

# The Hunting, Fishing, and Trapping Sectors

## Chapter 10

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### Summary Points

- The activities of hunting, fishing and trapping in northwest Alberta have histories, in all likelihood, as long as that of human occupation in the region.
- Whereas the original purpose of hunting, fishing and trapping were for subsistence purposes, these activities assumed market value with the arrival of Euro-Canadians. Today, non-aboriginal people who hunt, fish, and trap do so primarily for recreational value. Hunting, trapping, and fishing remain important traditional activities of aboriginal people in northwest Alberta.
- Of the various big game species hunted in northwest Alberta, highest number of hunters, hunter effort (hunter-days), and harvest occurs for moose, followed in rank declining order by white-tailed deer, mule deer, black bear, elk, and grizzly bear.
- Highest number of hunting days per animal harvested occurred for grizzly bear, followed in rank declining order by mule deer, white-tailed deer, elk, moose, and black bear.
- In general, the number of hunters in Alberta and northwest Alberta have declined during the past two decades. Changes in availability of big game populations to hunt, in societal attitudes towards hunting, and the urban/rural composition of the population, are likely contributors to these temporal changes in participation of hunting.
- Sport fishing, through both direct and indirect expenditures, contributes significantly to regional and provincial economies.
- Sport fishing opportunities have been increased in northwest Alberta through stocking programs in ponds and lakes.
- Gods Lake is the only lake in northwest Alberta classified by Alberta Environmental Protection as a “trophy lake”.
- Lake whitefish is the prime species allocated in the commercial fishery, followed by tullibee and pike. Walleye, perch and lake trout are the other species of fish with set quotas
- The Natural Resources Service is of the belief that sport fish populations are relatively stable, and have not experienced the significant declines reported in the northeast portion of the province.
- Squirrel was the most common furbearer harvested, following in decreasing rank order by muskrat, beaver, marten, weasel, mink, lynx, coyote, fisher, fox, timber wolf, otter, wolverine, and Black Bear.
- The most common mammalian families contributing to the fur harvest in northwest Alberta between 1978–1993 were the rodent families, followed by the weasel, cat, dog and bear families
- Between 1978–1993, the most valuable pelts were lynx, with a mean sale price of \$312.91. This value is almost twice that of the next most valuable (wolverine), with a mean value of \$177.42. The descending rank order of the remaining species, based on mean pelt value, were fisher, timber wolf, cross fox, marten, coyote, black bear, silver fox, otter, red fox, mink, beaver, white fox, blue fox, muskrat, weasel and squirrel.

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# Sport Hunting Industry

## Introduction

Sport hunting is a popular activity in northwestern Alberta, and contributes significantly to the regional economy. Sport hunting is administered by Alberta Natural Resources Service, and is subject to provisions of the Wildlife Act. Annual details pertaining to sport hunting are provided in *The Alberta Guide to Hunting Regulations*. Regulations pertaining to sport hunting are administered geographically at the scale of the Wildlife Management Unit (WMU). Current boundaries of the WMUs in northwest Alberta are shown in Figure 1. The size and listing of those wildlife species hunted in each WMU in northwest Alberta are provided in Table 1 and Figure 2. Although WMU 926 provides good habitat for mule deer, moose, white-tailed deer, and black bear, there are no hunting seasons within this area due to its proximity to residences and the town of Peace River. This WMU is comprised primarily of the Heart River valley between Peace River and Nampa, and prior to its designation as a separate WMU in the mid 1980's, was known as the Greene Valley Wildlife Sanctuary.

Prior to 1997, the area comprising WMU 539 was part of WMU 536. Figure 1 and Figure 2, and Table 1 indicate the location and area of WMU 539, however the hunter effort and harvest data predate the boundary change that created 539. The statistics presented for 1987 to 1995 represent a period when this area was still part of 536.

Also note that prior to 1993, WMU 526 included all of what is now 527, and this creates some difficulties in interpreting the statistics presented, particularly concerning elk.

Only small portions of WMUs 359, 522, 523 and 544 fall within the boundaries of the study area. For this reason, these WMUs have not been discussed in this chapter, and their hunting statistics have not been included in any of the summary information provided.

The major big game species hunted recreationally in northwest Alberta, in decreasing order of number harvested, are: moose, white-tailed deer, mule deer, black bear, elk, and until recently, grizzly bear. The phone census data organized by Alberta Natural Resources Service from 1987-1995 indicate considerable annual variation in hunter numbers, animal harvest, hunting days, and hunter effort per harvested animal for each big game species (see Figure 3–Figure 38). This variation presumably reflects changes in big game populations, availability and format of hunting licenses and draws, field hunting conditions, and temporal changes in hunting desirability of each game species.

Subsistence hunting of big game species, particularly moose, is a common practice among First Nations people who are legally entitled to hunt wildlife on unoccupied crown land throughout the year. No estimates of harvest levels by First Nations people are available. Metis people manage the harvest of big game species on Metis settlement lands, yet they are currently required to purchase sport hunting licenses and comply with hunting regulations when hunting off the settlements. This however, is being challenged in court on the basis of aboriginal hunting rights.

Table 1. Size of wildlife management units in northwest Alberta and those species having sport hunting seasons (general, archery, or quota) in 1997. Data Source: Natural Resources Service.

WMU	Area (ha)	Species Hunted in WMU
520	1,033,353	white-tailed deer, mule deer, moose, black bear
524	1,299,626	white-tailed deer, mule deer, moose, black bear, grizzly bear
525	580,723	white-tailed deer, mule deer, moose, black bear, grizzly bear
526	710,111	white-tailed deer, mule deer, moose
527	676,793	white-tailed deer, mule deer, moose, elk, grizzly bear
528	1,204,276	white-tailed deer, mule deer, moose, black bear
534	2,610,057	white-tailed deer, mule deer, moose, black bear
535	432,030	white-tailed deer, mule deer, moose, black bear
536	3,390,786	white-tailed deer, mule deer, moose, black bear
537	600,522	white-tailed deer, mule deer, moose, black bear, grizzly bear
539	1,963,974	white-tailed deer, mule deer, moose, black bear
540	1,076,213	white-tailed deer, mule deer, moose, black bear
542	1,690,704	white-tailed deer, mule deer, moose, black bear
926	4,403	

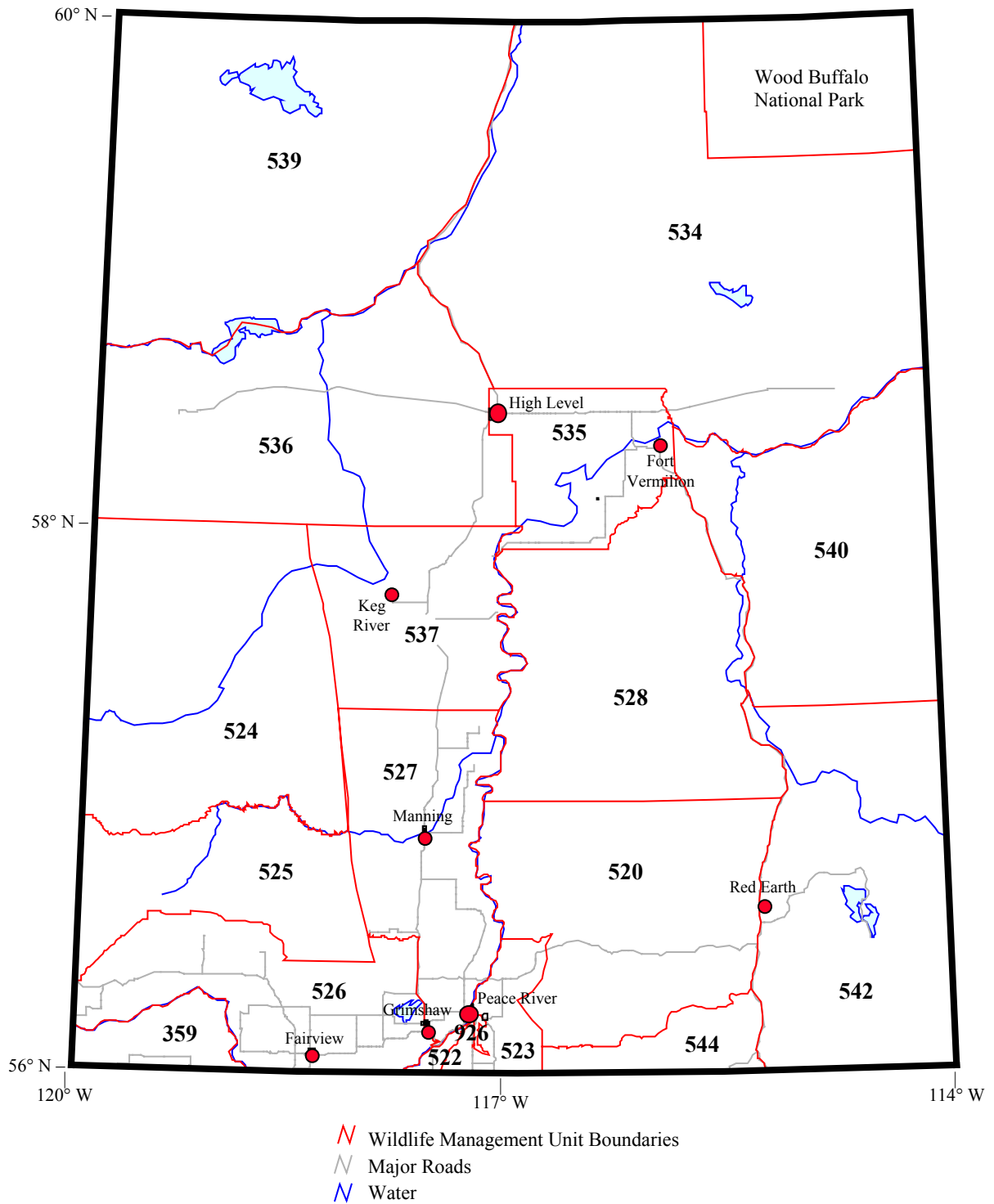


Figure 1. Wildlife management units (WMUs) of northwest Alberta. Data Source: DMI GIS Library.

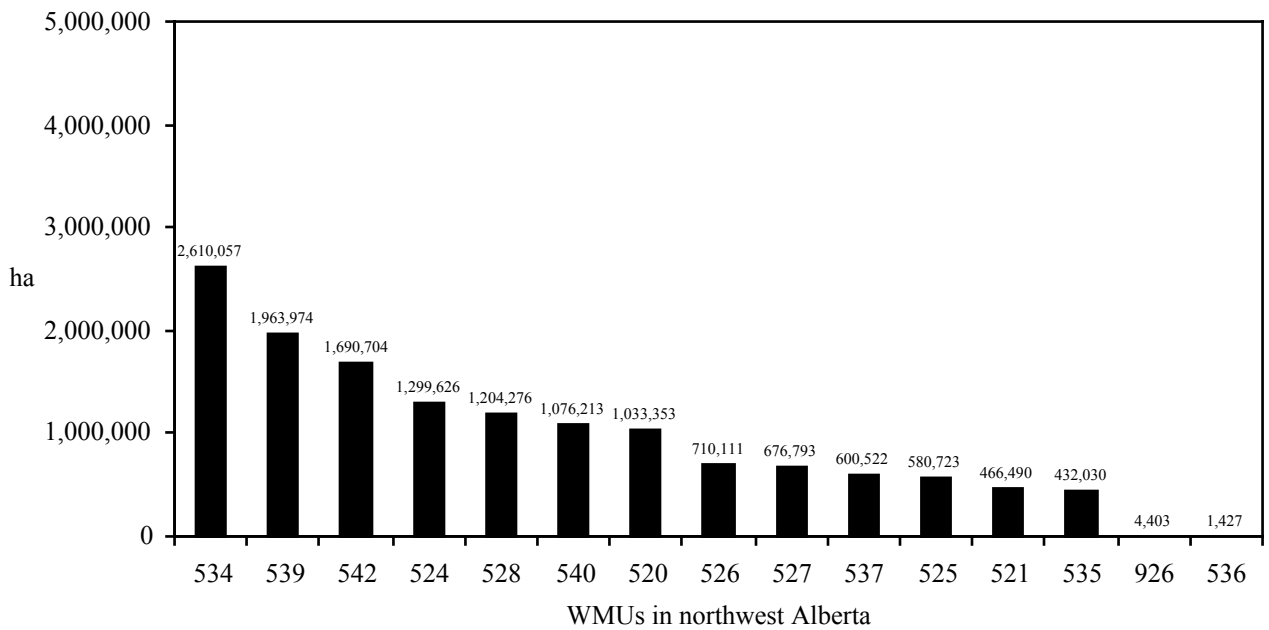


Figure 2. Size of wildlife management units in northwest Alberta. Data Source: DMI GIS Library.

