.0	0	0.0	5	0	0.0	5	100.0
9-11 YEARS	34	16	47.0	18	53.0	13	10	77.0	3	23.0
12 YEARS	284	274	96.3	10	3.7	*93	69	74.3	0	0.0
1-3 YEARS COLLEGE	310	274	88.5	36	11.5	*176	*155	88.1	21	11.9
4 YEARS COLLEGE	*122	*119	98.3	2	1.7	66	59	90.5	6	9.5
5 YEARS OR MORE	328	*199	60.8	*128	39.2	47	17	35.9	30	64.1

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 27. Licensed and Unlicensed Sportsmen, Expenditures, Days, Trips, and Miles Travelled, by Type of Fishing and Hunting and Resident Status: 1980

(Population 16 years old and older. Numbers in hundreds)

Item	Total		Licensed				Unlicensed			
			Resident		Nonresident		Resident		Nonresident	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL FISHING										
PARTICIPANTS.	3147	100.0	1712	54.4	961	30.6	234	7.4	*197	6.3
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	455301	100.0	226328	49.7	183070	40.2	15761	3.5	*16262	3.6
DAYS.	40249	100.0	28832	71.6	6625	16.5	3002	7.5	*1128	2.8
TRIPS	33918	100.0	26183	77.2	3829	11.3	2852	8.4	*391	1.2
TOTAL MILES TRAVELLED . . .	4737941	100.0	2059973	43.5	1705873	36.0	214427	4.5	*731716	15.4
FRESHWATER FISHING										
PARTICIPANTS.	3147	100.0	1712	54.4	961	30.6	234	7.4	*197	6.3
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	455301	100.0	226328	49.7	183070	40.2	15761	3.5	*16262	3.6
DAYS.	41539	100.0	30034	72.3	6676	16.1	3002	7.2	*1164	2.8
TRIPS	33918	100.0	26183	77.2	3829	11.3	2852	8.4	*391	1.2
TOTAL MILES TRAVELLED . . .	4737941	100.0	2059973	43.5	1705873	36.0	214427	4.5	*731716	15.4
TOTAL HUNTING										
PARTICIPANTS.	1927	100.0	1435	74.4	311	16.1	*71	3.7	65	3.4
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	*379677	100.0	196376	51.7	158743	41.8	*9237	2.4	9715	2.6
DAYS.	22476	100.0	16108	71.7	3015	13.4	*2813	12.5	236	1.0
TRIPS	20653	100.0	15890	76.9	933	4.5	*3314	16.0	119	0.6
TOTAL MILES TRAVELLED . . .	2236961	100.0	1475105	65.9	455157	20.3	*92392	4.1	192737	8.6
BIG GAME HUNTING										
PARTICIPANTS.	1764	100.0	1356	76.9	293	16.6	*60	3.4	38	2.1
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	320436	100.0	149490	46.7	155195	48.4	*4512	1.4	6334	2.0
DAYS.	13912	100.0	10584	76.1	2486	17.9	*572	4.1	92	0.7
TRIPS	9751	100.0	8383	86.0	578	5.9	*572	5.9	39	0.4
TOTAL MILES TRAVELLED . . .	1445175	100.0	909386	62.9	423238	29.3	*27908	1.9	70879	4.9
SMALL GAME HUNTING										
PARTICIPANTS.	632	100.0	507	80.2	37	5.9	31	4.9	27	4.2
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	32208	100.0	26149	81.2	2220	6.9	3158	9.8	22	0.1
DAYS.	4750	100.0	3044	64.1	251	5.3	1302	27.4	41	0.9
TRIPS	4324	100.0	2747	63.5	109	2.5	1330	30.8	27	0.6
TOTAL MILES TRAVELLED . . .	295032	100.0	201649	68.3	20709	7.0	37514	12.7	30635	10.4

(See footnotes at end of table.)

Table 27. Licensed and Unlicensed Sportsmen, Expenditures, Days, Trips, and Miles Travelled, by Type of Fishing and Hunting and Resident Status: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Item	Total		Licensed				Unlicensed			
			Resident		Nonresident		Resident		Nonresident	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
MIGRATORY BIRDS										
PARTICIPANTS.	320	100.0	282	88.0	21	6.6	13	4.1	0	0.0
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	14499	100.0	12678	87.4	1309	9.0	490	3.4	0	0.0
DAYS.	1905	100.0	1435	75.3	293	15.4	91	4.8	0	0.0
TRIPS	2379	100.0	1346	56.6	236	9.9	712	29.9	0	0.0
TOTAL MILES TRAVELLED . . .	121392	100.0	93257	76.8	10765	8.9	14815	12.2	0	0.0
OTHER ANIMALS										
PARTICIPANTS.	354	100.0	262	74.1	10	2.7	*34	9.6	44	12.3
EXPENDITURES (FOOD, TRAVEL, LODGING & FEES) . .	12533	100.0	8058	64.3	18	0.1	*1077	8.6	3359	26.8
DAYS.	4076	100.0	2977	73.0	10	0.2	*919	22.5	158	3.9
TRIPS	4198	100.0	3414	81.3	10	0.2	*701	16.7	53	1.3
TOTAL MILES TRAVELLED . . .	375361	100.0	270813	72.1	446	0.1	*12155	3.2	91224	24.3

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 28. Selected Characteristics of Freshwater Fishermen, by Type of Water Fished: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Type of freshwater									
	Total		Manmade lakes and reservoirs (10 acres or more		Manmade ponds and reservoirs (less than 10 acres)		Natural lakes and ponds		Rivers and streams	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL PERSONS	2040	100.0	956	46.9	391	19.2	823	40.3	1450	71.1
POPULATION DENSITY										
BIG CITIES	0	0.0	0	(B)	0	(B)	0	(B)	0	(B)
SMALL CITIES	467	22.9	239	51.1	*79	16.8	190	40.8	355	76.0
TOWNS AND RURAL AREAS	1573	77.1	718	45.6	313	19.9	632	40.2	1096	69.7
SEX AND AGE GROUP:										
MALE, TOTAL	1372	67.3	630	45.9	302	22.0	619	45.1	1028	74.9
16-17 YEARS	*58	2.9	24	41.3	15	25.0	*39	67.5	*52	90.0
18-24 YEARS	238	11.7	100	41.8	*90	37.7	112	47.2	189	79.4
25-34 YEARS	387	18.9	166	43.0	*76	19.6	201	52.0	313	81.0
35-44 YEARS	267	13.1	127	47.5	*56	21.1	126	47.4	194	72.8
45-54 YEARS	143	7.0	98	68.6	23	16.0	34	23.4	*87	60.8
55-64 YEARS	172	8.4	*64	37.2	32	18.6	*53	31.0	126	73.2
65 YEARS AND OLDER	108	5.3	*52	48.0	11	9.8	*53	49.0	*66	61.5
FEMALE, TOTAL	668	32.7	326	48.9	89	13.3	204	30.5	422	63.3
16-17 YEARS	*38	1.9	17	44.1	15	40.2	4	11.1	17	45.5
18-24 YEARS	*83	4.0	*38	46.2	4	5.4	*40	48.3	*73	88.2
25-34 YEARS	207	10.2	*87	41.9	33	15.9	*70	33.9	148	71.5
35-44 YEARS	*91	4.5	*55	60.1	9	10.0	*42	46.1	*58	63.4
45-54 YEARS	*72	3.5	*46	64.5	4	5.5	11	15.6	*39	53.8
55-64 YEARS	99	4.9	*49	49.8	13	13.1	17	17.5	*42	42.5
65 YEARS AND OLDER	*77	3.8	34	43.6	10	13.2	19	24.3	*45	58.6
RACE:										
WHITE	1942	95.2	945	48.7	371	19.1	754	38.8	1373	70.7
BLACK	0	0.0	0	(B)	0	(B)	0	(B)	0	(B)
ALL OTHERS	98	4.8	11	11.2	20	20.4	*69	70.4	*78	79.4
ANNUAL HOUSEHOLD INCOME:										
UNDER $5,000	133	6.5	*68	51.4	*44	33.4	34	25.6	*61	46.1
$ 5,000- $9,999	197	9.7	115	58.3	*39	19.9	*58	29.5	112	56.6
$10,000-$14,999	273	13.4	*79	29.0	*41	15.0	132	48.4	229	83.9
$15,000-$19,999	318	15.6	151	47.5	*38	11.8	138	43.4	233	73.2
$20,000-$24,999	284	13.9	129	45.4	*48	16.8	128	45.2	231	81.4
$25,000-$29,999	228	11.2	116	50.8	*78	34.3	105	46.0	166	72.7
$30,000-$39,999	185	9.1	*84	45.4	22	12.0	*63	33.9	141	76.4
$40,000-$49,999	*61	3.0	*41	66.2	6	9.9	12	20.1	*48	78.1
$50,000 OR MORE	*80	3.9	*40	49.9	*41	51.7	30	37.6	*37	46.3
NOT REPORTED	280	13.7	133	47.5	34	12.0	122	43.4	193	68.7
EDUCATION:										
NONE	0	0.0	0	(B)	0	(B)	0	(B)	0	(B)
1- 7 YEARS	*54	2.6	29	53.2	8	15.6	13	24.6	26	48.7
8 YEARS	148	7.2	*74	50.2	4	2.7	*42	28.4	103	70.0
9-11 YEARS	263	12.9	116	44.0	*91	34.5	102	38.8	174	66.0
12 YEARS	832	40.8	419	50.3	152	18.3	278	33.5	576	69.2
1-3 YEARS COLLEGE	309	15.1	132	42.9	*55	17.9	174	56.4	217	70.1
4 YEARS COLLEGE	175	8.6	*72	41.2	30	17.2	109	62.4	151	86.5
5 YEARS OR MORE	260	12.7	115	44.2	*50	19.3	104	40.0	204	78.4

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 29. Hunters on Public Land: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of hunting	All hunting		Total hunters on public land		Hunters on Federally-managed land	
	Number	Percent	Number	Percent of all hunters	Number	Percent of total
TOTAL HUNTERS. . . .	1539	100.0	1037	67.4	811	78.2
BIG GAME	1438	93.4	988	68.7	780	79.0
SMALL GAME	554	36.0	283	51.1	187	66.0
MIGRATORY BIRDS. . .	305	19.8	159	52.3	*75	46.8
OTHER ANIMALS. . . .	305	19.8	105	34.2	*64	61.3

Type of hunting	Hunters on State-managed land		Hunters on locally-managed land		Hunters on unclassified land	
	Number	Percent of total	Number	Percent of total	Number	Percent of total
TOTAL HUNTERS. . . .	220	21.2	272	26.3	153	14.8
BIG GAME	165	16.7	240	24.3	119	12.1
SMALL GAME	*54	19.2	*67	23.6	18	6.3
MIGRATORY BIRDS. . .	*60	37.9	*52	32.8	27	17.2
OTHER ANIMALS. . . .	11	10.6	51	49.0	10	9.9

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 30. Selected Characteristics of Hunters on Public Land: 1980

(Population 16 years old and older. Numbers in hundreds)

Characteristic	Hunters		
	All hunters	Hunters on public lands	Percent hunted on public lands
TOTAL PERSONS	1539	1037	67.4
POPULATION DENSITY OF RESIDENCE			
BIG CITIES	0	0	(B)
SMALL CITIES	229	134	58.3
TOWNS AND RURAL AREAS	1310	903	69.0
SEX AND AGE GROUP:			
BOTH SEXES, TOTAL	1539	1037	67.4
16-17 YEARS	95	*53	55.6
18-24 YEARS	291	198	68.1
25-34 YEARS	508	370	72.8
35-44 YEARS	257	189	73.7
45-54 YEARS	178	111	62.5
55-64 YEARS	132	*75	56.5
65 YEARS AND OLDER	*77	*40	52.3
MALE, TOTAL	1247	870	69.7
FEMALE, TOTAL	292	167	57.3
RACE:			
WHITE	1422	969	68.2
BLACK	2	2	100.0
ALL OTHERS	115	65	56.9
ANNUAL HOUSEHOLD INCOME:			
UNDER $5,000	85	*54	63.4
$ 5,000- $9,999	109	*51	46.6
$10,000-$14,999	197	144	73.2
$15,000-$19,999	213	142	66.8
$20,000-$24,999	223	156	70.1
$25,000-$29,999	187	147	78.3
$30,000-$39,999	127	100	79.1
$40,000-$49,999	*37	17	45.3
$50,000 OR MORE	94	*45	48.1
NOT REPORTED	267	181	67.7
EDUCATION:			
NONE	5	5	100.0
1- 7 YEARS	29	24	83.7
8 YEARS	104	56	53.5
9-11 YEARS	262	149	56.8
12 YEARS	652	452	69.4
1-3 YEARS COLLEGE	222	163	73.5
4 YEARS COLLEGE	109	75	69.2
5 YEARS OR MORE	157	113	72.3

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Wildlife Management Regions

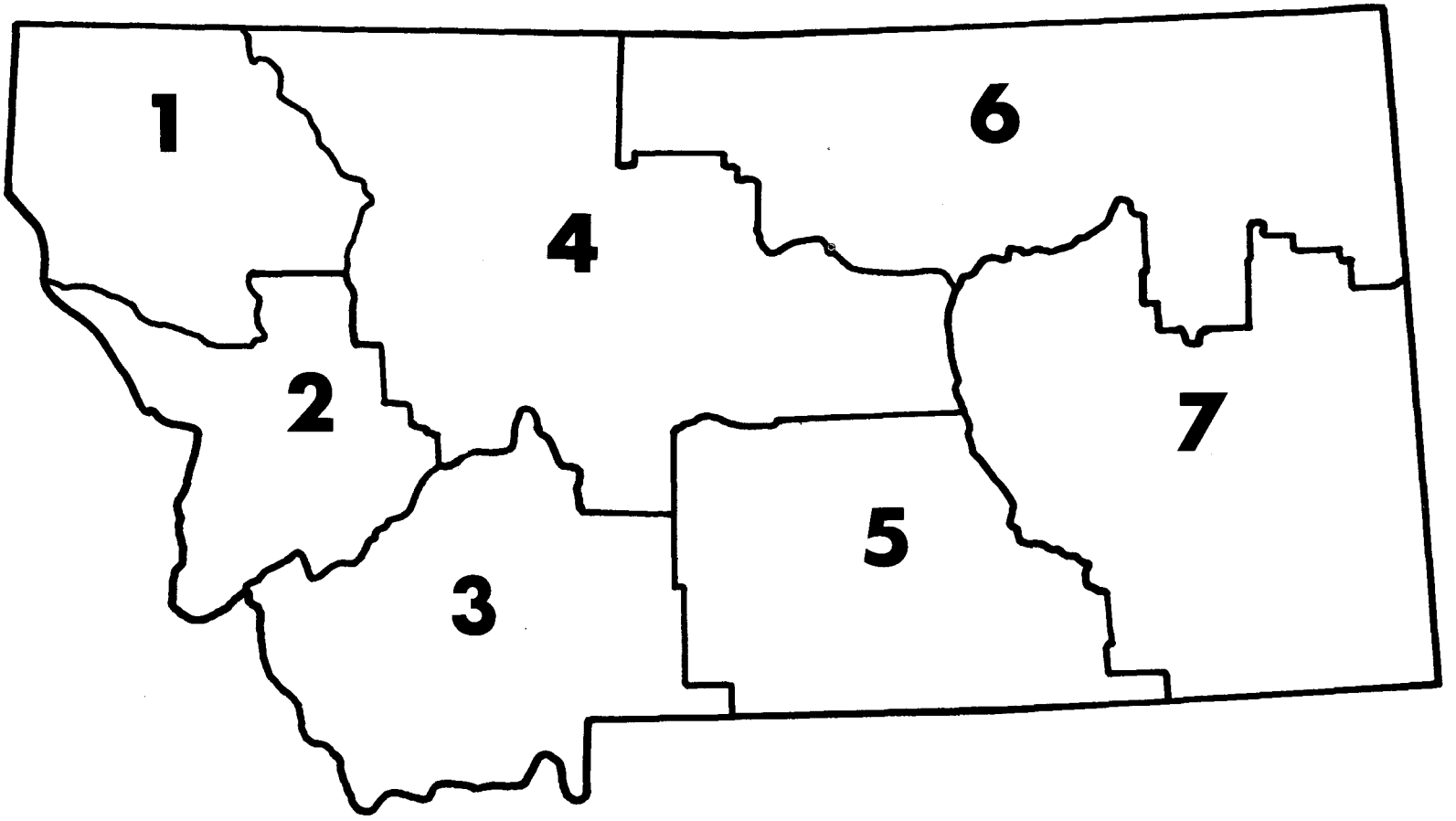

Table 31. Fishing and Hunting, by State Wildlife Management Region: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of sport	Total			Region 1			Region 2			Region 3		
	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips
STATE RESIDENTS:												
ALL FISHERMEN. . . .	1988	32497	29699	472	7128	7713	300	2155	1814	653	9938	8834
ALL HUNTERS.	1528	19201	19577	301	3008	2691	149	1242	1070	446	5219	5074
BIG GAME	1434	11335	9134	284	2377	1926	140	1000	759	421	3340	2867
SMALL GAME	544	4434	4165	96	495	454	*38	*161	*147	125	738	758
MIGRATORY BIRDS. .	299	1611	2143	*53	*252	*197	*35	*126	*123	96	482	470
OTHER HUNTING. . .	301	3908	4136	22	144	115	8	45	41	88	1170	978
NONRESIDENTS:												
ALL FISHERMEN. . . .	1158	7752	4219	221	1418	336	*143	*1644	*1445	651	2917	1686
ALL HUNTERS.	399	3275	1075	26	195	31	*126	*619	*205	*111	*882	*319
BIG GAME	331	2577	617	18	134	18	*102	*595	*167	*108	*862	*299
SMALL GAME	*88	*316	*159	5	9	5	*44	*52	*38	5	5	5
MIGRATORY BIRDS. .	21	293	236	8	62	8	0	0	0	3	8	8
OTHER HUNTING. . .	*53	*168	*63	0	0	0	0	0	0	6	6	6

(See footnotes at end of table.)

Table 31. Fishing and Hunting, by State Wildlife Management Region: 1980 *(Continued)*

(Population 16 years old and older. Numbers in hundreds)

Type of sport	Region 4			Region 5			Region 6			Region 7		
	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips	Partic-ipants	Days	Trips
STATE RESIDENTS:												
ALL FISHERMEN. . . .	673	7230	5816	256	2605	2202	187	2020	1995	186	1421	1326
ALL HUNTERS.	457	5274	5787	156	959	819	235	2662	3350	249	835	786
BIG GAME	416	2538	1845	129	441	312	199	921	745	231	717	680
SMALL GAME	173	1150	934	*64	*353	*331	87	1458	1486	29	79	55
MIGRATORY BIRDS. .	91	434	434	22	93	89	31	219	826	4	4	4
OTHER HUNTING. . .	134	2126	2574	31	91	87	*49	*285	*293	12	47	47
NONRESIDENTS:												
ALL FISHERMEN. . . .	*168	*965	*358	*133	*517	*288	14	249	81	16	43	25
ALL HUNTERS.	37	192	49	43	89	77	21	609	342	51	689	52
BIG GAME	22	98	22	29	38	35	13	165	25	50	687	51
SMALL GAME	3	3	3	15	15	15	21	229	93	1	2	1
MIGRATORY BIRDS. .	0	0	0	0	0	0	11	224	220	0	0	0
OTHER HUNTING. . .	25	111	25	18	46	27	4	4	4	0	0	0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 32. Special Fishing: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of fishing	Fishermen		Days	
	In-State	Out-of-State	In-State	Out-of-State
TOTAL FISHERMEN[1]/DAYS. . .	1988	252	32497	1723
SPEAR FISHING.	5	0	60	0
FISHING WITH NET OR SEINE.	11	0	11	0
FISHING THROUGH THE ICE	337	12	1654	31
FISHING WITH BOW AND ARROW	10	0	14	0
GIGGING FOR FROGS. . .	0	0	0	0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.
[1]Refers to all resident freshwater fishermen.

Table 33. Special Hunting: 1980

(Population 16 years old and older. Numbers in hundreds)

Type of hunting	All hunters	Bow and arrow			Primitive firearm			Pistol or handgun		
		Hunters		Days (in-State)	Hunters		Days (in-State)	Hunters		Days (in-State)
		Number	Percent		Number	Percent		Number	Percent	
TOTAL[1].	240	90	37.7	626	13	5.2	22	170	71.0	922
BIG GAME	150	90	60.1	556	13	8.3	22	*65	43.6	*291
SMALL GAME	98	15	15.2	59	0	0.0	0	*83	84.8	*308
MIGRATORY BIRDS. . .	0	0	(B)	0	0	(B)	0	0	(B)	0
OTHER ANIMALS. . . .	*51	2	4.4	11	0	0.0	0	*49	95.6	*323

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.
[1]Refers to special equipment hunters only.

