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Characteristics and Expenditures of Nonresident Sportsmen in North Dakota in 1983

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and
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Preface

This report presents the results of a mail survey of nonresident hunters in North Dakota in 1983. It represents replication of a similar study accomplished by Leitch and Scott (1978) for hunters during the 1976 season. Because nonresidents are an important component of hunting and fishing in the state, time-series data on their characteristics and expenditures are important for game and fish management.

Of course, the study would not have been possible without the cooperation of 1,673 nonresident sportsmen who completed and returned questionnaires. Mr. Arlen Harmoning, the sponsor's representative, provided invaluable assistance throughout the study. Several individuals at North Dakota State University assisted with the many mailings and computerizing of returns. They were Julie Miller, Harvey Vreugdenhil, Sharon Vreugdenhil, and Tom Jirik. The authors also extend their appreciation to Brenda Ekstrom, Randal Coon, and Timothy Petry of the Department of Agricultural Economics for their thoughtful comments and suggestions on the original draft of this report.

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CHARACTERISTICS AND EXPENDITURES OF NONRESIDENT SPORTSMEN IN NORTH DAKOTA IN 1983

by

Randall S. Anderson and Jay A. Leitch*

Fish and wildlife are important resources in North Dakota. They are important not only as a part of the natural ecological system but also as an economic resource. Sportsmen spend millions of dollars each year on hunting and fishing activities. Therefore, accurate and regular information concerning the magnitude and distribution of these cash flows is useful when preparing and justifying departmental budgets and activities.

Nonresident sportsmen are an important segment of the North Dakota hunting and fishing industry. In 1983, 9 percent of the licensed hunters and 12 percent of the licensed anglers in the state were nonresidents. Their activities have an impact on the state's natural resources and on the economy through purchases of food, lodging, gasoline, and other services and equipment. In addition, nonresident hunting and fishing license sales are an important source of revenue for the North Dakota Game and Fish Department. Approximately 20 percent of all 1983 hunting and fishing license revenue came from the sale of nonresident licenses.

A survey conducted in 1976 estimated that the total expenditure (excluding license purchases) by nonresident hunters in North Dakota was \$2.5 million, which added \$6.3 million in total business activity to the state's economy (Leitch and Scott 1978). That study also presented socioeconomic characteristics and harvest success of nonresident deer, antelope, waterfowl, and upland game hunters. Since data obtained were from only one year, it was recommended that surveys of nonresident hunters be conducted on a continuing basis. It would then be possible to observe trends in nonresident activities to provide a more accurate assessment of their economic impact.

The objectives of this study were to:

1. identify the socioeconomic characteristics of nonresident sportsmen in North Dakota,
2. estimate the level of activity and expenditures by nonresident sportsmen, and
3. project total economic activity attributable to nonresident sportsmen for the 1983 hunting season and for the 1983-84 fishing season.

Data collected in this study were compared with nonresident data obtained in the 1976 study. Nonresident sportsmen included are firearms deer hunters, archery deer hunters, archery antelope hunters, upland game and waterfowl hunters, and anglers.

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Nonresident Hunting and Fishing Regulations

Some nonresident sportsmen are subject to more restrictive regulations than are their resident counterparts. For example, a resident does not need a license to take unprotected species of wildlife, but a nonresident needs both a general game and nongame stamp. Nonresident season limits for small game including waterfowl in 1983 were: 20 ducks, 12 geese, 10 sharp-tailed grouse, 10 ruffed grouse, 6 pheasants, and 10 Hungarian partridge. Nonresident small game hunters must tag all ducks, geese, ruffed grouse, sharp-tailed grouse, pheasants, and Hungarian partridge with a seal that accompanies the license.

Nonresident waterfowl hunters must possess a general game stamp, small game/habitat stamp, federal migratory bird hunting stamp, plus a nonresident waterfowl license in order to hunt in North Dakota. To insure an equitable distribution of permits and to discourage hunter congestion, the state is divided into eight waterfowl zones. Seven of these zones have a limited number of permits available while the eighth zone has an unrestricted number. When nonresident sportsmen apply for a license, they must specify the zone(s) in which they wish to hunt. The waterfowl license is valid only for the specified waterfowl hunting zones and for a period of 14 consecutive days or any two periods of seven consecutive days each. A license authorizing two seven-day hunting periods allows hunting in a different zone during each period.

All firearms deer licenses are issued through lottery. Nonresidents are restricted to no more than 1 percent of available licenses by hunting units. Nonresidents may not apply for a firearms antelope license. However, archery permits for deer and antelope are not limited. All nonresident big game hunters are subject to the same regulations as resident hunters.

Nonresident anglers are subject to basically the same regulations as residents. Residents 16 years of age and older and nonresidents 12 years of age and older need licenses. Anglers could purchase either a seven-day license or a license valid for one year starting April 30, 1983 and ending May 4, 1984.

The annual number of nonresident hunting licenses sold from 1976 to 1983 has not varied significantly (Table 1). However, there has been a sharp drop in the sale of archery deer licenses from 1980 until 1983. A sharp drop in archery antelope license sales has also occurred. In 1977, there were 54 nonresident archery antelope licenses sold. Due to low antelope populations, no antelope hunting seasons were established from 1978 to 1981. When the season was established again in 1982, only eight nonresident archery licenses were sold.

Nonresident license sales vary from year to year depending on several factors which may or may not be under control of the managing agency. Low gasoline prices or season closures in other states may prompt some sportsmen to travel elsewhere to hunt or fish. Other factors may include license prices, previous harvest success in North Dakota, or the state's hunting and fishing reputation.

TABLE 1. NONRESIDENT HUNTING AND FISHING LICENSES SOLD IN NORTH DAKOTA, 1976-1983

Year	Small Game	Waterfowl ^a	Firearm Deer	Archery Deer	Archery Antelope	Fishing		
						7-Day	Season	Husband-Wife
1976	8,855	8,530	486	330	38	12,073	3,863	N.A.
1977	8,416	7,933	345	365	54	11,140	3,950	N.A.
1978	9,112	8,744	292	402	N.S.	12,731	2,827	N.A.
1979	9,158	8,682	354	356	N.S.	11,105	2,741	N.A.
1980	8,751	8,262	259	443	N.S.	15,180	2,893	N.A.
1981	7,433	6,931	334	125	N.S.	20,293	3,988	N.A.
1982	8,054	7,615	306	110	8	20,655	4,162	N.A.
1983	7,664	7,085	336	116	7	16,168	3,122	580

N.S. = No season

N.A. = License type not available.

^aA small game license is a prerequisite.

Decline of nonresident archery deer and antelope hunting can be partially attributed to the increase in license prices. Archery hunting licenses costing \$25.00 in 1976 were priced at \$100.00 in 1983.

Fishing is the most popular licensed nonresident activity and the only activity to increase significantly from 1976 to 1983. Approximately 16,000 nonresident fishing licenses were sold in 1976. In comparison, over 20,000 nonresidents were licensed to fish in 1983-84. This upward trend in angler participation can be partially explained by increased recognition that North Dakota has established several excellent fisheries.

The 1983 Nonresident Sportsmen Population

In 1983, nonresident sportsmen purchased over 8,000 hunting and approximately 20,000 fishing licenses. These sportsmen were from 49 different states and three foreign countries. Approximately 85 percent of the hunters purchased nonresident waterfowl permits and over 450 bought big game licenses.

Survey Procedure

Questionnaires with return envelopes were mailed to all nonresident firearm deer hunters (Appendix A), archery deer hunters (Appendix B), and archery antelope hunters (Appendix C), and to a 10 percent sample of small game hunters (Appendix D) and anglers (Appendix E) (Table 2).

TABLE 2. DISPOSITION OF QUESTIONNAIRES BY LICENSE TYPE, NUMBER RETURNED, AND RESPONSE RATE, 1983

License Type	First Mailing	Second Mailing	Undelivered	Returned	Response Rate
	- - - - number of questionnaires - - - -				percent
Firearm Deer	336	155	18	249	78
Archery Deer	107	61	2	75	71
Archery Antelope	7	6	0	4	57
Small Game	1,070	133	11	675	64
Fishing	1,295	250	33	670	53
Total	2,815	605	64	1,673	61

Surveys designed to cover nonresident sportsmen's activities for the season were mailed during the final week of the season. Sportsmen not responding to the first mailing within three weeks were sent a follow-up letter and questionnaire; the overall response rate after two mailings was 61 percent.¹

Expenditures

Nonresident sportsmen purchased two general categories of goods: durable and nondurable. Nondurable goods are those that are used up over a relatively short time period or that can be used one time. Examples of nondurable goods or services are ammunition, bait, gasoline, food, and lodging. Expenditures for nondurable goods are generally termed *variable expenditures* since the amount spent varies with time spent in the state. Durable goods are those that last for a relatively long time and are not used up with one use. Examples of durable goods are firearms, fishing rods, decoys, camping equipment, and vehicles. Expenditures for durable goods are generally termed *fixed expenditures* since the amount spent is not closely related to time spent in the state. It is reasonable to expect that nonresident sportsmen purchase most of their durable goods in their home area; however, some durable goods are purchased in North Dakota. Although these expenditures may vary considerably, they do have an impact on the state's economy.

Respondents were asked to estimate how much they spent for a predetermined list of durable and nondurable goods and services in North Dakota during their hunting or fishing visit(s) in 1983 (Table 3). Nonresident anglers were asked to estimate expenditures for the summer fishing season. Anglers were also asked to indicate the North Dakota city where the purchase of any durable goods occurred.

¹Follow-up letters and surveys were mailed to all big game hunters and to a sample of the small game hunters and anglers who did not respond to the first mailing.

TABLE 3. NONDURABLE (VARIABLE) AND DURABLE (FIXED) GOODS EXPENDITURE CATEGORIES

Variable Expenditures

Ammunition
Bait
Food and Beverages
Motel, Hotel, Campground
Private Transportation (gas, oil, repairs)--if you traveled with someone or had other travelers with you, include only your share of total transportation expense
Commercial Transportation (bus or air fare)
Film
Taxidermy
Veterinary Services
Access Fees
Meat Processing
Boat and Motor Rental
Equipment Repairs and Maintenance
Gas and Oil (for boat motor)
Souvenirs
Other

Fixed Expenditures

Hunting or Fishing Equipment (guns, bows, arrows, rods, reels, tackle, tackle box, land net, etc.)
Special Clothing for Hunting or Fishing
Decoys
Boat, Motor, Trailer
Pickup Camper or Van
Motor Home
Camping Equipment
Other Equipment

Characteristics of Nonresident Sportsmen

The following description of selected socioeconomic characteristics of 1983 nonresident sportsmen is presented to provide a perspective for the analysis of expenditure information to be presented later and to compare with characteristics of hunters surveyed in 1976.

Age

Average age of nonresident sportsmen in 1983 was 41.3 years (Table 4). The youngest sportsman was 13 years old and the oldest was 81 years old. Archery deer hunters were significantly younger than other sportsmen in both 1976 and 1983.

TABLE 4. AVERAGE AGE OF NONRESIDENT SPORTSMEN IN NORTH DAKOTA, 1983

License Type	Average Age	Youngest	Oldest
	- - - - -	years - - - - -	
Firearm Deer	41.0	14	78
Archery Deer	32.9	15	68
Small Game	40.9	13	80
Fishing	<u>43.1</u>	<u>13</u>	<u>81</u>
All Sportsmen	41.3	13	81

Sex

Hunting and fishing have typically been male-dominated activities. In 1983, over 98 percent of North Dakota nonresident big and small game hunters were male (Table 5). Fishing attracted the greatest proportion of female participants, 18.4 percent, and there were no female archery deer hunters.

TABLE 5. SEX OF NONRESIDENT SPORTSMEN IN NORTH DAKOTA, 1983

License Type	Male	Female
	- - - percent - - -	
Firearm Deer	98.8	1.2
Archery Deer	100.0	0.0
Small Game	98.5	1.5
Fishing	81.6	18.4

Occupation

Occupation can be an important characteristic which dictates what and how much leisure time activities individuals can pursue. Occupations reported by nonresident sportsmen in 1983 revealed close similarities and also some significant differences from 1976. The largest single occupational group of anglers, small game hunters, and firearm deer hunters was the professional group (Table 6). Labor was the occupational group most frequently reported by archery deer hunters. The second largest occupational group reported by small game hunters was the managerial or executive group. This was not an occupation reported by a large number of other sportsmen; however, this was the largest single occupational group of hunters in 1976. A significant number of anglers, 16.2 percent, stated they were either unemployed or retired.

TABLE 6. OCCUPATIONS OF NONRESIDENT SPORTSMEN IN NORTH DAKOTA, BY LICENSE TYPE, 1983

Occupation	License Type			
	Small Game	Firearm Deer	Archery Deer	Fishing
	percent			
Farming	2.3	8.1	8.1	5.6
Professional	27.9	21.9	13.5	17.4
Sales	11.2	11.3	9.5	5.6
Labor	6.0	10.5	25.7	12.6
Student	4.7	2.4	4.0	5.9
Government	6.3	4.4	4.0	3.5
Managerial/Executive	18.7	9.3	5.4	7.9
Craftsman	6.3	11.3	13.5	9.8
Education	2.4	1.6	1.4	4.7
Unemployed or Retired	7.7	8.9	5.4	16.2
Other	6.5	10.3	9.5	10.8
TOTALS	100.0	100.0	100.0	100.0

Distance Traveled

Distance traveled is the average one-way mileage traveled by sportsmen to get to the North Dakota site. Upland game hunters traveled the greatest average distance, 795 miles, to hunt in 1983 (Table 7). Archery deer hunters traveled the least average distance, 502 miles. All average distances traveled in 1983 were higher than distances reported by sportsmen in 1976.

TABLE 7. AVERAGE ONE-WAY DISTANCE TRAVELED BY NONRESIDENT SPORTSMEN TO GET TO THE NORTH DAKOTA SITE

Activity	Miles Traveled	
	1976	1983
Deer Hunting--Firearm	588	639
Deer Hunting--Archery	373	502
Upland Game Hunting	536	795
Waterfowl Hunting	480	692
Fishing	--	696

Type of Home Area

The majority of nonresident fishermen and firearm deer hunters were from cities with over 5,000 population (Table 8). However, the majority of archery deer hunters were from rural areas.