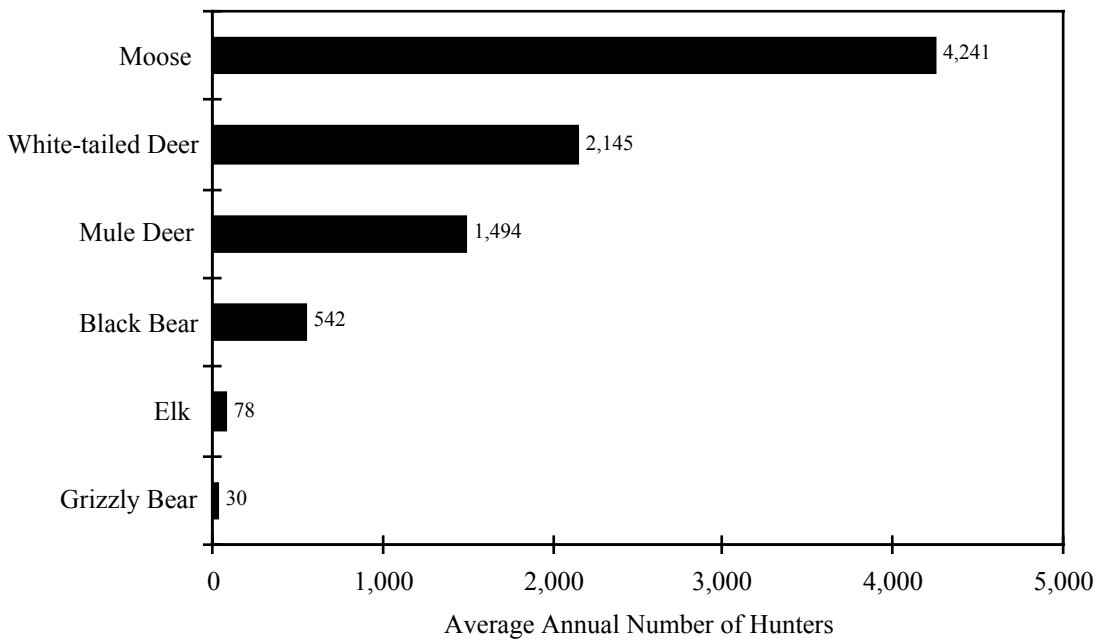


Figure 3. Average annual number of hunters for each big game species in the WMUs of northwest Alberta during 1987–1995. Data Source: Natural Resources Service.

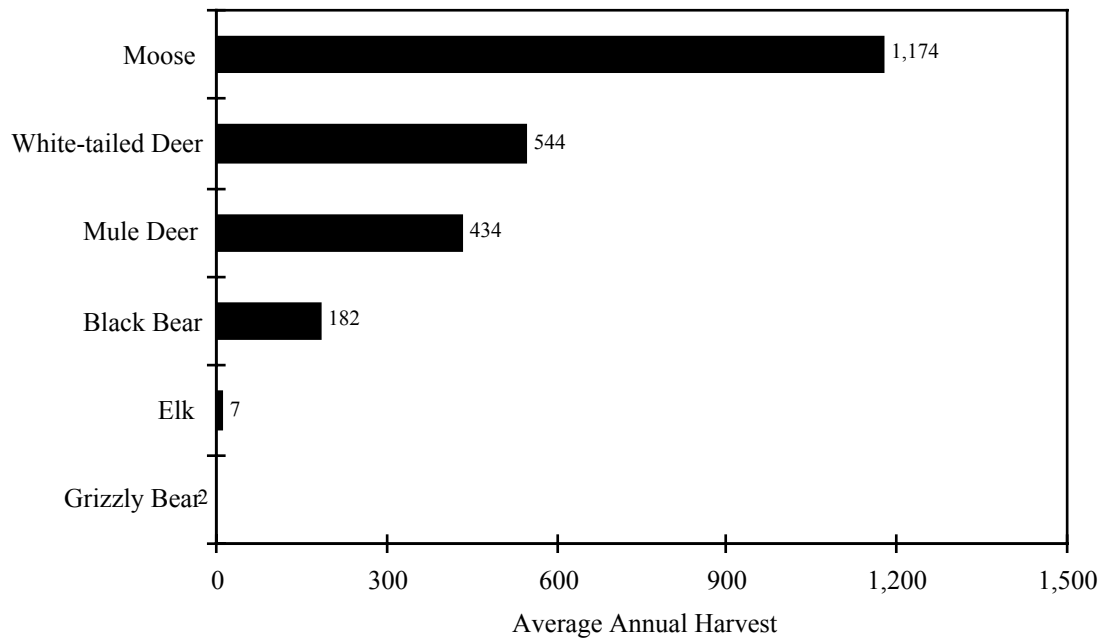


Figure 4. Average annual harvest of big game species in the WMUs of northwest Alberta during 1987–1995. Data Source: Natural Resources Service.

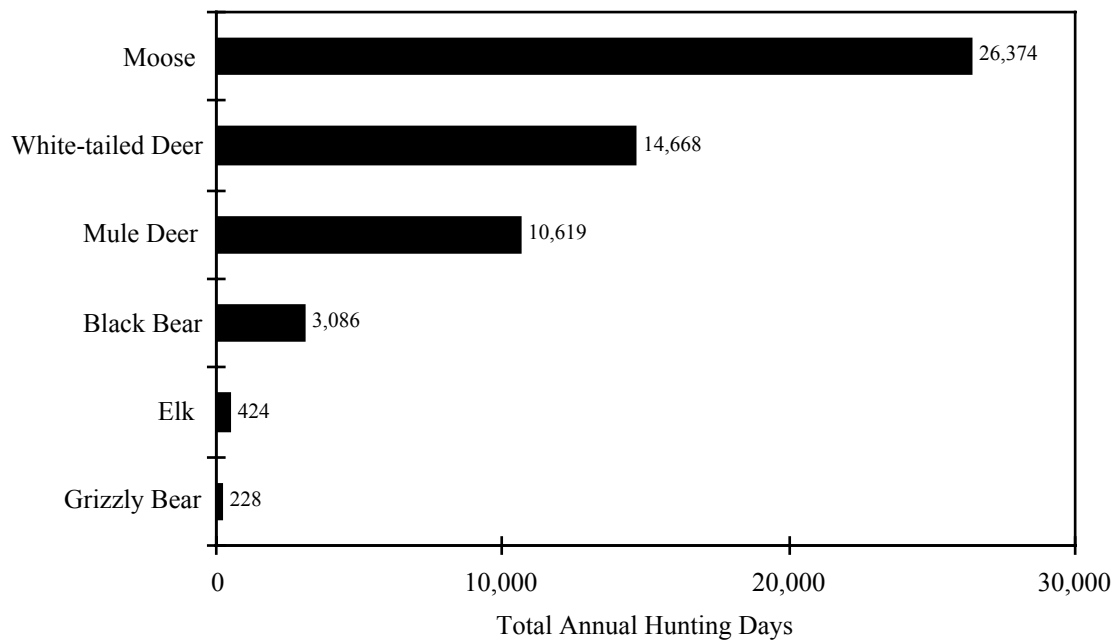


Figure 5. Average total annual number of hunting days for each big game species for WMUs of northwest Alberta during 1987–1995. Data Source: Natural Resources Service.

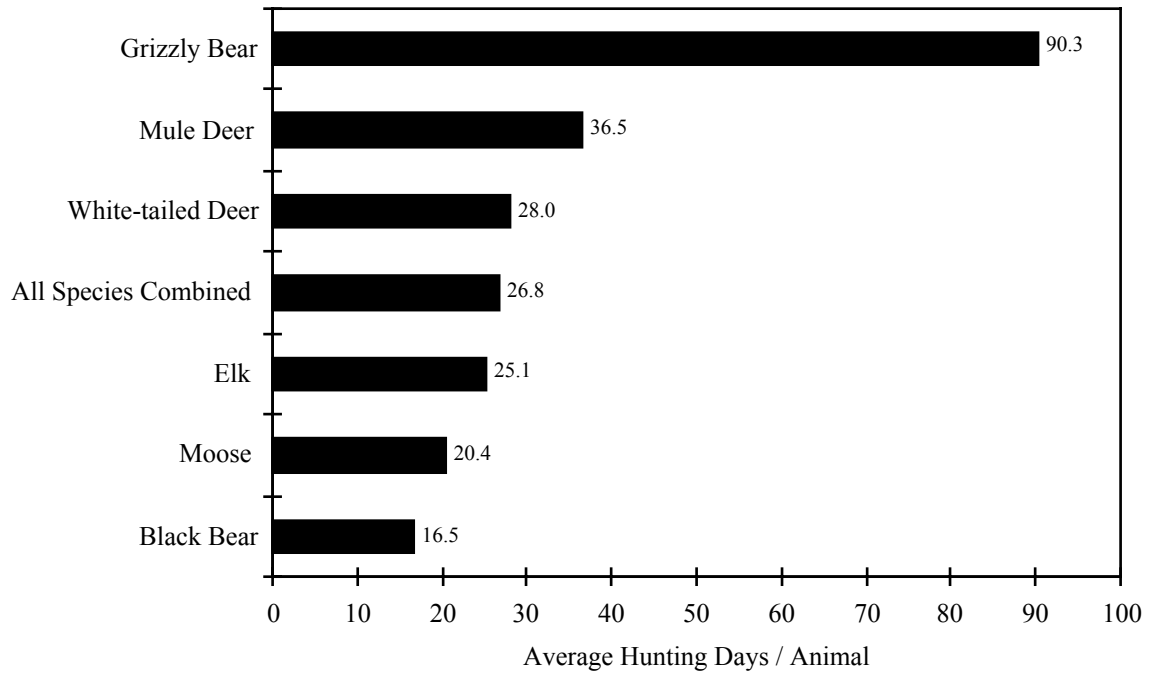


Figure 6. Average number of days per animal harvested in the WMUs of northwest Alberta during 1987–1995. Data Source: Natural Resources Service. This graphic was based on WMUs where animals were harvested and therefore are an underestimate of statistical effort required to harvest an individual.

## **Moose**

Moose are a popular big game species in northwest Alberta, and hunting opportunities draw moose hunters from other parts of the province, Canada, and internationally. Approximately twice as many hunters sought moose as compared to the next leading species, white-tailed deer. On average, between 1987 and 1995, 4,241 hunters annually harvested 1,174 moose in northwest Alberta (Figure 3 and Figure 4). The annual effort expended in hunting moose is approximately 26,374 hunting days, averaging about 20.4 days per moose harvested (Figure 5 and Figure 6).