Table 34. Land Leased or Owned for Fishing or Hunting, by Land Use and Cost: 1980

(Population 16 years old and older. Numbers in hundreds)

Item	Number
TOTAL PERSONS OWNING OR LEASING LAND USED FOR FISHING OR HUNTING	406
TOTAL ACRES OWNED/LEASED	614294
AVERAGE ACRES OWNED/LEASED	1513.7
TOTAL PERSONS OWNING OR LEASING LAND PRIMARILY FOR FISHING OR HUNTING	*55
PERCENT OF TOTAL PERSONS	*13.6
TOTAL ACRES OWNED/LEASED PRIMARILY FOR FISHING OR HUNTING	*21077
AVERAGE ACRES OWNED/LEASED PRIMARILY FOR FISHING OR HUNTING	*382.7
TYPE OF HUNTING/FISHING DONE: (NUMBER OF USERS)	
BIG GAME	30
SMALL GAME	6
MIGRATORY BIRDS	0
OTHER HUNTING	0
FRESHWATER ONLY	21
SALTWATER ONLY	0
BOTH FRESHWATER AND SALTWATER	0
TOTAL ANNUAL COST	*1292
AVERAGE ANNUAL COST	*23.46

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 35. Age First Fished or Hunted and Years of Participation: 1980

(Population 16 years old and older. Numbers in hundreds)

Age and years of participation	Hunters		Fishermen	
	Number	Percent	Number	Percent
BEGINNING AGE:				
6- 8 YEARS	169	11.0	616	30.1
9-11 YEARS	253	16.5	322	15.7
12-15 YEARS	714	46.4	279	13.6
16-17 YEARS	102	6.6	24	1.2
18-24 YEARS	168	10.9	105	5.1
25-34 YEARS	*73	4.8	*66	3.2
35-44 YEARS	12	0.8	23	1.1
45-54 YEARS	10	0.6	19	0.9
55-64 YEARS	3	0.2	19	0.9
65 YEARS OR MORE. . . .	0	0.0	0	0.0
YEARS OF PARTICIPATION:				
0-2 YEARS.	107	6.9	*53	2.6
3-5 YEARS.	157	10.2	152	7.4
6-8 YEARS.	167	10.9	100	4.9
9-11 YEARS	169	11.0	159	7.8
12-15 YEARS	197	12.8	306	14.9
16-17 YEARS	*41	2.6	*51	2.5
18-24 YEARS	205	13.3	330	16.1
25-34 YEARS	215	14.0	426	20.8
35-44 YEARS	148	9.6	208	10.2
45-54 YEARS	*77	5.0	109	5.3
55-64 YEARS	*49	3.2	99	4.8
65 YEARS OR MORE. . . .	0	0.0	*30	1.4

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 36. Fishermen and Hunters Participating in 1979 but Not in 1980, by Age

(Numbers in hundreds)

Age	Fishermen		Hunters	
	Number	Percent of 1980 fishermen	Number	Percent of 1980 hunters
6- 8 YEARS	10	2.6	0	0.0
9-11 YEARS	10	2.5	0	0.0
12-15 YEARS	*30	7.7	*11	4.6
16-17 YEARS	*24	5.9	5	2.2
18-24 YEARS	71	17.8	41	17.1
25-34 YEARS	85	21.4	80	33.6
35-44 YEARS	53	13.3	40	16.7
45-54 YEARS	41	10.4	21	8.9
55-64 YEARS	43	10.7	28	11.8
65 YEARS OR MORE. . . .	*31	7.8	*12	5.1

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 37. Fishermen and Hunters, Expenditures, and Days, by Travel Distance: 1980

(Population 16 years old and older. Numbers in hundreds)

Average one-way distance	Fishing						Hunting					
	Resident				Nonresident		Resident				Nonresident	
	In-State		Out-of-State				In-State		Out-of-State			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
NUMBER OF SPORTSMEN:												
1-5 MILES	225	11.3	11	3.7	0	0.0	127	8.3	2	5.3	51	12.7
6-24 MILES	439	22.1	10	3.4	*142	12.2	345	22.6	2	4.8	22	5.5
25-49 MILES	415	20.9	4	1.2	65	5.6	445	29.1	8	16.9	18	4.5
50-99 MILES	518	26.1	30	9.8	58	5.0	362	23.7	2	4.2	5	1.2
100-249 MILES	247	12.4	*43	13.7	*100	8.6	199	13.0	4	8.5	4	1.0
250-499 MILES	7	0.3	16	5.2	80	6.9	10	0.6	8	17.4	10	2.4
500-999 MILES	0	0.0	35	11.2	47	4.0	9	0.6	4	8.6	34	8.6
1,000 MILES AND OVER	0	0.0	32	10.3	220	19.0	0	0.0	7	15.8	*131	32.8
EXPENDITURES:												
1-5 MILES	10058	4.1	376	1.0	0	0.0	3397	1.6	0	0.0	489	0.3
6-24 MILES	53057	21.6	305	0.8	*36456	28.7	42666	20.5	0	0.0	12308	8.2
25-49 MILES	51696	21.1	0	0.0	10725	8.5	53005	25.4	540	7.9	2367	1.6
50-99 MILES	90395	36.8	15268	40.4	2286	1.8	79087	37.9	0	0.0	708	0.5
100-249 MILES	40021	16.3	*2123	5.6	*13532	10.7	26080	12.5	9	0.1	1994	1.3
250-499 MILES	282	0.1	3492	9.3	12097	9.5	1666	0.8	382	5.6	5914	3.9
500-999 MILES	0	0.0	6071	16.1	3592	2.8	2588	1.2	3762	55.4	10786	7.2
1,000 MILES AND OVER	0	0.0	10114	26.8	48134	38.0	0	0.0	2103	30.9	*115512	77.0
NUMBER OF RECREATION DAYS:												
1-5 MILES	5922	19.3	219	14.1	0	0.0	1126	6.0	15	4.4	184	8.1
6-24 MILES	8260	26.9	115	7.4	*2906	51.7	6511	34.8	18	5.2	634	27.8
25-49 MILES	5739	18.7	4	0.2	470	8.4	4882	26.1	58	17.4	229	10.1
50-99 MILES	7990	26.0	355	22.8	323	5.7	4279	22.9	8	2.3	17	0.8
100-249 MILES	2661	8.7	*364	23.4	*407	7.2	1793	9.6	11	3.4	36	1.6
250-499 MILES	128	0.4	63	4.0	381	6.8	19	0.1	72	21.6	19	0.9
500-999 MILES	0	0.0	281	18.1	208	3.7	99	0.5	79	23.7	150	6.6
1,000 MILES AND OVER	0	0.0	158	10.1	929	16.5	0	0.0	74	22.0	*1006	44.2

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25. Data are arrayed by the average distance travelled per sportsman. For example, expenditures in the less than 5 miles average one-way distance travelled category are total expenditures by sportsmen whose trips averaged less than 5 miles one way.

Table 38. Number of States Fished and Hunted and Days: 1980

(Population 16 years old and older. Numbers in hundreds)

Location of activity	All fishing				All hunting			
	Fishermen		Days		Hunters		Days	
	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent
TOTAL	2050	100.0	34582	100.0	1539	100.0	19557	100.0
IN 1 STATE (NOT CURRENT STATE OF RESIDENCE)	*41	2.0	*228	0.7	11	0.7	61	0.3
IN 2 STATES (NOT CURRENT STATE OF RESIDENCE)	8	0.4	280	0.8	0	0.0	0	0.0
IN 3 STATES (NOT CURRENT STATE OF RESIDENCE)	0	0.0	0	0.0	0	0.0	0	0.0
IN 4 OR MORE STATES (NOT CURRENT STATE OF RESIDENCE)	0	0.0	0	0.0	0	0.0	0	0.0
IN CURRENT STATE OF RESIDENCE ONLY	1754	85.5	26287	76.0	1502	97.6	18426	94.2
IN CURRENT STATE OF RESIDENCE AND 1 OTHER STATE	223	10.9	6829	19.7	19	1.2	627	3.2
IN CURRENT STATE OF RESIDENCE AND 2 OTHER STATES	8	0.4	678	2.0	7	0.5	360	1.8
IN CURRENT STATE OF RESIDENCE AND 3 OTHER STATES	2	0.1	96	0.3	0	0.0	0	0.0
IN CURRENT STATE OF RESIDENCE AND 4 OR MORE OTHER STATES	2	0.1	47	0.1	0	0.0	0	0.0
IN FOREIGN COUNTRIES, TOTAL	36	1.7	138	0.4	9	0.6	82	0.4
CANADA	25	70.5	91	66.2	9	100.0	82	100.0
MEXICO	0	0.0	0	0.0	0	0.0	0	0.0
OTHER	11	29.5	47	33.8	0	0.0	0	0.0

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 39. Membership in Sportsmen's Organizations and Magazine Readership: 1980

(Population 16 years old and older. Numbers in hundreds)

Activity	All sportsmen		Hunters		Fishermen	
	Number	Percent	Number	Percent	Number	Percent
MEMBERSHIP IN:						
LOCAL BIRDING CLUBS	4	0.2	4	0.3	0	0.0
LOCAL ROD AND GUN CLUBS	*70	2.8	*67	4.3	*56	2.7
OTHER WILDLIFE RELATED ORGANIZATIONS	*49	1.9	*41	2.7	*41	2.0
BELONG TO NATIONAL WILDLIFE RELATED OR CONSERVATION ORGANIZATIONS	526	20.7	357	23.2	454	22.2
READ MAGAZINES OR PERIODICALS DEVOTED TO FISHING, HUNTING, OR WILDLIFE:[1]						
FREQUENTLY	879	34.6	625	40.6	760	37.1
SOMETIMES	517	20.3	350	22.7	405	19.7
RARELY	290	11.4	159	10.3	236	11.5

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

[1]Frequently: once a month. Sometimes: six times during the year. Rarely: less than six times during the year.

Table 40. Participation of Nonconsumptive Users in Fishing or Hunting: 1980

(Population 6 years old and older. Numbers in hundreds)

Nonconsumptive activity	Total nonconsumptive users		Fished or hunted		Fished only		Hunted only		Fished and hunted		Did not fish or hunt	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL PARTICIPANTS	5799	100.0	2935	50.6	1407	24.3	441	7.6	1087	18.7	2864	49.4
TOTAL PRIMARY PARTICIPANTS	2949	50.9	1693	57.4	763	25.9	250	8.5	681	23.1	1256	42.6
NONRESIDENTIAL	1576	53.4	990	62.8	447	28.4	132	8.4	412	26.1	586	37.2
RESIDENTIAL	2177	73.8	1251	57.5	553	25.4	192	8.8	505	23.2	926	42.5
TOTAL SECONDARY PARTICIPANTS	5640	97.3	2871	50.9	1370	24.3	431	7.6	1070	19.0	2769	49.1
NONRESIDENTIAL	4637	82.2	2508	54.1	1181	25.5	343	7.4	984	21.2	2128	45.9
RESIDENTIAL	4510	80.0	2332	51.7	1124	24.9	347	7.7	860	19.1	2178	48.3

Table 41. Selected Characteristics of Wildlife Observers: 1980

(Population 6 years old and older. Numbers in hundreds)

Characteristic	State population		Total residential		Secondary residential				
						Days (percent)			
	Number	Percent	Number	Percent	Observers Reporting Days	Less than 20	20-50	51-100	More than 100
TOTAL PERSONS	6946	100.0	4542	65.4	4460	23.9	17.5	13.7	45.0
POPULATION DENSITY									
BIG CITIES	0	0.0	0	(B)	0	(B)	(B)	(B)	(B)
SMALL CITIES	1323	19.0	753	56.9	736	30.0	21.0	14.4	34.6
TOWNS AND RURAL AREAS	5623	81.0	3789	67.4	3724	22.6	16.8	13.5	47.0
SEX AND AGE GROUP:									
MALE, TOTAL	3449	49.7	2244	65.1	2201	23.5	17.5	13.7	45.2
FEMALE, TOTAL	3497	50.3	2297	65.7	2259	24.2	17.5	13.6	44.7
MALE AND FEMALE:									
6-8 YEARS	319	4.6	199	62.6	192	26.6	20.9	9.8	42.6
9-11 YEARS	386	5.6	232	60.1	229	30.9	18.7	11.4	39.0
12-15 YEARS	507	7.3	312	61.5	304	27.0	15.7	12.6	44.6
16-17 YEARS	276	4.0	176	63.6	176	31.1	12.0	17.1	39.8
18-24 YEARS	1013	14.6	644	63.6	640	34.7	17.3	13.9	34.0
25-34 YEARS	1335	19.2	906	67.9	891	25.7	20.5	10.6	43.1
35-44 YEARS	888	12.8	599	67.4	592	24.2	15.2	16.1	44.5
45-54 YEARS	721	10.4	482	66.8	475	18.3	17.4	13.4	50.9
55-64 YEARS	705	10.1	519	73.7	512	13.8	17.0	15.2	54.0
65 YEARS AND OVER	796	11.5	472	59.3	451	11.8	16.8	16.9	54.6
RACE:									
WHITE	6151	88.6	4211	68.5	4133	22.4	17.7	13.6	46.2
BLACK	6	0.1	0	0.0	0	(B)	(B)	(B)	(B)
ALL OTHERS	789	11.4	330	41.9	327	41.8	14.9	14.2	29.1
ANNUAL HOUSEHOLD INCOME:									
UNDER $5,000	583	8.4	329	56.4	321	35.5	14.6	8.7	41.3
$ 5,000- $9,999	882	12.7	597	67.7	592	24.9	17.0	14.0	44.2
$10,000-$14,999	833	12.0	550	66.1	539	24.9	17.8	13.1	44.2
$15,000-$19,999	900	13.0	543	60.3	540	21.9	21.9	16.3	39.9
$20,000-$24,999	904	13.0	674	74.5	671	23.9	20.9	14.9	40.3
$25,000-$29,999	609	8.8	451	74.0	442	26.0	18.6	15.8	39.5
$30,000-$39,999	445	6.4	334	75.0	332	24.0	21.5	6.5	47.9
$40,000-$49,999	150	2.2	94	62.2	92	11.6	11.2	18.6	58.6
$50,000 OR MORE	345	5.0	227	65.6	219	16.6	11.4	22.2	49.8
NOT REPORTED	1293	18.6	743	57.4	714	20.8	12.7	11.6	54.9
EDUCATION:									
NONE	171	2.5	101	58.8	99	30.1	18.8	10.8	40.3
1- 7 YEARS	1053	15.2	622	59.1	604	26.2	17.9	10.3	45.6
8 YEARS	569	8.2	357	62.7	348	19.9	17.7	17.8	44.7
9-11 YEARS	948	13.7	560	59.1	554	27.1	13.6	14.3	44.9
12 YEARS	2334	33.6	1550	66.4	1530	24.2	17.0	13.9	45.0
1-3 YEARS COLLEGE	937	13.5	641	68.4	630	21.0	19.1	14.9	45.0
4 YEARS COLLEGE	439	6.3	314	71.6	311	25.3	22.1	10.9	41.7
5 YEARS OR MORE	494	7.1	397	80.3	384	19.7	17.9	14.3	48.0

Table 41. Selected Characteristics of Wildlife Observers: 1980 *(Continued)*

(Population 6 years old and older. Numbers in hundreds)

Characteristic	Primary residential				
	Observers Reporting Days	Days (percent)			
		Less than 10	10-20	21-50	More than 50
TOTAL PERSONS	1332	24.8	21.4	17.1	36.6
POPULATION DENSITY					
BIG CITIES	0	(B)	(B)	(B)	(B)
SMALL CITIES	212	30.4	21.2	23.3	25.1
TOWNS AND RURAL AREAS	1120	23.7	21.5	16.0	38.8
SEX AND AGE GROUP:					
MALE, TOTAL	700	26.9	20.1	18.0	34.9
FEMALE, TOTAL	632	22.4	22.9	16.1	38.5
MALE AND FEMALE:					
6-8 YEARS	75	29.1	8.7	19.8	42.4
9-11 YEARS	85	24.0	26.2	21.2	28.6
12-15 YEARS	110	24.6	19.3	22.8	33.3
16-17 YEARS	35	15.8	12.1	30.5	41.5
18-24 YEARS	147	44.2	29.8	12.8	13.1
25-34 YEARS	274	24.2	28.1	18.8	28.9
35-44 YEARS	169	17.1	10.9	14.3	57.7
45-54 YEARS	141	31.4	28.3	13.3	27.1
55-64 YEARS	145	17.6	13.8	17.1	51.5
65 YEARS AND OVER	151	16.8	21.4	14.3	47.5
RACE:					
WHITE	1291	25.4	21.6	16.7	36.3
BLACK	0	(B)	(B)	(B)	(B)
ALL OTHERS	41	7.0	16.3	31.3	45.4
ANNUAL HOUSEHOLD INCOME:					
UNDER $5,000	82	26.1	20.8	5.4	47.7
$ 5,000- $9,999	159	27.8	21.3	24.0	26.8
$10,000-$14,999	156	18.3	22.8	23.9	35.0
$15,000-$19,999	129	23.3	25.8	6.7	44.3
$20,000-$24,999	198	34.6	25.7	13.4	26.3
$25,000-$29,999	158	28.5	19.5	19.4	32.6
$30,000-$39,999	113	26.6	24.2	20.6	28.6
$40,000-$49,999	30	30.9	26.5	22.2	20.4
$50,000 OR MORE	91	30.0	15.0	18.4	36.6
NOT REPORTED	216	12.1	16.3	16.6	55.0
EDUCATION:					
NONE	37	25.5	0.0	30.6	43.9
1- 7 YEARS	220	22.5	21.3	21.3	34.9
8 YEARS	106	26.6	16.5	9.2	47.7
9-11 YEARS	124	19.7	29.9	21.0	29.5
12 YEARS	374	28.4	20.1	17.8	33.7
1-3 YEARS COLLEGE	191	18.7	23.5	15.2	42.7
4 YEARS COLLEGE	110	22.0	30.7	14.3	32.9
5 YEARS OR MORE	170	31.0	17.8	13.7	37.5

Table 42. Fishermen and Hunters, by State of Residence: 1980

(U.S. population 16 years old and older.)

State	Population	Fished or hunted		Fished only		Hunted only		Fished and hunted	
		Number	Percent of population	Number	Percent of population	Number	Percent of population	Number	Percent of population
TOTAL, ALL STATES	1699425	467127	27.5	292683	17.2	46538	2.7	127906	7.5
ALABAMA	28589	10447	36.5	5877	20.6	1193	4.2	3377	11.8
ALASKA	2739	1479	54.0	874	31.9	88	3.2	516	18.8
ARIZONA	20693	4800	23.2	2897	14.0	670	3.2	1233	6.0
ARKANSAS	16905	6675	39.5	2891	17.1	878	5.2	2905	17.2
CALIFORNIA	181447	40260	22.2	32052	17.7	1667	0.9	6541	3.6
COLORADO	21740	7584	34.9	4946	22.8	540	2.5	2097	9.6
CONNECTICUT	23623	4526	19.2	3594	15.2	90	0.4	842	3.6
DELAWARE	4412	1113	25.2	801	18.2	56	1.3	256	5.8
DIST. OF COLUMBIA	4953	494	10.0	422	8.5	21	0.4	51	1.0
FLORIDA	78559	22246	28.3	17987	22.9	974	1.2	3286	4.2
GEORGIA	40027	13339	33.3	8581	21.4	842	2.1	3917	9.8
HAWAII	7067	1665	23.6	1463	20.7	*41	0.6	161	2.3
IDAHO	6715	3332	49.6	1481	22.0	427	6.4	1425	21.2
ILLINOIS	84712	19302	22.8	14758	17.4	1045	1.2	3499	4.1
INDIANA	40347	12178	30.2	8437	20.9	985	2.4	2756	6.8
IOWA	21468	7591	35.4	4191	19.5	848	3.9	2553	11.9
KANSAS	17643	6374	36.1	3940	22.3	699	4.0	1736	9.8
KENTUCKY	26776	8415	31.4	5214	19.5	553	2.1	2648	9.9
LOUISIANA	30513	10254	33.6	5399	17.7	1264	4.1	3590	11.8
MAINE	8299	2831	34.1	1088	13.1	471	5.7	1273	15.3
MARYLAND	31592	6649	21.0	4673	14.8	672	2.1	1304	4.1
MASSACHUSETTS	43766	7331	16.8	6026	13.8	334	0.8	971	2.2
MICHIGAN	67862	21091	31.1	11129	16.4	2862	4.2	7101	10.5
MINNESOTA	30303	13614	44.9	8058	26.6	1222	4.0	4334	14.3
MISSISSIPPI	17917	6665	37.2	2818	15.7	947	5.3	2900	16.2
MISSOURI	36997	11808	31.9	6978	18.9	1152	3.1	3677	9.9
MONTANA	5734	2540	44.3	1001	17.5	490	8.5	1049	18.3
NEBRASKA	11601	3812	32.9	2058	17.7	546	4.7	1208	10.4
NEVADA	6349	1682	26.5	1036	16.3	256	4.0	390	6.1
NEW HAMPSHIRE	6937	1588	22.9	859	12.4	211	3.0	518	7.5
NEW JERSEY	55762	9141	16.4	7291	13.1	723	1.3	1126	2.0
NEW MEXICO	9418	2593	27.5	1467	15.6	416	4.4	711	7.5
NEW YORK	132480	22724	17.2	14890	11.2	3344	2.5	4491	3.4
NORTH CAROLINA	44002	12603	28.6	8127	18.5	803	1.8	3674	8.3
NORTH DAKOTA	4731	2002	42.3	1068	22.6	292	6.2	642	13.6
OHIO	79979	21164	26.5	14459	18.1	2059	2.6	4646	5.8
OKLAHOMA	22722	8510	37.5	5178	22.8	565	2.5	2767	12.2
OREGON	20209	7633	37.8	4381	21.7	755	3.7	2496	12.4
PENNSYLVANIA	90429	18575	20.5	7281	8.1	4020	4.4	7274	8.0
RHODE ISLAND	7153	1270	17.8	1090	15.2	34	0.5	146	2.0
SOUTH CAROLINA	22754	6668	29.3	4606	20.2	369	1.6	1693	7.4
SOUTH DAKOTA	4996	1980	39.6	750	15.0	407	8.1	823	16.5
TENNESSEE	34637	10980	31.7	6008	17.3	1168	3.4	3804	11.0
TEXAS	105358	32563	30.9	19045	18.1	3701	3.5	9816	9.3
UTAH	9976	3738	37.5	1669	16.7	938	9.4	1131	11.3
VERMONT	3840	1455	37.9	523	13.6	268	7.0	664	17.3
VIRGINIA	39818	11362	28.5	6914	17.4	1307	3.3	3142	7.9
WASHINGTON	31799	10738	33.8	7257	22.8	914	2.9	2567	8.1
WEST VIRGINIA	14539	4540	31.2	1473	10.1	928	6.4	2139	14.7
WISCONSIN	35014	13393	38.3	7022	20.1	1129	3.2	5242	15.0
WYOMING	3523	1808	51.3	655	18.6	354	10.0	799	22.7