TABLE 8. HOME AREA TYPE OF NONRESIDENT SPORTSMEN IN NORTH DAKOTA, BY LICENSE TYPE, 1983

License Type	Home Area Type		
	City With Over 5,000 Population	Town With Less Than 5,000 Population	Rural Area
	percent		
Firearm Deer	61.0	12.6	26.4
Archery Deer	41.9	12.2	45.9
Fishing	58.4	21.9	19.7

Other Nonresident Licenses Held

Nonresident sportsmen frequently pursue more than one outdoor activity in North Dakota. For example, 28.2 percent of firearm deer hunters also purchased North Dakota small game licenses and 10.1 percent held a fishing license (Table 9).

TABLE 9. OTHER NORTH DAKOTA LICENSES AND STAMPS PURCHASED BY NONRESIDENT SPORTSMEN, BY LICENSE TYPE, 1983

License Type	Small Game	Deer Archery	Deer Firearm	Antelope Archery	Fishing Season	Fishing 7-Day
	percentage					
Small Game	--	0.3	0.6	0.0	2.7	4.7
Archery Deer	17.6	--	4.1	1.4	8.1	8.1
Firearms Deer	28.2	2.0	--	0.0	3.6	6.5
Fishing	2.4	0.3	NA	0.0	--	--

NA = not available.

Value Placed on Activity

All nonresident sportsmen surveyed were asked to put a dollar value on a typical day of North Dakota hunting or fishing. The highest average value, \$88.76, was given by firearms deer hunters; the lowest average value, \$71.11, was by upland game hunters (Table 10). Individual responses ranged from \$0.00 to \$9,998.00.

Nonresident Sportsmen Activity and Expenditures

The type of activities pursued--small game hunting, big game hunting, or fishing--provided the basis for analyzing nonresident sportsmen's activities and expenditures. Small game hunters were primarily interested in hunting upland game or waterfowl. Big game hunters were either firearms deer hunters, archery deer hunters, or archery antelope hunters. Anglers were asked to respond regarding fishing activities during the summer of 1983.

TABLE 10. DOLLAR VALUE PLACED ON A TYPICAL DAY OF HUNTING OR FISHING BY NONRESIDENT SPORTSMEN IN NORTH DAKOTA, 1983

Activity	Average	Lowest	Highest
Firearms Deer Hunting	88.76	0.00	1,000.00
Archery Deer Hunting	74.63	4.00	1,000.00
Upland Game Hunting	71.11	0.00	1,000.00
Waterfowl Hunting	75.57	1.00	1,000.00
Fishing	72.88	0.00	9,998.00

Several different components of each activity were examined. Information requested included length of stay, number of trips, harvest success, type and location of hunting or fishing area, and reasons for coming to North Dakota. Due to the differences in activities, all survey instruments were not identical.

Small Game Hunting

Small game hunting attracted the most nonresident hunters to North Dakota in 1983. Overall, nonresident hunters purchased 7,664 North Dakota small game licenses in 1983. A sample of 6,295 license holders revealed that only Rhode Island, Vermont, and New Jersey had residents who did not purchase a license (Figure 1). Sixty-eight percent of the licenses were

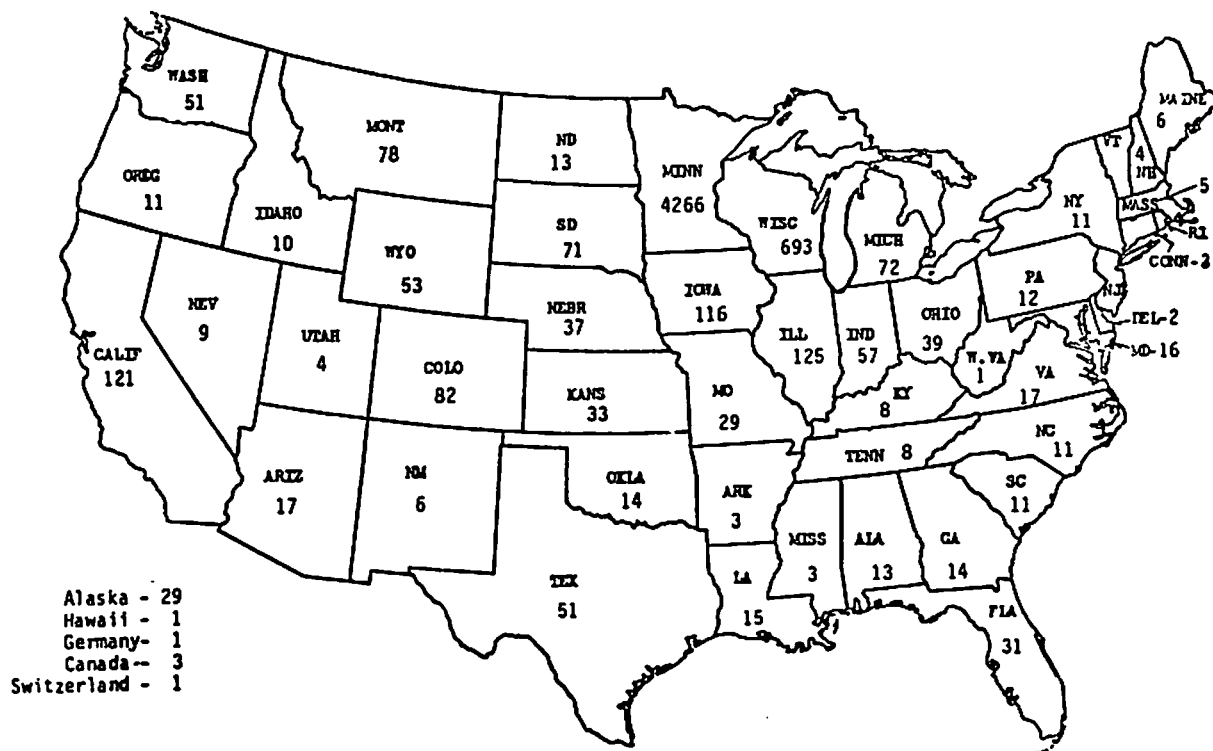


Figure 1. Residency of 6,295 North Dakota Nonresident Small Game License Holders, 1983

purchased by Minnesota residents. Licenses were also purchased by hunters from Canada, Germany, and Switzerland. Some nonresident hunters indicated that North Dakota was their place of residence. However, these sportsmen had either not lived in North Dakota long enough to be eligible for a resident license, or they were only temporary residents.

Two types of nonresident small game hunters are identified in this report: those who hunt upland game (pheasant, grouse, partridge, tree squirrels, doves, cottontail rabbits) and those who also (or only) hunt waterfowl.

Upland Game Hunting

Fifty-five percent of the nonresident small game hunters hunted upland game in North Dakota in 1983, harvesting an average of 1.8 sharptail grouse each. This was a significant decline from the 1976 hunting season when hunters were able to bag an average of 6.7 sharptails. Season bags of other upland species in 1983 were as follows: Hungarian partridge, 1.4; pheasant, 1.3; doves, 0.4; and ruffed grouse, 0.1. Average harvest of squirrel, rabbit, and sage grouse by nonresident hunters was less than 0.1 each.

Nonresident upland game hunters averaged 1.25 hunting trips to North Dakota in 1983. Seventy-four percent of the hunting was on private land, 13 percent on federal land, 8 percent on state land, and 5 percent on land of unknown ownership.

The four most popular counties for upland game hunting were Ward (6.8 percent), Williams (5.8 percent), McLean (5.8 percent), and Bottineau (4.9 percent) (Figure 2).

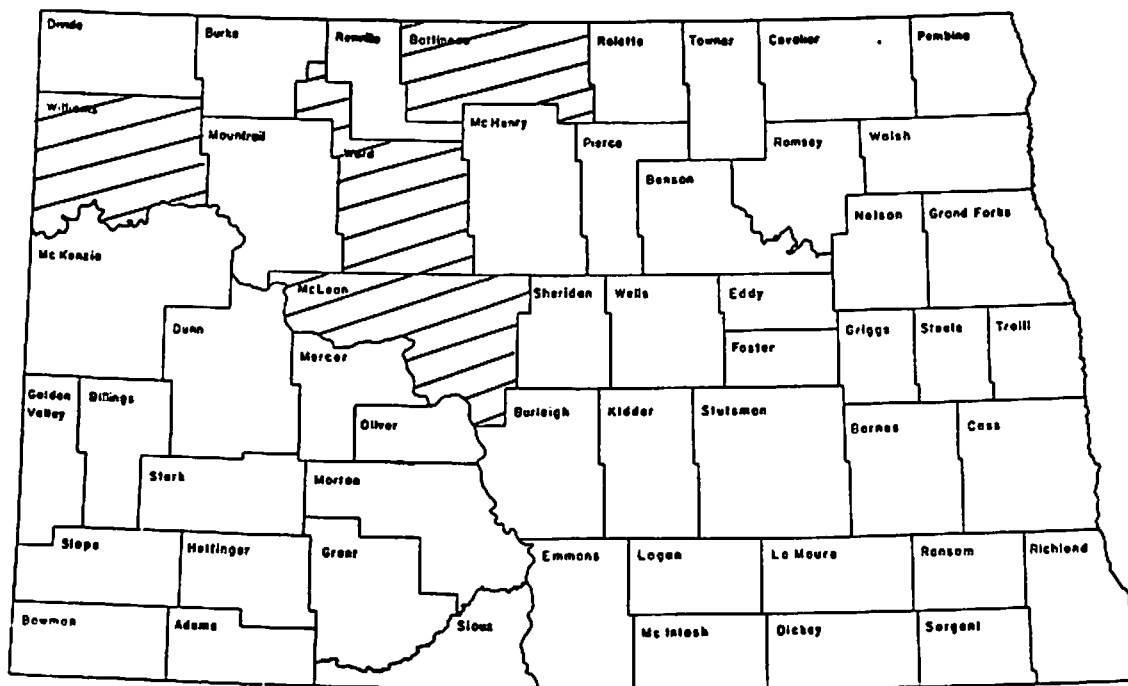


Figure 2. The Four Counties Most Frequently Hunted by Nonresident Upland Game Hunters, 1983

Waterfowl Hunting

Ninety-one percent of the nonresident small game hunters indicated they hunted ducks, coot, Wilson's snipe, geese, or sandhill crane in North Dakota during the 1983 season. Waterfowl hunters bagged an average of 10.2 ducks and 3.8 geese each during the 1983 season. This average is slightly higher than that of the 1976 hunting season, when hunters harvested an average of 9.2 ducks and 3.1 geese.

The most popular county for nonresident waterfowl hunters was Ramsey County which attracted 12.0 percent of the hunters. Other counties frequently hunted in were Bottineau (10.9 percent), Towner (9.3 percent), Pierce (7.8 percent), and Ward (5.8 percent) (Figure 3). Seventy-seven percent of the hunting occurred on private land and 11 percent on federal land.

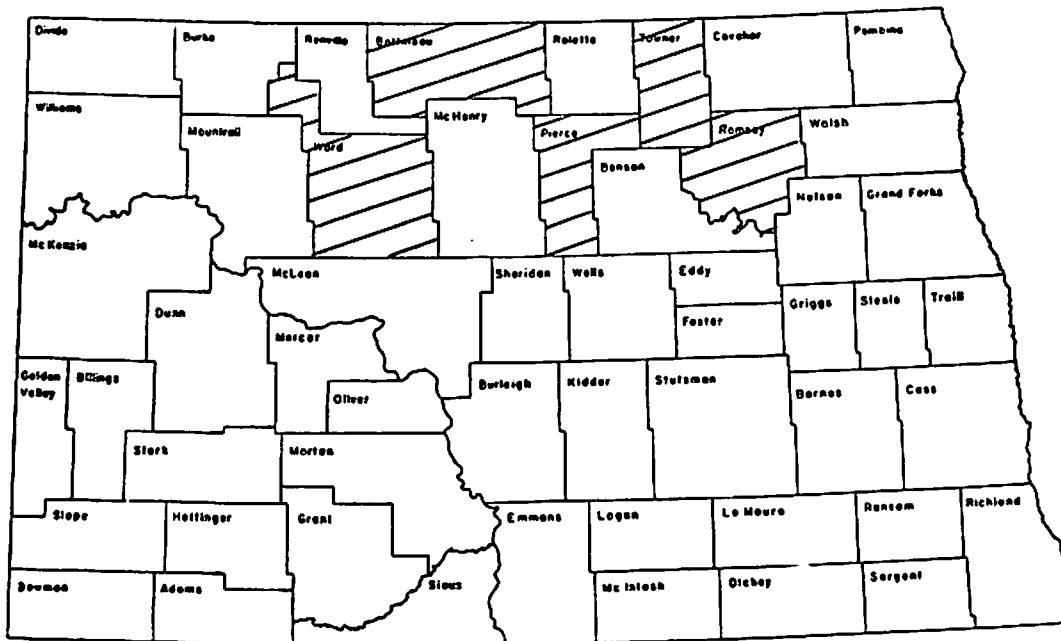


Figure 3. The Five Counties Most Frequently Hunted by Nonresident Waterfowl Hunters, 1983

Only 4.4 percent of nonresident waterfowl hunters rented, leased, or paid an access fee to hunt ducks or geese in North Dakota in 1983. This is significantly lower than the 1976 average when 15 percent of the hunters paid for the right to hunt waterfowl on private land. The average amount paid for these hunting rights in 1983 was \$179. This figure may be somewhat misleading because over 75 percent of those indicating they had leased paid \$175 or less. The highest lease reported by hunters was \$2,000. The length of the hunting lease ranged from one day to one month. The most common arrangement was either a one- or four-day lease, and the average length was 6.6 days. The smallest area leased was 15 acres and the

largest was 5,500 acres. Over half of the leases for waterfowl hunting rights by nonresidents occurred in Ramsey, Towner, and Pierce counties of northeast central North Dakota. The two most frequent responses given by small game hunters concerning why they chose to hunt in North Dakota were (1) because of the good hunting area and large number of birds (32 percent), or (2) they had friends or relatives in the state (28 percent).