There are many reasons why moose are the most popular species hunted in northwest Alberta. They are the largest-bodied member of the deer family in North America, make impressive trophies, and provide a large amount of meat for the successful hunter. The average number of days hunted in order to obtain an animal are also relatively low compared to most other big game species as shown in Figure 6. There are also ample opportunities to hunt moose in quite remote areas in northwest Alberta, providing the wilderness experience sought by many hunters. Moose hunting opportunity has been reduced in other parts of the province due to declining populations, but the more liberal hunting seasons available in northwest Alberta has attracted more hunters in recent years. Many other species of big game are harvested incidentally while hunters are hunting moose.

There is a substantial annual fluctuation in the number of moose hunters and days hunted as shown in Figure 7 and Figure 8. Not surprisingly, Figure 9 shows a corresponding fluctuation in the annual harvest of moose. Since 1987, the harvest numbers peaked in 1991, with 6,555 hunters harvesting 1,604 moose, and generally declined thereafter. The effort required to harvest a moose fluctuates annually, likely in response to populations, licensing changes, season dates, and field conditions (Figure 10). The number of hunters and average effort required to successfully harvest a moose varies significantly among WMUs in northwest Alberta (Figure 11 and Figure 12), and may reflect population levels and access within the WMU.

Recent policy and regulation changes have resulted in the loss of small-scale operations and their replacement by large-volume full-time outfitters able to meet the requirements of the new legislation. This reduction in the number of licensed outfitters (226 licensed outfitters, April 1992) has created a more manageable industry, in comparison to the less regulated industry in the past. The outfitting industry remains a very significant contributor to the Alberta economy. In 1991, 2,330 NR/NRA outfitted big game hunters spent \$11,676,600 in Alberta, and the total economic contribution of the outfitted hunting industry in Alberta for 1991 was \$23,082,400 (Excelleration Corp., 1992). Although there has been concern by resident hunters that outfitters are significantly decreasing resident hunting opportunities, analysis of big game hunting licenses sold in Alberta in 1990 indicates that only 2.7% of the 229,785 licenses were purchased by non-resident and non-resident alien (NR/NRA) hunters. Of the estimated 61,471 big game animals harvested in 1990, NR/NRA hunters accounted for only 1.9% (Excelleration Corp., 1992).

Figure 13–Figure 15 indicate the total number of moose license sales in Alberta, as well as a breakdown of the sales to residents and NR/NRA hunters between 1953 and 1996. Similarly, Figure 16–Figure 18 show the estimates of total moose harvest in Alberta between 1953 and 1996, with a breakdown of resident versus NR/NRA harvest.

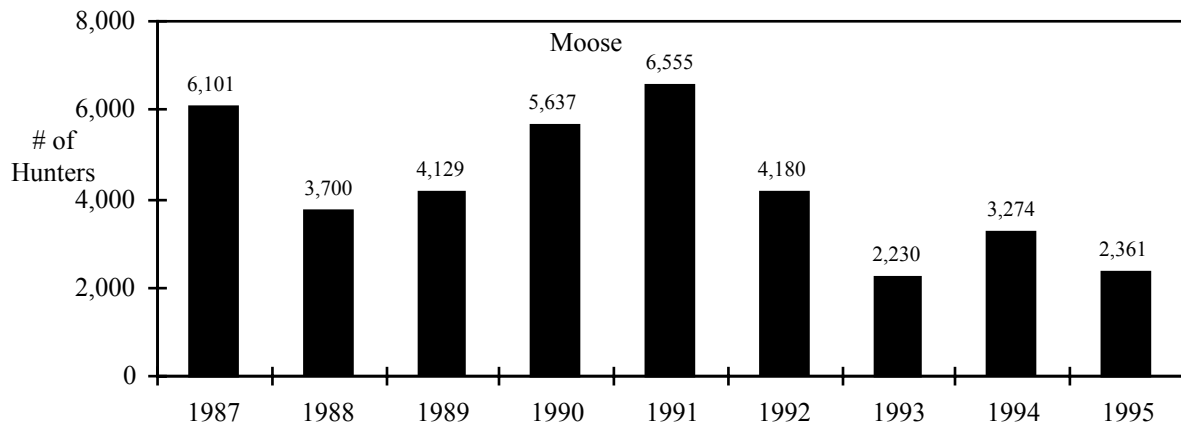


Figure 7. Estimate of number of moose hunters during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

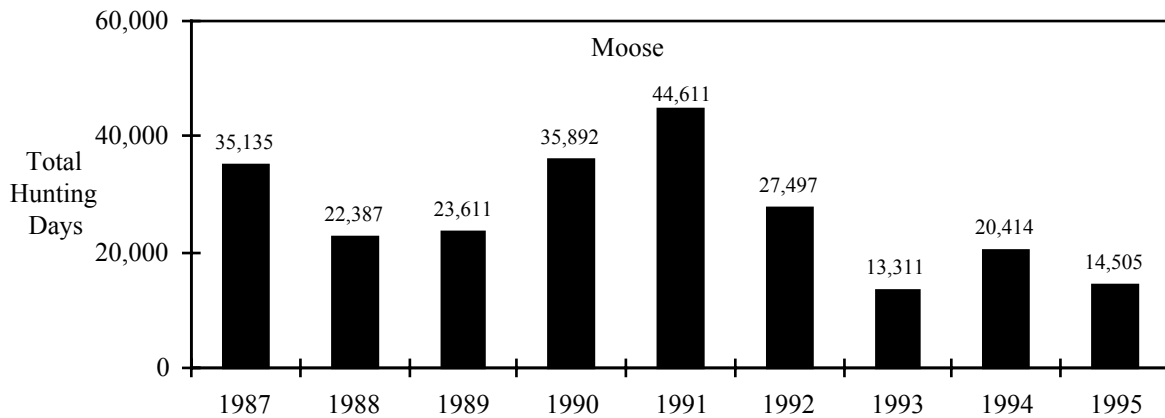


Figure 8. Estimate of total number of hunting days for moose during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

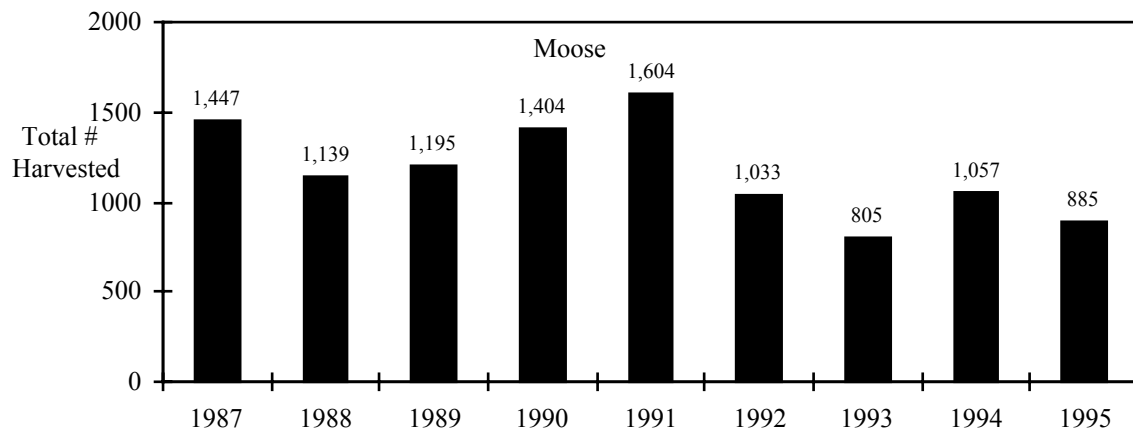


Figure 9. Estimate of total harvest of moose during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

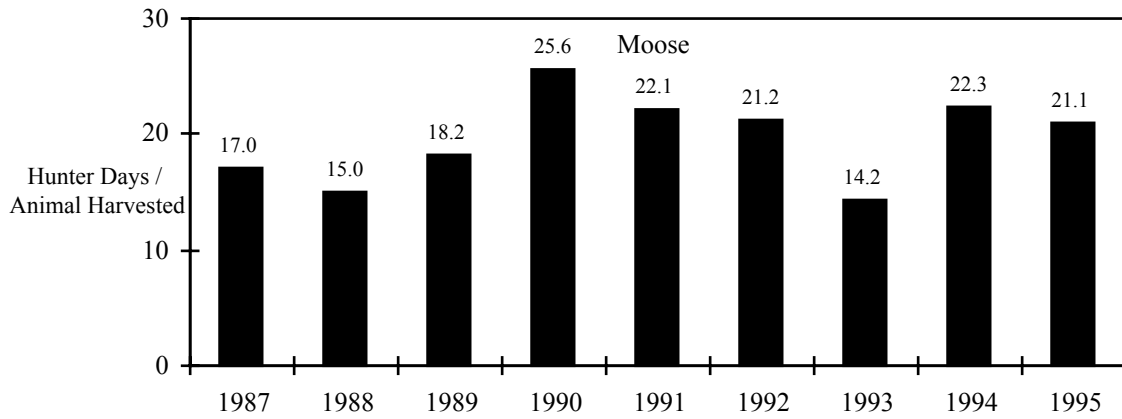


Figure 10. Estimate of average hunting days per moose killed by hunters during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

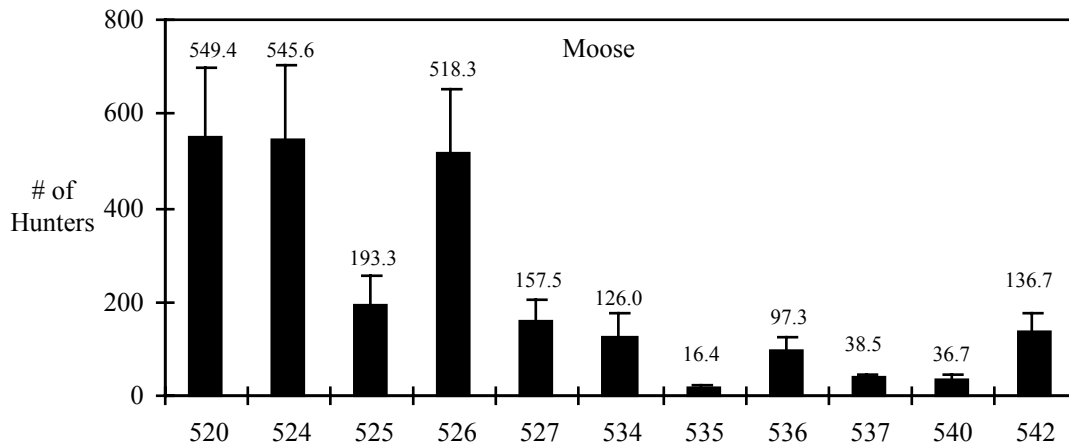


Figure 11. Comparison of average number of moose hunters (+ 1 S.D.) during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

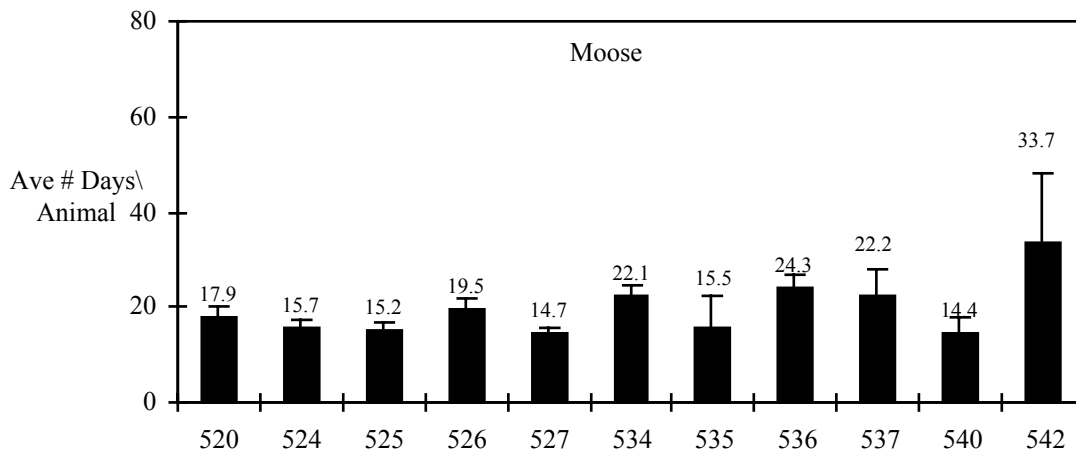


Figure 12. Comparison of average number of hunting days per moose killed (+ 1 S.D.) during 1987–1995 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