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 43. Fishermen and Hunters 6-15 Years Old, by State of Residence: 1980

(Numbers in hundreds)

State	Population 6-15 years old	Fished or hunted		Fished only		Hunted only		Fished and hunted	
		Number	Percent of population	Number	Percent of population	Number	Percent of population	Number	Percent of population
TOTAL, ALL STATES. .	353134	121409	34.4	101788	28.8	3540	1.0	16082	4.6
ALABAMA	6455	2268	35.1	1582	24.5	134	2.1	553	8.6
ALASKA.	672	326	48.5	265	39.4	*7	1.0	54	8.1
ARIZONA	4410	1261	28.6	1005	22.8	118	2.7	138	3.1
ARKANSAS.	3674	1665	45.3	1085	29.5	83	2.2	497	13.5
CALIFORNIA.	35011	9901	28.3	9185	26.2	189	0.5	527	1.5
COLORADO.	4430	1774	40.1	1542	34.8	26	0.6	207	4.7
CONNECTICUT	4730	1594	33.7	1541	32.6	17	0.4	37	0.8
DELAWARE.	917	278	30.3	246	26.8	*7	0.8	25	2.7
DIST. OF COLUMBIA .	779	73	9.4	68	8.8	2	0.2	3	0.4
FLORIDA	13605	4688	34.5	3963	29.1	90	0.7	635	4.7
GEORGIA	9291	3296	35.5	2727	29.3	80	0.9	490	5.3
HAWAII.	1481	348	23.5	333	22.5	*6	0.4	*9	0.6
IDAHO	1595	915	57.4	694	43.5	32	2.0	189	11.9
ILLINOIS.	17694	5984	33.8	5638	31.9	32	0.2	314	1.8
INDIANA	8878	3385	38.1	2933	33.0	40	0.5	412	4.6
IOWA.	4415	2242	50.8	1555	35.2	147	3.3	540	12.2
KANSAS.	3436	1693	49.3	1428	41.6	35	1.0	229	6.7
KENTUCKY.	5928	2790	47.1	2316	39.1	54	0.9	420	7.1
LOUISIANA	7297	2271	31.1	1445	19.8	207	2.8	619	8.5
MAINE	1792	774	43.2	556	31.0	35	1.9	184	10.3
MARYLAND.	6619	1891	28.6	1709	25.8	25	0.4	156	2.4
MASSACHUSETTS . . .	8505	2502	29.4	2453	28.8	*6	0.1	43	0.5
MICHIGAN.	15358	5138	33.5	4422	28.8	179	1.2	537	3.5
MINNESOTA	6381	3803	59.6	3231	50.6	68	1.1	504	7.9
MISSISSIPPI	4467	1543	34.5	1017	22.8	59	1.3	467	10.5
MISSOURI.	7435	3071	41.3	2486	33.4	61	0.8	524	7.0
MONTANA	1212	609	50.3	430	35.5	57	4.7	122	10.1
NEBRASKA.	2373	888	37.4	613	25.8	72	3.0	203	8.6
NEVADA.	1231	361	29.3	290	23.6	14	1.1	56	4.6
NEW HAMPSHIRE . . .	1472	548	37.2	488	33.1	*12	0.8	47	3.2
NEW JERSEY.	11300	2919	25.8	2707	24.0	69	0.6	143	1.3
NEW MEXICO.	2256	709	31.4	596	26.4	40	1.8	73	3.2
NEW YORK.	26097	6574	25.2	6097	23.4	105	0.4	371	1.4
NORTH CAROLINA. . .	9421	2784	29.5	2284	24.2	66	0.7	434	4.6
NORTH DAKOTA. . . .	993	510	51.4	420	42.3	20	2.0	70	7.0
OHIO.	17071	6490	38.0	5908	34.6	98	0.6	484	2.8
OKLAHOMA.	4632	2147	46.3	1715	37.0	20	0.4	411	8.9
OREGON.	3964	1911	48.2	1575	39.7	58	1.5	278	7.0
PENNSYLVANIA. . . .	17551	5694	32.4	4593	26.2	298	1.7	803	4.6
RHODE ISLAND. . . .	1365	430	31.5	401	29.4	*6	0.4	23	1.7
SOUTH CAROLINA. . .	5266	1373	26.1	1049	19.9	24	0.4	301	5.7
SOUTH DAKOTA. . . .	1064	521	48.9	387	36.3	21	2.0	113	10.6
TENNESSEE	7301	2361	32.3	1771	24.3	81	1.1	509	7.0
TEXAS	23847	7340	30.8	5646	23.7	266	1.1	1428	6.0
UTAH.	2673	1086	40.6	824	30.8	88	3.3	175	6.5
VERMONT	816	422	51.7	310	38.0	27	3.4	84	10.3
VIRGINIA.	8291	2735	33.0	2191	26.4	80	1.0	464	5.6
WASHINGTON.	6335	2511	39.6	2052	32.4	66	1.0	394	6.2
WEST VIRGINIA . . .	3097	1150	37.1	848	27.4	85	2.7	216	7.0
WISCONSIN	7478	3465	46.3	2862	38.3	117	1.6	486	6.5
WYOMING	773	399	51.6	306	39.5	*11	1.4	83	10.7

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 44. Fishermen and Days, by Type of Fishing and State of Residence: 1980

(U.S. population 16 years old and older. Numbers in hundreds)

State	Fishermen						
		Saltwater only		Freshwater only		Freshwater and saltwater	
	Total	Number	Percent	Number	Percent	Number	Percent
TOTAL, ALL STATES	420589	56805	13.5	297148	70.7	66635	15.8
ALABAMA	9254	*339	3.7	7634	82.5	1281	13.8
ALASKA	1391	184	13.2	789	56.7	418	30.0
ARIZONA	4130	95	2.3	3609	87.4	426	10.3
ARKANSAS	5797	0	0.0	5673	97.9	*123	2.1
CALIFORNIA	38593	7578	19.6	19238	49.8	11776	30.5
COLORADO	7043	56	0.8	6548	93.0	439	6.2
CONNECTICUT	4436	1328	29.9	1688	38.0	1420	32.0
DELAWARE	1057	668	63.2	171	16.2	218	20.6
DIST. OF COLUMBIA	473	228	48.3	134	28.2	*111	23.5
FLORIDA	21273	7752	36.4	6379	30.0	7142	33.6
GEORGIA	12498	614	4.9	9678	77.4	2205	17.6
HAWAII	1624	1385	85.3	*80	4.9	159	9.8
IDAHO	2905	28	1.0	2704	93.1	173	6.0
ILLINOIS	18257	*380	2.1	16850	92.3	1027	5.6
INDIANA	11193	137	1.2	10529	94.1	527	4.7
IOWA	6744	40	0.6	6625	98.2	78	1.2
KANSAS	5675	37	0.6	5468	96.3	*171	3.0
KENTUCKY	7862	101	1.3	7211	91.7	550	7.0
LOUISIANA	8990	1119	12.5	6242	69.4	1628	18.1
MAINE	2360	134	5.7	1719	72.8	508	21.5
MARYLAND	5977	2830	47.3	1728	28.9	1419	23.7
MASSACHUSETTS	6997	2724	38.9	2080	29.7	2193	31.3
MICHIGAN	18230	326	1.8	16811	92.2	1092	6.0
MINNESOTA	12392	0	0.0	12183	98.3	209	1.7
MISSISSIPPI	5718	*203	3.6	4672	81.7	843	14.7
MISSOURI	10655	0	0.0	10422	97.8	*233	2.2
MONTANA	2050	10	0.5	1965	95.9	*74	3.6
NEBRASKA	3266	0	0.0	3193	97.8	73	2.2
NEVADA	1426	13	0.9	1251	87.7	163	11.4
NEW HAMPSHIRE	1377	143	10.4	833	60.5	400	29.1
NEW JERSEY	8418	4536	53.9	1727	20.5	2154	25.6
NEW MEXICO	2177	24	1.1	1979	90.9	174	8.0
NEW YORK	19380	6245	32.2	9961	51.4	3174	16.4
NORTH CAROLINA	11801	2064	17.5	6225	52.7	3512	29.8
NORTH DAKOTA	1709	0	0.0	1683	98.5	26	1.5
OHIO	19105	204	1.1	17437	91.3	1464	7.7
OKLAHOMA	7945	63	0.8	7709	97.0	*173	2.2
OREGON	6877	494	7.2	4308	62.6	2075	30.2
PENNSYLVANIA	14555	2171	14.9	10194	70.0	2190	15.0
RHODE ISLAND	1236	569	46.0	244	19.7	424	34.3
SOUTH CAROLINA	6299	1145	18.2	3286	52.2	1869	29.7
SOUTH DAKOTA	1573	6	0.4	1525	96.9	*42	2.7
TENNESSEE	9812	142	1.4	9040	92.1	631	6.4
TEXAS	28862	4742	16.4	18976	65.7	5143	17.8
UTAH	2800	24	0.8	2677	95.6	*100	3.6
VERMONT	1187	18	1.5	1040	87.6	130	10.9
VIRGINIA	10056	2963	29.5	4471	44.5	2622	26.1
WASHINGTON	9823	2771	28.2	4195	42.7	2857	29.1
WEST VIRGINIA	3612	77	2.1	3228	89.4	307	8.5
WISCONSIN	12264	86	0.7	11755	95.9	423	3.4
WYOMING	1454	7	0.5	1381	95.0	65	4.5

(See footnotes at end of table.)

Table 44. Fishermen and Days, by Type of Fishing and State of Residence: 1980 *(Continued)*

(U.S. population 16 years old and older. Numbers in hundreds)

State	Days of participation						
		Freshwater			Saltwater		
	Total	Number	Percent	Average	Number	Percent	Average
TOTAL, ALL STATES. .	8576242	7105715	82.9	20	1470656	17.1	12
ALABAMA	199719	190179	95.2	21	9536	4.8	6
ALASKA.	27538	21720	78.9	18	5845	21.2	10
ARIZONA	63441	60422	95.2	15	3032	4.8	6
ARKANSAS.	138807	138397	99.7	24	*410	0.3	*3
CALIFORNIA.	661470	477122	72.1	15	184363	27.9	10
COLORADO.	102602	100626	98.1	14	1977	1.9	4
CONNECTICUT	99030	61225	61.8	20	37875	38.2	14
DELAWARE.	20134	8484	42.1	22	11570	57.5	13
DIST. OF COLUMBIA .	8686	5722	65.9	23	2972	34.2	9
FLORIDA	612303	332326	54.3	25	279378	45.6	19
GEORGIA	256427	238030	92.8	20	18398	7.2	7
HAWAII.	32607	3961	12.1	17	28652	87.9	19
IDAHO	49623	48569	97.9	17	1093	2.2	5
ILLINOIS.	368678	362348	98.3	20	6330	1.7	4
INDIANA	244674	241461	98.7	22	3214	1.3	5
IOWA.	132199	130611	98.8	19	1588	1.2	13
KANSAS.	123288	122201	99.1	22	*1061	0.9	*5
KENTUCKY.	172557	166821	96.7	21	5732	3.3	9
LOUISIANA	192707	162642	84.4	21	30816	16.0	11
MAINE	44651	39335	88.1	18	5506	12.3	9
MARYLAND.	83814	37517	44.8	12	46390	55.3	11
MASSACHUSETTS . . .	137713	83806	60.9	20	52611	38.2	11
MICHIGAN.	416778	409192	98.2	23	7063	1.7	5
MINNESOTA	195480	195060	99.8	16	420	0.2	2
MISSISSIPPI	141782	128650	90.7	23	12827	9.0	12
MISSOURI.	198950	198096	99.6	19	*854	0.4	*4
MONTANA	34575	34220	99.0	17	*361	1.0	*4
NEBRASKA.	59484	59335	99.7	18	149	0.3	2
NEVADA.	21974	21405	97.4	15	569	2.6	3
NEW HAMPSHIRE . . .	29434	25411	86.3	21	4025	13.7	7
NEW JERSEY.	173940	73659	42.3	19	100205	57.6	15
NEW MEXICO.	35311	34619	98.0	16	692	2.0	3
NEW YORK.	380888	233161	61.2	18	148438	39.0	16
NORTH CAROLINA. . .	233433	188879	80.9	19	44607	19.1	8
NORTH DAKOTA. . . .	26218	26119	99.6	15	99	0.4	4
OHIO.	442075	435382	98.5	23	6728	1.5	4
OKLAHOMA.	180134	179027	99.4	23	*1406	0.8	*6
OREGON.	139411	123574	88.6	19	15861	11.4	6
PENNSYLVANIA. . . .	310162	270632	87.3	22	39363	12.7	9
RHODE ISLAND. . . .	31746	15128	47.7	23	16619	52.3	17
SOUTH CAROLINA. . .	157702	119907	76.0	23	39232	24.9	13
SOUTH DAKOTA. . . .	26481	26386	99.6	17	*95	0.4	*2
TENNESSEE	200537	196909	98.2	20	3629	1.8	5
TEXAS	577450	403009	69.8	17	174876	30.3	18
UTAH.	36994	36577	98.9	13	*417	1.1	*3
VERMONT	24930	24330	97.6	21	601	2.4	4
VIRGINIA.	176015	121491	69.0	17	53507	30.4	10
WASHINGTON.	198132	142900	72.1	20	55228	27.9	10
WEST VIRGINIA . . .	81023	79191	97.7	22	1831	2.3	5
WISCONSIN	245595	243404	99.1	20	2207	0.9	4
WYOMING	26942	26540	98.5	18	402	1.5	6

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 45. Hunters and Days, by Type of Hunting and State of Residence: 1980

(U.S. population 16 years old and older. Numbers in hundreds)

State	All hunting					Big game				
	Hunters		Days			Hunters		Days		
	Number	Percent	Number	Percent	Average	Number	Percent	Number	Percent	Average
TOTAL, ALL STATES	174444	100.0	3301679	100.0	19	118061	67.7	1127883	34.2	10
ALABAMA	4571	2.6	100511	3.0	22	3165	69.3	42290	42.1	13
ALASKA	605	0.3	9218	0.3	15	499	82.6	4430	48.1	9
ARIZONA	1903	1.1	35436	1.1	19	996	52.3	6888	19.4	7
ARKANSAS	3784	2.2	86265	2.6	23	2922	77.2	26984	31.3	9
CALIFORNIA	8208	4.7	119609	3.6	15	3764	45.9	29510	24.7	8
COLORADO	2637	1.5	36217	1.1	14	1909	72.4	12818	35.4	7
CONNECTICUT	932	0.5	19673	0.6	21	578	62.0	5074	25.8	9
DELAWARE	312	0.2	5606	0.2	18	215	68.9	1438	25.7	7
DIST. OF COLUMBIA	72	0.0	590	0.0	8	39	53.8	275	46.7	7
FLORIDA	4260	2.4	100986	3.1	24	2960	69.5	57159	56.6	19
GEORGIA	4758	2.7	78331	2.4	16	3399	71.4	40800	52.1	12
HAWAII	202	0.1	3365	0.1	17	171	84.4	1616	48.0	9
IDAHO	1852	1.1	27984	0.8	15	1457	78.7	9902	35.4	7
ILLINOIS	4543	2.6	89556	2.7	20	1364	30.0	9219	10.3	7
INDIANA	3741	2.1	92844	2.8	25	1506	40.3	17898	19.3	12
IOWA	3401	1.9	55568	1.7	16	832	24.5	6091	11.0	7
KANSAS	2434	1.4	40655	1.2	17	420	17.3	4209	10.4	10
KENTUCKY	3201	1.8	69581	2.1	22	1568	49.0	11898	17.1	8
LOUISIANA	4855	2.8	126367	3.8	26	2939	60.5	38018	30.1	13
MAINE	1744	1.0	29999	0.9	17	1654	94.9	16576	55.3	10
MARYLAND	1977	1.1	32428	1.0	16	1467	74.2	10932	33.7	7
MASSACHUSETTS	1305	0.7	41549	1.3	32	868	66.5	9340	22.5	11
MICHIGAN	9963	5.7	181280	5.5	18	8802	88.3	86859	47.9	10
MINNESOTA	5556	3.2	87303	2.6	16	3780	68.0	22090	25.3	6
MISSISSIPPI	3848	2.2	110550	3.3	29	2816	73.2	46894	42.4	17
MISSOURI	4829	2.8	87774	2.7	18	2790	57.8	20674	23.6	7
MONTANA	1539	0.9	19557	0.6	13	1438	93.4	11508	58.8	8
NEBRASKA	1754	1.0	33781	1.0	19	457	26.1	2426	7.2	5
NEVADA	646	0.4	8597	0.3	13	331	51.3	2368	27.5	7
NEW HAMPSHIRE	729	0.4	12641	0.4	17	695	95.3	7079	56.0	10
NEW JERSEY	1850	1.1	38428	1.2	21	1491	80.6	12681	33.0	9
NEW MEXICO	1126	0.6	14678	0.4	13	903	80.2	3955	26.9	4
NEW YORK	7834	4.5	137910	4.2	18	7274	92.8	69554	50.4	10
NORTH CAROLINA	4476	2.6	99685	3.0	22	2464	55.1	33285	33.4	14
NORTH DAKOTA	934	0.5	19425	0.6	21	538	57.6	2829	14.6	5
OHIO	6706	3.8	131700	4.0	20	3354	50.0	32825	24.9	10
OKLAHOMA	3332	1.9	63702	1.9	19	1751	52.5	12540	19.7	7
OREGON	3252	1.9	47901	1.5	15	2937	90.3	28370	59.2	10
PENNSYLVANIA	11295	6.5	189981	5.8	17	10530	93.2	81207	42.7	8
RHODE ISLAND	180	0.1	4240	0.1	24	*85	47.5	*931	22.0	*11
SOUTH CAROLINA	2062	1.2	55376	1.7	27	1348	65.4	16635	30.0	12
SOUTH DAKOTA	1230	0.7	26146	0.8	21	469	38.1	3817	14.6	8
TENNESSEE	4972	2.9	101835	3.1	20	2307	46.4	23912	23.5	10
TEXAS	13518	7.7	226600	6.9	17	8383	62.0	66649	29.4	8
UTAH	2069	1.2	21120	0.6	10	1885	91.1	9375	44.4	5
VERMONT	932	0.5	22609	0.7	24	895	96.1	9813	43.4	11
VIRGINIA	4448	2.5	96345	2.9	22	3654	82.1	46169	47.9	13
WASHINGTON	3481	2.0	54752	1.7	16	2848	81.8	27313	49.9	10
WEST VIRGINIA	3066	1.8	74307	2.3	24	2526	82.4	23326	31.4	9
WISCONSIN	6371	3.7	114618	3.5	18	5551	87.1	50317	43.9	9
WYOMING	1153	0.7	16500	0.5	14	1065	92.4	9117	55.3	9

(See footnotes at end of table.)