Several suggestions were provided by survey respondents concerning how the State Game and Fish Department could improve small game hunting or management. Thirty-eight percent of the hunters commented that they would like hunting restrictions eased and 19 percent felt maintenance of habitat was important. Other frequent responses given were that license fees should be lowered and the tagging system should be improved.

Small game hunters were asked to indicate which years in the last seven they had hunted waterfowl or upland game in North Dakota. Fifty-six percent responded that they had hunted in 1982 and 52 percent had hunted in 1981. The other years and percentages are as follows: 1980 (45 percent), 1979 (44 percent), 1978 (36 percent), 1977 (33 percent), and 1976 (33 percent).

Small Game Hunters' Expenditures

Expenditures by nonresident small game hunters represent combined expenditure of upland game and waterfowl hunters. Small game hunters spent an average of \$484.55 each during the 1983 season (Table 11). The largest portion, 73 percent, was for variable expenditures. Fourteen percent of average total expenditures went to purchase durable goods and 13 percent was spent for licenses.

The total expenditure of \$484.55 expressed in constant 1976 dollars² was \$277.83. This amount is lower than total expenditures reported by 1976 small game hunters (\$303.75). Food and beverages, lodging, and private transportation accounted for over 70 percent of expenditures for nondurable goods or services in both 1976 and 1983.

Big Game Hunting

Nonresident big game hunters are allowed to hunt only deer and antelope in North Dakota. Deer hunting permits are available for a firearms and an archery season; antelope hunting permits are available only for an archery season.

Firearms Deer Hunting

Nonresident sportsmen purchased 336 firearms deer licenses in 1983. Over half of these, 183, were purchased by Minnesota residents (Figure 4).

²The Consumer Price Index for converting 1983 dollars to 1976 dollars is (1983 dollars) (0.5734) = 1976 dollars.

TABLE 11. EXPENDITURES BY NONRESIDENT SMALL GAME HUNTERS IN NORTH DAKOTA, 1983

Good or Service	Expenditure	Percent of Total
<u>Variable Expenditures</u>		
Food and Beverages	\$117.06	33.3
Lodging	65.48	18.7
Private Transportation	105.44	30.0
Commercial Transportation	40.71	11.6
Film	3.44	1.0
Taxidermy Work	3.48	1.0
Veterinary Services	0.80	0.2
Access Fees	7.46	2.1
Meat Processing	4.33	1.2
Other	<u>3.29</u>	<u>0.9</u>
TOTAL	\$351.49	100.0

<u>Fixed Expenditures</u>		
Guns and Accessories	\$ 31.84	46.1
Decoys	5.66	8.2
Duck Boat	0.08	0.1
Special Clothing for Hunting	14.23	20.6
Pickup Camper or Van	0.35	0.5
Camping Equipment	1.38	2.0
Other Equipment	<u>15.52^a</u>	<u>22.5</u>
TOTAL	\$ 69.06	100.0

<u>Total Expenditures</u>		
Variable	\$351.49	72.5
Fixed	69.06	14.3
License	<u>64.00^b</u>	<u>13.2</u>
TOTAL	\$484.55	100.0

^aThis figure may be somewhat misleading as it includes a \$9,600 travel trailer purchased by one sportsman.

^bThis includes the general game, small game/habitat, and waterfowl license fees.

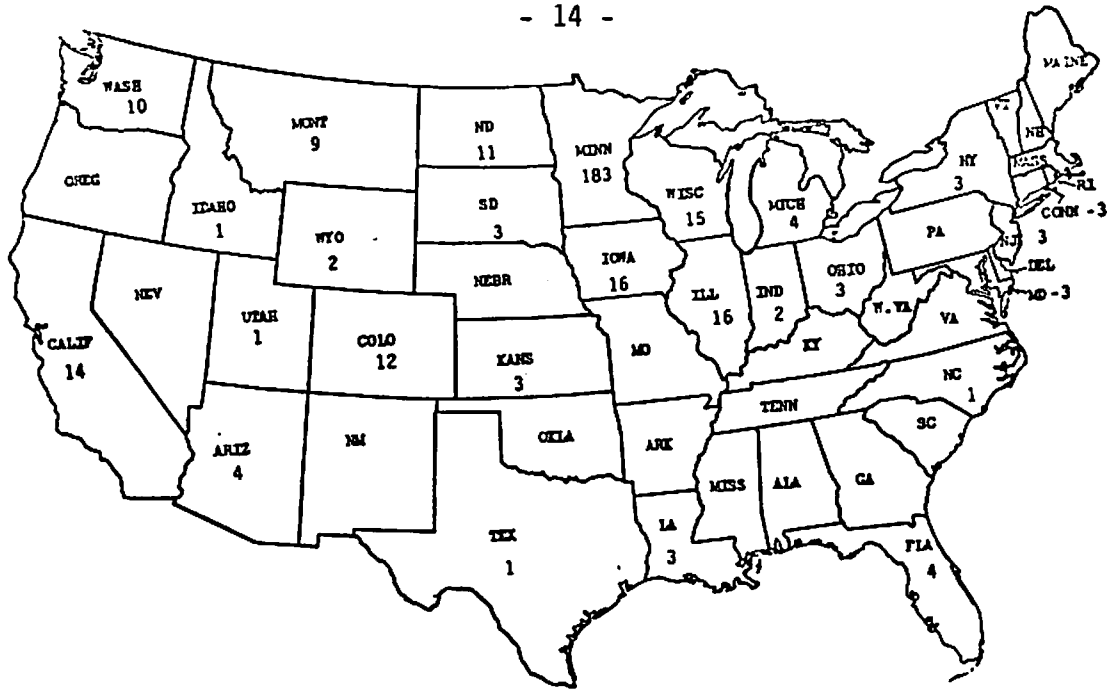


Figure 4. North Dakota Nonresident Firearms Deer Licenses Sold, By State, 1983

Two species of deer--whitetail and mule deer--can be hunted by nonresidents. Overall, 69 percent of the nonresident firearms deer hunters reported bagging deer in 1983. This is slightly higher than the 1976 harvest rate of 62 percent. Eighty-three percent of the successful 1983 hunters reported bagging a whitetail deer. Antlered whitetail was the deer type most frequently harvested (57 percent).

The four most popular counties for firearms deer hunting were Bottineau (8.1 percent), McKenzie (7.7 percent), McLean (5.3 percent), and Billings (4.0) (Figure 5). These deer hunters reported hunting in all but six North Dakota counties.

When nonresident deer hunters were asked why they chose to hunt in North Dakota, the most frequent response (58 percent) was because friends or relatives resided in the state. Other reasons were that they had lived in North Dakota before (20 percent) or because of the high deer population (10 percent). Respondents were asked for suggestions or comments on how the State Game and Fish Department could improve firearm deer hunting or deer management in North Dakota. Nineteen percent of the hunters suggested a lower license fee and 14 percent would like to be able to party hunt. Fourteen percent commented that the State Game and Fish Department is doing a good job in its activities.

Overall, 75 percent of the firearm deer respondents indicated they had good hunting experiences in 1983. Eight percent indicated that too much posted land was a problem.

Nonresident firearms deer hunters spent an average of 3.98 days hunting in North Dakota in 1983. Seventy-eight percent of the hunting was on private land, 12 percent on federal land, 7 percent on state land, and 3 percent on land of unknown ownership.

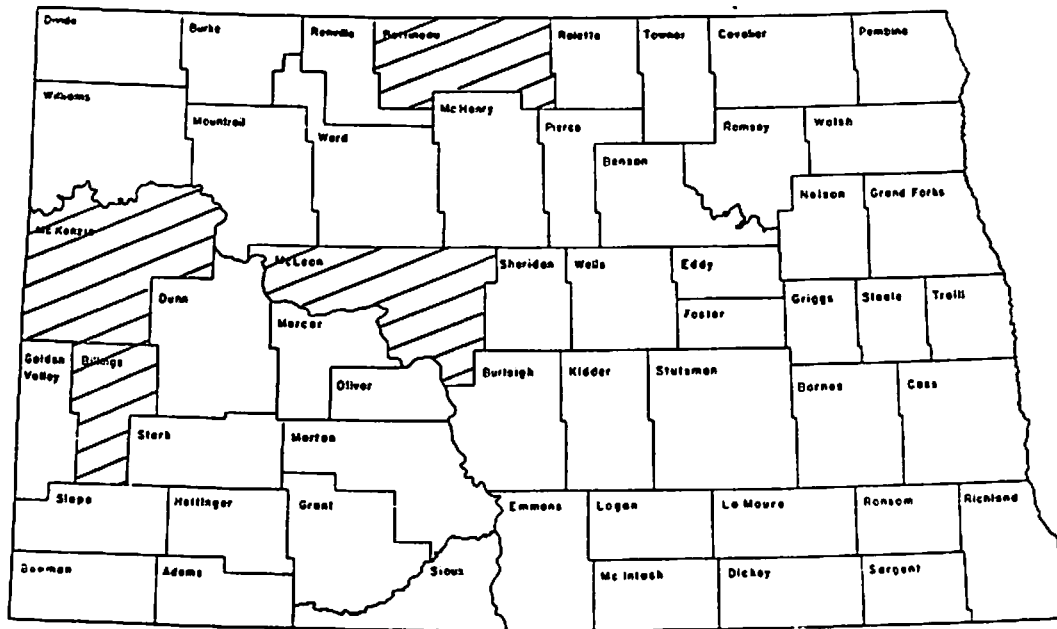


Figure 5. The Four Counties Most Frequently Hunted in By Nonresident Firearms Deer Hunters, 1983

Firearms Deer Hunters' Expenditures. Nonresident firearms deer hunters each spent an average of \$483.25 during the 1983 season (Table 12). Variable expenditures made up 57 percent, fixed expenditures 22 percent, and license fee 21 percent of the total spent in the state.

Food and drink, private transportation, and commercial transportation comprised 79.2 percent of total variable expenditures. The highest average amount spent for durable goods was for a pickup camper or van, \$63.61, and for firearms, \$16.91. The total expenditure of \$483.25 expressed in constant 1976 dollars was \$277.09. This amount is slightly lower than total expenditures of \$297.71 reported by hunters in 1976.

Archery Deer Hunting

There were 116 nonresident sportsmen who purchased North Dakota archery deer licenses in 1983. Minnesota residents purchased over half of these licenses (Figure 6).

Questionnaires were sent to 107 nonresident archers in the first mailing; 44 replied. Follow-up letters and questionnaires mailed three weeks later produced 31 additional responses. The overall response rate was 72 percent.

Both whitetail and mule deer can be hunted by archers. Approximately 43 percent of the respondents were successful in harvesting a deer in 1983. This is higher than the success rate in 1977 when only 25 percent of the archers were able to bag a deer. Bow hunters in 1983 reported harvesting 21 whitetail deer, of which 11 were antlered bucks. Eleven mule deer were also taken.

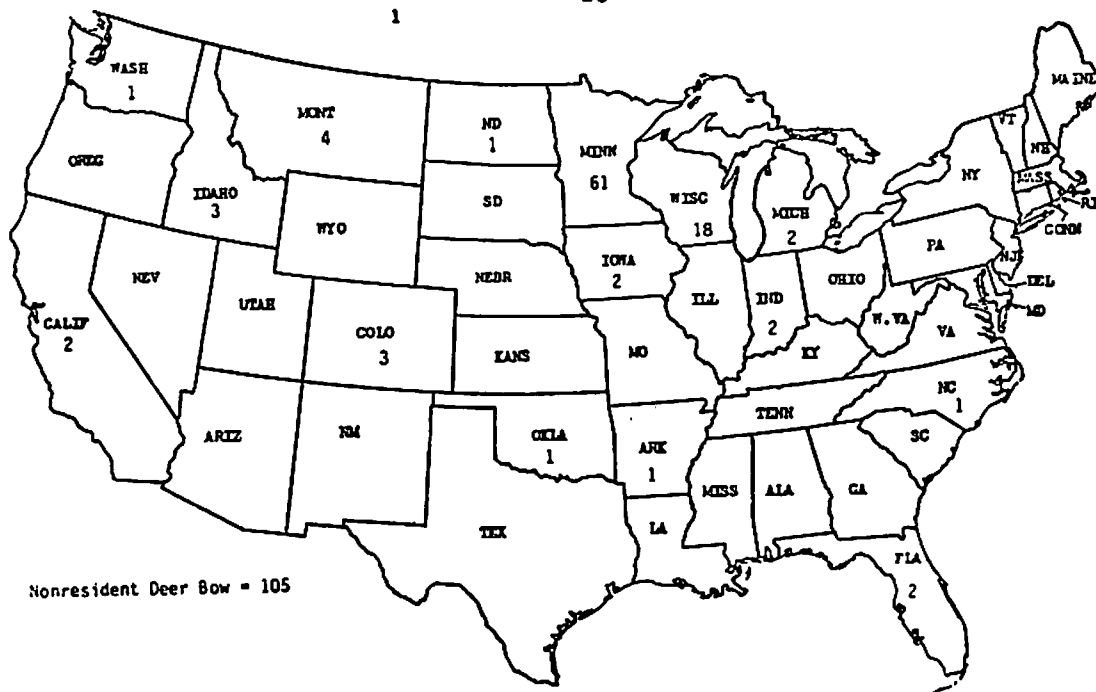


Figure 6. North Dakota Nonresident Deer Archery Licenses Sold, By State, 1983

Nonresident archers hunted throughout North Dakota. The four most popular counties were McKenzie (13.5 percent), Slope (10.8 percent), Billings (9.5 percent), and Cass (8.1 percent) (Figure 7). Hunters reported 59 percent of their hunting was on private land, 19 percent was on state land, and 19 percent on federal land.