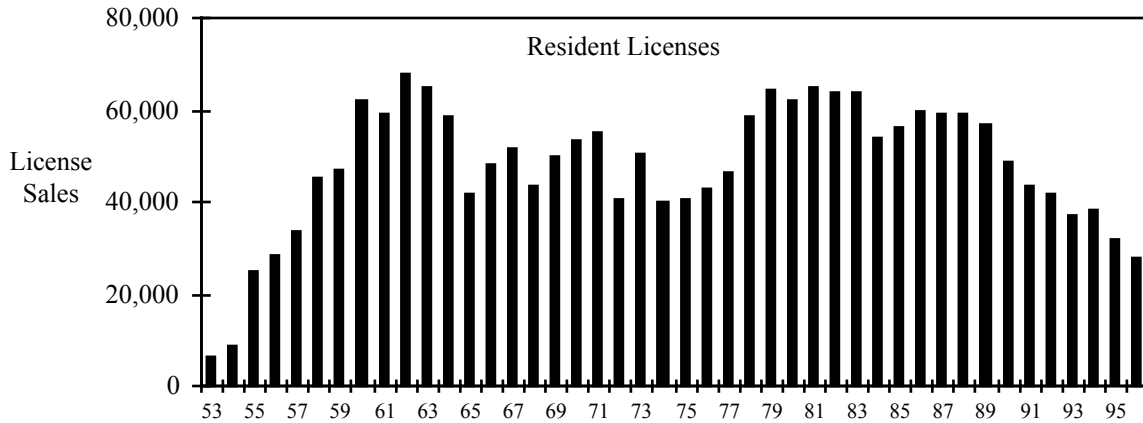


Figure 13. Moose license sales to residents in Alberta (1953–1996). Data Source: Natural Resources Service.

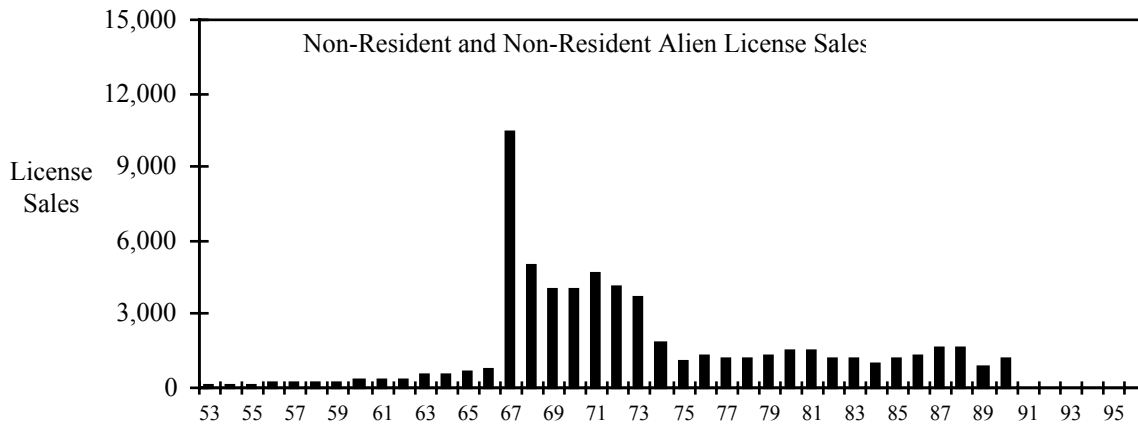


Figure 14. Moose license sales to non-residents and non-resident aliens in Alberta (1953–1996). Data Source: Natural Resources Service.

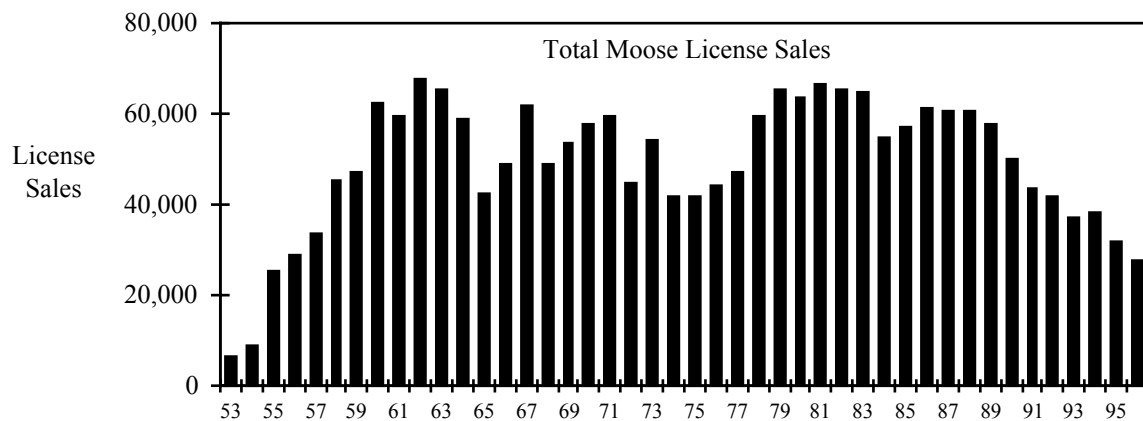


Figure 15. Total license sales for moose in Alberta (1953–1996). Data Source: Natural Resources Service.

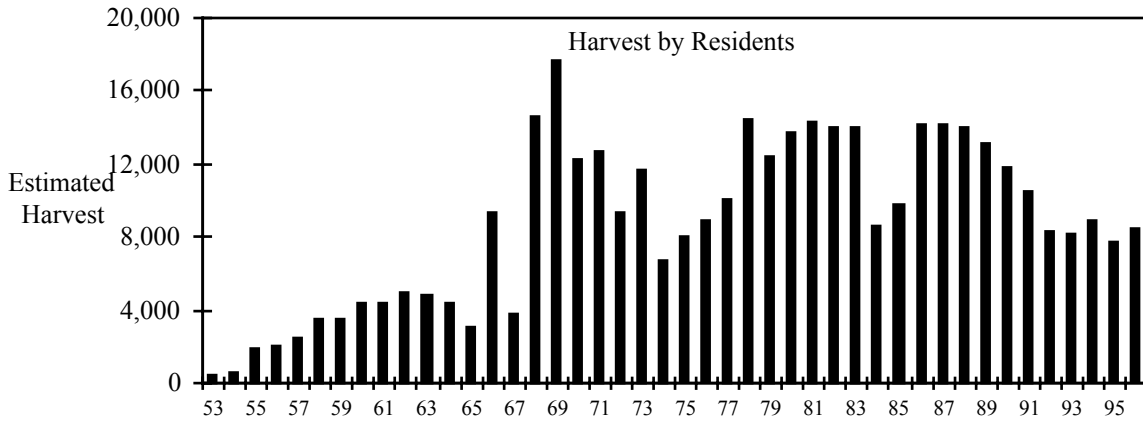


Figure 16. Harvest of moose in Alberta (1953–1996) by residents. Data Source: Natural Resources Service.

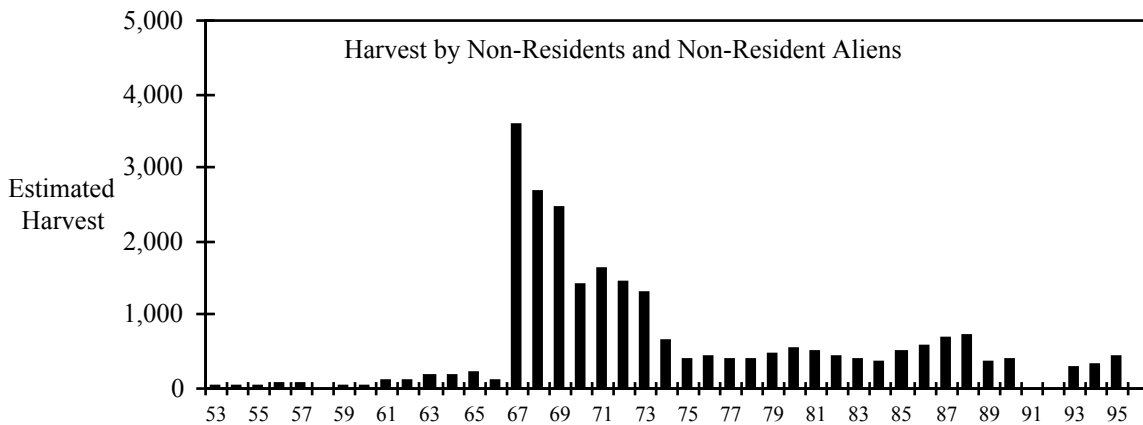


Figure 17. Harvest of moose in Alberta (1953–1996) by non-residents and non-resident aliens. Data Source: Natural Resources Service.

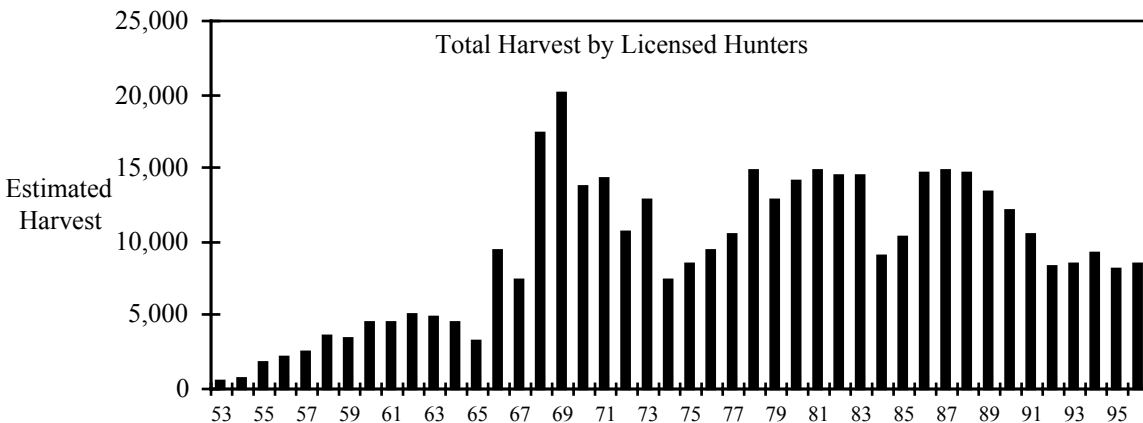


Figure 18. Total harvest of moose in Alberta (1953–1996). Data Source: Natural Resources Service.

### **White-tailed Deer**

White-tailed deer are second only to moose in popularity among northwest Alberta hunters. Between 1987 and 1995, an average of 2,145 hunters harvested 544 white-tailed deer annually (Figure 3 and Figure 4). These hunters spent an average of 14,668 days annually, with an average of 28 days hunted to harvest one animal (Figure 5 and Figure 6). White-tailed deer are generally associated with farmland, and ease of access and good population levels likely contribute to their popularity with hunters.