Table 45. Hunters and Days, by Type of Hunting and State of Residence: 1980 *(Continued)*

(U.S. population 16 years old and older. Numbers in hundreds)

State	Small game					Migratory birds				
	Hunters		Days			Hunters		Days		
	Number	Percent	Number	Percent	Average	Number	Percent	Number	Percent	Average
TOTAL, ALL STATES. .	123620	70.9	1512459	45.8	12	53108	30.4	429096	13.0	8
ALABAMA	3277	71.7	38723	38.5	12	1784	39.0	15491	15.4	9
ALASKA.	340	56.2	4076	44.2	12	224	37.0	1443	15.7	6
ARIZONA	1532	80.5	20740	58.5	14	1137	59.8	8199	23.1	7
ARKANSAS.	2886	76.3	40536	47.0	14	1050	27.8	11662	13.5	11
CALIFORNIA.	6099	74.3	64630	54.0	11	4453	54.2	30620	25.6	7
COLORADO.	1563	59.3	14458	39.9	9	845	32.0	8283	22.9	10
CONNECTICUT	707	75.9	10012	50.9	14	297	31.8	2951	15.0	10
DELAWARE.	210	67.4	2558	45.6	12	145	46.7	1282	22.9	9
DIST. OF COLUMBIA .	68	94.5	379	64.2	6	21	29.0	114	19.3	5
FLORIDA	2988	70.2	43314	42.9	14	1813	42.6	14212	14.1	8
GEORGIA	2825	59.4	25819	33.0	9	1505	31.6	8499	10.9	6
HAWAII.	97	47.7	1607	47.8	17	25	12.3	228	6.8	9
IDAHO	1198	64.7	13063	46.7	11	496	26.8	4257	15.2	9
ILLINOIS.	4100	90.2	53101	59.3	13	1453	32.0	16915	18.9	12
INDIANA	3277	87.6	47691	51.4	15	405	10.8	3833	4.1	9
IOWA.	3185	93.6	39199	70.5	12	579	17.0	4791	8.6	8
KANSAS.	2189	89.9	25677	63.2	12	1001	41.1	8461	20.8	8
KENTUCKY.	2818	88.0	36993	53.2	13	949	29.6	6731	9.7	7
LOUISIANA	4027	83.0	61456	48.6	15	2018	41.6	19430	15.4	10
MAINE	931	53.4	10635	35.5	11	247	14.1	2853	9.5	12
MARYLAND.	1263	63.9	13791	42.5	11	723	36.6	7003	21.6	10
MASSACHUSETTS . . .	1062	81.4	22755	54.8	21	463	35.5	4902	11.8	11
MICHIGAN.	5590	56.1	75413	41.6	13	1801	18.1	16136	8.9	9
MINNESOTA	4023	72.4	44692	51.2	11	2196	39.5	18045	20.7	8
MISSISSIPPI	2993	77.8	44885	40.6	15	1516	39.4	11239	10.2	7
MISSOURI.	3752	77.7	48042	54.7	13	1106	22.9	8629	9.8	8
MONTANA	554	36.0	4545	23.2	8	305	19.8	1678	8.6	6
NEBRASKA.	1633	93.1	20866	61.8	13	773	44.1	7360	21.8	10
NEVADA.	478	74.1	4709	54.8	10	216	33.4	1111	12.9	5
NEW HAMPSHIRE . . .	386	53.0	3907	30.9	10	127	17.5	1079	8.5	8
NEW JERSEY.	1273	68.8	17812	46.4	14	550	29.7	5815	15.1	11
NEW MEXICO.	516	45.8	6943	47.3	13	378	33.6	3116	21.2	8
NEW YORK.	4072	52.0	46535	33.7	11	1285	16.4	7803	5.7	6
NORTH CAROLINA. . .	3588	80.2	48097	48.2	13	1727	38.6	12042	12.1	7
NORTH DAKOTA. . . .	670	71.7	8475	43.6	13	508	54.4	4444	22.9	9
OHIO.	5720	85.3	70130	53.3	12	836	12.5	7221	5.5	9
OKLAHOMA.	2824	84.7	39094	61.4	14	912	27.4	7687	12.1	8
OREGON.	1150	35.4	12705	26.5	11	851	26.2	6892	14.4	8
PENNSYLVANIA. . . .	8423	74.6	73428	38.6	9	1810	16.0	13465	7.1	7
RHODE ISLAND. . . .	136	75.9	2411	56.9	18	*69	38.5	*1024	24.2	*15
SOUTH CAROLINA. . .	1390	67.4	22140	40.0	16	1059	51.4	9476	17.1	9
SOUTH DAKOTA. . . .	1087	88.4	16261	62.2	15	470	38.2	4688	17.9	10
TENNESSEE	4042	81.3	52629	51.7	13	1512	30.4	9242	9.1	6
TEXAS	8971	66.4	100456	44.3	11	6876	50.9	50641	22.3	7
UTAH.	1043	50.4	7870	37.3	8	378	18.3	2708	12.8	7
VERMONT	474	50.8	7704	34.1	16	128	13.7	2423	10.7	19
VIRGINIA.	3025	68.0	30564	31.7	10	1338	30.1	8029	8.3	6
WASHINGTON.	1888	54.2	20824	38.0	11	1098	31.5	12092	22.1	11
WEST VIRGINIA . . .	2502	81.6	32658	43.9	13	*100	3.3	*381	0.5	*4
WISCONSIN	4267	67.0	52942	46.2	12	1357	21.3	10985	9.6	8
WYOMING	508	44.0	4511	27.3	9	192	16.6	1485	9.0	8

(See footnotes at end of table.)

Table 45. Hunters and Days, by Type of Hunting and State of Residence: 1980 *(Continued)*

(U.S. population 16 years old and older. Numbers in hundreds)

State	Other animals				
	Hunters		Days		
	Number	Percent	Number	Percent	Average
TOTAL, ALL STATES	26421	15.1	384310	11.6	15
ALABAMA	591	12.9	7383	7.3	12
ALASKA	44	7.3	724	7.9	16
ARIZONA	244	12.8	2566	7.2	11
ARKANSAS	567	15.0	7471	8.7	13
CALIFORNIA	*555	6.8	*4000	3.3	*7
COLORADO	371	14.1	3521	9.7	9
CONNECTICUT	*189	20.3	*3237	16.5	*17
DELAWARE	*31	9.9	*462	8.2	*15
DIST. OF COLUMBIA	4	5.5	8	1.3	2
FLORIDA	*445	10.4	*5338	5.3	*12
GEORGIA	*337	7.1	*7739	9.9	*23
HAWAII	2	1.2	35	1.0	15
IDAHO	259	14.0	2578	9.2	10
ILLINOIS	892	19.6	14992	16.7	17
INDIANA	932	24.9	25292	27.2	27
IOWA	575	16.9	6368	11.5	11
KANSAS	403	16.5	4860	12.0	12
KENTUCKY	650	20.3	14816	21.3	23
LOUISIANA	538	11.1	11884	9.4	22
MAINE	134	7.7	1703	5.7	13
MARYLAND	*227	11.5	*1450	4.5	*6
MASSACHUSETTS	*214	16.4	*8152	19.6	*38
MICHIGAN	970	9.7	9250	5.1	10
MINNESOTA	548	9.9	4369	5.0	8
MISSISSIPPI	370	9.6	7605	6.9	21
MISSOURI	825	17.1	12023	13.7	15
MONTANA	305	19.8	3926	20.1	13
NEBRASKA	384	21.9	5192	15.4	14
NEVADA	*83	12.8	*1040	12.1	*13
NEW HAMPSHIRE	111	15.3	1043	8.2	9
NEW JERSEY	360	19.5	4128	10.7	11
NEW MEXICO	*138	12.3	*2009	13.7	*15
NEW YORK	1262	16.1	16894	12.3	13
NORTH CAROLINA	683	15.3	8366	8.4	12
NORTH DAKOTA	354	37.9	4504	23.2	13
OHIO	1568	23.4	23342	17.7	15
OKLAHOMA	537	16.1	5695	8.9	11
OREGON	325	10.0	2638	5.5	8
PENNSYLVANIA	2240	19.8	28167	14.8	13
RHODE ISLAND	28	15.4	199	4.7	7
SOUTH CAROLINA	346	16.8	7542	13.6	22
SOUTH DAKOTA	317	25.7	4462	17.1	14
TENNESSEE	964	19.4	17051	16.7	18
TEXAS	2330	17.2	30147	13.3	13
UTAH	154	7.4	1728	8.2	11
VERMONT	174	18.7	3234	14.3	19
VIRGINIA	993	22.3	14934	15.5	15
WASHINGTON	*330	9.5	*2866	5.2	*9
WEST VIRGINIA	795	25.9	19288	26.0	24
WISCONSIN	544	8.5	5176	4.5	10
WYOMING	181	15.7	2916	17.7	16

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

Table 46. Fishermen and Hunters, Days, and Expenditures, by State Where Activity Occurred and Resident Status: 1980

(U.S. population 16 years old and older. Numbers in hundreds)

State	Fishing											
	Fishermen						Days of participation					
	Total		Resident		Nonresident		Total		Resident		Nonresident	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL, ALL STATES	420589	100.0	382337	90.9	100664	23.9	8489848	100.0	7613925	89.7	875923	10.3
ALABAMA	11563	100.0	8896	76.9	2667	23.1	218745	100.0	190449	87.1	28296	12.9
ALASKA	2249	100.0	1324	58.9	925	41.1	33491	100.0	26086	77.9	7405	22.1
ARIZONA	5016	100.0	3495	69.7	1521	30.3	63990	100.0	49804	77.8	14186	22.2
ARKANSAS	8956	100.0	5744	64.1	3213	35.9	152771	100.0	130686	85.5	22086	14.5
CALIFORNIA	37593	100.0	34963	93.0	2629	7.0	604687	100.0	583217	96.4	21470	3.6
COLORADO	9253	100.0	6265	67.7	2989	32.3	104904	100.0	87000	82.9	17905	17.1
CONNECTICUT	4720	100.0	3871	82.0	848	18.0	86964	100.0	83617	96.2	3348	3.8
DELAWARE	2238	100.0	866	38.7	1371	61.3	23955	100.0	16706	69.7	7249	30.3
DIST. OF COLUMBIA	193	100.0	*104	53.7	89	46.3	5370	100.0	*3942	73.4	1428	26.6
FLORIDA	34062	100.0	20277	59.5	13784	40.5	654791	100.0	564531	86.2	90260	13.8
GEORGIA	12836	100.0	11349	88.4	1487	11.6	237941	100.0	222213	93.4	15729	6.6
HAWAII	2439	100.0	1532	62.8	907	37.2	32757	100.0	30179	92.1	2577	7.9
IDAHO	4227	100.0	2773	65.6	1454	34.4	54036	100.0	43496	80.5	10539	19.5
ILLINOIS	15598	100.0	14094	90.4	1504	9.6	291233	100.0	280356	96.3	10877	3.7
INDIANA	11461	100.0	9231	80.5	2229	19.5	221472	100.0	204235	92.2	17236	7.8
IOWA	6462	100.0	5922	91.7	539	8.3	110742	100.0	107427	97.0	3316	3.0
KANSAS	5766	100.0	5115	88.7	650	11.3	108592	100.0	104639	96.4	3953	3.6
KENTUCKY	10526	100.0	7346	69.8	3180	30.2	173304	100.0	154210	89.0	19094	11.0
LOUISIANA	11148	100.0	8606	77.2	2541	22.8	201591	100.0	179675	89.1	21916	10.9
MAINE	4584	100.0	2298	50.1	2287	49.9	61408	100.0	42894	69.9	18514	30.1
MARYLAND	7760	100.0	5382	69.4	2377	30.6	84193	100.0	71861	85.4	12333	14.6
MASSACHUSETTS	8006	100.0	5871	73.3	2135	26.7	125362	100.0	113100	90.2	12262	9.8
MICHIGAN	22874	100.0	17381	76.0	5493	24.0	444808	100.0	396974	89.2	47834	10.8
MINNESOTA	16611	100.0	11767	70.8	4844	29.2	215196	100.0	179714	83.5	35482	16.5
MISSISSIPPI	7624	100.0	5496	72.1	2127	27.9	154668	100.0	133370	86.2	21298	13.8
MISSOURI	12304	100.0	9987	81.2	2318	18.8	202664	100.0	182521	90.1	20143	9.9
MONTANA	3147	100.0	1988	63.2	1158	36.8	40249	100.0	32497	80.7	7752	19.3
NEBRASKA	3428	100.0	2855	83.3	574	16.7	54028	100.0	50330	93.2	3697	6.8
NEVADA	2168	100.0	1091	50.3	1077	49.7	18365	100.0	14062	76.6	4303	23.4
NEW HAMPSHIRE	2837	100.0	1260	44.4	1576	55.6	34990	100.0	25178	72.0	9812	28.0
NEW JERSEY	12165	100.0	7523	61.8	4642	38.2	197121	100.0	155308	78.8	41813	21.2
NEW MEXICO	3519	100.0	1947	55.3	1572	44.7	38733	100.0	30020	77.5	8713	22.5
NEW YORK	21105	100.0	18001	85.3	3103	14.7	362807	100.0	343046	94.6	19761	5.4
NORTH CAROLINA	15820	100.0	11217	70.9	4603	29.1	237079	100.0	207470	87.5	29609	12.5
NORTH DAKOTA	1544	100.0	1389	89.9	*155	10.1	20681	100.0	19504	94.3	*1177	5.7
OHIO	18157	100.0	16831	92.7	1327	7.3	394964	100.0	379916	96.2	15047	3.8
OKLAHOMA	10094	100.0	7691	76.2	2403	23.8	189902	100.0	171220	90.2	18682	9.8
OREGON	8409	100.0	6538	77.7	1871	22.3	141620	100.0	130085	91.9	11535	8.1
PENNSYLVANIA	14247	100.0	11813	82.9	2434	17.1	271304	100.0	253349	93.4	17955	6.6
RHODE ISLAND	2221	100.0	1175	52.9	1046	47.1	35968	100.0	28340	78.8	7628	21.2
SOUTH CAROLINA	9348	100.0	6016	64.4	3332	35.6	163152	100.0	145739	89.3	17413	10.7
SOUTH DAKOTA	2175	100.0	1482	68.2	692	31.8	27928	100.0	23971	85.8	3957	14.2
TENNESSEE	11615	100.0	9036	77.8	2578	22.2	192087	100.0	176533	91.9	15554	8.1
TEXAS	29079	100.0	26311	90.5	2768	9.5	550019	100.0	530801	96.5	19218	3.5
UTAH	3973	100.0	2535	63.8	1438	36.2	52010	100.0	32358	62.2	19653	37.8
VERMONT	1828	100.0	1133	62.0	695	38.0	27903	100.0	23225	83.2	4678	16.8
VIRGINIA	11757	100.0	8695	74.0	3062	26.0	170324	100.0	146030	85.7	24294	14.3
WASHINGTON	11223	100.0	9363	83.4	1860	16.6	195651	100.0	184417	94.3	11234	5.7
WEST VIRGINIA	4169	100.0	3413	81.9	756	18.1	75940	100.0	71832	94.6	4108	5.4
WISCONSIN	18251	100.0	11757	64.4	6493	35.6	294153	100.0	232946	79.2	61208	20.8
WYOMING	3374	100.0	1320	39.1	2054	60.9	33231	100.0	22847	68.8	10384	31.2

(See footnotes at end of table.)

Table 46. Fishermen and Hunters, Days, and Expenditures, by State Where Activity Occurred and Resident Status: 1980 *(Continued)*

(U.S. population 16 years old and older. Numbers in hundreds)

State	Fishing (Continued)						Hunting					
	Expenditures[1] (dollars)						Hunters					
	Total		Resident		Nonresident		Total		Resident		Nonresident	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL, ALL STATES	71172465	100.0	55609004	78.1	15563461	21.9	174444	100.0	165716	95.0	21026	12.1
ALABAMA	1515283	100.0	1162108	76.7	353175	23.3	5394	100.0	4483	83.1	911	16.9
ALASKA	612054	100.0	350274	57.2	261780	42.8	640	100.0	595	92.9	45	7.1
ARIZONA	755470	100.0	619132	82.0	136338	18.0	2210	100.0	1856	84.0	354	16.0
ARKANSAS	1383033	100.0	795626	57.5	587408	42.5	4706	100.0	3723	79.1	983	20.9
CALIFORNIA	7873975	100.0	7499468	95.2	374507	4.8	7337	100.0	7048	96.1	289	3.9
COLORADO	1176861	100.0	812903	69.1	363958	30.9	3733	100.0	2444	65.5	1289	34.5
CONNECTICUT	543802	100.0	495562	91.1	48239	8.9	796	100.0	742	93.3	53	6.7
DELAWARE	189414	100.0	95633	50.5	93782	49.5	367	100.0	260	71.0	106	29.0
DIST. OF COLUMBIA	30945	100.0	*25493	82.4	5452	17.6	17	100.0	0	0.0	17	100.0
FLORIDA	5924097	100.0	3862902	65.2	2061195	34.8	3868	100.0	3655	94.5	*213	5.5
GEORGIA	1486230	100.0	1366906	92.0	119324	8.0	5334	100.0	4697	88.1	637	11.9
HAWAII	495420	100.0	231539	46.7	263881	53.3	285	100.0	173	60.8	111	39.2
IDAHO	536952	100.0	317286	59.1	219666	40.9	2199	100.0	1810	82.3	390	17.7
ILLINOIS	1677382	100.0	1564664	93.3	112718	6.7	4174	100.0	3968	95.1	*206	4.9
INDIANA	1402318	100.0	1087298	77.5	315020	22.5	3858	100.0	3615	93.7	*243	6.3
IOWA	539135	100.0	513331	95.2	25804	4.8	3948	100.0	3291	83.4	657	16.6
KANSAS	655580	100.0	611390	93.3	44190	6.7	3333	100.0	2340	70.2	992	29.8
KENTUCKY	1196111	100.0	919721	76.9	276390	23.1	3916	100.0	3126	79.8	790	20.2
LOUISIANA	1535293	100.0	1293656	84.3	241637	15.7	5159	100.0	4639	89.9	520	10.1
MAINE	606315	100.0	179698	29.6	426616	70.4	2143	100.0	1741	81.2	403	18.8
MARYLAND	865588	100.0	700193	80.9	165396	19.1	1874	100.0	1625	86.7	249	13.3
MASSACHUSETTS	1125299	100.0	839193	74.6	286106	25.4	1228	100.0	1058	86.2	170	13.8
MICHIGAN	3244389	100.0	2609678	80.4	634711	19.6	10667	100.0	9856	92.4	811	7.6
MINNESOTA	2264668	100.0	1586929	70.1	677739	29.9	5659	100.0	5428	95.9	231	4.1
MISSISSIPPI	918392	100.0	735514	80.1	182878	19.9	4897	100.0	3791	77.4	1106	22.6
MISSOURI	1655367	100.0	1177141	71.1	478227	28.9	4920	100.0	4572	92.9	348	7.1
MONTANA	457671	100.0	248048	54.2	209623	45.8	1927	100.0	1528	79.3	399	20.7
NEBRASKA	448381	100.0	402474	89.8	45907	10.2	2290	100.0	1709	74.6	582	25.4
NEVADA	331037	100.0	190614	57.6	140423	42.4	646	100.0	528	81.6	119	18.4
NEW HAMPSHIRE	231785	100.0	119534	51.6	112250	48.4	938	100.0	677	72.1	261	27.9
NEW JERSEY	1733508	100.0	1234084	71.2	499423	28.8	1757	100.0	1615	91.9	*142	8.1
NEW MEXICO	537261	100.0	335150	62.4	202110	37.6	1144	100.0	1022	89.3	123	10.7
NEW YORK	2885319	100.0	2535330	87.9	349989	12.1	8470	100.0	7682	90.7	789	9.3
NORTH CAROLINA	1930887	100.0	1440115	74.6	490773	25.4	4668	100.0	4275	91.6	393	8.4
NORTH DAKOTA	191342	100.0	173023	90.4	*18318	9.6	1063	100.0	873	82.1	*190	17.9
OHIO	1885589	100.0	1741784	92.4	143805	7.6	6531	100.0	6335	97.0	*197	3.0
OKLAHOMA	1403741	100.0	1155877	82.3	247864	17.7	3565	100.0	3158	88.6	406	11.4
OREGON	1282833	100.0	1007543	78.5	275290	21.5	3560	100.0	3198	89.8	*362	10.2
PENNSYLVANIA	1208706	100.0	997909	82.6	210797	17.4	12658	100.0	11122	87.9	1536	12.1
RHODE ISLAND	197569	100.0	105485	53.4	92084	46.6	156	100.0	135	86.5	21	13.5
SOUTH CAROLINA	1053170	100.0	677373	64.3	375797	35.7	2422	100.0	1993	82.3	429	17.7
SOUTH DAKOTA	294417	100.0	176916	60.1	117501	39.9	1796	100.0	1210	67.4	586	32.6
TENNESSEE	1366701	100.0	1005436	73.6	361264	26.4	5078	100.0	4652	91.6	426	8.4
TEXAS	5835617	100.0	5481916	93.9	353701	6.1	13286	100.0	12643	95.2	643	4.8
UTAH	620659	100.0	370508	59.7	250151	40.3	2325	100.0	2005	86.3	320	13.7
VERMONT	167577	100.0	83231	49.7	84346	50.3	1408	100.0	926	65.7	483	34.3
VIRGINIA	1358028	100.0	1058035	77.9	299993	22.1	4871	100.0	4180	85.8	690	14.2
WASHINGTON	1661139	100.0	1423591	85.7	237548	14.3	3429	100.0	3241	94.5	*187	5.5
WEST VIRGINIA	454643	100.0	411723	90.6	42920	9.4	3861	100.0	3037	78.6	825	21.4
WISCONSIN	2780037	100.0	1535715	55.2	1244322	44.8	6730	100.0	6322	93.9	408	6.1
WYOMING	645474	100.0	244349	37.9	401125	62.1	1630	100.0	1118	68.6	512	31.4

(See footnotes at end of table.)