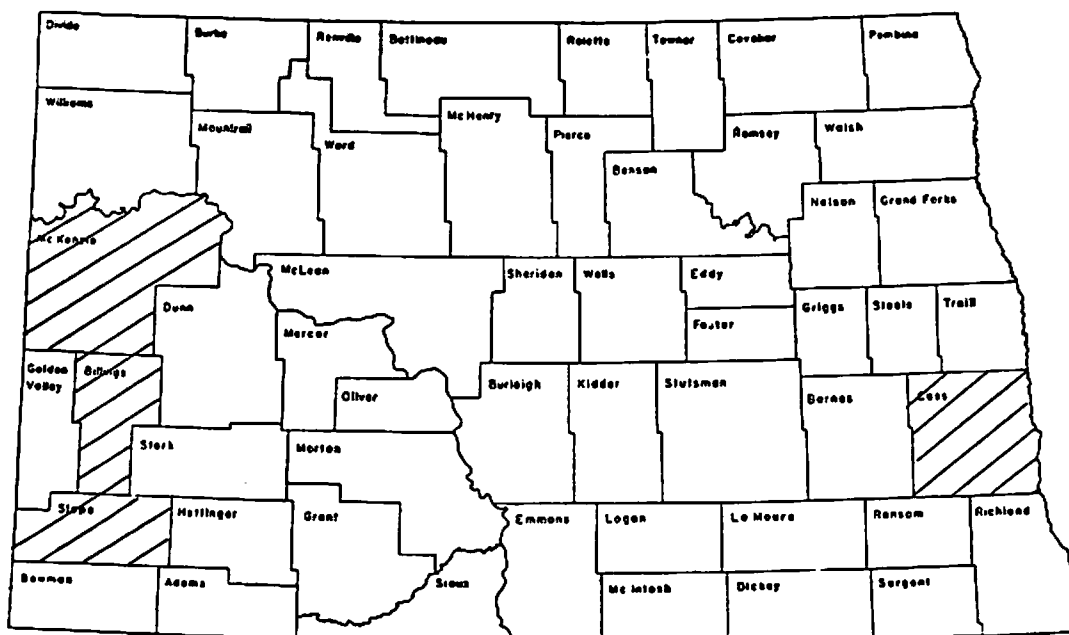


Figure 7. The Four Counties Most Frequently Hunted in By Nonresident Archery Deer Hunters, 1983

TABLE 12. EXPENDITURES BY NONRESIDENT FIREARMS DEER HUNTERS IN NORTH DAKOTA, 1983

Good or Service	Expenditure	Percent of Total
<u>Variable Expenditures</u>		
Ammunition	\$ 7.08	2.6
Private Transportation	74.57	27.2
Commercial Transportation	57.58	21.0
Lodging	23.15	8.4
Food and Beverages	84.84	31.0
Film	2.53	0.9
Taxidermy Work	6.94	2.5
Access Fees	1.37	0.5
Processing of Meat	14.48	5.3
Miscellaneous	1.57	0.6
TOTAL	\$274.11	100.0
Average days hunted	3.98	
Average daily expenditure	\$68.87	

<u>Fixed Expenditures</u>		
Firearms	\$ 16.91	16.1
Special Clothing for Hunting	7.43	7.1
Pickup Camper or Van	63.61	60.5
Motor Home	0.00	0.0
Camping Equipment	0.44	0.4
Other Equipment	16.75	15.9
TOTAL	\$105.14	100.0

<u>Total Expenditures</u>		
Variable	\$274.11	56.7
Fixed	105.14	21.8
License	104.00 ^a	21.5
TOTAL	\$483.25	100.0

^aRepresents deer gun and general game license fees.

Archery deer hunters spent an average of 8.1 days in North Dakota. Individual responses ranged from 1 to 73 days. The two most frequent responses given by archery deer hunters concerning why they chose to hunt in North Dakota were (1) because they had friends or relatives in the state (34 percent), or (2) because of the high deer population (15 percent). Other frequent responses given were because they had hunted in the area before (11 percent) or they wanted to hunt mule deer (10 percent).

Survey participants provided several comments concerning archery deer hunting in North Dakota. Over 50 percent of the comments addressed the issue of lowering license fees and 7 percent were in favor of party hunting. Thirty-one percent of the comments received indicated the State Game and Fish Department was doing a good job in their management activities.

Archery Deer Hunters' Expenditures. Nonresident archery deer hunters had the lowest total expenditures of any of the sportsmen types. They spent an average of \$299.67 each during the 1983 season (Table 13). Variable expenditures made up 58 percent of the total, fixed expenditures 8 percent, and license fee 34 percent. These percentages differ substantially from those of hunters in 1976. Archery deer and antelope hunters in 1976 reported that variable expenditures made up 44 percent of the total, fixed expenditures 46 percent, and license fee 10 percent.

The 1983 total expenditure of \$299.67 expressed in constant 1976 dollars was \$171.83. This is substantially less than the \$274.80 reported by archers in 1976. Of further interest, hunters in 1983 spent an average of 8.08 days in North Dakota, while hunters in 1976 stayed only 7.4 days. License fees also increased from \$25.00 in 1976 to almost \$60.00 (constant 1976=100) in 1983.

Archery Antelope Hunting

Seven hunters from Washington, South Dakota, Iowa, and Ohio purchased 1983 North Dakota archery antelope licenses. Questionnaires were mailed to all seven hunters but only four were returned. One archer did not hunt in North Dakota in 1983, so only three of the returned questionnaires were usable. Due to the sample size, only selected comments and data are presented in this report and no statistical significance is implied.

Reasons given by antelope hunters for why they chose to hunt in North Dakota were similar to responses given by other big game hunters: (1) because friends or relatives resided in the state or (2) they were former North Dakota residents.

There was only one comment received concerning how antelope hunting or management could be improved in North Dakota. This suggestion indicated more sportsmen could be attracted to hunt antelope in North Dakota by reducing the \$100.00 license fee. The antelope hunters commented on the friendly landowner attitude and ease of obtaining permission to hunt on private land. All respondents indicated their 1983 antelope hunt was a good experience. Two of the three respondents stated they were successful in bagging an antelope in 1983. When asked to put a dollar value on a typical day of North Dakota archery antelope hunting, responses ranged from \$30.00 to \$100.00.

TABLE 13. EXPENDITURES BY NONRESIDENT ARCHERY DEER HUNTERS IN NORTH DAKOTA, 1983

Good or Service	Expenditure	Percent of Total
<u>Variable Expenditures</u>		
Food and Beverages	\$ 61.64	33.7
Lodging	12.03	7.0
Private Transportation	75.14	43.5
Commercial Transportation	12.60	7.3
Film	3.84	2.2
Taxidermy Work	2.14	1.2
Access Fees	1.64	1.0
Meat Processing	2.81	1.6
Other	0.86	0.5
TOTAL	\$172.70	100.0
Average days hunted	8.08	
Average daily expenditure	\$21.37	

<u>Fixed Expenditures</u>		
Bows	\$ 8.11	33.8
Arrows	5.74	23.9
Special Clothing for Hunting	7.06	29.5
Pickup Camper or Van	0.00	00.0
Motor Home	0.00	00.0
Camping Equipment	0.77	3.2
Other Equipment	2.29	9.6
TOTAL	\$ 23.97	100.0

<u>Total Expenditures</u>		
Variable	\$172.70	57.6
Fixed	23.97	8.0
License	103.00 ^a	34.4
TOTAL	\$299.67	100.0

^aRepresents deer bow and general game license fees.

Fishing

Fishing is the activity pursued by most nonresident sportsmen in North Dakota. Sportsmen from across the United States purchased 19,870 nonresident fishing licenses for the 1983-84 season. A random sample of 2,104 licenses revealed that Minnesota residents purchased approximately one-fourth of the licenses (Figure 8). Hawaii, Vermont, and Connecticut were the only states in the sample which had no residents who purchased a 1983-84 North Dakota fishing license.

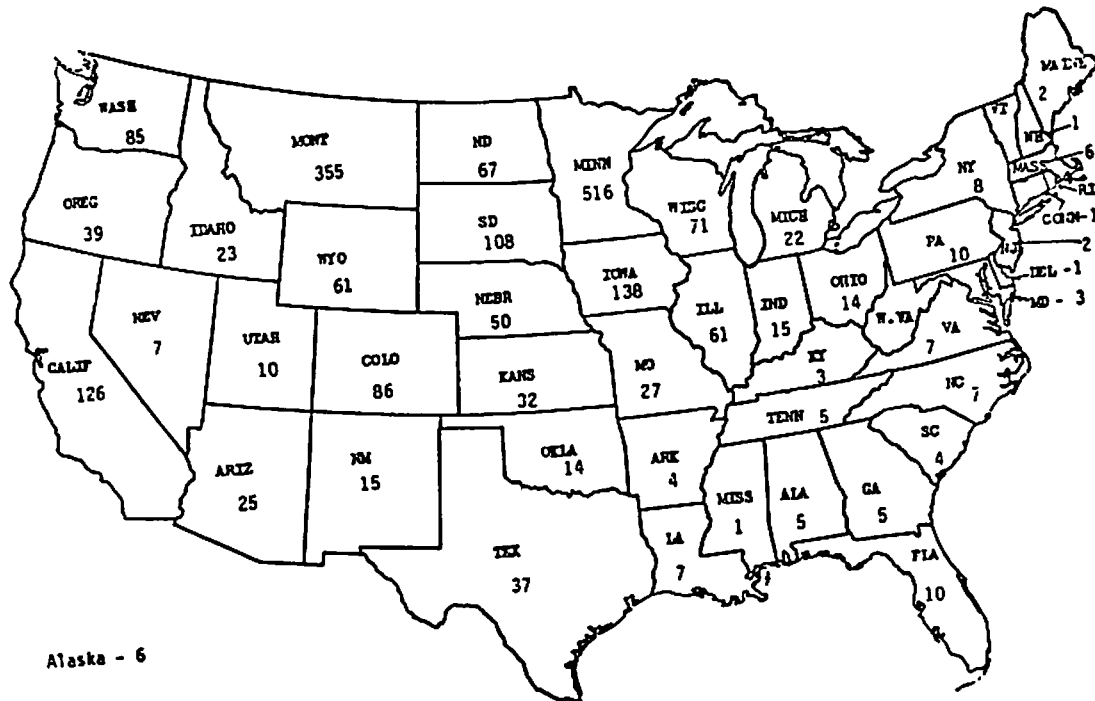


Figure 8. Residency of 2,104 North Dakota Nonresident Fishing License Holders, 1983

Three types of nonresident fishing licenses are available: (1) an individual seven-day license, (2) an individual season-long license, and (3) a husband-wife season-long license. The seven-day license was the type most frequently purchased by survey respondents (67.8 percent). Only 3.6 percent of the anglers indicated they had not purchased a nonresident fishing license in at least one of the past five years, and 13.8 percent had purchased a license each year.

Fifteen percent of the fishermen came to North Dakota just to fish. Other reasons given for coming to North Dakota included (1) to visit friends or relatives (64 percent), (2) for camping (9 percent), or (3) for work (8 percent).

The average one-way distance traveled by sportsmen to fish in North Dakota was 696 miles; the highest individual response was 3,300 miles.

The summer fishing area used most frequently by respondent anglers in 1983 was Lake Sakakawea with its numerous bays and associated state parks (Table 14). Other popular fishing areas were Devils Lake, Missouri River, and Garrison Dam Tailrace. Devils Lake had the highest number of total trips, 351, and Lake Sakakawea State Park had the second highest total, 348. Anglers made an average of 3.3 trips and spent an average total of 8.20 days fishing in North Dakota in 1983.

TABLE 14. USE OF MAJOR NORTH DAKOTA SUMMER FISHING AREAS AS REPORTED BY RESPONDENT NONRESIDENT ANGLERS, 1983

Fishing Area	Number of Fishermen	Total Number of Trips	Average # of Days	Average One-Way Distance from Home
Devils Lake	138	351	5.6	647
Garrison Dam Tailrace	81	219	6.1	561
Lake Sakakawea State Park	118	348	6.7	702
White Earth Bay	28	54	7.8	425
Van Hook	18	61	7.2	599
Lewis and Clark	20	54	5.2	548
Tobacco Garden	11	20	3.7	365
Beaver Bay	10	20	5.4	436
Parshall Bay	9	11	3.4	423
McKenzie Bay	8	24	13.6	291
Beulah Bay	8	36	9.2	373
Four Bears Park	7	15	4.5	191
Missouri River	35	188	7.2	471
Red River	43	111	7.5	602
Lake Ashtabula	30	72	7.8	624
Sheyenne River	13	64	6.2	687
Jamestown Reservoir	8	50	7.6	630
Camels Hump Dam	9	15	2.9	782
Lake Darling	10	46	8.5	848
Oahe Wildlife Mgt.	10	14	3.7	1,082
Lake Jessie	10	18	4.4	666
Trenton Lake	8	36	6.1	570

Angler Expenditures

Nonresident anglers spent an average of \$455.87 each during the 1983 season³ (Table 15). Variable expenditures made up 71 percent of the total spent in the state, fixed expenditures 27 percent, and the license fee 2 percent.

The highest average variable expenditures were for transportation, \$113.30, and for food and beverages, \$112.69. Individual responses for total variable expenditures ranged from a low of \$1.00 to a high of \$7,215.00. The highest average durable expenditure was \$93.90 spent for a boat, motor, or trailer. Individual responses for total durable expenditures ranged from \$2.00 to \$10,000.00.

Impact of Nonresident Sportsmen on North Dakota's Economy

Nonresident sportsmen are an important segment of the recreation industry in North Dakota. These hunters and anglers purchase a variety of goods and services while in North Dakota and, therefore, have a significant impact on the state's economy.

Total 1983 Nonresident Sportsmens' Expenditures

Total expenditures by nonresident sportsmen in 1983 were estimated to be \$12,219,400 excluding license fees (Table 16).⁴ Anglers spent an estimated \$8,846,100, which accounts for 72 percent of the total. Total expenditures by all nonresident hunters were estimated to be \$3,373,300. An analysis of total hunter expenditures revealed that small game hunters accounted for 96 percent of the total and archery deer hunters accounted for less than 1 percent of the total.

Total hunter expenditures of \$3,373,300 expressed in constant 1976 dollars were approximately \$1,934,200. This amount was almost 25 percent less than the total expenditures of \$2,525,200 reported by hunters in 1976. However, there were also approximately 16 percent fewer hunting licenses sold (small game + big game) in 1983.