The number of white-tailed deer hunters, total number of hunting days, and total number of deer harvested fluctuated substantially between 1987 and 1995, and appear to be decreasing in the following years). Figure 22 provides an estimate of the average number of hunting days per animal harvested for each year in the same time period. Figure 23 and Figure 24 indicate the average number of white-tailed deer hunters and the average number of hunting days required to harvest an animal in each WMU for the period 1987 to 1995. Although no statistical analysis was done, there appears to be a similar trend in the number of moose and white-tailed deer hunters in the various WMUs (Figure 11 and Figure 23). It is possible that white-tailed deer were being hunted incidentally to moose in many WMUs. Substantial variability in the number of days required to harvest a white-tailed deer between WMUs is noted in Figure 24.

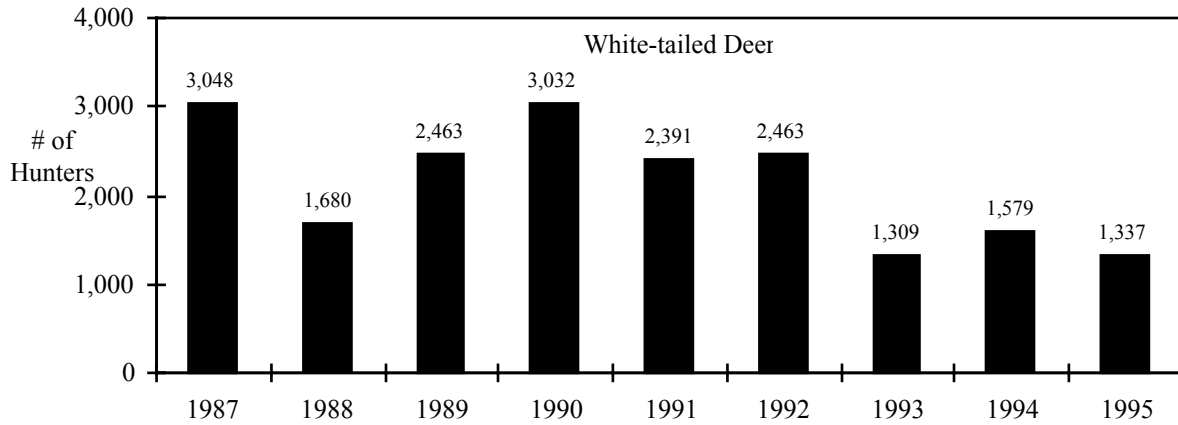


Figure 19. Estimate of number of white-tailed deer hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

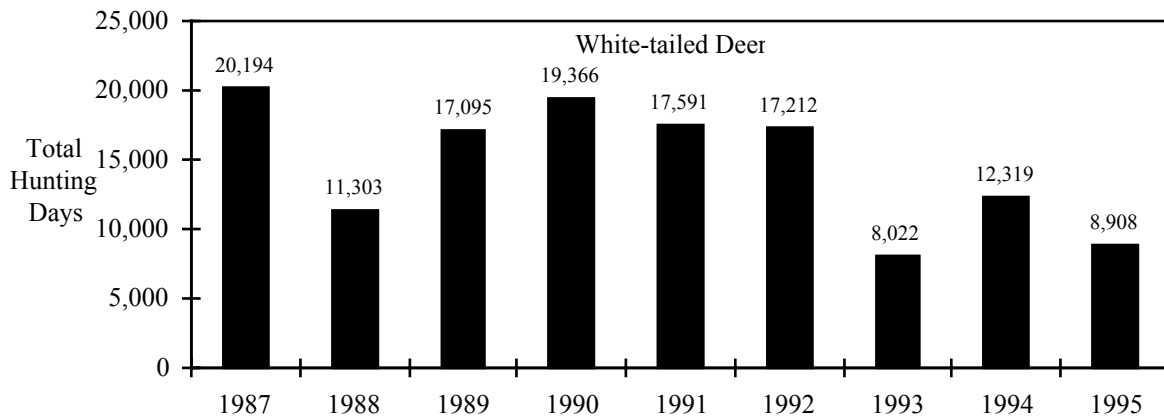


Figure 20. Estimate of total number of hunting days for white-tailed deer during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

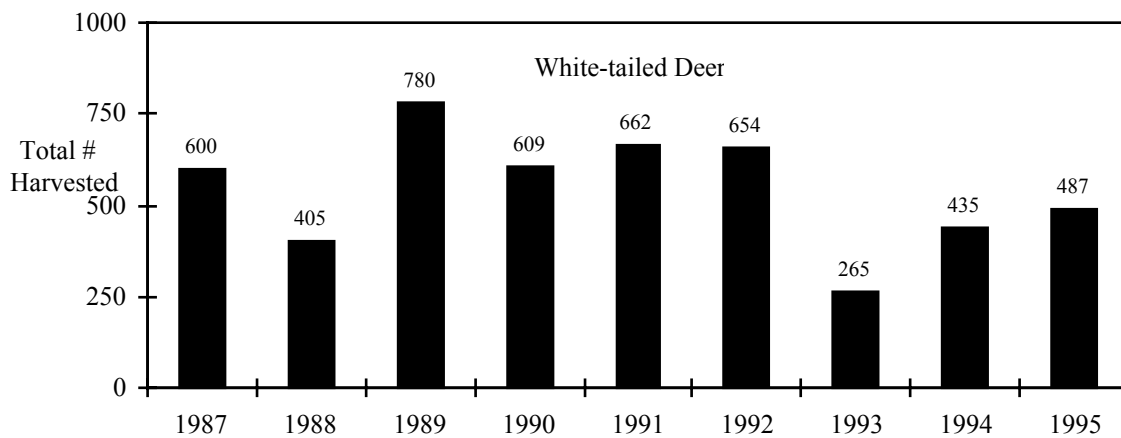


Figure 21. Estimate of total harvest of white-tailed deer during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

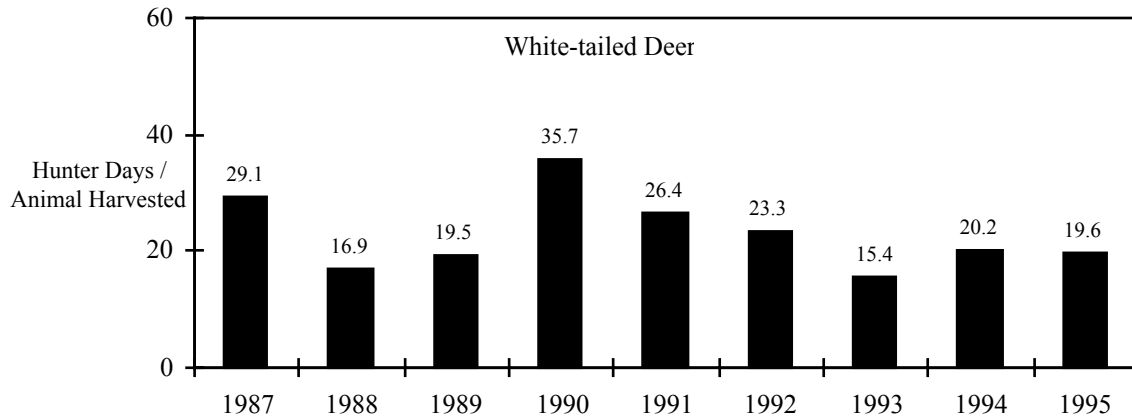


Figure 22. Estimate of average hunting days per white-tailed deer killed by hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

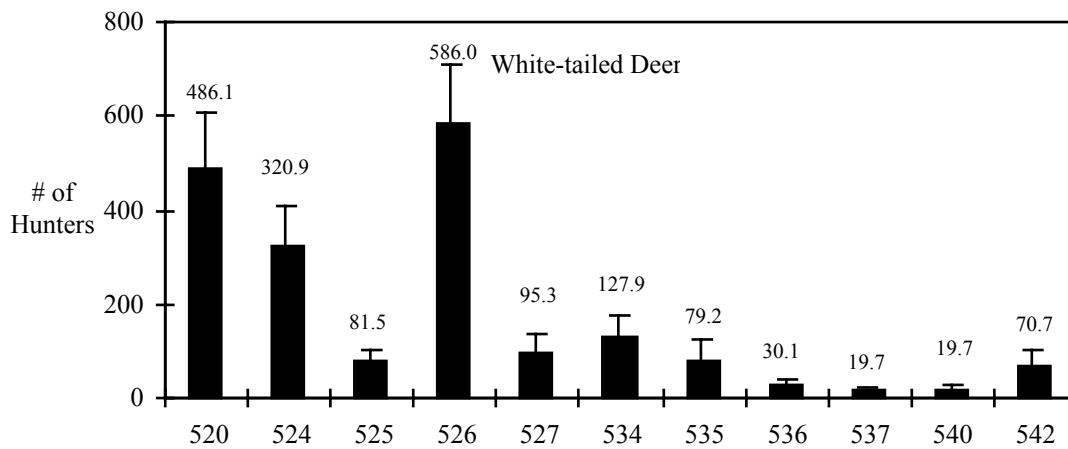


Figure 23. Comparison of average number of white-tailed deer hunters (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

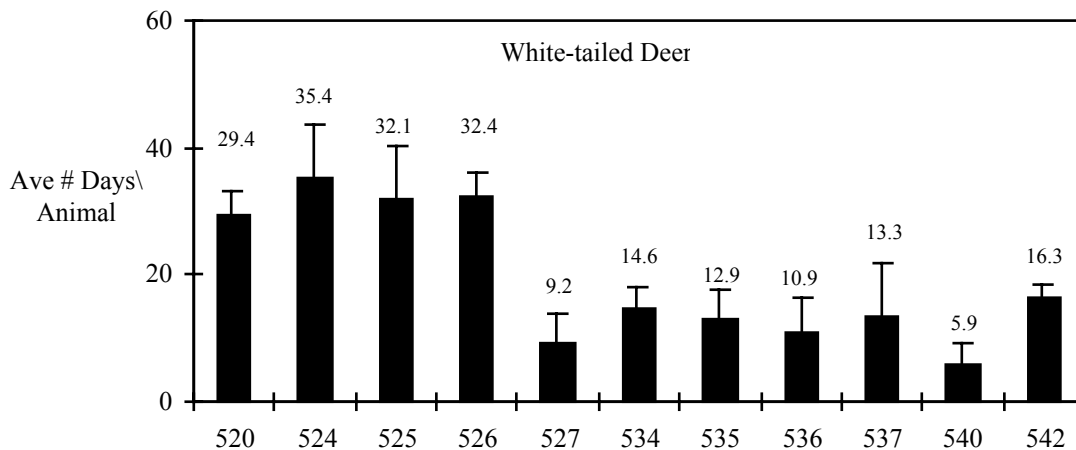


Figure 24. Comparison of average number of hunting days per white-tailed deer killed (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

## **Mule Deer**

Mule deer are the third most common species hunted in northwest Alberta (Figure 3). Between 1987 and 1995, an average of 1,494 hunters harvested 434 mule deer annually (Figure 3, Figure 4). These hunters spent an average of 10,619 days annually, with an average of 36.5 days hunted to harvest one animal (Figure 5, Figure 6). They are a common ungulate of the study area, and are well distributed throughout the region. The highest populations of mule deer tend to be associated with the valleys of the Peace River and its tributaries. The reduced accessibility of this habitat may result in the higher average number of days required to harvest an animal, as compared to that of white-tailed deer (Figure 6).

As with moose and white-tailed deer, the number of mule deer hunters, total number of hunting days, and total number of animals harvested has fluctuated substantially between 1987 and 1995 (Figure 25, Figure 26, Figure 27). The hunting effort and harvest level peaked in 1992, and as with moose and white-tailed deer, appears to have declined in the more recent years. Figure 28 shows the variability in the average number of hunting days to harvest an animal for the same time period.