Table 46. Fishermen and Hunters, Days, and Expenditures, by State Where Activity Occurred and Resident Status: 1980 *(Continued)*

(U.S. population 16 years old and older. Numbers in hundreds)

State	Hunting (Continued)											
	Days of participation						Expenditures[1] (dollars)					
	Total		Resident		Nonresident		Total		Resident		Nonresident	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
TOTAL, ALL STATES	3295171	100.0	3087086	93.7	208085	6.3	27756839	100.0	23494539	84.6	4262299	15.4
ALABAMA	107346	100.0	98163	91.4	9183	8.6	784907	100.0	585513	74.6	199395	25.4
ALASKA	9920	100.0	8837	89.1	1083	10.9	161118	100.0	147527	91.6	13591	8.4
ARIZONA	36494	100.0	33453	91.7	3041	8.3	464212	100.0	444430	95.7	19782	4.3
ARKANSAS	90588	100.0	83683	92.4	6905	7.6	721979	100.0	539872	74.8	182107	25.2
CALIFORNIA	95854	100.0	93161	97.2	2692	2.8	1660406	100.0	1580592	95.2	79814	4.8
COLORADO	42509	100.0	32861	77.3	9647	22.7	998268	100.0	401036	40.2	597232	59.8
CONNECTICUT	16076	100.0	15285	95.1	791	4.9	78614	100.0	73827	93.9	4787	6.1
DELAWARE	5490	100.0	4991	90.9	498	9.1	40469	100.0	27989	69.2	12480	30.8
DIST. OF COLUMBIA	44	100.0	0	0.0	44	100.0	4418	100.0	1887	42.7	2531	57.3
FLORIDA	94652	100.0	91413	96.6	3239	3.4	839646	100.0	789171	94.0	*50474	6.0
GEORGIA	80329	100.0	75383	93.8	4946	6.2	631234	100.0	575239	91.1	55995	8.9
HAWAII	3419	100.0	3018	88.3	401	11.7	69916	100.0	38531	55.1	31386	44.9
IDAHO	31355	100.0	26129	83.3	5226	16.7	367373	100.0	252576	68.8	114797	31.2
ILLINOIS	82504	100.0	80963	98.1	*1541	1.9	372730	100.0	350905	94.1	*21825	5.9
INDIANA	90806	100.0	89531	98.6	*1275	1.4	358734	100.0	346873	96.7	*11860	3.3
IOWA	56919	100.0	52817	92.8	4102	7.2	370213	100.0	276485	74.7	93728	25.3
KANSAS	43466	100.0	38232	88.0	5235	12.0	420425	100.0	313334	74.5	107091	25.5
KENTUCKY	68956	100.0	64958	94.2	3998	5.8	319842	100.0	288157	90.1	31685	9.9
LOUISIANA	121464	100.0	119247	98.2	2217	1.8	823738	100.0	763137	92.6	60602	7.4
MAINE	32938	100.0	29488	89.5	3450	10.5	193101	100.0	104118	53.9	88983	46.1
MARYLAND	27932	100.0	27218	97.4	714	2.6	245344	100.0	209870	85.5	35474	14.5
MASSACHUSETTS	33476	100.0	30929	92.4	2547	7.6	168399	100.0	157975	93.8	10424	6.2
MICHIGAN	185134	100.0	178149	96.2	6985	3.8	1714507	100.0	1598570	93.2	115937	6.8
MINNESOTA	85583	100.0	83279	97.3	2304	2.7	701251	100.0	667066	95.1	34185	4.9
MISSISSIPPI	117895	100.0	106225	90.1	11670	9.9	815503	100.0	685256	84.0	130246	16.0
MISSOURI	83693	100.0	80947	96.7	2746	3.3	445973	100.0	404108	90.6	41864	9.4
MONTANA	22476	100.0	19201	85.4	3275	14.6	379677	100.0	208566	54.9	171111	45.1
NEBRASKA	37324	100.0	31879	85.4	5445	14.6	367422	100.0	254744	69.3	112678	30.7
NEVADA	6814	100.0	6376	93.6	439	6.4	163112	100.0	160711	98.5	2402	1.5
NEW HAMPSHIRE	13891	100.0	11548	83.1	2344	16.9	118073	100.0	56178	47.6	61895	52.4
NEW JERSEY	36266	100.0	33876	93.4	*2389	6.6	186798	100.0	162952	87.2	*23846	12.8
NEW MEXICO	13656	100.0	12931	94.7	725	5.3	145963	100.0	136839	93.7	9124	6.3
NEW YORK	144503	100.0	134045	92.8	10458	7.2	873243	100.0	784538	89.8	88705	10.2
NORTH CAROLINA	93900	100.0	91962	97.9	1939	2.1	567263	100.0	508507	89.6	58756	10.4
NORTH DAKOTA	19282	100.0	18155	94.2	*1127	5.8	177055	100.0	150313	84.9	*26742	15.1
OHIO	122165	100.0	119745	98.0	*2421	2.0	908849	100.0	880734	96.9	*28115	3.1
OKLAHOMA	64311	100.0	60826	94.6	3485	5.4	464639	100.0	412278	88.7	52362	11.3
OREGON	48362	100.0	45981	95.1	*2381	4.9	579464	100.0	538917	93.0	*40547	7.0
PENNSYLVANIA	196887	100.0	185552	94.2	11334	5.8	1101126	100.0	895475	81.3	205650	18.7
RHODE ISLAND	3333	100.0	3302	99.1	30	0.9	16095	100.0	16002	99.4	93	0.6
SOUTH CAROLINA	59039	100.0	53278	90.2	5761	9.8	324376	100.0	258312	79.6	66064	20.4
SOUTH DAKOTA	31187	100.0	25716	82.5	5471	17.5	363429	100.0	183031	50.4	180398	49.6
TENNESSEE	95869	100.0	91609	95.6	4261	4.4	681285	100.0	629202	92.4	52083	7.6
TEXAS	223898	100.0	213170	95.2	10728	4.8	2620797	100.0	2464062	94.0	156734	6.0
UTAH	24072	100.0	19139	79.5	4933	20.5	348923	100.0	271228	77.7	77696	22.3
VERMONT	27411	100.0	22042	80.4	5369	19.6	192955	100.0	89515	46.4	103440	53.6
VIRGINIA	99603	100.0	90572	90.9	9031	9.1	811052	100.0	695445	85.7	115607	14.3
WASHINGTON	51858	100.0	50234	96.9	*1625	3.1	732320	100.0	667561	91.2	*64759	8.8
WEST VIRGINIA	76283	100.0	70204	92.0	6079	8.0	412722	100.0	347645	84.2	65077	15.8
WISCONSIN	117748	100.0	112515	95.6	5234	4.4	909999	100.0	851753	93.6	58246	6.4
WYOMING	20191	100.0	14867	73.6	5324	26.4	537883	100.0	245987	45.7	291896	54.3

Note: Shading--based on a sample size less than 10. Asterisk--based on a sample size greater than or equal to 10 but less than 25.

[1]Expenditures for travel, food, lodging, and fees only. Other expenditures were not recorded by State of purchase. Total expenditures do not equal the sum of comparable estimates in table 22 because of nonresponse and out-of-State expenditures.

Appendix A
Definitions

Big game

Large wild animals hunted for sport or food, including deer, elk, bear, antelope, and wild turkey.

Day

Any part of a day spent participating in a given activity. For instance, if someone hunted 2 hours one day and 3 hours another day, it would be recorded as 2 days of hunting. If someone hunted 2 hours in the morning and 1 hour during the evening of the same day, it would be considered 1 day of hunting.

Deep sea fishing

Ocean fishing more than 3 miles from shore.

Education

The highest grade of regular schooling completed.

Exempt

Not required to purchase a license to hunt or fish in a State in which the respondent hunted or fished in 1980.

Feed

The act of maintaining a bird feeder or otherwise providing food to birds or other wildlife. Includes checking feeder or the supply of crumbs/scraps to be sure that food is available. Some examples of other wildlife that may have been fed are deer, rabbits, and squirrels. Not included are zoo animals or birds kept as pets (canaries, parakeets, etc.).

Fishing

The sport of catching or attempting to catch fish with hook and line or by archery, spearing, gigging or shooting for frogs, and seining and netting (but not for bait). Related pursuits that are not considered fishing in the survey include commercial fishing and catching or gathering shellfish (crabs, clams, oysters, etc.).

Freshwater

Inland waters such as rivers, lakes, streams, and ponds. This category includes the Great Lakes and connecting waters except where clearly distinguished.

Gigging

Using a pronged spear to catch frogs.

Great Lakes (fishing)

Lakes Superior, Michigan, Huron, Erie and Ontario, tributaries and connecting waters, such as Lake St. Clair, and the St. Lawrence River, south of the bridge at Cornwall, New York. Great Lakes fishing includes fishing in these waters as well as fishing for smelt, steelhead, or salmon in rivers that run into the Great Lakes.

Home

The place where the respondent lives or the place where the respondent was staying while on vacation or while on a trip for another purpose; the starting point of a wildlife-related trip.

Household member

Any individual whose usual residence was the sample address.

Hunting

The sport of searching for wildlife with firearms or archery equipment. Only hunting for pleasure or recreation is included. Excluded are trapping animals, commercial hunting, searching for animals to photograph them, capturing animals live (e.g., to put in a zoo or for biological research), and hunting for frogs. Excluded are those who did not have a weapon but may have accompanied others in the field.

Income

The money income of all current household members, 14 years of age or older, during calendar year 1980. Included as income are wages and salaries, net income from a person's own (unincorporated) business, professional practice, or farm and other income payments such as pensions, dividends, and interest, as well as other kinds of periodic money income other than earnings.

In-State

Respondent's State of residence at the time of the screening interview.

Licensed

A fisherman and/or hunter who was licensed to fish and/or hunt in the State where the activity took place.

Local wildlife organizations

Rod and gun clubs, birding clubs, and other wildlife-related organizations not of national scope. Includes State and local chapters of national organizations.

Manmade areas

Areas such as golf courses, cemeteries, and urban parks.

Manmade lakes and reservoirs

Bodies of water created by using dams or other controls to contain the water.

Migratory birds

Birds regularly moving from one region or climate to another for feeding or breeding, for example, ducks, geese, dove, and woodcock.

Natural lakes and ponds

Standing bodies of fresh water that were not created by man.

Nonconsumptive user

One who participates in noncomsumptive wildlife-associated activities. (See also, primary nonresidential, primary residential, secondary nonresidential, secondary residential.)

Nonresident

An individual who participated in a State other than that in which he or she resided at the time of the screening interview.

Observe

To give special attention to and derive enjoyment from the viewing of wildlife.

Off-road vehicles

Vehicles such as dune buggies, 4-wheel-drive vehicles, snowmobiles, and trailbikes.

One-day trip

A trip on which the respondent went and returned on the same day, not involving an overnight stay.

Other animals

Animals sometimes thought of as pests or varmints hunted for sport or for food. Not considered to be game animals in some States.

Out-of-State

Activity that occurs in States other than the respondent's State of residence.

Participant

An individual who fished, hunted, and/or engaged in a nonconsumptive activity during 1980.

Population density

Big cities: central cities with population of 500,000 or more. Small cities: all other urban areas with populations of 2,500 but less than 500,000. Towns and rural areas: all places with populations under 2,500 and places with 2,500 persons or more not in an urbanized area.

Primary nonresidential

Trips or outings of at least 1 mile from home for the primary purpose of observing photographing, or feeding wildlife. (Trips to zoos, circuses, aquariums, and museums, and trips to fish or hunt are not included.)

Primary residential

Activities around the home whose primary purpose is wildlife related, including (1) closely observing or trying to identify birds or other wildlife, (2) photographing wildlife, (3) feeding birds or other wildlife on a regular basis, (4) maintaining natural areas of at least ¼ acre for which benefit to wildlife is an important concern, (5) maintaining plantings (shrubs, agricultural crops, etc.) for which benefit to wildlife is an important concern, and (6) visiting public parks within 1 mile of home for the purpose of observing, photographing, or feeding wildlife.

Primary purpose

The purpose that motivated the trip or activity and without which the trip or activity would not have been undertaken.

Primitive firearm

A black powder gun loaded in the discharge end (muzzle) of the weapon; a muzzle loader.

Public area

Lands owned and administered by local, State, or Federal governments.

Resident

An individual who participated in the State in which (s)he resided at the time of the screening interview.

Response rate

Percent of eligible sample households or individuals that were interviewed.

Saltwater fishing

Fishing in oceans, bays, sounds and tidal waters of rivers and streams.

Secondary nonresidential

Enjoyment from seeing or hearing wildlife while on a trip or outing of at least 1 mile that is taken for another purpose, such as camping, driving for pleasure, or boating.

Secondary residential

Enjoyment from unplanned opportunities to see or hear wildlife while pursuing other activities around the home (e.g., enjoying birds while doing yardwork).

Small game

Smaller sized wild animals, such as rabbits, quail, grouse and pheasant, which are hunted for sport or for food, not including waterfowl, other migratory birds, and animals generally considered to be pests or varmints.

Spender

An individual who purchased a particular item in 1980.

Sportsman

An individual who hunted and/or fished for sport or food.

Surf and shore fishing

Fishing in saltwater 3 miles or less from shore.

Trip

Trips for the primary purpose of hunting, fishing, or a nonconsumptive activity as well as trips for another purpose (e.g., vacation) during which these activities occurred. Included are trips from the respondent's residence as well as trips from a starting point other than the respondent's principal residence (e.g., a vacation home, relative's residence).

Unlicensed

A fisherman and/or hunter who was not licensed to fish and/or hunt in the State in which the activity took place; includes sportsmen who were exempt from having a license.

Appendix B

Statistical Reliability Analysis

SAMPLE DESIGN

The 1980 National Survey of Fishing, Hunting, and Wildlife Associated Recreation (FHWAR) was designed to provide State-level estimates of the participation rates for hunting and fishing. The study was conducted in two stages; an initial screening of households to identify participants and a followup enumeration of selected households with participants to collect detailed data about the households' wildlife-related recreation. The 1980 FHWAR sample was selected from expired Current Population Survey (CPS) samples.

Current Population Survey

The expired CPS samples used for the 1980 FHWAR survey had been selected initially from the 1970 census files with coverage in all 50 States and the District of Columbia. The samples, while active, had been continually updated to reflect new construction. The CPS samples used were located in more than 630 areas comprising more than 1,100 counties, independent cities, and minor civil divisions in the Nation.

The FHWAR Screening Sample

The screening sample[1] for Montana consisted of about 2,110 households identified from expired CPS samples between the period December 1978 to February 1980. Of these, roughly 17.7 percent were found to be vacant or otherwise not to be enumerated. Of the remaining households, 4.6 percent could not be enumerated because the occupants were not found at home after repeated calls or were unavailable for some other reason. Overall, 1,650 completed household interviews were obtained for a response rate of approximately 95.4 percent. About 62.4 percent of the interviewed households were contacted by telephone and the remaining interviewed households were contacted by personal visit. Interviewing for the screening sample was completed in March 1981.

Detailed Sample

The detailed sample[1] was selected in the following manner: Each household containing at least one sportsman 16 years old and older was assigned a level of participation dependent upon the highest level of participation according to the screening interview for any sportsman in the household. This procedure grouped households into two levels of participation, substantial households, i.e., at least one household member fished or hunted for 30 days or more or spent more than $500 for fishing or hunting, and nonsubstantial households. These households were further grouped by hunter and nonhunter classifications. Differential sampling rates were applied to the four strata such that one-fourth of the households in the nonsubstantial nonhunter stratum were revisited, one-half of the households in the nonsubstantial hunter stratum were revisited, and all of the households in the substantial hunter and nonhunter strata were revisited. Once a household was selected for detailed interviewing, all participants 16 years old and older, irrespective of their level of participation, were interviewed in detail. The detailed sample consisted of 510 households, selected from households identified from the screening sample as containing a sportsman. Roughly, 790 sportsmen were selected for detailed interviewing. Of these, roughly 9.5 percent were not at home after repeated calls or were unavailable for some other reason resulting in a response rate of 90.5 percent of eligible selected sportsmen. In all, about 680

[1] For a more complete description of the FHWAR sampling schemes, contact the Statistical Methods Division, Bureau of the Census.

interviews with sportsmen were completed. Preliminary analysis indicated that additional sportsmen may have been incorrectly classified as inactive during the screening phase. Including nonresponse to both the screening phase and the detailed phase as well as misclassification of sportsmen, the overall response rate was roughly 82.4 percent. Detailed interviewing was completed in June 1981.

ESTIMATION PROCEDURE

The estimation procedure for the two samples of the 1980 FHWAR Survey involved the inflation of the weighted sample results to independent estimates of the population. A brief description of the major weight components by sample is given below.

Screening Sample

1. Base Weight. The reciprocal of the probability of selecting a household.
2. Household Noninterview Adjustment. A factor to adjust the weight assigned to interviewed households to account for households eligible for interview but for which an interview was not obtained.
3. First-Stage Adjustment. The more than 630 areas designated for our samples were selected from roughly 1,900 such areas of the United States. Some of our sample areas represent only themselves and are referred to as self-representing. The remaining areas represent other areas similar in selected characteristics and are thus designated nonself-representing. The first-stage factor reduced the component of variation arising out of sampling the nonself-representing areas.
4. Second-Stage Adjustment. This adjustment involved the inflation of the sample results to independently derived postcensal estimates of the civilian noninstitutional and nonbarrack military populations for the State. Overall, the second-stage ratio adjustment was 1.14.

Detailed Sample

1. Base Weight. The final person-tabulation weight developed from the weighting of the screening sample.
2. Stratum Adjustment. This factor inflated the weights of the sample households selected from the four level-of-participation categories to account for all households in the category.
3. Sportsmen Noninterview. This factor adjusted the weights of the interviewed sportsmen to account for sportsmen intended for interview but for some reason not interviewed.

RELIABILITY OF SAMPLE ESTIMATES

The statistics[2] produced by this survey are estimates derived from a sample and hence, are apt to differ somewhat from the actual values being estimated. This occurs because there are two types of errors possible in an estimate based on a sample survey - sampling errors and nonsampling errors.

Nonsampling Errors

Let us suppose that a comparable complete enumeration was conducted, that is, an interview is attempted for every person 16 years old and older in the United States. Chances are we would still not correctly estimate every parameter (for example, the proportion

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[2]Statistics for the population 6 years old and older and 6-15 years old were derived from the screening interviews. Statistics for the population 16+ were derived from the detailed interviews.

of persons who fished) under consideration. In this instance, the difference is solely due to nonsampling errors. Nonsampling errors occur also in sample surveys and can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness on the part of the respondents to provide correct information, inability to recall information, errors made in collection such as in recording or coding the data, errors made in processing the data, and errors made in estimating values for missing data. Explicit measures of these errors are generally not available. It is believed that most of the important operational and out-of-range response errors were detected and corrected in the course of the Bureau's review of the data for accuracy and consistency. Unfortunately, some response and operational errors remain.

Another source of error in sample surveys is the failure to represent all units with the sample (undercoverage). There were two particular undercoverage problems in this survey: sample attrition, i.e., loss of the original sample due to nonreturns from the field, processing, etc., and failure to represent new construction in the sampling frame for the period roughly between December 1978 and June 1980. Overall undercoverage as compared to the level of the 1980 decennial census is about 14.0 percent. Generally, undercoverage is larger for males than for females and larger for blacks and other races combined than for whites. Ratio estimation to independent age-sex-race population controls, as described previously, partially corrects for the bias due to survey undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics than interviewed persons in the same age-sex-race group.

A coverage improvement sample was included with the CPS samples beginning in 1978, in order to provide coverage of mobile homes and new construction housing units that previously had no chance for selection in the CPS sample. The inclusion of this coverage improvement sample in the FHWAR does not have a significant effect on the estimates.

Sampling Errors

The particular sample used for the 1980 FHWAR Survey is one of a large number of all possible probability samples of the same size that could have been selected using the same sample design. Estimates derived from the different samples would differ from each other. The expected deviation of a sample result from the average of all possible samples is called the sampling error. The exact sampling error is unknown, however, guides to the potential size of the sampling error are provided by the standard error of the estimate.

The standard error of a survey estimate attempts to provide a measure of this variation among the estimates from the possible samples, and thus is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. The standard errors that were calculated for this survey also partially measure the effect of variable nonsampling errors but do <u>not</u> measure any systematic biases in the data.

Note When Using Small Estimates

Because of the large standard errors involved, there is little chance that summary measures (such as averages and percent distributions) would reveal useful information when computed on a small base. Estimated numbers are shown, however, even though the relative standard errors of these numbers are larger than those for corresponding percentages. These

smaller estimates are provided primarily to permit such combinations of the categories that serve each data user's needs.

The estimate and its associated standard error may be used to construct a confidence interval, i.e., an interval having a prescribed probability that it would include the average result of all possible samples. The chances are about 95 out of 100 (95 percent) that the interval from two standard errors below the estimate to two standard errors above the estimate would include the average value of all possible samples. Of course, any particular 95-percent confidence interval may or may not contain the average value of all possible samples. But for a particular sample, one can say with 95-percent confidence that the average of all possible samples is included in the constructed interval. Also frequently used are 68-percent and 99-percent confidence intervals, which are obtained by constructing a one-standard error interval (plus or minus) and a 2½ standard error interval (plus or minus), respectively, about the estimate. The chances are about 2 out of 3 that the average result of all possible samples is contained in the 68 percent confidence interval and 99 out of 100 that the average value of all possible samples is included in the 99-percent confidence interval.

Standard Error Tables and Their Use

In order to derive standard errors that would be applicable to a large number of estimates and could be prepared at a moderate cost, a number of approximations were required. Therefore, instead of providing an individual standard error for each estimate, generalized sets of standard errors are provided for various types of characteristics. As a result, the sets of standard errors provided give an indication of the order of magnitude of the sampling error of an estimate rather than the precise sampling error.

The figures presented in the generalized tables 1-10 are approximations to standard errors of various estimates shown in the report. Standard errors for intermediate values not shown in the generalized tables of standard errors may be approximated by interpolation.

Two or three parameters are used (denoted a, b, and c) to calculate standard errors for each type of characteristic in the generalized standard error tables; they are presented in table 11. These parameters were used to calculate the standard errors for levels and percentages of sportsmen, fishermen, or hunters and the aggregates, trips, days, and expenditures. Direct computation of the standard errors will give more accurate results than the use of the standard error tables. Methods for direct computation are given in the following sections.

Standard Errors of Estimated Numbers

The approximate standard error σ_x of an estimated number shown in this report can be obtained in two ways. It may be obtained by use of the generalized standard error tables or formulas 1 or 2. Formula 1 is used for standard errors of levels of sportsmen, fishermen, or hunters.

$$\sigma_x = \sqrt{ax^2 + bx} \qquad (1)$$

Here x is the size of the estimate and a and b are the parameters in the table associated with the particular characteristic. Use of this formula will provide more accurate results than the use of the generalized standard error tables.

$$\sigma_x = \sqrt{ax^2 + bx + \frac{cx^2}{y}} \qquad (2)$$

Formula 2 is used for standard errors of the aggregates; trips, days, and expenditures. Here x is again the size of the estimate, y is the base of the estimate, and a, b, and c are the parameters in the tables associated with the particular characteristic.