Input-Output Analysis of Economic Activity

Input-output analysis is a technique for tabulating and describing the linkages or interdependencies between various industrial groups within

³Nonresident anglers surveyed were asked to indicate money spent in North Dakota during 1983 summer fishing season. Although some anglers also participated in winter fishing, for purposes of this study it was assumed that summer expenditures would be representative of spending by all nonresident anglers.

⁴It was assumed that all sportsmen who purchased licenses participated in their respective activities in 1983.

TABLE 15. EXPENDITURES BY NONRESIDENT ANGLERS IN NORTH DAKOTA, 1983

Good or Service	Expenditure	Percent of Total
<u>Variable Expenditures</u>		
Food and Beverages	\$112.69	34.8
Lodging	37.20	11.5
Transportation	113.30	35.0
Boat and Motor Rental	4.84	1.5
Bait	13.70	4.2
Boat Launching Fees	1.10	0.4
Gas and Oil (for boat motor)	11.53	3.6
Repairs and Maintenance	7.55	2.3
Packing, Cleaning of Fish	0.88	0.3
Film	5.92	1.8
Taxidermy Work	1.00	0.3
Souvenirs	10.73	3.3
Other	3.05	1.0
TOTAL	\$323.49	100.0
Average days fished	8.20	
Average daily expenditure	\$39.45	

<u>Fixed Expenditures</u>		
Boat, Motor, Trailer	\$ 93.90	77.2
Depth/Fish Finder	3.22	2.7
Rods and Reels	7.33	6.0
Tackle	10.25	8.4
Tackle Box	0.42	0.3
Camping Equipment	2.83	2.3
Special Clothing	1.68	1.4
Other Equipment	2.08	1.7
TOTAL	\$121.71	100.0

<u>Total Expenditures</u>		
Variable	\$323.49	71.0
Fixed	121.71	26.7
License	10.67 ^a	2.3
TOTAL	\$455.87	100.0

^aRepresents mixture of short term, season long individual, and husband-wife license fees.

TABLE 16. TOTAL EXPENDITURES^a MADE BY NONRESIDENT SPORTSMEN
IN NORTH DAKOTA, BY LICENSE TYPE, 1983

License Type	Expenditure	Percent of Total
Fishing	\$8,846,100	72.4
Small Game Hunting	3,223,100	26.4
Firearms Deer Hunting	127,400	1.0
Archery Deer Hunting	22,800	0.2
TOTAL	\$12,219,400	100.0

^aExcluding license fee.

an economy (Leontief 1966). The economy considered may be the national economy or an economy as small as that of a multi-county area (region) served by one of the state's major retail trade centers. Input-output analysis assumes that economic activity in a region is dependent upon the basic industries that exist in that region, often referred to as its economic base. This economic base is largely the region's export base, i.e., those industries (or basic sectors) that earn income from outside the area. The remaining economic activities are the trade and service sectors, which exist to furnish the inputs required by other sectors in the area.

The role of the input-output model is to estimate the total business activity by economic sector for a specified level of final demand for the area's products. Employment requirements by sector are then derived from the estimates of total business activity. The North Dakota input-output model (Coon et al. 1984) and associated productivity ratios were used in this analysis.

Total Business Activity

The estimated total business activity generated in each sector of the state's economy as a result of expenditures made by nonresident hunters in 1983 are indicated in Table 17. Total business activity generated in 1983 was \$7,740,000. This total includes direct expenditures of \$3,373,000 plus associated secondary impacts. Seventy-two percent of the expenditures were made in the retail sector, 18 percent in the business and personal service sector, and 11 percent in the transportation sector.

The interdependence coefficients show that for each dollar spent by nonresident hunters, eight cents of business was generated in the agriculture--livestock sector; eleven cents of business was generated in the transportation sector; \$1.05 of business was generated in the retail trade sector; and so on for the other sectors. In total, for every dollar spent by nonresident hunters, \$2.31 of business (including the dollar spent) occurred in the state.

Total business activity generated by the 1983 expenditures of nonresident anglers in North Dakota was \$19,018,000 (Table 18). Ninety percent of the expenditures were made in the retail sector and 10 percent in the business and personal service sector.

TABLE 17. TOTAL BUSINESS ACTIVITY AND EMPLOYMENT BY SECTOR AND PERSONAL INCOME^a GENERATED BY NONRESIDENT HUNTER EXPENDITURES^b IN NORTH DAKOTA, 1983

Economic Sector	Interdependence Coefficient	Total Business Activity	Employment ^c
1. Agriculture, Livestock	0.08	\$ 255,000	3.7
2. Agriculture, Crops	0.03	92,000	1.3
3. Sand and Gravel Mining	d	12,000	0.1
4. Construction	0.04	135,000	3.9
5. Transportation	0.11	368,000	36.1
6. Communication and Utilities	0.06	224,000	4.9
7. Ag Processing and Misc. Mfg.	0.04	133,000	3.2
8. Retail	1.05	3,557,000	43.9
9. Finance, Insurance, and Real Estate	0.08	246,000	3.3
10. Business and Personal Service	0.21	697,000	43.6
11. Professional and Social Services	0.04	114,000	7.9
12. Households	0.50	1,677,000	--
13. Government	0.07	229,000	30.4
TOTAL	2.31	\$7,740,000	182.3

^aRow 12, Households, represents personal income.

^bNonresident hunter expenditures were \$3,373,000. Seventy-two percent of nonresident hunters were made in the retail sector, 18 percent in the business and personal service sector, and 11 percent in the transportation sector. The interdependence coefficients represent those proportions from the appropriate columns in Table 3 of Coon et al. (1984).

^cEmployment in each sector was estimated using gross productivity ratios.

^dLess than 0.005.

The interdependence coefficients show that for every dollar spent by nonresident anglers, approximately \$2.15 of business activity occurred in the state. The largest portion of this total was generated in the retail sector.

Personal Income

Personal income is one part of the total business activity generated by expenditures of hunters and anglers. This component is represented by the interdependence coefficient of households (Tables 17 and 18, Row 12). For every dollar spent by nonresident hunters, there was 50 cents of personal income realized in the state. Every dollar spent by anglers resulted in 43 cents of personal income. Total 1983 personal income generated in North Dakota as a result of nonresident hunter expenditures was \$1,677,000 (Table 17, Row 12). Nonresident angler expenditures generated a total of \$3,846,000 of personal income in 1983 (Table 18, Row 12).

TABLE 18. TOTAL BUSINESS ACTIVITY AND EMPLOYMENT BY SECTOR AND PERSONAL INCOME^a GENERATED BY NONRESIDENT ANGLER EXPENDITURES^b IN NORTH DAKOTA, 1983

Economic Sector	Interdependence Coefficient	Total Business Activity	Employment ^c
1. Agriculture, Livestock	0.09	\$ 742,000	10.8
2. Agriculture, Crops	0.03	265,000	3.9
3. Sand and Gravel Mining	d	23,000	0.1
4. Construction	0.03	324,000	9.3
5. Transportation	0.01	93,000	9.1
6. Communication and Utilities	0.06	519,000	11.3
7. Ag. Processing and Misc. Mfg.	0.05	381,000	9.1
8. Retail	1.19	10,539,000	130.2
9. Finance, Insurance, and Real Estate	0.07	555,000	7.4
10. Business and Personal Service	0.12	1,084,000	67.8
11. Professional and Social Service	0.03	264,000	18.2
12. Households	0.43	3,846,000	--
13. Government	0.04	382,000	50.8
TOTAL	2.15	\$19,018,000	328.0

^aRow 12, Households, represents personal income.

^bNonresident angler expenditures were \$8,846,000. Ninety percent of the expenditures of nonresident anglers were made in the retail sector, and 10 percent in the business and personal service sector. The interdependence coefficients represent those proportions from the appropriate columns in Table 3 of Coon et al. (1984).

^cEmployment in each sector was estimated using gross productivity ratios.

^dLess than 0.005.

Employment

Expenditures by nonresident sportsmen directly and indirectly contribute to employment in various sectors of the economy; for example, even though hunters did not spend any money directly in the construction sector (Table 7, Row 4), \$135,000 of business occurred in that sector. This amount of business in the construction sector supported the employment of 3.9 individuals.

Nonresident hunters spent enough money in 1983 to support the employment of 182 individuals in all sectors of North Dakota's economy (Table 17). The retail sector had the highest employment level, 43.9, as a result of those expenditures. Expenditures by hunters in 1976 were responsible for supporting 178 employees. Expenditures by anglers supported the employment of 328 individuals in 1983 (Table 18).

License Expenditures

Nonresident sportsmen spent \$746,137 in the government sector to purchase licenses in 1983 (Table 19).

TABLE 19. NONRESIDENT HUNTING AND FISHING LICENSES SOLD AND REVENUE RECEIVED BY THE NORTH DAKOTA GAME AND FISH DEPARTMENT, 1983

License Type	Cost	Number Sold	Revenue
General Game	\$ 3.00	8,125	\$ 24,375
Small Game/Habitat	53.00	7,664	406,192
Waterfowl	8.00	7,085	56,680
Deer Bow	100.00	116	11,600
Deer Gun/Permit	101.00	336	33,936
Antelope Bow	100.00	7	700
Nongame	15.00	38	570
Fishing (7-Day)	8.00	16,168	129,344
Fishing (Season)	20.00	3,122	62,440
Fishing (Husband-Wife)	35.00	580	20,300
TOTAL			\$746,137

Summary

A mail survey was conducted to collect 1983 data on characteristics, expenditures, attitudes, and harvest success of nonresident sportsmen in North Dakota. This information was then compared with nonresident hunter data collected in 1976. Sportsmen included in the 1983 sample were small game (upland and waterfowl) hunters, firearms deer hunters, archery deer hunters, archery antelope hunters, and nonresident anglers. Surveys were sent to 2,815 nonresident sportsmen who purchased some of the approximately 28,000 licenses. The overall response rate, after two mailings, was 61 percent.

The largest nonresident sportsmen groups were anglers and small game hunters. The smallest group was archery antelope hunters. The average sportsman in 1983 was male, approximately 41 years old, and was employed as a professional. He probably traveled over 500 miles to hunt or fish in North Dakota, and his dollar value placed on a typical day of hunting or fishing would be between \$70 and \$90.

Nonresident sportsmen came to North Dakota to hunt or fish in 1983 for three main reasons: (1) because they had friends or relatives in the state, (2) because of the good hunting and fishing, or (3) because they were former North Dakota residents.

Waterfowl hunters and deer hunters in 1983 had slightly better harvest success than hunters in 1976. However, there was a sharp decline in the average number of sharptail grouse harvested in 1983.

Expenditures by nonresident sportsmen were grouped into three major categories: variable expenditures (nondurable goods and services), fixed

expenditures (durable goods), and license fees. Small game hunters spent the largest amount of the four sportsman groups--\$485 (Table 20). They spent an average of \$351 on nondurable goods and services, \$69 on durable goods, and \$64 on licenses.

TABLE 20. AVERAGE INDIVIDUAL EXPENDITURES BY NONRESIDENT SPORTSMEN IN NORTH DAKOTA, 1983

Item	Small Game Hunters	Firearms Deer Hunters	Archery Deer Hunters	Anglers
License Fee	\$ 64.00	\$104.00	\$103.00	\$ 10.67
Variable Expenditure	351.49	274.11	172.70	323.49
Fixed Expenditure	69.06	105.14	23.97	121.71
TOTAL	\$484.55	\$483.25	\$299.67	\$455.87

Firearms deer hunters spent an average of \$483 during their four-day visit. They spent an average of \$274 on nondurable goods and services, \$105 on durable goods, and \$104 on licenses.

Anglers spent an average of \$456 during their North Dakota visit. They spent \$323 on nondurable goods and services, \$122 on durable goods, and \$11 on licenses. Archery deer hunters spent over eight days hunting in North Dakota but spent the least money of the four sportsmen groups in 1983--\$300. They spent an average of \$173 on nondurable goods and services, \$24 on durable goods, and \$103 on licenses.

Expenditures by firearms deer hunters, archery deer hunters, and small game hunters in 1983 were less than expenditures by these groups in 1976. Nonresident anglers were not included in the 1976 study, so no comparison was made. Total expenditures by nonresident sportsmen in 1983 were estimated to be \$12,219,400 excluding license fees. Anglers spent an estimated \$8,846,000, and hunters spent approximately \$3,373,300. Due to the interactions of the economy--spending and respending via the multiplier process--these direct expenditures resulted in \$26,758,000 in total business activity in the state's economy.

A portion of the total business activity generated by nonresident sportsmen represents personal income to North Dakotans. Expenditures by anglers and hunters resulted in \$5,523,000 of personal income in 1983 and employment for 510 workers during the same period.

Information collected in sportsmen surveys is another tool which can be used in managing fish and wildlife resources. As it becomes increasingly recognized that the use of any resource is ultimately guided by society's needs and values, more attention will be focused on the social effects of hunting and fishing, particularly their economic importance and their affected human participants. If North Dakota is going to continue to issue nonresident hunting and fishing licenses, then it is important for resource managers to continue collecting data that will improve fish and game management decisions that involve nonresident sportsmen.

APPENDIX A

Nonresident Firearm Deer Hunting Questionnaire

Survey of
FIREARM
DEER HUNTING
ACTIVITY
IN NORTH DAKOTA



NONRESIDENT DEER HUNTER SURVEY

1. Did you hunt deer in North Dakota during the 1983 firearms season?

☐ NO If no, please stop here and return this questionnaire.

☐ YES If yes, please continue.

2. Please mark an "X" on the days that you hunted.

	S	M	T	W	Th	F	S
						4	5
November	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20						

3. Did you harvest a deer?

☐ NO If no, please go to question number 5.

☐ YES If yes, please continue.

4. What type of deer was it?

Mule Deer

☐ Antlered Buck

☐ Button Buck

☐ Large Doe

☐ Small Doe

Whitetail Deer

☐ Antlered Buck

☐ Button Buck

☐ Large Doe

☐ Small Doe

5. In what unit did you hunt deer? _____

Please estimate as best you can the money you spent in North Dakota on firearm deer hunting in 1983.