Figure 29 and Figure 30 show the variability in the number of hunters and average days to successfully harvest a mule deer in the various WMUs in northwest Alberta. The data indicate a strong preference for MWU 526 by mule deer hunters. This WMU contains a long expanse of prime mule deer habitat along the south facing slopes of the Peace River, as well as the valleys of its many tributaries. There are many access points for hunters within this prime habitat. The area has a relatively high human population, which affords good hunting opportunities close to town.

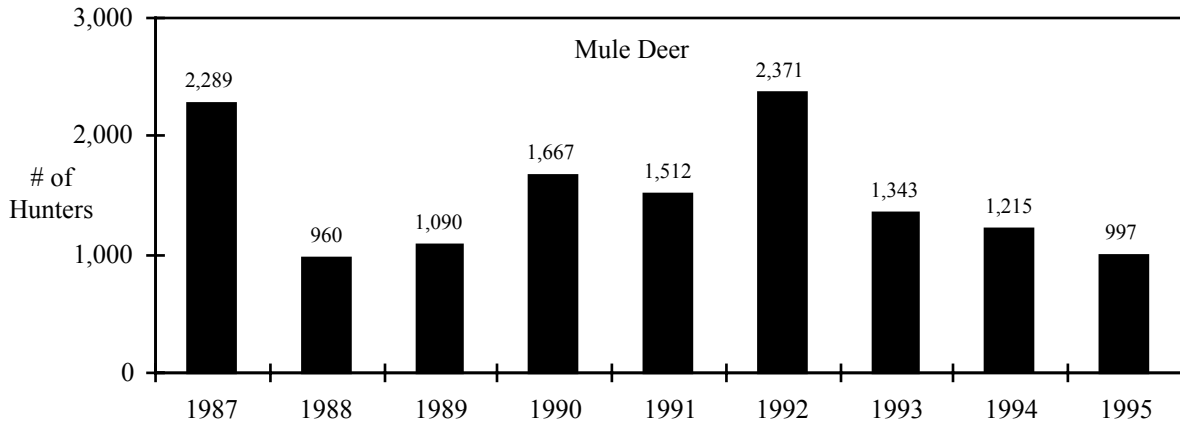


Figure 25. Estimate of number of mule deer hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

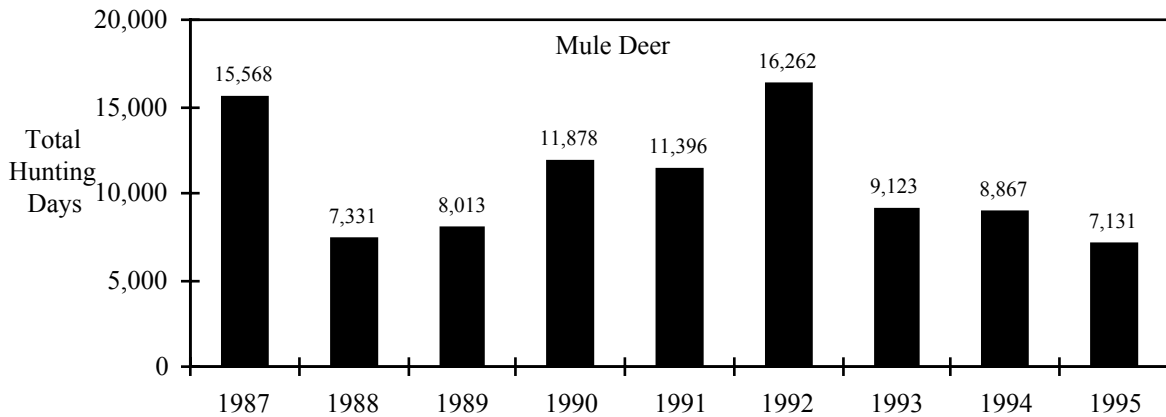


Figure 26. Estimate of total number of hunting days for mule deer during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

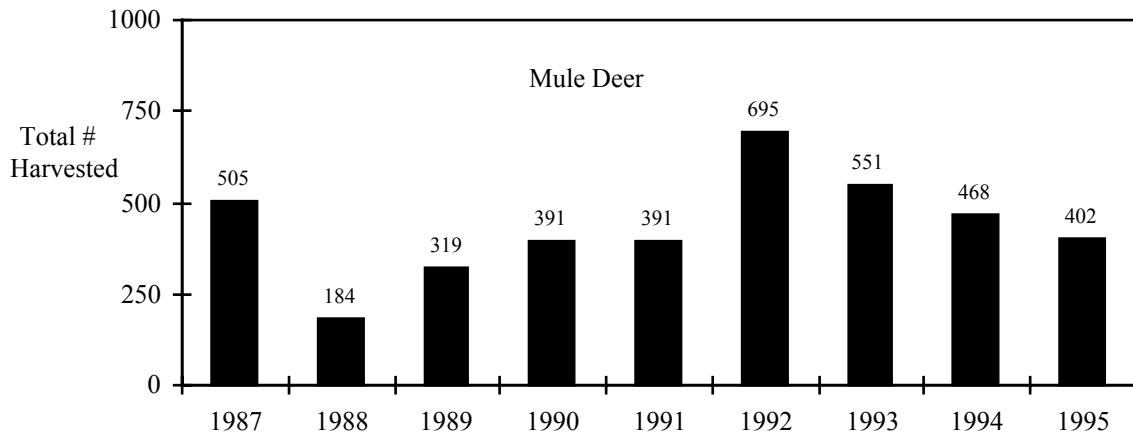


Figure 27. Estimate of total harvest of mule deer during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

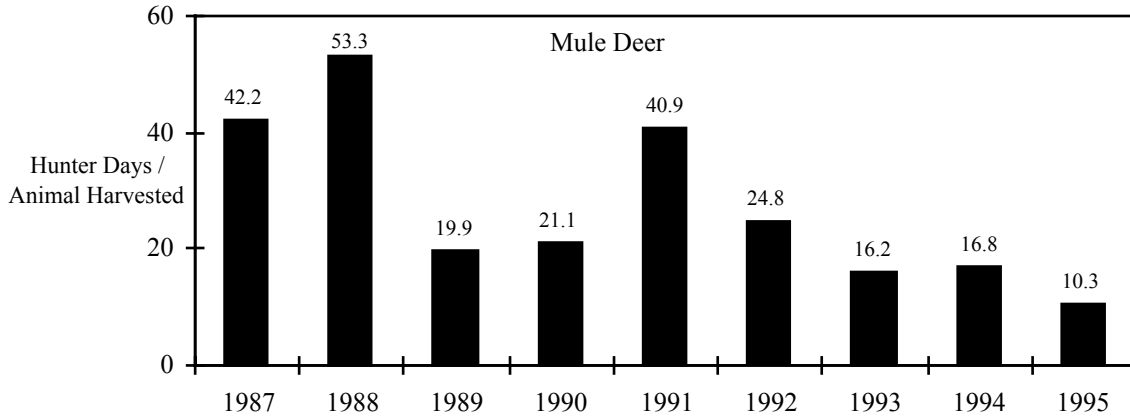


Figure 28. Estimate of average hunting days per mule deer killed by hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

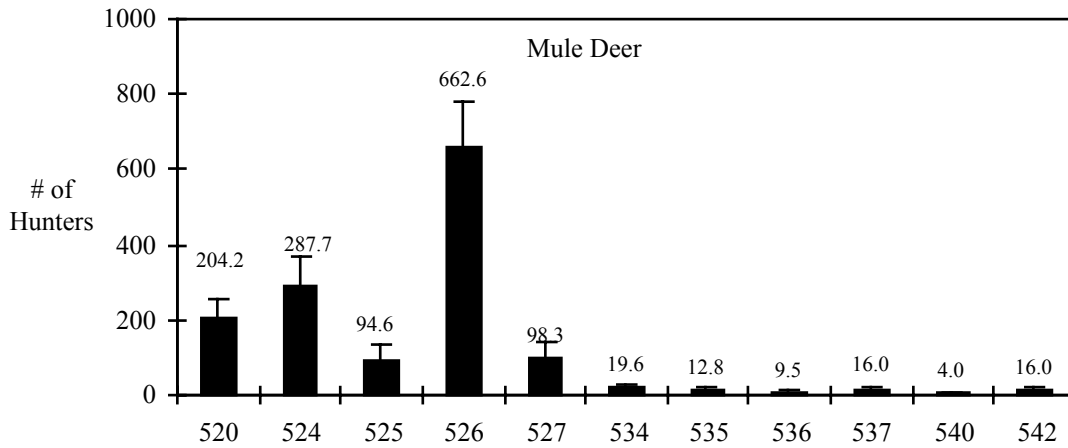


Figure 29. Comparison of average number of mule deer hunters (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

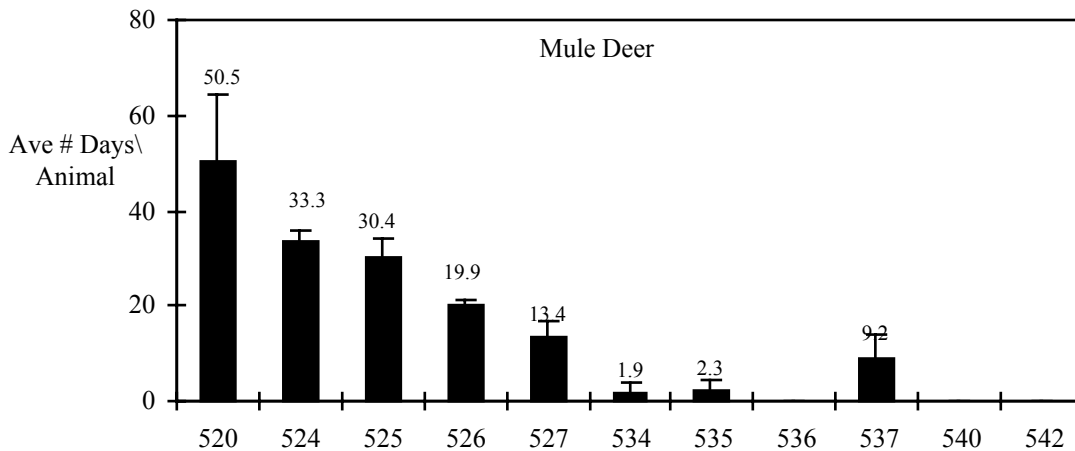


Figure 30. Comparison of average number of hunting days per mule deer killed (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service

## **Black Bear**

Black bears are the fourth most common big game species hunted in northwest Alberta. Between 1987 and 1994, an average of 542 hunters harvested 182 black bear annually (Figure 3, Figure 4). These hunters spent an average of 3,086 days annually, with an average of 16.5 days hunted to harvest one animal ((Figure 5, Figure 6). Black bears are commonly hunted for their hides and meat. Both spring and fall seasons are available with spring hunting being popular as a change from the usual fall hunt. Baiting of black bears is also allowed in some WMUs, an option that is used by many bear hunters.

Figures 31, 32, and 33 show the estimated number of bear hunters, total number of hunting days and number of black bears harvested annually between 1987 and 1994, respectively. The actual harvest of black bears in northwest Alberta is likely significantly higher than indicated, as land owners can hunt black bear on their property without a license, and First Nations people can do the same on unoccupied crown land. Figure 34 shows the substantial annual fluctuation in the number of hunting days required to successfully harvest an animal between 1987 and 1994. Reasons for this variability may include bear population levels, field conditions, and bear response to bait as influenced by other food availability.

There is substantial variability in the number of hunters and the number of days to harvest a black bear between the various WMUs in northwest Alberta for the period 1987 to 1994 (Figure 36, Figure 37). The number of black bear hunters follows a similar pattern to the number of moose hunters (Figure 11), which may suggest some degree of incidental hunting of bears while hunting moose during the fall season.