Illustration of the Computation of the Standard Error of an Estimated Number

Suppose that a data table shows that 100,000 persons 16 years old and older either fished or hunted. Using formula 1 and the parameters a = -.0020200 and b = 1,153 from table 11, the estimate of the standard error is

$$\sigma_x = \sqrt{-.0020200(100{,}000)^2 + 1{,}153(100{,}000)}$$

$$= 9{,}800$$

This means that the chances are 68 out of 100 that the estimate would have been a figure differing from the average of all possible samples by less than 9,800. Similarly, the chances are 95 out of 100 that the estimate would have been a figure differing from the average of all possible samples by less than 19,600 (twice the standard error), i.e., the 95-percent confidence interval for the number of persons 16 years old and older who either fished or hunted is from 80,400 to 119,600.

Suppose also that 200,000 fishermen 16 years old and older engaged in 800,000 days of participation in all fishing. Using formula 2 and the parameters a = .0016165, b = 23,529, and c = 1,712 from table 11, the estimate of the standard error on 800,000 days is

$$\sigma_x = \sqrt{.0016165(800{,}000)^2 + 23{,}529(800{,}000) + \frac{1{,}712(800{,}000)^2}{200{,}000}}$$

$$= 159{,}200$$

The chances are 68 out of 100 that the estimate would have been a figure differing from the average of all possible samples by less than 159,200. The chances are 95 out of 100 that the estimate would have been a figure differing from the average of all possible samples by less than 318,400 (twice the standard error), i.e., the 95-percent confidence interval for the number of days of participation for all fishermen 16 years old and older is from 481,600 to 1,118,400.

Standard Errors of Estimated Percentages

The reliability of an estimated percentage, computed by using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which this percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. Linear interpolation in the tables of standard errors of percentages may be used to obtain standard errors for intermediate values of x and p or formula 3, from which the tabulated standard errors $\sigma(x,p)$ are computed, can be used directly; direct computation will give more accurate results than linear interpolation. Formula 3 must be used to compute standard errors of percentages for all aggregated estimates.

$$\sigma_{(x,p)} = \sqrt{\frac{b}{x} \cdot (p) \quad (100 - p)} \qquad (3)$$

Here x is the size of the subclass of sportsmen, hunters, days, etc., which is the base of the percentage; p is the percentage ($0 \leq p \leq 100$); and b is the parameter in the tables associated with the particular characteristic in the numerator of the percentage.

Illustration of the Computation of the Standard Error of an Estimated Percentage

Suppose that of 100,000 hunters 16 years old and older, 40.0 percent had completed 1 year of college. From table 11 the appropriate b parameter is 507. Using formula 3, the approximate standard error of 40.0 percent is

$$\sigma_{(x,p)} = \sqrt{\frac{507}{100,000} \cdot (40.0) \quad (100.0 - 40.0)}$$

$$= 3.5 \text{ percent}$$

This means that the 68-percent confidence interval for the percentage of hunters 16 years old and older with 1 year of college, i.e., 40.0 percent, is from 36.5 to 43.5 percent, and the 95-percent confidence interval is from 33.0 to 47.0 percent, i.e., 40.0 $\pm$ (2)(3.5).

Standard Errors of Estimated Averages

Certain mean values for sportsmen, fishermen, etc. shown in the report were calculated as the ratio of two numbers. For example, average days per fisherman is calculated as:

$$\frac{x}{y} = \frac{\text{total days}}{\text{total fishermen}}$$

Standard errors for these averages may be approximated by the use of formula 4 below.

$$\sigma_{(x/y)} = \sqrt{\left(\frac{x}{y}\right)^2 \left[\frac{\sigma_x^2}{x^2} + \frac{\sigma_y^2}{y^2} - 2\rho\left(\frac{\sigma_x}{x}\right)\left(\frac{\sigma_y}{y}\right)\right]} \qquad (4)$$

In formula 4, ρ represents the correlation coefficient between the numerator and the denominator of the estimate. When applying the above formula, use 0.7 as an estimate of ρ.

Table 1. Standard Errors for Estimated Numbers of Sportsmen, Fishermen, or Hunters 6 Years Old and Over and 6-15 Years Old

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

SIZE OF ESTIMATE	STANDARD ERROR
5	1
10	2
15	2
25	3
50	4
75	5
100	6
250	8
500	7
1000	0
2500	0
5000	0

Table 2. Standard Errors for Estimated Percentages of Sportsmen, Fishermen, or Hunters 6 Years Old and Over and 6-15 Years Old

(68 CHANCES OUT OF 100)

	BASE OF PERCENTAGE (THOUSANDS)										
ESTIMATED PERCENTAGE	20	25	50	75	100	250	500	750	1000	2500	5000
1 OR 99	1.4	1.2	0.9	0.7	0.6	0.4	0.3	0.2	0.2	0.1	0.1
2 OR 98	1.9	1.7	1.2	1.0	0.9	0.5	0.4	0.3	0.3	0.2	0.1
5 OR 95	3.0	2.7	1.9	1.5	1.3	0.8	0.6	0.5	0.4	0.3	0.2
10 OR 90	4.1	3.7	2.6	2.1	1.8	1.2	0.8	0.7	0.6	0.4	0.3
15 OR 85	4.9	4.4	3.1	2.5	2.2	1.4	1.0	0.8	0.7	0.4	0.3
25 OR 75	5.9	5.3	3.7	3.1	2.6	1.7	1.2	1.0	0.8	0.5	0.4
50	6.8	6.1	4.3	3.5	3.1	1.9	1.4	1.1	1.0	0.6	0.4

Table 3. Standard Errors for Estimated Numbers of Sportsmen or Fishermen 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

SIZE OF ESTIMATE	STANDARD ERROR
5	2
10	3
15	4
25	5
50	7
75	9
100	10
250	13
500	8
1000	0
2500	0
5000	0

Table 4. Standard Errors for Estimated Percentages of Sportsmen or Fishermen 16 Years Old and Over

(68 CHANCES OUT OF 100)

	BASE OF PERCENTAGE (THOUSANDS)										
ESTIMATED PERCENTAGE	20	25	50	75	100	250	500	750	1000	2500	5000
1 OR 99	2.4	2.1	1.5	1.2	1.1	0.7	0.5	0.4	0.3	0.2	0.2
2 OR 98	3.4	3.0	2.1	1.7	1.5	1.0	0.7	0.5	0.5	0.3	0.2
5 OR 95	5.2	4.7	3.3	2.7	2.3	1.5	1.0	0.9	0.7	0.5	0.3
10 OR 90	7.2	6.4	4.6	3.7	3.2	2.0	1.4	1.2	1.0	0.6	0.5
15 OR 85	8.6	7.7	5.4	4.4	3.8	2.4	1.7	1.4	1.2	0.8	0.5
25 OR 75	10.4	9.3	6.6	5.4	4.6	2.9	2.1	1.7	1.5	0.9	0.7
50	12.0	10.7	7.6	6.2	5.4	3.4	2.4	2.0	1.7	1.1	0.8

Table 5. Standard Errors for Estimated Numbers of Hunters 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

SIZE OF ESTIMATE	STANDARD ERROR
5	2
10	2
15	3
25	3
50	5
75	6
100	6
250	8
500	6
1000	0
2000	0

Table 6. Standard Errors for Estimated Percentages of Hunters 16 Years Old and Over

(68 CHANCES OUT OF 100)

	BASE OF PERCENTAGE (THOUSANDS)										
ESTIMATED PERCENTAGE	20	25	50	75	100	250	500	750	1000	2500	5000
1 OR 99	1.6	1.4	1.0	0.8	0.7	0.4	0.3	0.3	0.2	0.1	0.1
2 OR 98	2.2	2.0	1.4	1.2	1.0	0.6	0.4	0.4	0.3	0.2	0.1
5 OR 95	3.5	3.1	2.2	1.8	1.6	1.0	0.7	0.6	0.5	0.3	0.2
10 OR 90	4.8	4.3	3.0	2.5	2.1	1.4	1.0	0.8	0.7	0.4	0.3
15 OR 85	5.7	5.1	3.6	2.9	2.5	1.6	1.1	0.9	0.8	0.5	0.4
25 OR 75	6.9	6.2	4.4	3.6	3.1	1.9	1.4	1.1	1.0	0.6	0.4
50	8.0	7.1	5.0	4.1	3.6	2.3	1.6	1.3	1.1	0.7	0.5

Table 7. Standard Errors for Estimated Numbers of Trips or Days of Participation for Sportsmen or Fishermen 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

	ESTIMATED NUMBER OF TRIPS OR DAYS										
BASE OF THE ESTIMATE	50	100	250	500	750	1000	5000	10000	25000	50000	70000
25	37	55	101	171	239	306	1368	2692	6663	13282	18577
50	36	52	90	144	194	244	1007	1955	4796	9530	13317
100	35	50	84	128	168	206	766	1452	3507	6929	9667
250	35	49	80	118	150	179	574	1040	2425	4726	6567
500	34	49	79	114	143	169	494	860	1934	3712	5133
1000	34	49	78	112	140	164	448	754	1634	3082	4238
2000	34	49	78	111	138	161	424	695	1461	2713	3710
4000	34	49	78	111	137	160	411	663	1366	2508	3415

Table 8. Standard Errors for Estimated Numbers of Trips or Days of Participation for Hunters 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

	ESTIMATED NUMBER OF TRIPS OR DAYS										
BASE OF THE ESTIMATE	50	100	250	500	750	1000	2500	5000	7500	10000	15000
25	18	31	66	125	183	242	592	1175	1758	2341	3507
50	16	26	51	92	132	172	413	813	1214	1614	2415
100	15	23	41	70	97	124	284	550	816	1081	1612
250	14	21	34	52	67	82	164	295	424	554	812
500	14	20	32	44	54	62	94	122	136	139	114
750	14	20	31	42	49	54	53	0	0	0	0
1000	14	20	30	40	46	49	0	0	0	0	0
1500	14	20	30	39	43	44	0	0	0	0	0

Table 9. Standard Errors for Estimated Expenditures by Sportsmen or Fishermen 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

	ESTIMATED EXPENDITURES										
BASE OF THE ESTIMATE	250	500	1000	2500	5000	10000	25000	50000	100000	500000	1000000
25	138	238	432	1008	1967	3882	9629	19206	38360	191593	383135
50	121	196	338	753	1438	2806	6907	13743	27413	136777	273482
100	111	172	280	584	1080	2067	5021	9943	19786	98529	196958
250	105	155	238	454	792	1453	3422	6698	13247	65635	131120
500	103	149	223	402	669	1180	2686	5183	10173	50080	99962
1000	102	146	215	373	598	1016	2228	4227	8215	40100	79952
2000	101	145	210	357	559	923	1959	3656	7035	34030	67767
4000	101	144	208	349	538	873	1810	3334	6363	30545	60765

Table 10. Standard Errors for Estimated Expenditures by Hunters 16 Years Old and Over

(68 CHANCES OUT OF 100. NUMBERS IN THOUSANDS)

	ESTIMATED EXPENDITURES										
BASE OF THE ESTIMATE	100	250	500	1000	2500	5000	10000	25000	50000	100000	300000
25	38	82	154	298	729	1448	2885	7197	14382	28754	86241
50	32	64	116	217	522	1028	2042	5082	10149	20283	60818
100	29	53	90	163	377	734	1447	3584	7147	14272	42773
250	26	45	71	118	254	476	920	2249	4464	8892	26608
500	26	42	63	99	196	351	656	1569	3088	6127	18279
750	25	41	61	92	173	298	541	1263	2465	4867	14474
1000	25	41	59	88	160	267	472	1079	2085	4095	12132
1500	25	40	58	84	146	232	392	855	1617	3137	9213

Table 11. Parameters for Calculating Standard Errors of Various Characteristics

DESCRIPTION OF THE CHARACTERISTIC	a	b	c
Sportsmen, fishermen, or hunters[1]	-.0005389	373	
Sportsmen or fishermen[2]	-.0020200	1,153	
Hunters[2]	-.0008882	507	
Expenditures:			
Sportsmen or fishermen[2]	.0027527	39,671	3,600
Hunters[2]	-.0004621	6,168	2,077
Number of trips or days of participation:			
Sportsmen or fishermen[2]	.0016165	23,529	1,712
Hunters[2]	-.0030865	4,050	1,437

[1] 6 years old and older and 6-15 years old.

[2] 16 years old and older.

Exhibit #13
2-7-85
FWP, Montana Outdoors

Elk Success Story: An Overview

by Gene Allen

Although elk are not our most pleasing wildlife resource in Montana, they continue to be one of the most desirable and sought-after big game species that Montana has to offer. Elk have a fairly wide distribution; they live in a variety of habitats, mostly on public lands, and their numbers have remained relatively stable—or have even increased—over the last several decades. Each factor has contributed to making elk one of Montana's most notable wildlife management success stories.

We can measure the success in a number of ways: (1) We have elk in more places than we had several decades ago. The Missouri Breaks elk herd is an example of a substantial herd in an area where, in the recent past, there were none at all. (2) Over time, Montana's elk numbers have gradually increased.

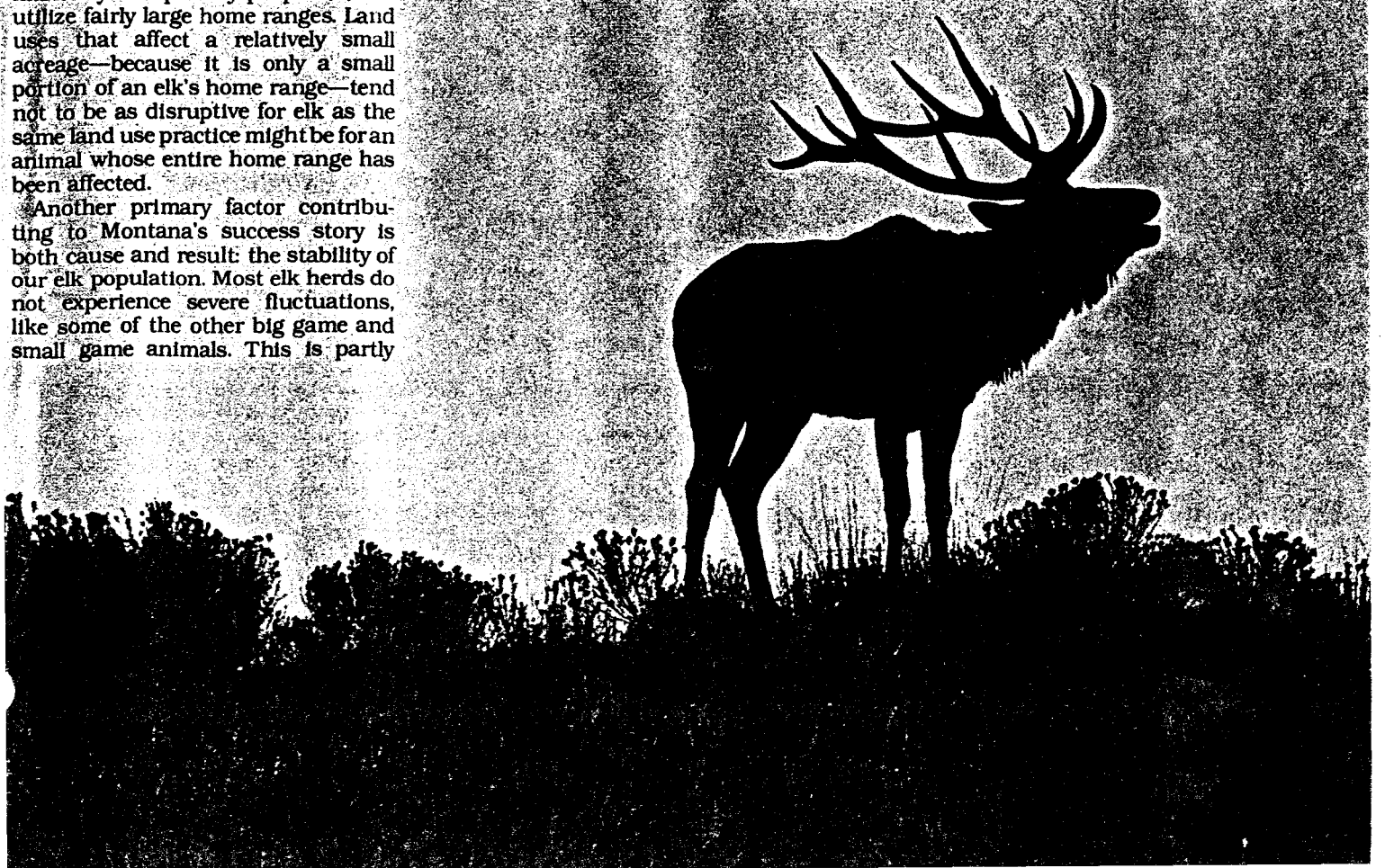
Two major reasons for the success are: (1) Most elk inhabit areas not permanently occupied by people. (2) Elk utilize fairly large home ranges. Land uses that affect a relatively small acreage—because it is only a small portion of an elk's home range—tend not to be as disruptive for elk as the same land use practice might be for an animal whose entire home range has been affected.

Another primary factor contributing to Montana's success story is both cause and result: the stability of our elk population. Most elk herds do not experience severe fluctuations, like some of the other big game and small game animals. This is partly because of their adaptability, the stable nature of their habitat, and the stable nature of the animals themselves—they are a fairly long-lived species. The recruitment rate (the survival of young required to offset adult mortality) necessary for a long-lived population is lower than for some other wildlife populations. This is an advantage and contributes to stability because weather and other happenings have less impact on adults than on young.

Other articles in this issue address various subjects that are part of the requirements for successful elk management programs. An important part of the success story has been acquisition of key winter ranges that permanently support and stabilize elk populations in those areas (see the article by Arnold Foss and Fred King). These lands form only a fraction of one percent of the land base of Montana, but they support as many as 10% to 15% of the state's wintering elk. In some areas, the elk utilizing forest lands during summer and fall would not be there, at least in those numbers, without the state-owned game ranges. The importance of winter game ranges and their contribution to the stability of Montana's elk populations cannot be overemphasized.

The department's elk management program has not been without problems. It has not been easy to try to walk the middle between not enough elk for people and hunters, and too many elk for private landowners. As economic pressures increase for private landowners, this aspect of our program becomes more difficult. In addition, the department faces its own set of economic pressures. Because of the department's financial situation, we

photo: Louis M. Kis



have not been able to purchase big game winter range for the last few years. Hopefully, over the next few years, we can again put ourselves in a financial posture that will allow us to acquire big game habitat into the future, primarily to help maintain the populations we have now.

Both direct and indirect pressures on elk are constantly increasing. These pressures take various forms, and they are not all pressures on individual elk. Many of the pressures are on elk habitat—which directly affects elk and populations of elk. Elk are large animals with significant habitat and forage requirements. These requirements are also important to other economic pursuits: timber harvest and cattle grazing are only two examples. Other activities, such as subdivisions and power lines, can also encroach upon important elements of elk habitat. All of these can be expected to affect elk and our elk management program.

One aspect of elk management is elk hunting opportunity and the concerns the department has for the future. Elk hunting opportunity gradually increased into the 1960s. From then to the present, elk hunting opportunity has become more and more restricted. This has been necessary as elk became more and more vulnerable, and as hunters increased in number and became capable of reaching all corners of an elk's range. As a result, elk are no longer secure in their habitat.

Many factors have contributed to making elk one of Montana's most notable wildlife management success stories.

graphics: Dan Coughlin

There are a number of ways to cope with this. But the end result is always the same: As elk security diminishes, more restrictions are placed on hunters. These restrictions can take many forms: One, of course, is reduction in number of hunters for a given area. More desirable would be trying to maintain opportunities for everyone, but cutting down on the length of time a person can hunt, splitting seasons, restricting the number who can hunt antlerless animals, and trying to maintain the universal opportunity to hunt bulls. The most restrictive should be considered as a last resort: permit-only hunting.

As uses of public lands increase, the long-term trend will be toward more restrictive hunting. Even now, as the bull elk harvest rate increases and the average age of bull elk becomes younger, we are hearing more and more people complaining about the quality of their hunt. They no longer see as many large or mature bulls as they used to, and, for them, the quality of their hunt is reduced. This aspect of quality is another whole element of elk hunting (or hunting of any kind, for that matter). Few people still hunt for subsistence. It is largely something we left behind many decades ago.

Hunters' concern for the lack of large bulls is, in most instances, not because of the biological need for large animals for breeding purposes. It is mostly for the element of quality that some hunters perceive a large, mature bull adds to the hunting experience. For some, the opportunity to take a larger, "trophy" animal is part of the experience.

These are some of the questions we will be pursuing with sportsmen more and more as time goes by; we will be asking them to comment on management directions that are not biological in nature.

The articles in this issue discuss some of the economic values of elk and other wildlife. Although they have value, wildlife are nonmarket goods and it is very difficult to come up with techniques to compare the value of them with other consumer products. However, the intense demand for other products of public land is making it necessary that we become more involved in the economic aspects of hunting and the values of wildlife. Efforts will be expended in the coming years toward this end. If wildlife are going to compete and maintain their well-earned places in the Montana scene, they are going to have to compete economically as well.

The long-range prognosis for elk and elk hunting depends on what scale of values one wants to use. We will be able to hunt elk for a long time but, as already mentioned, the hunt may not be the same 20 years from now as it is today. That doesn't mean that it may not be as good, but it might mean that in order to have an acceptable experience, a hunter may not have the opportunity as often as he does now. A kind of rationing of opportunity may be necessary.

In the coming months, readers will be hearing more and more about road management (see Mike Aderhold's article). While timber harvest is a necessary and desirable part of the Montana economy, the roads associated with timber management have probably had the greatest impact on elk of any single element. There are many alternatives for road management. The department is working with public agencies and large private corporations at this time to try and formulate a timber program—without any additional miles of open roads. Increased timber removal can, in part, be mitigated by closing roads and maintaining some restrictions on the access to an area during hunting season.