6. Food and Beverages	\$ _____
Motel, Hotel, Campground	\$ _____
Private Transportation Expenses (<u>your share</u> of gas, oil, repairs to vehicle during trip)	\$ _____
Miles Traveled (list total if you drove, write <u>0</u> if you rode)	_____ miles
Commercial Transportation Expenses (bus or air fare)	\$ _____
Film	\$ _____
Taxidermy	\$ _____
Access Fees	\$ _____
Processing of Meat	\$ _____
Other (please specify) _____	\$ _____

Please complete the chart below for items of durable equipment that you purchased in North Dakota for deer hunting in 1983.

7. Gun	\$ _____
Ammunition	\$ _____
Special Clothing Used Primarily for Deer Hunting	\$ _____
Pickup Camper or Van	\$ _____
Motor Home	\$ _____
Camping Equipment Used Primarily for Deer Hunting	\$ _____
Other Equipment (please specify) _____	\$ _____

8. How did you travel from your home to North Dakota?

<input type="radio"/> Car or Pickup	<input type="radio"/> Commercial Air
<input type="radio"/> Motor Home	<input type="radio"/> Private Airplane
<input type="radio"/> Bus	<input type="radio"/> Other _____

9. How many people made the trip with you from your home to where you hunted in North Dakota? _____ How many of these also hunted deer? _____

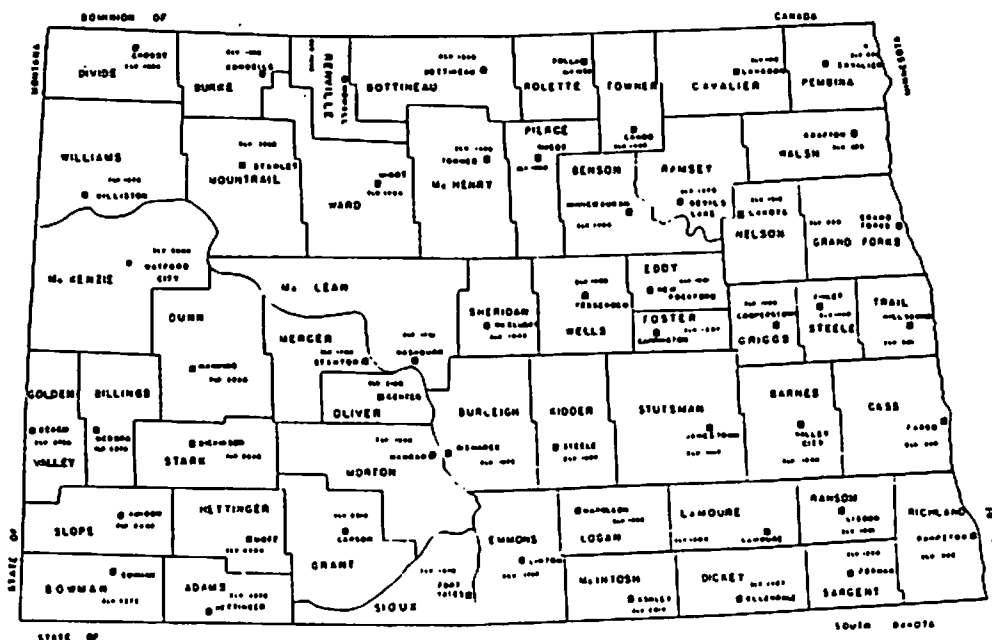
10. If you could put a dollar value on a typical day of North Dakota deer hunting with a firearm, what would it be? \$ _____

11. Indicate the percentage of hunting that you did on each type of land.

Federal	_____ %
State	_____ %
Private	_____ %
Unknown	_____ %
Total	100 %

12. Place an "X" on the map below where you hunted deer the most.

NORTH DAKOTA



- 4 -

13. What is the one-way distance from your home to where you hunted most?
_____ miles

14. Why did you hunt deer in North Dakota?

15. Do you have any suggestions or comments on how the State Game and Fish Department could improve firearm deer hunting or deer management in North Dakota?

16. Did you have any unusually good or bad experiences while deer hunting with a firearm in 1983 in North Dakota?

17. What is your sex?

☐ Male

☐ Female

18. What is your age? _____

- 5. -

19. What is your principal occupation?

- ☐ Farming
- ☐ Professional
- ☐ Sales
- ☐ Labor
- ☐ Government
- ☐ Managerial/Executive
- ☐ Craftsman
- ☐ Education
- ☐ Student
- ☐ Unemployed or Retired
- ☐ Other _____

20. What type of home area do you live in?

- ☐ City with 5,000 or more population
- ☐ Town with less than 5,000 population
- ☐ Rural area

21. What other North Dakota licenses/stamps did you have in 1983?

- ☐ Deer, Bow
- ☐ Antelope, Bow
- ☐ Small Game
- ☐ Fishing, Season
- ☐ Fishing, Short term

22. Did you buy a federal duck stamp in 1983?

- ☐ YES
- ☐ NO

Thanks for your cooperation.
We hope you enjoyed hunting North Dakota in 1983.

NONRESIDENT HUNTERS IN NORTH DAKOTA

A survey of nonresident hunters in North Dakota in 1976 revealed the following characteristics:

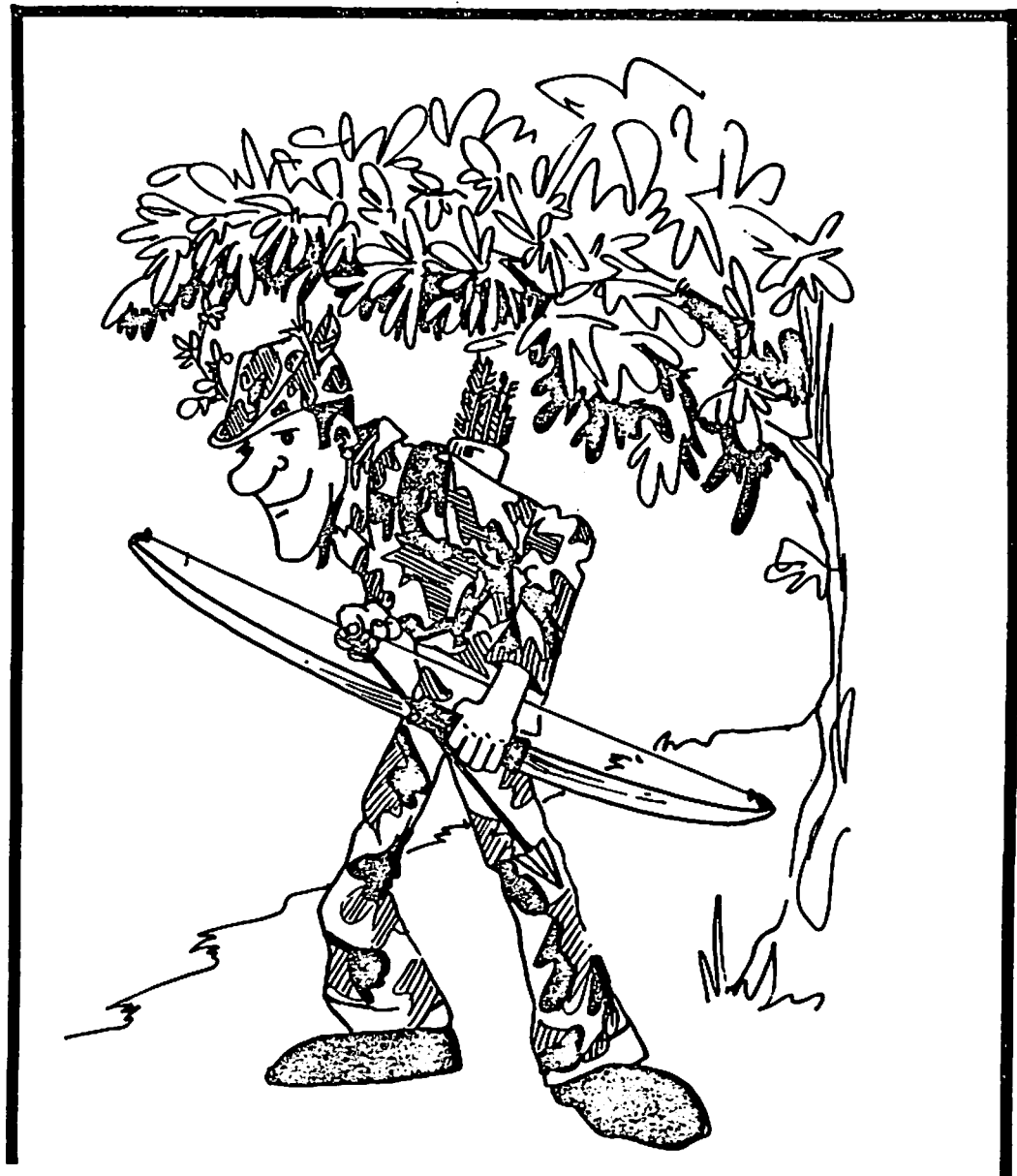
- Over 9,000 hunters came from 47 states and three foreign countries.
- Eighty percent hunted waterfowl.
- They paid a total of \$272,748 for licenses, or 27 percent of all state hunting license revenue.
- They came because they had hunted here before, they had friends or relatives in the state, or they were former residents.
- Only 25 percent of their time was spent hunting on public lands.
- Waterfowl hunters hunted an average of 5.3 days and spent \$311 each.
- Upland game hunters averaged about five days hunting and spent \$241.
- Firearms deer hunters hunted about four days and spent an average of \$280 per hunter.
- Bow and arrow deer hunters stayed the longest, seven days, and spent about \$275.
- Total expenditures, except for licenses, was \$2.5 million, resulting in a gross business volume of \$6.3 million, and employment of over 200 people.

Your response to this year's survey will allow us to compile similar statistics for the impact of nonresident hunters in North Dakota in 1983. This information is very useful to the State Game and Fish Department, as it shows how important nonresident hunters are to the state's economy.

APPENDIX B

Nonresident Archery Deer Hunting Questionnaire

Survey of
**BOW AND ARROW
DEER HUNTING ACTIVITY
IN NORTH DAKOTA**



NONRESIDENT HUNTERS IN NORTH DAKOTA

A survey of nonresident hunters in North Dakota in 1976 revealed the following characteristics:

- Over 9,000 hunters came from 47 states and three foreign countries.
- Eighty percent hunted waterfowl.
- They paid a total of \$272,748 for licenses, or 27 percent of all state hunting license revenue.
- They came because they had hunted here before, they had friends or relatives in the state, or they were former residents.
- Only 25 percent of their time was spent hunting on public lands.
- Waterfowl hunters hunted an average of 5.3 days and spent \$311 each.
- Upland game hunters averaged about five days hunting and spent \$241.
- Firearms deer hunters hunted about four days and spent an average of \$280 per hunter.
- Bow and arrow deer hunters stayed the longest, seven days, and spent about \$275.
- Total expenditures, except for licenses, was \$2.5 million, resulting in a gross business volume of \$6.3 million, and employment of over 200 people.

Your response to this year's survey will allow us to compile similar statistics for the impact of nonresident hunters in North Dakota in 1983. This information is very useful to the State Game and Fish Department, as it shows how important nonresident hunters are to the state's economy.

NONRESIDENT ARCHERY DEER HUNTER SURVEY

1. Did you hunt deer in North Dakota during the 1983 archery season?

☐ NO If no, please stop here and return this questionnaire.

☐ YES If yes, please continue.

2. Please mark an "X" on the days that you hunted.

SEPTEMBER

S	M	T	W	Th	F	S
					2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER

S	M	T	W	Th	F	S
		1	2	3	4	5
6						
	21	22	23	24	25	26
27	28	29	30			

DECEMBER

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

3. Did you harvest a deer?

☐ NO If no, please go to question number 5.

☐ YES If yes, please continue.

4. What type of deer was it?

Mule Deer

☐ Antlered Buck

☐ Button Buck

☐ Large Doe

☐ Small Doe

Whitetail Deer

☐ Antlered Buck

☐ Button Buck

☐ Large Doe

☐ Small Doe

Please estimate as best you can the money you spent in North Dakota while archery deer hunting in 1983.

5. Food and Beverages	\$ _____
Motel, Hotel, Campground	\$ _____
Private Transportation Expenses (<u>your share</u> of gas, oil, repairs to vehicle during trip)	\$ _____
Miles Traveled (list total if you drove, write <u>0</u> if you rode)	_____ miles
Commercial Transportation Expenses (bus or air fare)	\$ _____
Film	\$ _____
Taxidermy	\$ _____
Access Fees	\$ _____
Processing of Meat	\$ _____
Other (please specify) _____	\$ _____

Please complete the chart below for items of durable equipment that you purchased in North Dakota for archery deer hunting in 1983.