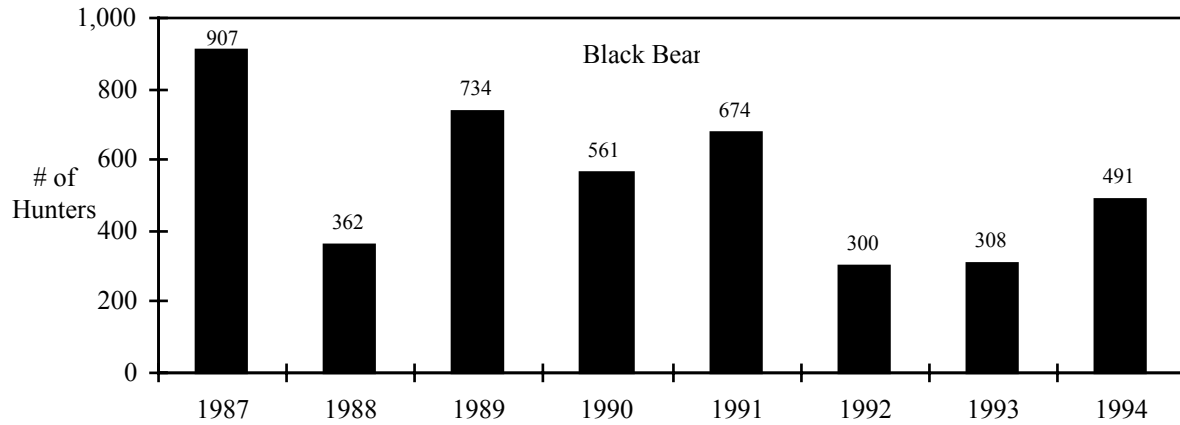


Figure 31. Estimate of number of black bear hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

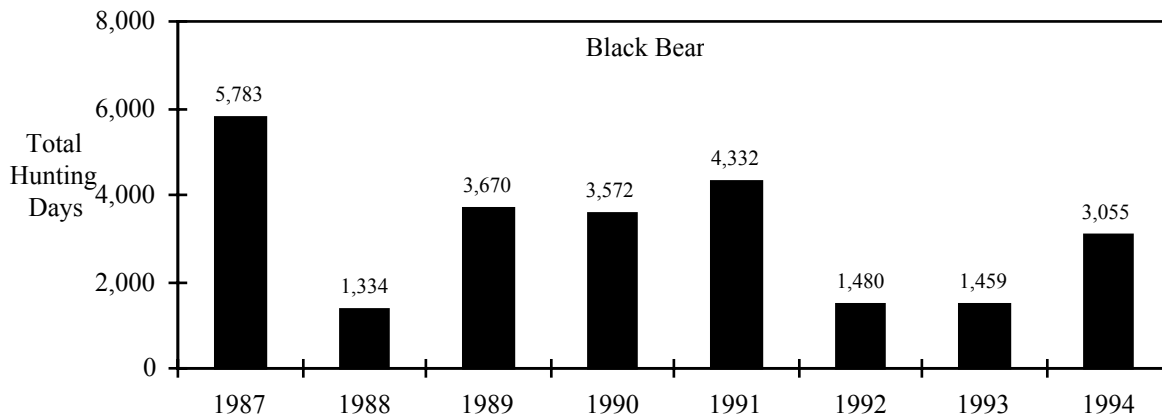


Figure 32. Estimate of total number of hunting days for black bear during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

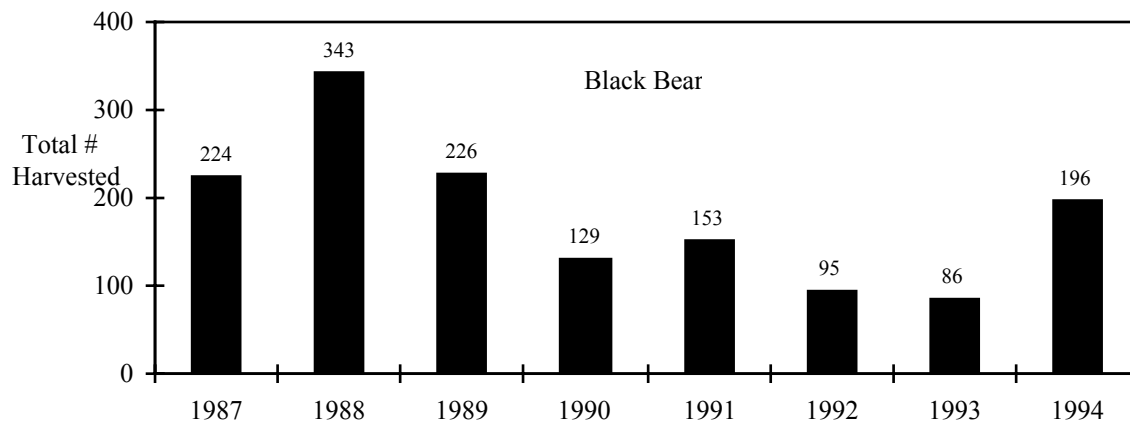


Figure 33. Estimate of number of black bear harvested during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

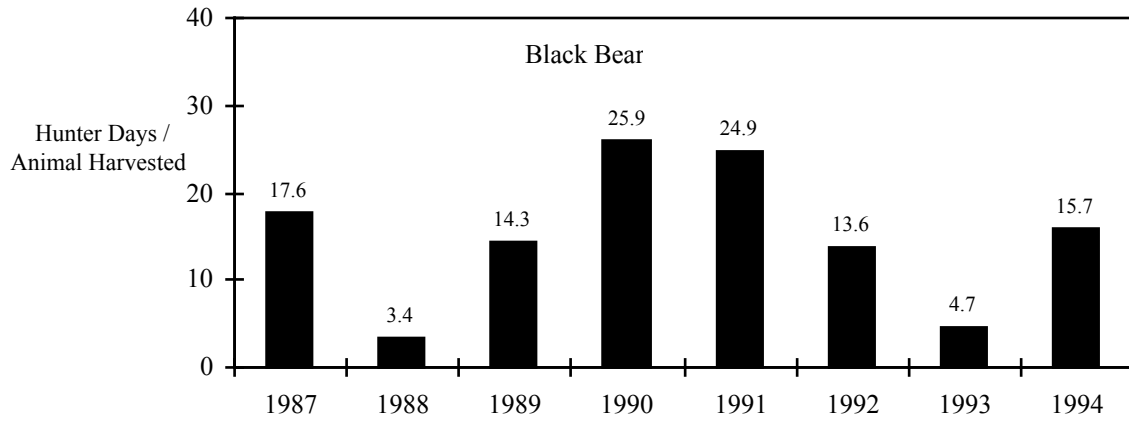


Figure 34. Estimate of average number of hunting days per black bear killed during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

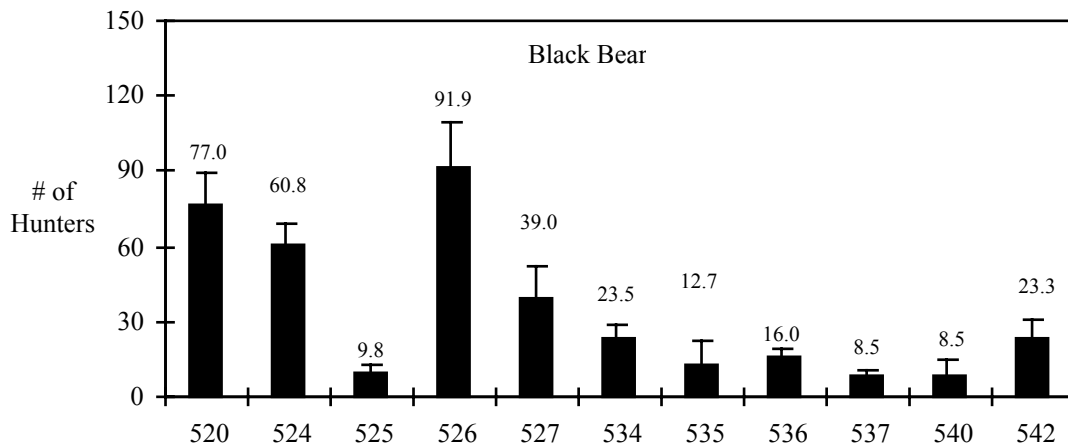


Figure 35. Comparison of average number of black bear hunters (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

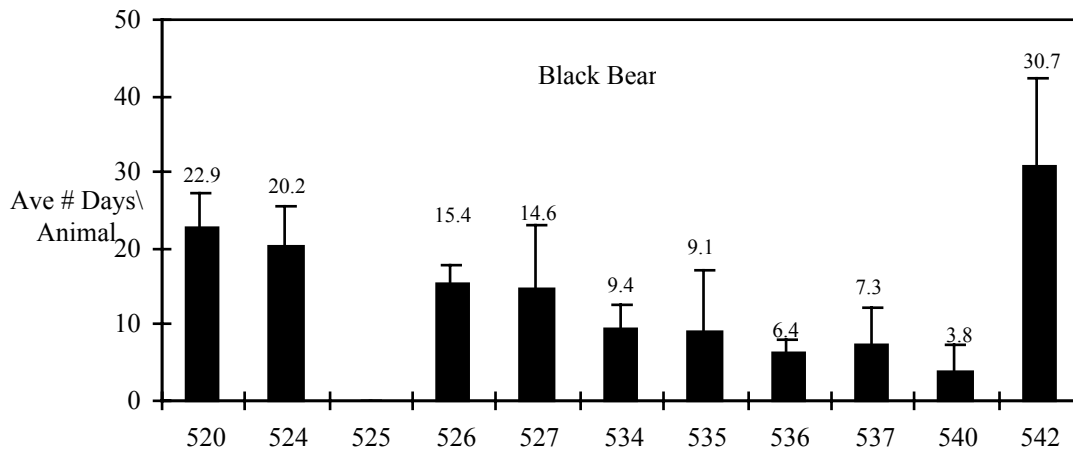


Figure 36. Comparison of average number of hunting days per black bear killed (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

## **Elk**

Although elk represent a small percentage of the animals harvested in northwest Alberta between 1987 and 1995 (Figure 3, Figure 4), they are a highly sought after trophy. An average of 78 hunters harvested 7 elk annually. These hunters spent an average of 424 days annually, with an average of 25.1 days hunted to harvest one animal (Figure 5, Figure 6).

Figure 37–Figure 39 indicate the number of elk hunters, total number of hunting days and the total harvest of elk in WMUs in northwest Alberta between 1987 and 1995. Changes to the hunting license structure may have resulted in the decrease in hunting effort in 1991, however it is interesting to note that there is not a corresponding decrease in harvest. There is substantial variability in the number of hunting days required to harvest an animal from one year to the next (Figure 40).

Elk are not widely distributed in the study area. Introductions of elk in WMU 527 occurred in the 1960's, and these elk have become a well-established population, and are migrating to adjacent areas. Elk are becoming more numerous in WMU 526, and a hunting season in this area will be available in 1999. Elk were also introduced into WMU 520 in the 1990's, however the population has not become well established to the extent of allowing a hunting season. Elk have also migrated into WMU 527 and WMU 523 from the WMU 520 introduction sites. Figure 41 and Figure 42 reflect the limited opportunity to hunt elk in northwest Alberta.