There are ways that the department can—and will have to—do a better job of integrating elk with other land uses. If we expect the other users of land to welcome elk with open arms, we are going to have to do something to make the competition more palatable. One thing that we have been doing (and expect to do even more of in the future) is to exchange grazing. Elk are allowed on private land during a portion of the year, and domestic livestock can graze on certain portions of some of the department's wildlife management areas.

We realize that a sound elk program cannot continue to exist and hunters cannot continue to be welcome if we are only good stewards of our property—we must be good neighbors as well. We have improved our status as neighbors, and we expect to continue to work on improving our relations with adjoining landowners. ■

A Winter Home for Elk

by Arnold Foss and Fred King

As summer's lazy days pass and the lush green mountain meadows take on autumn's golden tinge and finally a frosty mantle of snow, the simple matter of finding the next meal becomes a major chore for Montana's elk.

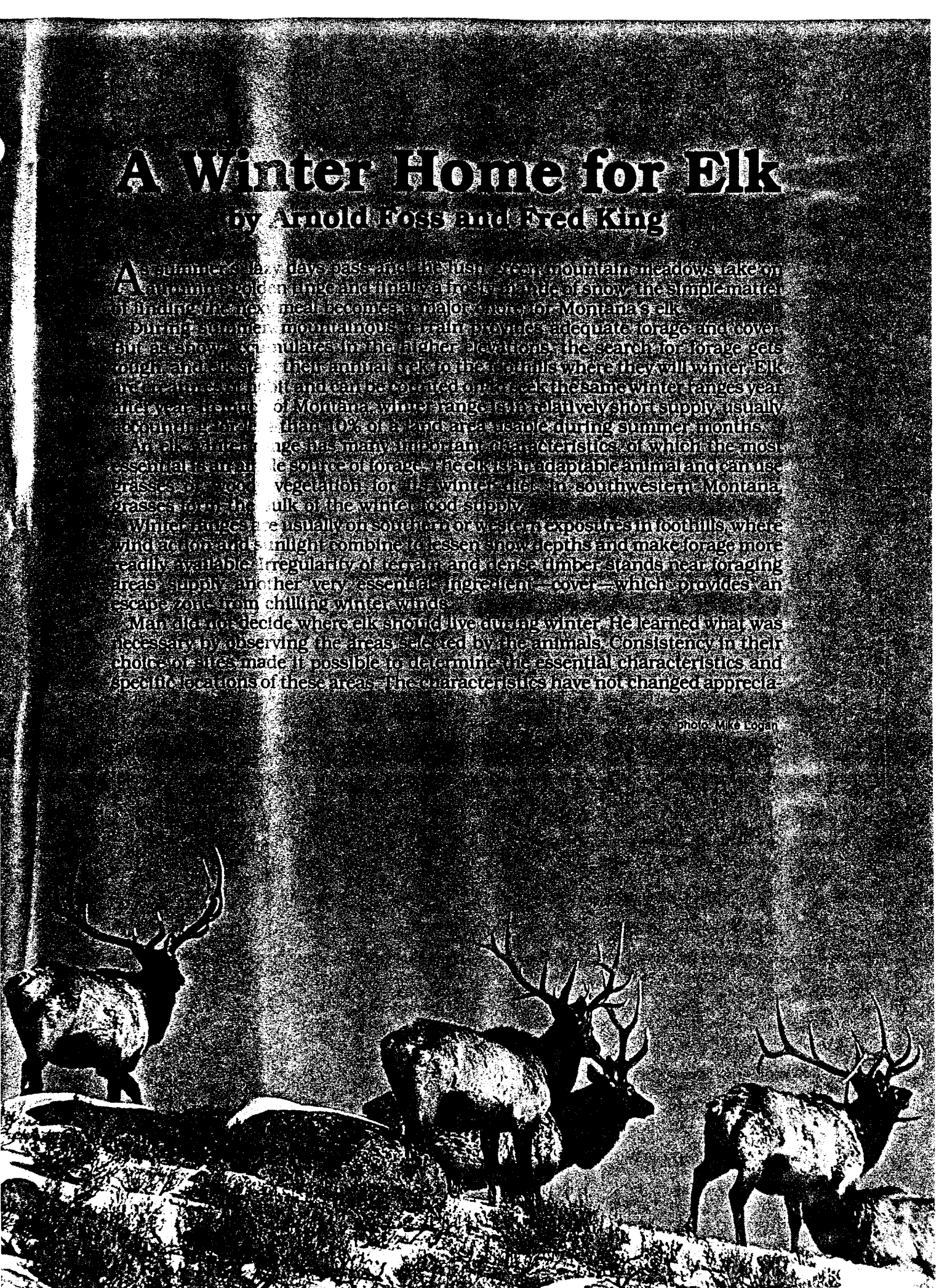
During summer, mountainous terrain provides adequate forage and cover. But as snow accumulates in the higher elevations, the search for forage gets tough and elk start their annual trek to the foothills where they will winter. Elk are creatures of habit and can be counted on to seek the same winter ranges year after year. Despite of Montana, winter range is in relatively short supply, usually accounting for less than 10% of a land area usable during summer months.

An elk's winter range has many important characteristics, of which the most essential is an ample source of forage. The elk is an adaptable animal and can use grasses or woody vegetation for its winter diet. In southwestern Montana, grasses form the bulk of the winter food supply.

Winter ranges are usually on southern or western exposures in foothills, where wind action and sunlight combine to lessen snow depths and make forage more readily available. Irregularity of terrain and dense timber stands near foraging areas supply another very essential ingredient—cover—which provides an escape zone from chilling winter winds.

Man did not decide where elk should live during winter. He learned what was necessary by observing the areas selected by the animals. Consistency in their choice of sites made it possible to determine the essential characteristics and specific locations of these areas. The characteristics have not changed apprecia-

photo: Mike Logan



bly over time. Sites exposed to sun and wind are essentially the same today as they were before man came on the scene—and elk have sought out these areas through the years.

But foothill zones are also highly appealing to man. For example, they provide choice summer pastures for domestic livestock. Most of Montana's foothill ranges are privately owned and are an important part of livestock operations. Most are grazed annually by livestock which remove much of the forage historically available to elk and to other wild animals. However, private lands provide a substantial amount of the winter range used by elk in Montana. In these situations, the number of elk that can be carried depends on the individual landowner's tolerance to elk and the economic conflict that results when elk remove forage the owner needs for his livestock.

"In much of Montana, winter range is in relatively short supply, usually accounting for less than 10% of a land area usable during summer months."

Elk are gregarious and predictable, and they can have substantial impact on the land. Because of man's interest in using these same areas, it became apparent to the Department of Fish, Wildlife and Parks that if significant numbers of elk were to be maintained for the people of Montana, it was essential to put some of the important winter ranges into public ownership. These lands could then be managed to give elk first priority for winter forage. Livestock and other land uses could be excluded or regulated as necessary.

Passage of the Pittman-Robertson Act by the U.S. Congress in 1937 and passage of the necessary assenting acts in 1941 by the Montana Legislature provided the first real opportunity for the department to acquire some of the more important foothill areas that would give elk permanent winter range. These acts provided a funding source for wildlife restoration activities by assigning a federal excise tax on weapons and ammunition. These taxes were then distributed to the states for wildlife management purposes. The winter ranges discussed in this article were purchased for elk and other big game animals through the federal Pittman-Robertson program. Seventy-five percent of the funds came from the federal excise tax, and the remaining 25% from Montana hunting license sales. In simple terms, the funding was provided by sportsmen from money paid for hunting licenses and federal excise taxes on sporting equipment.

Various people and groups view acquisition of land for big game winter ranges in Montana differently. Some have strongly supported the concept; others have opposed it. One objection has been that public acquisition of land removes it from county tax rolls. To alleviate this concern, the department pays an in-lieu-of-tax to the county in which the land is situated. This fee is similar to that paid by a private individual for the same land base. Other people object to more land in public ownership in a state such as Montana where approximately 30% of the land is administered by public management agencies. However, those aware of the quandary that elk and other big game species are in have been highly supportive of acquisition efforts and were grateful for an opportunity to provide a permanent range for elk.

A look at some of the winter ranges in southwestern Montana will indicate what these acquisitions mean to Montanans today and to future generations.

GALLATIN

Sportsmen's money was put to work in 1945 when the department purchased 6,188 acres in the Gallatin Canyon, 50 miles southwest of Bozeman. This purchase would mark the beginning of acquisition of five major big game winter ranges in southwestern Montana. Through additional land purchases in the Gallatin Canyon, the department today holds title to 7,313 acres. In addition, the department also leases 3,200 acres from Burlington Northern Railroad. These acres form the Gallatin Wildlife Management Area (all wildlife management areas were previously called "game ranges").

The Gallatin Wildlife Management Area (WMA) provides and assures winter forage and cover for a segment of the Gallatin elk population. The major portion of the population is migratory, wintering on the wildlife management area and summering in Yellowstone National Park. A small segment of it resides year-round in the Gallatin area, summering primarily in the Gallatin National Forest. Because of their scenic beauty and proximity to Yellowstone National Park, these lands satisfy many outdoor recreation needs of the public. Currently, private holdings in the Gallatin are being developed as recreational complexes or as speculative real estate investments. With this trend in land use, elk populations cannot be maintained without year-round ranges under public title. The Gallatin WMA fills the winter segment of this need, and 400 to 500 elk winter there.

The Fleecer Mountain Wildlife Management Area, near Butte and Anaconda, provides year-round habitat for elk, mule deer, moose, and other wildlife, as well as winter forage and cover for more than 1,000 elk (photo: Vince Fischer).

BEAR CREEK

A segment of the Gallatin elk population annually migrates from summer range in Yellowstone Park to a historic

wintering area near Bear Creek in the Madison drainage. In July 1954, the department made the first purchase of land in the foothills east of Cameron which would later be known as the Bear Creek WMA. This area now comprises 3,456 acres of elk winter range. It provides a winter home for over 500 elk and several hundred mule deer. Approximately half of these elk summer in the Madison drainage, and the remainder are migrants from the Gallatin drainage.

WALL CREEK

The Gravelly Mountain Range is recognized as an area that provides abundant big game hunting opportunities. In November 1960, the department first purchased land that would become the Wall Creek WMA. Situated 25 miles south of Ennis in the eastern foothills of the Gravelly Range, this area consists of 5,829 acres of deeded land and an additional 918 acres leased from the Montana Department of State Lands. This range provides year-round habitat for a variety of wildlife and permanent winter range for over 700 elk. Before the acquisition, the same area carried approximately 150 elk during the winter. There were chronic complaints of elk depredation on private lands in the vicinity, most of which the acquisition eliminated.

FLEECER MOUNTAIN

The Fleecer Mountain WMA, near Butte and Anaconda, has been a highly favored hunting area. For years, elk have journeyed high into the upper reaches of the Big Hole drainage to spend the summer, then back to the Fleecer vicinity for the winter. The area had a history of heavy domestic livestock grazing, leaving little for the elk to live on during the winter. In 1962, the department initiated purchase of lands that now form the Fleecer Mountain WMA. This range contains 6,432 acres of deeded land and an additional 877 acres leased from the Department of State Lands. It provides year-round habitat for elk, mule deer, moose, and a variety of other wildlife, as well as winter forage and cover for more than 1,000 elk.

BLACKTAIL

Acquisition of the Blacktail WMA was finalized in 1972. This purchase provided 11,261 acres of deeded land, with 6,161 acres leased from the Department of State Lands—a total of 17,422 acres managed to accommodate the needs of elk and other big game species. This extremely important parcel makes up the primary wintering ground for elk which migrate from summer ranges in the Snowcrest Mountains and upper Ruby River areas. This range is on the east fork of Blacktail Creek, approximately 30 miles southeast of Dillon.

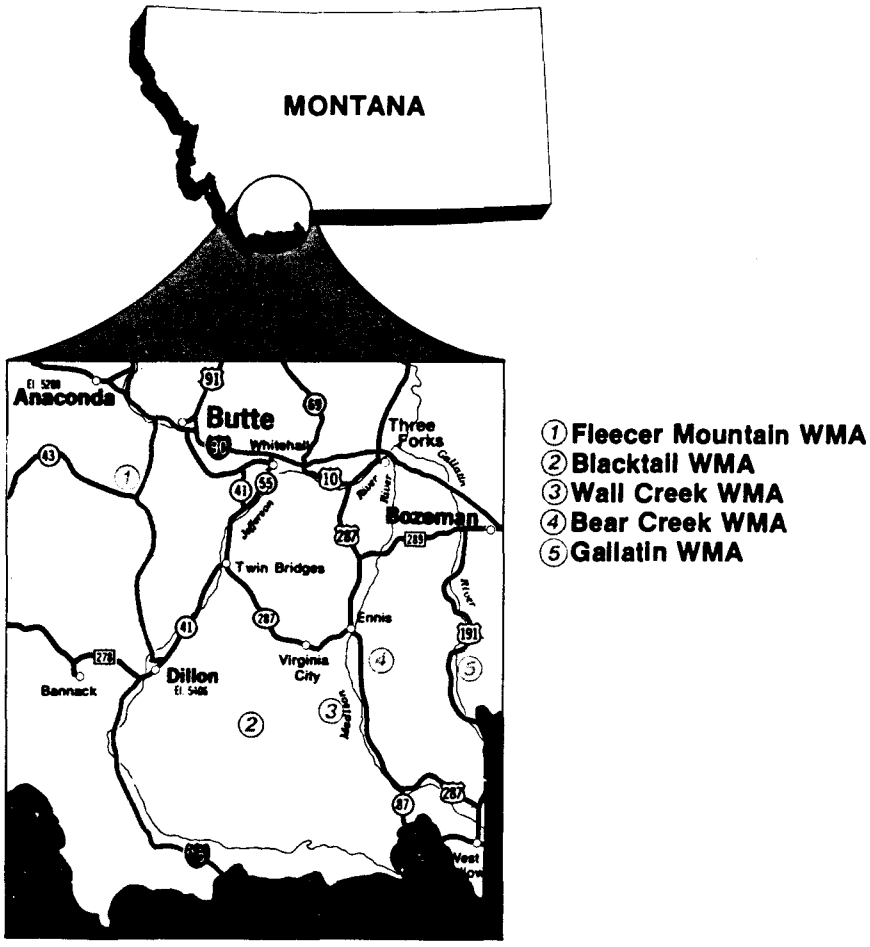
Before department ownership, the Blacktail was also home to 5,000 sheep and 800 domestic cows. Most livestock use was during summer, but the areas grazed were the same areas that elk needed during the winter, and the elk were compelled to forage on what vegetation was left. The current winter population of 900 elk on the wildlife management area is approximately twice the number present at the time the acquisition was made.

The major objective of these purchases was to provide a winter area for elk where competition for forage, space, and solitude could be eliminated by regulating or curtailing other uses of the land. As the condition and quantity of vegetation improved on these acquisitions, not only were better forage conditions offered for big game animals, but improved cover, nesting, and feeding areas for a variety of wildlife. Many additional benefits have accrued to the public. Because they are in public ownership, these lands now offer opportunities for hunting, fishing, photography, hiking, camping, and many other outdoor activities. Several miles of high quality fishing streams were secured along with the winter ranges.

These ranges are adjacent to national forest lands, which provide the bulk of the summer habitat for elk and other big game species. This allows movement between summer and winter ranges with minimal disturbance to adjacent private lands and also affords additional public access to areas that may have been closed to public use if they had remained in private ownership.

All activities and maintenance on these lands are designed to protect the landscape and to improve the quality and quantity of vegetation. A major activity is construction and maintenance of fences. Fences form all boundaries, which eliminates livestock

Five Elk Winter Ranges In Southwestern Montana



grazing on the lands. The boundaries are also "signed" so the lands can easily be identified by the public.

Roads and trails are maintained in a primitive condition, minimizing impact on the landscape, yet allowing adequate public access with two-wheel drive vehicles. Maintenance of roads and trails is directed toward sites where soil erosion may begin or currently poses a problem. Culverts, cattle guards, and small bridges are installed as necessary to facilitate public travel. Off-road vehicles are not permitted on wildlife management areas. From Dec. 1 to May 15, all lands are closed to motorized vehicles to eliminate disturbance to wintering animals.

Since 1945, the department has acquired title to almost 27,000 acres of elk winter range in southwestern Montana. These ranges, purchased with sportsmen's dollars, support winter populations of approximately 3,600 elk. In addition, antelope, moose, mule and white-tailed deer, and a variety of birds and small mammals make seasonal or year-round use of the ranges. These lands were purchased for a total cost of $1,440,327—or $53.39 per acre.

In addition to initial costs, there are annual costs for operation. For fiscal year 1981, these included $9,378 in fees for the 11,157 acres leased, $9,196 for fees in lieu of taxes to the counties, and $53,703 for construction of fences and maintenance of existing facilities. For FY 1981, the total annual operating cost for these five winter ranges was $72,277. At present levels for wintering elk, this amounts to approximately $20 per elk. However, we have not yet seen the upper limit on the number of elk that can be maintained on these winter ranges, so the cost per elk will diminish as numbers of elk increase. If the values to the many other wildlife species were considered, the cost per elk would be even less.

The monetary value of an elk has been calculated in a variety of ways, resulting in a wide range of values from one locality to another. For example, the state of Colorado has assigned a value of $5,600 to an elk. Recent studies in our state have suggested that $2,000 is a more realistic figure for Montana. The latter is based on the market value of the recreation associated with elk hunting ($50 per day) in relation to the total recreation days provided per elk harvested.

Since these winter ranges support approximately 3,600 elk and 20% of these animals can be harvested annually, this amounts to 720 elk available to the hunting public each year. If the value of $2,000 is applied to the 720 elk, it amounts to $1,440,000 generated annually into Montana's economy. These figures strongly indicate that the current price of the resident elk license is a bargain by anybody's analysis.

The pressures on Montana's land base have increased greatly since purchase of the Gallatin Game Range in 1945. Livestock and big game still conflict for forage and space in many spots in southwestern Montana; however, many other interests also compete with wildlife. Expanding human populations and related demands now encroach into areas once not considered for human habitation. Subdivision of land for homes, particularly in the foothill zones, is constantly taking its toll on big game winter ranges. Man's demands for energy, minerals, and lumber continue to increase and intensify. The ultimate result is a reduction in the quantity and quality of habitat—habitat essential to wildlife in carrying out normal life processes.

"current and constant demands on the land magnify the value of the winter ranges purchased to date."

These current and constant demands on the land magnify the value of the winter ranges purchased to date. The Montana public and the wildlife species that use these areas have received—and will continue to receive—dividends. The dividends include not only a permanent range for wildlife but also a place that can be used and enjoyed by the public for years to come. A look into the years ahead tells us these ranges will become even more important to future generations. ■

Exhibit # 16
2-7-85
FWP

KEY TO MONTANA RECREATION SITES LIST

Recreation Map Coordinates -

Name - Official site name.

Type -

FS	Forest Service Campground
BLM	Bureau of Land Management Campground
NP	National Park
NRA	National Recreation Area
NHS	National Historic Site
NB	National Battlefield
NPS	National Park Service Campground
SP	State Park
SM	State Monument
SRA	State Recreation Area
SFAS	State Fishing Access Site
SWMA	State Wildlife Management Area

Land File No. - Three digit number of land file followed by name or abbreviated name of seller or lessor where necessary to differentiate sites. (P) preceding number indicates 'pending.'

Exhibit 16
2-7-85
FWP

9 | 112°30′ | 10 | 11 20′ | 12

Exhibit #18
2-7-85
FWP

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
JOHN R. McGUIRE, CHIEF

FOREST VISITORS MAP

LEWIS AND CLARK NATIONAL FOREST

(ROCKY MOUNTAIN DIVISION)

MONTANA

PRINCIPAL MERIDIAN MONTANA

1976

Scale ½"=1 Mile

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometres

LEGEND

- National Forest Boundary
- Adjacent National Forest Boundary
- County Line
- Game or Bird Refuge Boundary
- Wilderness Boundary
- 10 — U.S. Highway
- 301 — State Highway
- 2708 — Forest Route
- Paved Road
- All Weather Road
- Primary Access Route-Normally Suitable for Automobile Travel-Travel with Caution
- Dirt Road
- Primitive Road
- Road or Trail with Restrictions-Inquire at Local Forest Service Station
- 107 — Trail
- Railroad
- Power Transmission Line
- PIPELINE — Pipeline or Conduit
- Point of Interest
- Sportsman's Access
- Forest Supervisor's Headquarters
- District Ranger Station
- Forest Service Station
- Mine, Quarry or Gravel Pit
- Horizontal Control Station
- Horizontal Control Station and Permanent Lookout Station
- 239 — Permanent Lookout Station with Aeronautical Number on Roof
- Located or Landmark Object
- U.S. Mineral or Location Monument
- Gaging Station
- Cave or Cavern
- Sawmill
- House, Cabin or other Building
- Schoolhouse
- Church
- Ski Area
- Trail Head
- Lewis and Clark National Forest
- Adjacent National Forest
- Other Federal
- State

T. 30 N.

T. 29 N.

A

B

20′

Exhibit #19
2-7-85
FWP

STATUS REPORT
GLEN LAKE COAL TAX PARK ACQUISITION

The 1983 Legislature mandated acquisition of this 83-acre proposed park area, which is located at the northern edge of Bozeman. The park consists of three contiguous tracts of land and an entrance right of way (see attached map).

Tract GL1, consisting of 47 acres, includes frontage on both shores of the East Gallatin River and an abandoned City of Bozeman landfill. The former landfill site covers about 24 acres of the tract.

Tract GL2 contains 30 acres including a 15-acre gravel pond. This tract was purchased from Glen Hash and Dorothy Beyl.