6. Bow	\$ _____
Arrows	\$ _____
Special Clothing Used Primarily for Deer Hunting	\$ _____
Pickup Camper or Van	\$ _____
Motor Home	\$ _____
Camping Equipment Used Primarily for Deer Hunting	\$ _____
Other Equipment (please specify) _____	\$ _____

7. How did you travel from your home to North Dakota?

- | | |
|-------------------------------------|--|
| <input type="radio"/> Car or Pickup | <input type="radio"/> Commercial Air |
| <input type="radio"/> Motor Home | <input type="radio"/> Private Airplane |
| <input type="radio"/> Bus | <input type="radio"/> Other _____ |

8. How many trips did you make to North Dakota to hunt deer with bow and arrow in 1983? _____

9. How many people made the trip(s) with you from your home to where you hunted in North Dakota? _____ How many of these also hunted deer? _____

(Trip 1)	_____	_____
(Trip 2)	_____	_____
(Trip 3)	_____	_____
(Trip 4)	_____	_____

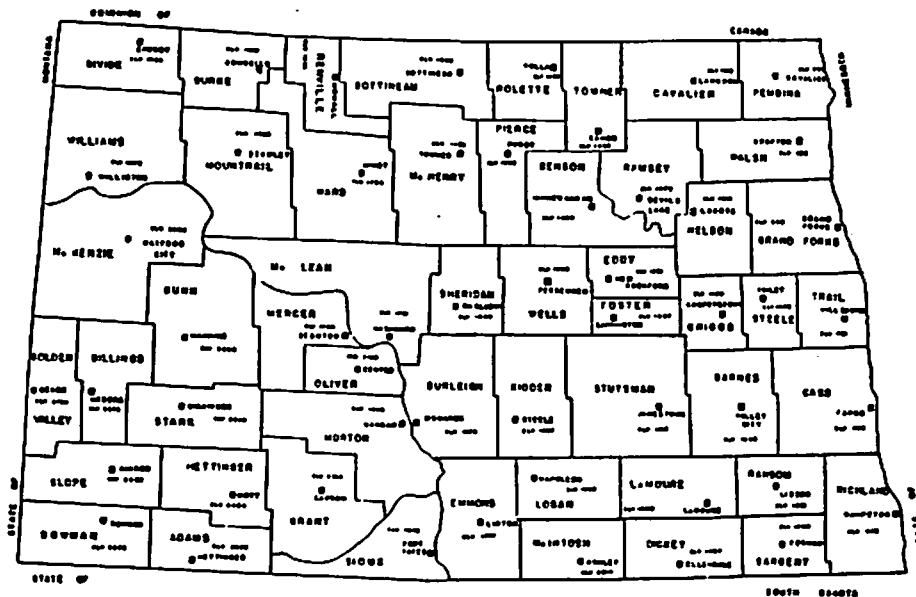
10. If you could put a dollar value on a typical day of North Dakota archery deer hunting, what would it be? \$ _____

11. Indicate the percentage of hunting that you did on each type of land.

Federal	_____ %	Unknown	_____ %
State	_____ %	Total	100 %
Private	_____ %		

12. Place an "X" on the map below where you hunted deer the most.

NORTH DAKOTA



13. What is the one-way distance from your home to where you hunted most?
_____miles

14. Why did you hunt deer in North Dakota?

15. Do you have any suggestions or comments on how the State Game and Fish Department could improve archery deer hunting or deer management in North Dakota?

16. Did you have any unusually good or bad experiences while deer hunting with a bow and arrow in 1983 in North Dakota?

17. What is your sex?

☐ Male

☐ Female

18. What is your age? _____

19. What is your principal occupation?

- ☐ Farming
- ☐ Professional
- ☐ Sales
- ☐ Labor
- ☐ Government
- ☐ Managerial/Executive
- ☐ Craftsman
- ☐ Education
- ☐ Student
- ☐ Unemployed or Retired
- ☐ Other _____

20. What type of home area do you live in?

- ☐ City with 5,000 or more population
- ☐ Town with less than 5,000 population
- ☐ Rural area

21. What other North Dakota licenses/stamps did you have in 1983?

- ☐ Deer, Firearm
- ☐ Antelope, Bow
- ☐ Small Game
- ☐ Waterfowl
- ☐ Fishing, Season
- ☐ Fishing, Short term

22. Did you buy a federal duck stamp in 1983?

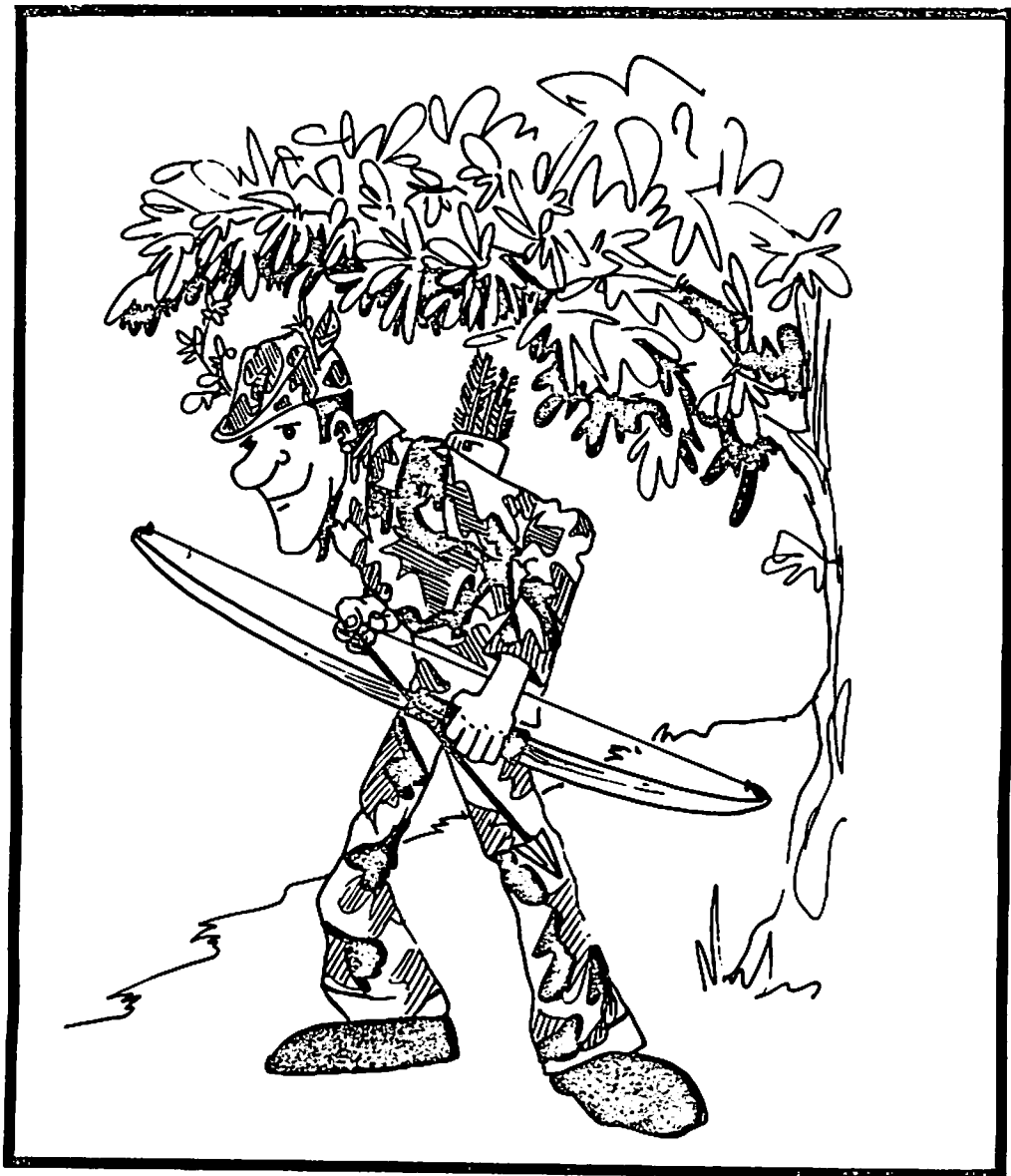
- ☐ YES
- ☐ NO

THANKS FOR YOUR COOPERATION.
WE HOPE YOU ENJOYED HUNTING NORTH DAKOTA IN 1983.

APPENDIX C

Nonresident Archery Antelope Hunting Questionnaire

NONRESIDENT BOW AND ARROW HUNTING IN NORTH DAKOTA



NONRESIDENT ARCHERY ANTELOPE HUNTER SURVEY

1. Did you hunt antelope in North Dakota during the 1983 archery season?

☐ NO If no, please stop here and return this questionnaire.

☐ YES If yes, please continue.

2. Please mark an "X" on the days that you hunted.

SEPTEMBER

S	M	T	W	Th	F	S
					2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER

S	M	T	W	Th	F	S
						1
2						
	24	25	26	27	28	29
30						

3. Did you harvest an antelope?

☐ NO If no, please go to question number 5.

☐ YES If yes, please continue.

4. What type of antelope was it?

☐ Antlered Buck

☐ Button Buck

☐ Large Doe

☐ Small Doe

Please estimate as best you can the money you spent in North Dakota while hunting antelope with bow and arrow in 1983.

5. Food and Beverages	\$ _____
Motel, Hotel, Campground	\$ _____
Private Transportation Expenses (<u>your share</u> of gas, oil, repairs to vehicle during trip)	\$ _____
Miles Traveled (list total if you drove, write <u>0</u> if you rode)	_____ miles
Commercial Transportation Expenses (bus or air fare)	\$ _____
Film	\$ _____
Taxidermy	\$ _____
Access Fees	\$ _____
* Processing of Meat	\$ _____
Other (please specify) _____	\$ _____

Please complete the chart below for items of durable equipment that you purchased in North Dakota for archery antelope hunting in 1983.

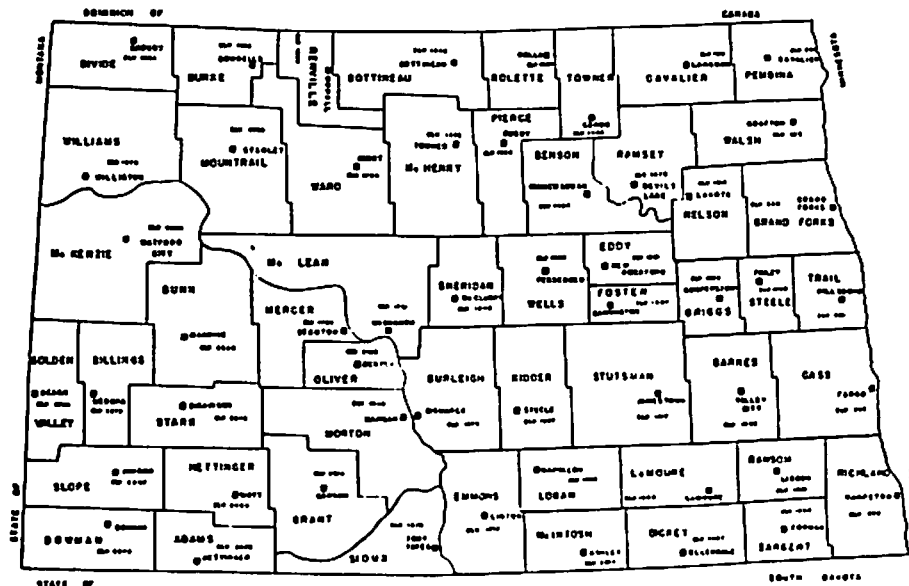
6. Bow	\$ _____
Arrows	\$ _____
Special Clothing Used Primarily for Antelope Hunting	\$ _____
Pickup Camper or Van	\$ _____
Motor Home	\$ _____
Camping Equipment Used Primarily for Antelope Hunting	\$ _____
Other Equipment (please specify) _____	\$ _____

7. How did you travel from your home to North Dakota?

- | | |
|-------------------------------------|--|
| <input type="radio"/> Car or Pickup | <input type="radio"/> Commercial Air |
| <input type="radio"/> Motor Home | <input type="radio"/> Private Airplane |
| <input type="radio"/> Bus | <input type="radio"/> Other _____ |

8. How many trips did you make to North Dakota to hunt antelope with bow and arrow in 1983? _____
9. How many people made the trip(s) with you from your home to where you hunted in North Dakota? _____ How many of these also hunted antelope? _____
- (Trip 1) _____
- (Trip 2) _____
- (Trip 3) _____
10. If you could put a dollar value on a typical day of North Dakota archery antelope hunting what would it be? \$ _____
11. Indicate the percentage of hunting that you did on each type of land.
- | | | | |
|---------|---------|---------|---------|
| Federal | _____ % | Unknown | _____ % |
| State | _____ % | Total | 100 % |
| Private | _____ % | | |
12. Place an "X" on the map below where you hunted antelope the most.

NORTH DAKOTA



13. What is the one-way distance from your home to where you hunted most?

_____miles

14. Why did you hunt antelope in North Dakota?

15. Do you have any suggestions or comments on how the State Game and Fish Department could improve antelope hunting or management in North Dakota?

16. Did you have any unusually good or bad experiences while antelope hunting in 1983 in North Dakota?

17. What is your sex?

☐ Male

☐ Female

18. What is your age? _____

19. What is your principal occupation?

- | | |
|------------------------------------|---|
| <input type="radio"/> Farming | <input type="radio"/> Government |
| <input type="radio"/> Professional | <input type="radio"/> Managerial/Executive |
| <input type="radio"/> Sales | <input type="radio"/> Craftsman |
| <input type="radio"/> Labor | <input type="radio"/> Education |
| <input type="radio"/> Student | <input type="radio"/> Unemployed or Retired |
| <input type="radio"/> Other _____ | |

20. What type of home area do you live in?

- ☐ City with 5,000 or more population
- ☐ Town with less than 5,000 population
- ☐ Rural area

21. What other North Dakota licenses/stamps did you have in 1983?

- ☐ Deer, Bow
- ☐ Deer, Firearm
- ☐ Small Game
- ☐ Waterfowl
- ☐ Fishing, Season
- ☐ Fishing, Short term

22. Did you buy a federal duck stamp in 1983?

- ☐ YES
- ☐ NO

THANKS FOR YOUR COOPERATION.
WE HOPE YOU ENJOYED HUNTING NORTH DAKOTA IN 1983.

NONRESIDENT HUNTERS IN NORTH DAKOTA

A survey of nonresident hunters in North Dakota in 1976 revealed the following characteristics:

- Over 9,000 hunters came from 47 states and three foreign countries.
- Eighty percent hunted waterfowl.
- They paid a total of \$272,748 for licenses, or 27 percent of all state hunting license revenue.
- They came because they had hunted here before, they had friends or relatives in the state, or they were former residents.
- Only 25 percent of their time was spent hunting on public lands.
- Waterfowl hunters hunted an average of 5.3 days and spent \$311 each.
- Upland game hunters averaged about five days hunting and spent \$241.
- Firearms deer hunters hunted about four days and spent an average of \$280 per hunter.
- Bow and arrow deer hunters stayed the longest, seven days, and spent about \$275.
- Total expenditures, except for licenses, was \$2.5 million, resulting in a gross business volume of \$6.3 million, and employment of over 200 people.

Your response to this year's survey will allow us to compile similar statistics for the impact of nonresident hunters in North Dakota in 1983. This information is very useful to the State Game and Fish Department, as it shows how important nonresident hunters are to the state's economy.