Tract GL3 contains six acres along both banks of the East Gallatin River and is a subdivision park dedicated and conveyed by Messrs. Cook and Bell to the City of Bozeman. These parties are deeding it to the State of Montana.

The gravel pond tract, GL2, has already been purchased from the owners for $420,000, which was appropriated for that purpose. The subdivision tract, GL3, is to be conveyed to the Department in the near future at no cost. The Fish and Game Commission will be asked to accept this donation during their January 24, 1985, meeting.

We will also ask the Commission to accept a lease to Tract GL1, which contains the old landfill. This tract has been the subject of much discussion, beginning with hearings in the 1983 Legislature. The remainder of this brief deals primarily with the former landfill site.

After the 1983 legislative session, articles began to appear in the Bozeman paper and our Department and the City of Bozeman began to receive inquiries about the health hazards the former landfill might present. In response to those concerns, the Department conferred with the Gallatin County sanitarian, the Solid Waste Bureau of the State Department of Health and Environmental Sciences, the Bozeman office of the Soil Conservation Service, and the Federal Environmental Protection Agency (EPA).

EPA began testing the site in the summer of 1983. At that time, we put all of our acquisition negotiations and site surveying activities on hold, pending the results of those tests. Initially, EPA had difficulty analyzing their samples. However, in February 1984 the agency issued a report that confirmed the presence of traces of problem substances in the soil, although no problems were found with the ground water. Because the tests conducted were of a very limited nature, EPA recommended

1. that tissue sample analysis of fish taken from the East Gallatin River be continued (which the Department has done and will continue to do on a regular basis; there have been no apparent problems);

2. that a system of shallow ground water sampling wells be drilled and the water in these wells monitored regularly (which the Department is requesting legislative funding to accomplish); and,

3. that no enclosed structures be built on the landfill due to the potential for an accumulation of methane gas.

Further consultation led to the additional recommendation that topsoil and vegetative cover be maintained on the entire landfill area and that the area not be irrigated.

The Solid Waste Bureau offered three similar recommendations. These were:

1. to perform bio-assay sampling of fish taken from the East Gallatin River;

2. to determine the potential (through testing) for methane gas buildups at the landfill site; and

3. to revegetate the area.

The Solid Waste Bureau also advised us to install ground water monitoring wells.

Had the landfill proved to be a hazard, we were prepared to return to the 1985 Legislature for guidance. The gravel-pond property, if uncontaminated by the landfill, could still have been a viable project. However, since the Legislature had authorized acquisition of a three-tract "package", we were uncertain about its interest in acquiring only a part of the area.

Once it had been determined that the project could be developed without significant risk to public health, there seemed to be no justifiable reason to wait for another legislative session to convene and reconsider the advisability of acquiring the site.

The Legislature knew it was acquiring a former landfill site. Testing showed that this old landfill is not now hazardous although without a shovelful-by-shovelful inspection of the entire landfill area, there is no guarantee that at some time in the future hazardous materials may begin to seep into the ground water or surrounding soil.

If the project is developed, the landfill site will probably be better managed and more thoroughly monitored than it is at present. As a result, public health is going to be better safeguarded in the presence of the project than it would be without it.

Additionally, the Legislature and the owners of the gravel pit property made a good-faith bargain in 1983 concerning its acquisition. The owners waited patiently while cash-flow problems with the Coal Tax Account were straightened out and through the period of testing at the landfill. Once the Parks Division became able to buy the property, and since there was no good reason not to carry out the legislative mandate, we did not feel it would be fair to make the sellers wait any longer. In fact, we risked a lawsuit to do so.

On the other hand, we did not feel that it would be a responsible action to commit the State of Montana to accepting responsibility and liability for problems at the landfill, should it eventually prove to be a problem. Therefore, rather than accept title to the property, we have negotiated a lease agreement with the City of Bozeman. This lease provides for ten-year renewable terms and review on a five-year basis. At the time of review and at the State's option, the City will deed the property to the Department of Fish, Wildlife and Parks. If at any time our testing of the site reveals the existence of problem substances at dangerous levels, the City will take remedial action or the Department will cease operating the site as a recreational area and return it to the control of the City. In return, the State will develop and monitor the site as recommended by EPA and the Solid Waste Bureau.

It should also be pointed out that the ground water gradient is such that any substances which may leach from the landfill should flow away from the gravel pond. That situation would be true regardless of whether the area was developed and the hazards would be carried downstream even if the State was not involved. The State's monitoring at the site should provide early warning of any problems that may occur in the stream as a result of the landfill.

Our Long-range Building program request before the 1985 Legislature includes $165,000 from the Parks Coal Tax funds to place topsoil upon and seed the area and to drill the monitoring wells. This funding will provide for professional consultant services to determine the proper locations for the wells and the proper way to cover the landfill. This will include recommendations about the depth of the topsoil needed, the amount of extra cover fill that may be necessary, and, possibly, the need for impervious clay layers to provide a seal around the landfill.

The next step will be to begin a public participation planning effort in Bozeman to decide what kinds of uses and facilities the residents desire in the project. We have not held meetings to date for three reasons. First, we are still implementing the Legislature's mandate to acquire the site. Second, there has been a considerable amount of local press coverage concerning our activities; and, third, the next step is to secure a legislative appropriation for drilling the test wells and for topsoiling and seeding the landfill area.

If our funding for the landfill site is approved, the planning process will proceed using surveys, the media, and public meetings. We will return to the 1987 Legislature with a request for funding to install those facilities deemed to be appropriate. We already have concluded that the landfill area will be used only for open space and unorganized play, and that no enclosed buildings will be constructed on it.

In summary, we believe we have been proceeding in a cautious, responsible manner. We have proceeded because we could find no reason not to do so. We could have delayed and asked that the matter be reconsidered by the 1985 Legislature, but dismissed that option because we learned nothing new which should cause alarm. The Legislature gave this acquisition a high priority (third of eight proposals), and the sellers had a right to expect responsive action in the absence of any good reason for further delay. We have built safeguards into the project, e.g., a responsible monitoring system, and we have assured that the State will not be responsible for any future cleanup that the landfill site may require. Finally, if worse comes to worst, the Department will still own a very valuable piece of real estate in the pond site, which it should be able to sell at a profit.

United States
Environmental Protection
Agency

Region 8, Montana Office
Federal Building
301 S. Park, Drawer 10096
Helena, Montana 59626

EPA

Ref: 8MO

MAY 22 1984

Mr. Duane Robertson, Chief
Solid Waste Management Bureau
Montana Department of Health and
Environmental Sciences
Cogswell Building
Helena, Montana 59620

Dear Duane:

I am responding to the April 20, 1984 letter from Mr. Richard Mayer, Chief, Design and Construction Bureau, Montana Department of Fish, Wildlife, and Parks to you regarding the Bozeman landfill sampling. Several doctoral researchers at Montana State University were concerned with the sampling completed by the United States Environmental Protection Agency (EPA) at Glenlake Park.

They had three conclusions. More soil sampling was needed to determine the risk associated with the site, additional ground water monitoring was needed to establish direction of flow and quality, and the EPA study had sampling and analytical flaws as well as flawed data interpretation.

I agree that additional sampling is required to fully define the type and extent of the potential or actual contamination problem posed by the Bozeman landfill. Further sampling could show that no public health and/or environmental threat exists. The purpose of the EPA sampling, however, was to only collect initial information about this site. If past and present owners or operators exist, the Agency normally expects these parties to complete the sampling. Based on the past history at the Bozeman landfill and the results of the limited sampling, it would be prudent for any potential owners to require the additional sampling to demonstrate the type and extent of contamination, if any, at this site.

I believe that the methods used by the Agency, and interpretation of the study results were correct. The individuals at MSU were concerned with several details of the study such as the number and location of the soil samples, and improper chemical characterization of the soil samples. The EPA study was as stated previously, not undertaken to fully assess the potential contamination problems at the Bozeman landfill, but to only assess whether further investigation was appropriate. If possible, the past or present owners or operators should undertake any further studies.

RECEIVED

MAY 23 1984

MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES
SOLID WASTE SECTION

If you, people with the Department of Fish, Wildlife, and Parks, City of Bozeman, or Montana State University have any questions or concerns, please call, or have them call me at 449-5473.

Sincerely yours,

John F. Wardell

John F. Wardell, Director
Montana Office

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

TED SCHWINDEN, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

HELENA, MONTANA 59620

May 23, 1984

Mr. Richard Mayer, Chief
Design and Construction Bureau
Parks Division
Fish, Wildlife and Parks
1420 East Sixth Avenue
Helena, Montana 59620

Dear Dick;

Enclosed is a copy of a letter from John Wardell, Director of the Montana Environmental Protection Agency (EPA), concerning EPA's 1983 sampling project at the proposed Glen Lake State Recreation Area.

In the enclosed letter, Mr. Wardell addresses the questions raised by several doctoral researchers at Montana State University concerning the Glen Lake sampling project.

If you have any questions, please call our office at 444-2821 or John Wardell at 449-5473.

Sincerely,

Duane L. Robertson

DUANE L. ROBERTSON, CHIEF
Solid Waste Management Bureau

DLR:SW:vc
Attachments

"AN EQUAL OPPORTUNITY EMPLOYER"

Montana Department
of
Fish, Wildlife & Parks

File or Return to DA

1420 East Sixth Avenue
Helena, Montana 59620

April 20, 1984

Lee - John W. informs me that Duane is responding
DMS

Mr. Duane Robertson
Department of Health
and Environmental Sciences
Capitol Station
Helena, Montana 59620

Dear Duane:

Attached is a copy of a letter from Curtis A. Shook, Acting Director of Recreation, City of Bozeman, concerning EPA sampling at the proposed Glen Lake State Recreation Area.

We have reviewed this letter and would like your input as to the validity of the questions MSU raises. Please return any comments to our office so that we can properly respond to the City of Bozeman.

Thank you for any help you can give.

Sincerely,

R. MAYER

RICHARD E. MAYER, Chief
Design and Construction Bureau
Parks Division

REM/mj
cc: Dick Ellis - LeRoy Ellig
Don Hyyppa
Enclosure

RECEIVED

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

TED SCHWINDEN, GOVERNOR

COGSWELL BUILDING

STATE OF MONTANA

HELENA, MONTANA 59620

February 28, 1984

Dick Ellis
Fish, Wildlife & Parks
8695 Huffine Lane
Bozeman, MT 59715

Dear Dick:

This is in response to your recent request for assistance in developing a groundwater monitoring program at the Bozeman Old City landfill. In the process of compiling this information we have also identified other issues which the Fish, Wildlife and Parks Department (FW&P) may want to address concerning the site. Specifically, your agency should consider developing plans to 1) perform fish bio-assay sampling; 2) evaluate potential methane gas buildup; and 3) revegetate the area.

Based on the information gathered from the August 1983 site investigation we recommend the following groundwater monitoring program be implemented.

1) Site Characterization

Conduct an investigation to characterize the geology and hydrology of the site. This investigation should include drilling test-holes, collecting and describing samples of materials penetrated and an evaluation of surface and groundwater interactions.

2) Monitoring Well Installation

Depending upon the results of the site characterization, three to four monitoring wells should be installed at the site. One or two wells should be installed hydraulically upgradient of the site to obtain samples of groundwater flowing into the site. Two to four wells should be installed hydraulically downgrandient of the site to obtain samples of groundwater flowing away from the site. Monitoring well design i.e., depth size, screened interval and casing material will depend upon the results of the site characterization. Also the elevation of each well should be accurately surveyed.

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3) Sampling and Analysis

Monitoring wells should be sampled and analyzed quarterly for one year to establish baseline trends. Depending upon results of the first year's monitoring, sampling frequency can revert to semi-annual or annual collection. Water levels in each well should be measured prior to sample collection to evaluate seasonal changes in groundwater flow rate and direction. The sample collection should be conducted according to EPA recommended procedures.

It is suggested that samples be analyzed for the following parameters that are generally indicative of landfill leachate:

total organic carbon (TOC)	phenol
ICAP metals scan	nitrate
conductivity	chloride
pH	

The results of analysis should be submitted to Department of Health and Environmental Sciences (DHES), Solid Waste Management Bureau (SWMB) for review.

In conjunction with the groundwater monitoring program at the landfill, a fish bio-assay sampling program of the resident game fish in the adjacent stream segments should be conducted. Also if the FW&P plans to stock Glen Lake, a preliminary bio-assay of selected game fish in the lake should be conducted. These samples should be analyzed for the following organic compounds identified during the August, 1983 site investigation.

1) Metal Scan,
2) Ethyl, Methyl benzene,
3) Vinyl chloride,
4) Pentachlorophenal and derivatives, and
5) Polynuclear Aromatic Screen.

NOTE: Items 4 and 5 are probably related to a wood treating plant upstream rather than the landfill, but since these compounds have a penchant to bio accumulate in the same fish population, we suggest that they be included in the sampling analysis.

Another problem connected with a landfill is methane gas, a common by-product of waste decomposition. In light of this fact, enclosed structures built at the landfill must be designed and constructed to prevent buildup of methane gas in/or under them. If your plans include such structures, we can provide further guidance in this area.

Finally, to lessen potential hazards from contact with contaminated soils at the landfill, a uniform soil cover and revegetation is necessary. The Montana Solid Waste Management Act requires that there is at least two (2) feet of approved earth cover material at a closed landfill. However, since the landfill may eventually be designated as a state park, additional top soil should be considered. And the Bozeman Soil Conservation Service would be a helpful source of information concerning the specific type of vegetation to be used at the landfill.

I have enclosed the lists of consultants and laboratories you requested from Lee Shanklin. If we can be of any further service, please contact us.

Sincerely,

Duane L Robertson

DUANE ROBERTSON, CHIEF
Solid Waste Management Bureau
Telephone: (406) 444-2821

DLR:SW:vc
Encls.

March 1, 1984
Helena, MT 59620

Mr. Duane Robertson, Chief
Solid Waste Management Bureau
Department of Health and
Environmental Sciences
Cogswell Building
Helena, MT 59620

Dear Duane,

We have received the letter from the Environmental Protection Agency dated February 8, 1984, concerning the proposed Glen Lake State Recreation Area, which includes Bozeman's old City Land Fill. We propose to proceed with our legislative mandate by attempting to negotiate a management agreement with the City on the Land Fill Area. At the same time we will proceed with negotiation for the acquisition of the Glen Lake area. Our Fisheries Division will be sampling fish for lead and zinc poisoning and processing those samples for test results.

Our tentative development proposal includes (a) using the dump site as an open space rather than a developed recreational use; (b) providing top soil and native vegetation cover for the dump site; and (c) installing the test wells and monitoring the site, as your office has recommended.

We would like your concurrence in this proposal and would like to continue to work with your office and the Environmental Protection Agency to assure that this project is adequately monitored and that care is given to protecting the public by implementing proper development and management techniques. We may ask the next State Legislature for additional funds to cover monitoring and testing costs and any other site protection improvements deemed necessary.

We look forward to hearing from you. Your concurrence or recommendations are vital to the responsible and successful pursuit of this project. Timing is also critical as we are now preparing our biennial budget requests and

the owners of the pond site are anxious to finalize the purchase agreement.

Sincerely yours,

DON HYYPPA
Administrator
Parks Division

DH/REM/gb
cc: Ron Marcoux
George Holton
LeRoy Ellig
Dick Ellis
John F. Wordell, Director,
Environmental Protection Agency
Region 8, Montana Office
Federal Building
301 South Park, Drawer 10096
Helena, Montana 59626
Dick Mayer
Curt Shook, Recreation Director, City of Bozeman

United States
Environmental Protection
Agency

Region 8, Montana Office
Federal Building
301 S. Park, Drawer 10096
Helena, Montana 59626

Art - bring up at staff - how about pesticides?. RM

NT-

EPA

Ref: 8MO

FEB 0 6 1984

Duane Robertson, Chief
Department of Health and Environmental Sciences
Solid Waste Management Bureau
Cogswell Building
Helena, MT. 59620

Dear Duane:

This is a summary of the analytical results of the August 24, 1983, site investigation at Bozeman's old City Landfill conducted by EPA at the request of the Solid Waste Management Bureau (SWMB). The delay in the release of this information was due primarily to the discovery of trace levels of certain common organic solvents in quality control samples. We recently completed extensive efforts to verify the validity of the data related to these compounds. We have determined that certain compounds were introduced through the process of sampling and analyses and may not represent actual contaminants at the site. Sample data for compounds which are likely to have sources other than the site (i.e., equipment or sample bottle contamination) have been excluded from consideration in our evaluations.

During the site investigation, 17 samples and 2 field controls were collected. As you are aware, these samples represent a general survey of the site at the time they were collected as opposed to an extensive detailed study of the area conducted over a more representative period of time. The samples were analyzed for a total of 133 specific organic compounds. Two of the three soil samples showed quantifiable traces of nine of the organic compounds analyzed. Two of the four sediment samples had quantifiable traces of three organic compounds. None of the five surface water or groundwater samples from five domestic wells showed organic compounds attributable to the landfill. According to the toxicological evaluation of these results, none of the levels of organics identified in the soils or sediments were in excess of any established acute health criteria based on direct contact. Most were lower by two or more orders of magnitude than the derived health criteria for soil and sediment.

Samples from the site were also analyzed for 21 inorganic compounds and metals (total digestible). Of the surface and groundwater samples associated with the landfill, only the level of manganese in one well exceeded the level established in EPA's Quality Criteria for Water, July 1976. Since the criteria for managanese was based on taste and staining, this level did not represent a health hazard. For stream and pond sediments, the levels of total arsenic, selenium and cadmium exceeded published background levels; however, due to the high organic content, and cation exchange capacity of sediments and the nature of the stream environment, these levels were not identified as a health concern in the toxicology review. One of the three soil samples taken at the landfill indicated elevated levels of zinc and lead. If this level of lead was prevalent at the site, it could pose a direct contact hazard from chronic exposure to children playing regularly in the dirt and ingesting approximately 0.1 grams per day from soiled hands.

The data from this limited survey of the site did not indicate that violations of existing Federal standards were occurring at the time the survey was conducted. The following, therefore, are our conclusions and recommendations regarding the landfill site:

1. Although the levels of contaminants identified in soil or sediment at the site presently do not appear to represent an acute direct contact hazard to human health, some do have a potential to bioaccumulate. Aquatic organisms would be at present the most sensitive segment of the environment and the best indicators of potential problems other than direct contact hazards. Since the area is being considered for park designation, and fishing already occurs along neighboring segments, sampling and analyses of a representative number of resident species of gamefish in the stream and pond segments adjacent to the landfill is recommended. Based on the initial results, the need, if any, for periodic resampling should be evaluated. This would provide data on potential adverse effects to the environment or risk from human consumption of fish taken from the area.

2. The fact that the pollutant levels identified during the 8/24/83 site investigation did not exceed the Ambient Water Quality Criteria for Priority Pollutants or other existing standards, does not preclude the presence or potential for development of significant contamination problems at the site. This is due to the nature of wastes deposited at the landfill, the dynamics of the decomposition process and the proximity of the site to routes of surface and groundwater movement. Because of this we recommend that the owner/operators of the site, in consultation with the SWMB, develop and implement a plan for constructing and sampling monitoring wells at the site. These wells should function to detect any leachate escaping from the site. A monitoring program should also be developed to provide critical information on characteristics of the shallow groundwater, such as seasonal variations in groundwater elevations, direction and rate of flow. This information will allow contingency plans to be developed to prevent significant adverse impact to drinking water supplies and/or sensitive aquatic environments.

   In order to lessen any potential hazards from contact with contaminated soils, the owner/operators should, with the cooperation of the Bureau, provide adequate, uniform cover and revegetation at the landfill site. Any development which would disturb this cover or encourage increased human activity on the site should be strongly discouraged.

3. Sampling for methane gas was not included in the site investigation. Since methane is a common by-product of waste decomposition at landfills, it is assumed that there is always a potential for methane to occur at this site. In light of this, development of any enclosed structures at the landfill should be strongly discouraged.

Although we have not determined that the levels of contaminants found at the time of the site investigation represent a significant acute health hazard, there is a long term potential for such problems to develop in conjunction with the old City Landfill. We also wish to emphasize that nothing in the data developed thus far would limit the liability of any past, present or future owner/operators of the site if it is determined at some future date that this site poses threat to human health or the environment.

If you have any questions or comments concerning the information presented here, please contact Lee Shanklin of my staff. A copy of the toxicology report will be provided to you as soon as it is finalized.

Sincerely yours,

John F. Wardell, Director
Montana Office

cc: Don Hyyppa, FWP
James W. Flynn, FWP
Dick Ellis, FWP
Richard Holmes, City of Bozeman

WITNESS STATEMENT

NAME Randy Poulsen BILL NO. _____

ADDRESS 6020 High Country Dr. Helena DATE 2/7/85

WHOM DO YOU REPRESENT? Harold Poulsen

SUPPORT White Sandy OPPOSE _____ AMEND _____

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

Comments:

VISITORS' REGISTER

LONG-RANGE PLANNING SUBCOMMITTEE

BILL NO. Prickley Pear White Sandy Big Game Range Acq. DATE FEBRUARY 7, 1985

SPONSOR

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
VIRGINIA WALTON	18 S. MONTANA AVE. HELENA	Prickly Pear X	
Harold Langenbach	630-N-Hoback Helena	X	
Randy Powlsen	6020 High Country	W.W. & Sandy	
Dolly McMaster	Box 483 East Helena		
Ralph Olson	2770 York Rd Helena	✓	
Shawn L. Olson			
Tom Meagher	104 E. 6TH AVE.	✓	
Jim Pellerin	5075 Ken Drive	✓	
DON HYKPPA	HELENA DFWP		
Mike Alderhold	787 5TH AVE W.N., Kalispell, MT	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

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