APPENDIX D

Nonresident Small Game Hunting Questionnaire

Survey of
**SMALL GAME
HUNTING ACTIVITIES
IN NORTH DAKOTA**



UPLAND GAME HUNTING

1. Did you buy a nonresident North Dakota general game license in 1983?

☐ NO
☐ YES

2. Did you buy a nonresident North Dakota small game stamp in 1983?

☐ NO If no, please stop here and return this questionnaire
☐ YES If yes, please continue

3. Did you hunt upland game (pheasant, grouse, partridge, tree squirrels, doves, cottontail rabbits) during the 1983 season in North Dakota?

☐ NO If no, please go to question number 11
☐ YES If yes, please continue

4. How many trips did you make to North Dakota to hunt upland game in 1983?

5. What is the one-way distance from your home to where you hunted most?

_____ miles

6. How did you travel from your home to North Dakota?

☐ Car or Pickup ☐ Commercial Air
☐ Motor Home ☐ Private Airplane
☐ Bus ☐ Other _____

7. How many of each of the following upland game species did you personally harvest in North Dakota in 1983?

Mourning Doves _____	Tree Squirrels _____
Hungarian Partridge _____	Sage Grouse _____
Sharp-Tailed Grouse _____	Ruffed Grouse _____
Ring-Necked Pheasant _____	Cottontail Rabbits _____

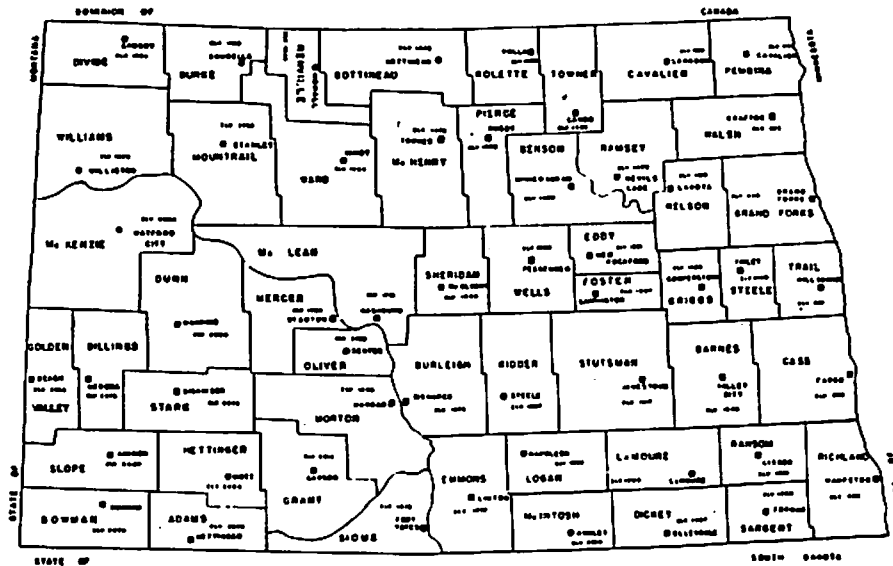
8. If you could put a dollar value on a typical day of North Dakota upland game hunting, what would it be? \$ _____

9. Indicate the percentage of upland game hunting that you did on each type of land.

Federal	_____ %	Unknown	_____ %
State	_____ %	Total	100 %
Private	_____ %		

10. Place an "X" on the map below where you hunted upland game the most.

NORTH DAKOTA



WATERFOWL HUNTING

11. Did you buy a federal duck stamp in 1983?

☐ NO If no, please go to Question 19

☐ YES If yes, please continue

12. Did you hunt ducks, coot, Wilson's snipe, geese, or sandhill crane in North Dakota during the 1983 season?

☐ NO If no, go to Question 19

☐ YES If yes, please continue

13. How many trips did you make to North Dakota to hunt waterfowl in 1983?

What is the one-way distance from your home to where you hunted most?

_____ miles

14. How many of each of the following waterfowl species did you personally harvest in North Dakota in 1983?

Ducks

Mallard	_____	Redhead	_____
Gadwall	_____	Canvasback	_____
Pintail	_____	Blue-Winged Teal	_____
Baldpate	_____	Green-Winged Teal	_____
Shoveler	_____	Scaup	_____
Other (Please Specify)	_____		_____

Geese

Canada (large and small)	_____
Snow or Blue	_____
White-Fronted (specklebelly)	_____
Other (Please Specify)	_____

15. If you could put a dollar value on a typical day of North Dakota waterfowl hunting, what would it be?

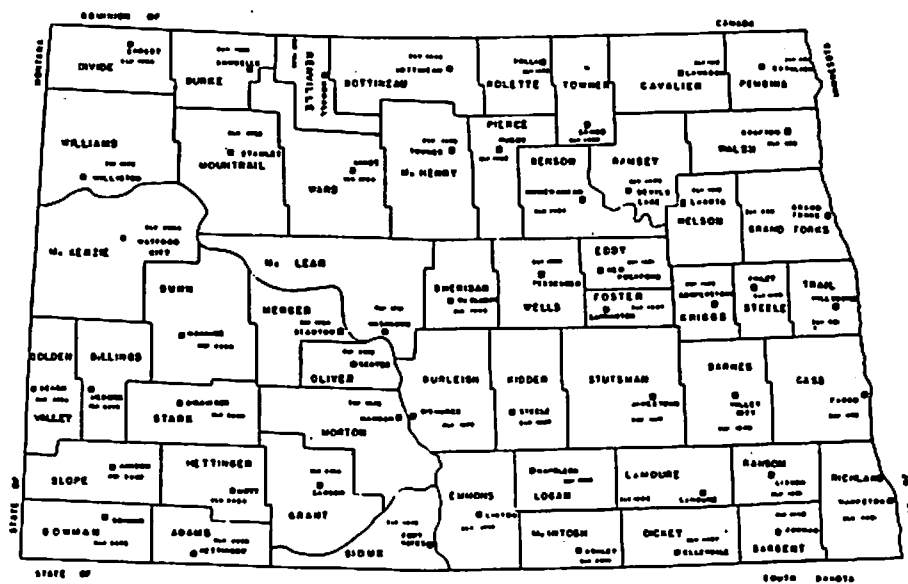
§ _____

16. Indicate the percentage of waterfowl hunting that you did on each type of land.

Federal	_____ %	Unknown	_____ %
State	_____ %	Total	<u>100</u> %
Private	_____ %		

17. Place an "X" on the map below where you hunted waterfowl the most.

NORTH DAKOTA



18. Did you rent, lease, or pay any type of access fees to hunt ducks or geese in North Dakota in 1983?

☐ NO If no, please go to question 19.

☐ YES If yes, please complete the following:

What was the amount paid? _____

What time period did it cover? _____

How much land area did it cover? _____

What was the nearest city or town to where you paid
to hunt? _____

19a. Please estimate as best you can the money you spent in North Dakota while upland game and waterfowl hunting in 1983.

Food and Beverages \$ _____

Motel, Hotel, Campground \$ _____

Private Transportation Expenses (your share
of gas, oil, repairs to vehicle during trip) \$ _____

Miles Traveled (list total if you drove,
write 0 if you rode) _____ miles

Commercial Transportation Expenses
(bus or air fare) \$ _____

Film \$ _____

Taxidermy \$ _____

Veterinary Services \$ _____

Access Fees (Include those from question 18) \$ _____

Meat Processing \$ _____

Other (please specify) _____ \$ _____

19b. Please complete the chart below for items of durable equipment that you purchased in North Dakota in 1983.

Gun(s) and Accessories	\$ _____
Decoys	\$ _____
Duck Boat	\$ _____
Special Clothing Used Primarily for Hunting	\$ _____
Pickup Camper or Van	\$ _____
Camping Equipment Used Primarily for Hunting	\$ _____
Other Equipment (Please Specify) _____	\$ _____

20. What percentage of the expenses in question 19 were for waterfowl hunting?
_____ percent

21. Why did you hunt waterfowl and/or upland game in North Dakota?

22. Do you have any suggestions or comments on how the State Game and Fish Department could improve hunting or wildlife management in North Dakota?

23. What is your sex?

☐ Male

☐ Female

24. What is your age? _____

25. What is your principal occupation?

- | | |
|------------------------------------|---|
| <input type="radio"/> Farming | <input type="radio"/> Government |
| <input type="radio"/> Professional | <input type="radio"/> Managerial/Executive |
| <input type="radio"/> Sales | <input type="radio"/> Craftsman |
| <input type="radio"/> Labor | <input type="radio"/> Education |
| <input type="radio"/> Student | <input type="radio"/> Unemployed or Retired |
| <input type="radio"/> Other _____ | |

26. What other North Dakota licenses/stamps did you have in 1983?

- | | |
|-------------------------------------|---|
| <input type="radio"/> Deer, Bow | <input type="radio"/> Fishing, Season |
| <input type="radio"/> Deer, Firearm | <input type="radio"/> Fishing, Short term |
| <input type="radio"/> Antelope, Bow | |

27. Circle the years in the last seven that you hunted waterfowl or upland game in North Dakota.

- | | |
|------|------|
| 1982 | 1978 |
| 1981 | 1977 |
| 1980 | 1976 |
| 1979 | |

THANKS FOR YOUR COOPERATION.
WE HOPE YOU ENJOYED HUNTING NORTH DAKOTA IN 1983.

APPENDIX E

Nonresident Angler Questionnaire

North Dakota State University
OF AGRICULTURE AND APPLIED SCIENCE
FARGO, NORTH DAKOTA 58105

AGRICULTURAL ECONOMICS
MORRILL HALL
P.O. BOX 5636

TELEPHONE 701-237-7441

Dear Fisherman:

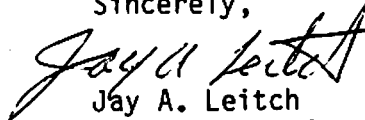
Thank you for coming to North Dakota to fish in 1983. I hope you enjoyed your visit and will come again.

We have been asked by the North Dakota Game and Fish Department to survey nonresident fishermen to find out what your impact is on the state's economy. Would you kindly take the next few moments of your time to complete this questionnaire? EVEN IF YOU DID NOT FISH IN NORTH DAKOTA IN 1983 it is important you answer the first three questions and return the form in the postage paid envelope I have enclosed.

The information you provide will be kept completely confidential and used only to develop overall statistics. Such a survey of nonresident fishermen expenditures in North Dakota has never been done, so this will be an important data source for the Game and Fish Department.

Please complete the questionnaire as soon as you can, while you can still recall your fishing trip(s). THANK YOU for your cooperation. If you have any questions about the survey, please feel free to call (701-237-7467) or include your questions when returning the questionnaire.

Sincerely,


Jay A. Leitch
Assistant Professor

1. Did you buy a North Dakota nonresident fishing license in 1983?
☐ Yes, if yes please continue
☐ No, if no please stop and return this questionnaire
2. What type of North Dakota nonresident fishing license did you buy?
☐ 7-day
☐ Season
3. How many years in the last 5 have you bought a nonresident fishing license in North Dakota? _____
4. What is the one-way distance from your home to where you fished most often in North Dakota? _____ miles
5. Did you have reasons other than fishing for coming to North Dakota?

<input type="radio"/> Just to Fish	<input type="radio"/> Shopping
<input type="radio"/> Visit Relatives	<input type="radio"/> Just Passing Through
<input type="radio"/> Camping	<input type="radio"/> Other _____
<input type="radio"/> Hunting	

In order to help estimate the value of fishing to the North Dakota economy we need to ask some questions about how much money you spent on fishing.

6. Please estimate to the best of your knowledge, the money you spent in North Dakota in the following categories.

money spent in North Dakota
during 1983 SUMMER fishing
season

FOOD AND BEVERAGES	\$ _____
LODGING (motel or camping fees)	\$ _____
TRANSPORTATION (gas, oil, repairs for vehicle on trips)	\$ _____
BOAT AND MOTOR RENTAL	\$ _____
BAIT	\$ _____
BOAT LAUNCHING FEES	\$ _____
GAS AND OIL (for boat motor)	\$ _____
REPAIRS AND MAINTENANCE OF EQUIPMENT	\$ _____
PACKING, CLEANING OF FISH	\$ _____
FILM	\$ _____
TAXIDERMY	\$ _____
SOUVENIRS	\$ _____
OTHER (please specify) _____	\$ _____

Did you purchase any items of durable equipment in North Dakota during the 1983 SUMMER fishing season? (If yes, please indicate costs and North Dakota city where purchased).

	city
BOAT, MOTOR, TRAILER	\$ _____
DEPTH/FISH FINDER	\$ _____
RODS AND REELS	\$ _____
TACKLE	\$ _____
TACKLE BOX	\$ _____
CAMPING EQUIPMENT USED PRIMARILY FOR FISHING	\$ _____
SPECIAL CLOTHING USED PRIMARILY FOR FISHING	\$ _____
OTHER FISHING EQUIPMENT (i.e., landing net)	\$ _____

7. Please complete the following table for each of the places you fished in North Dakota during the 1983 SUMMER fishing season.

<u>Place Fished</u>	<u>Number of Separate Trips</u>	<u>Total Number of Days</u>	<u>Approximate One-Way Distance From Your Home</u>
example: <u>Devils Lake</u>	<u>4</u>	<u>8</u>	<u>375</u>
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8. If you could put a dollar value on a typical day of SUMMER fishing in North Dakota, what would it be? \$

We would like to know some things about you to help us analyze your responses.

9. What is your age?
10. What is your sex? ☐ Male ☐ Female
11. What is your principal occupation?
- ☐ Farming
 - ☐ Professional
 - ☐ Sales
 - ☐ Labor
 - ☐ Government
 - ☐ Managerial/Executive
 - ☐ Craftsman
 - ☐ Education
 - ☐ Student
 - ☐ Unemployed or Retired
 - ☐ Other
12. What type of home area do you live in?
- ☐ City with 5,000 or more population
 - ☐ Town with less than 5,000 population
 - ☐ Rural area
13. What other North Dakota licenses/stamps did you have in 1983?
- ☐ Deer, Bow
 - ☐ Antelope, Bow
 - ☐ Small Game
 - ☐ Waterfowl

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