Changes to the boundary of WMU 526 in 1993 create some challenges in interpreting the hunter and harvest statistics for elk. Prior to 1993, WMU 526 included all of the area of what is now WMU 527. Virtually all of the elk hunted and harvested in WMU 526 (Figure 41, Figure 42) occurred in the portion that is now WMU 527. Figure 41 and Figure 42 represent a short chronology of changes in elk hunting in the Deadwood/Manning area, with the data for WMU 526 representing the time period from 1987 to 1993, and WMU 527 representing the period 1994 to 1995. These two figures suggest a decrease in the number of elk hunters in the later period, but a corresponding decrease in the average number of days invested to harvest an animal. From the time of the boundary change, no elk hunting season has been available in the revised WMU 526, however the population levels are sufficient that a hunting season will be available in 1999.

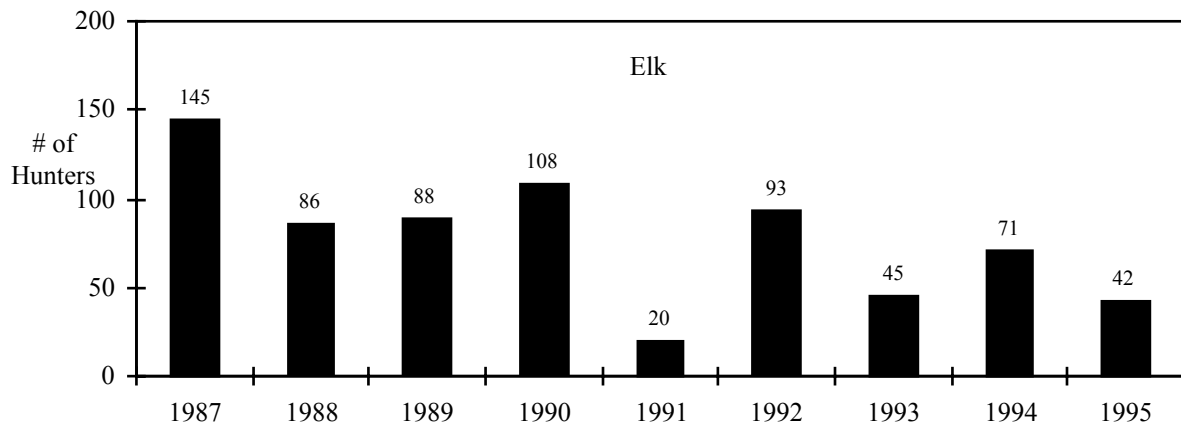


Figure 37. Estimate of number of elk hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

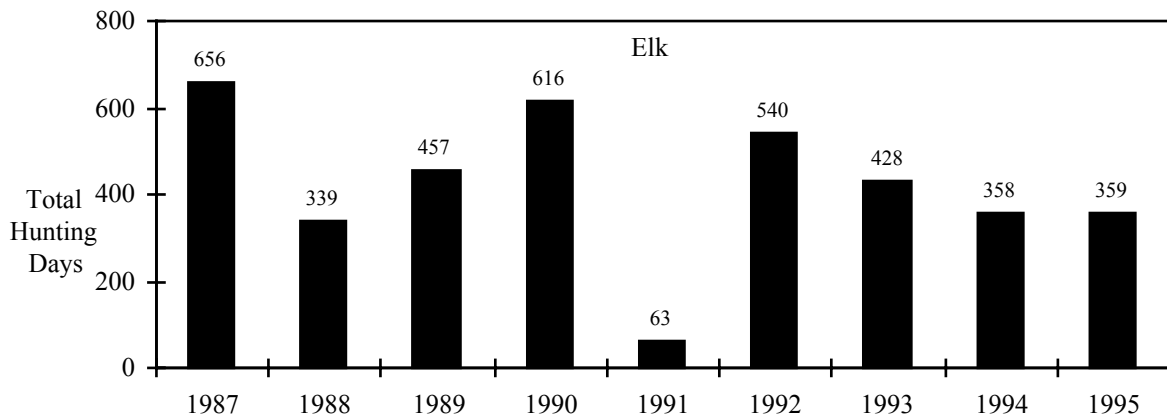


Figure 38. Estimate of total number of hunting days for elk during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

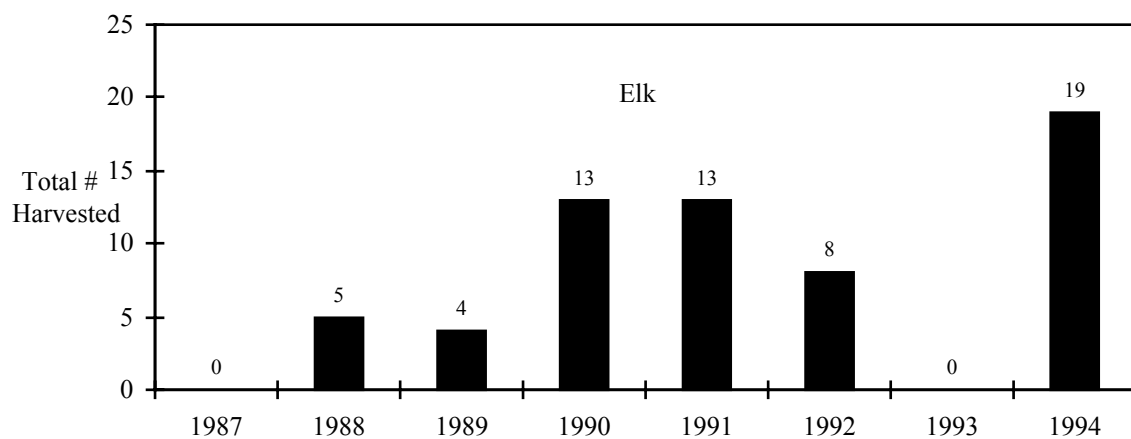


Figure 39. Estimate of total harvest of elk during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

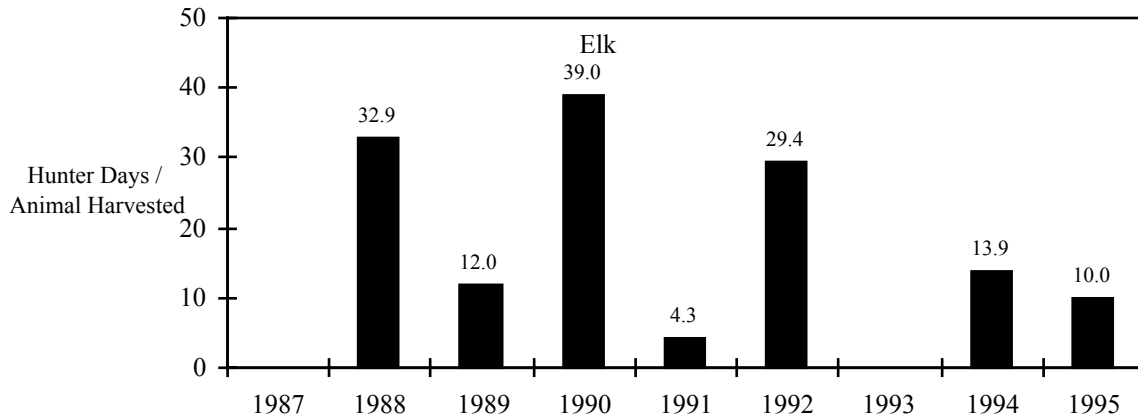


Figure 40. Estimate of average hunting days per elk killed by hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

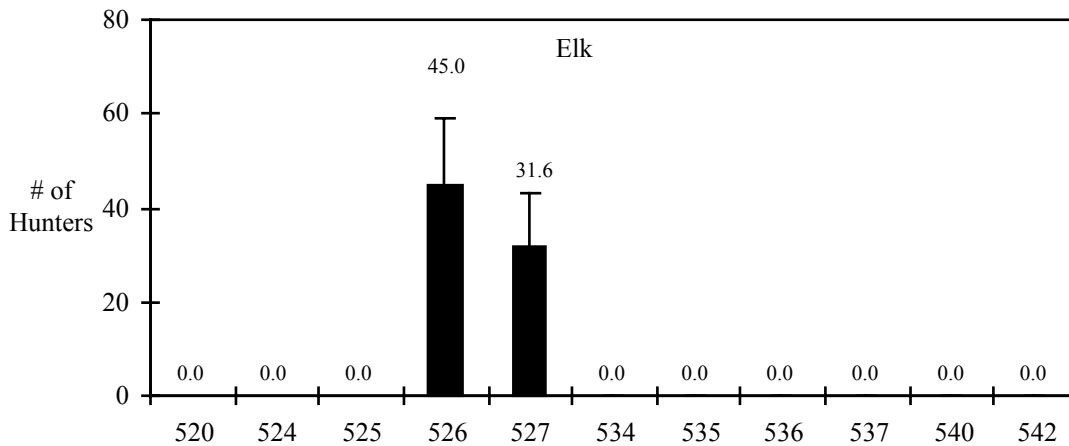


Figure 41. Comparison of average number of elk hunters (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

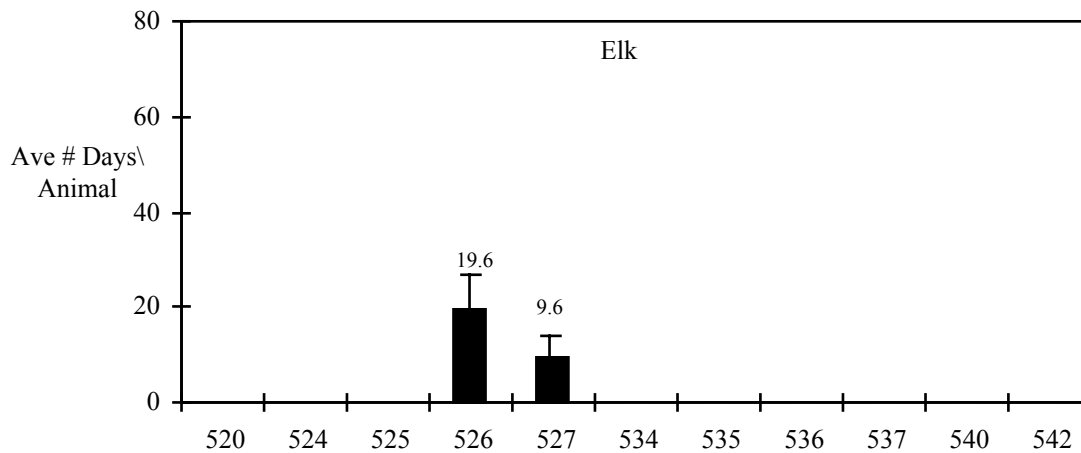


Figure 42. Comparison of average number of hunting days per elk killed (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

## **Grizzly Bear**

Grizzly bear hunters are the least numerous hunters in northwest Alberta based on 1987-1994 data. An average of only 30 hunters per year hunted grizzly bear, with an average of 2 bears per year being harvested (Figure 3, Figure 4). These hunters spent an average annual total of 228 days hunting grizzly bear (Figure 5). Figure 6 shows that an average of 90.3 hunting days per grizzly bear harvested, by far the highest of any big game species in northwest Alberta. This is predictable, considering the remote nature of the bears' habitat, and their low population densities. Grizzly bear hunting is only permitted in the spring, with a limited number of tags available. Fall seasons have not been available since 1988. This is due, in part, to a need to prevent the incidental harvest of grizzly bears during overlapping fall seasons. Current seasons and licensing structure provide the greatest opportunity for hunters specifically interested in hunting grizzly bears, considering the limited number of tags that are available.

Figure 43–Figure 45 show the fluctuation in number of grizzly bear hunters, number of days hunted and number of bears harvested between 1987 and 1994. The numbers peaked in 1989 with 64 hunters harvesting 6 bears. The numbers have generally declined since. Figure 46 indicates the average number of hunting days per grizzly bear harvested. The variability between WMUs for the number of grizzly bear hunters per WMU, and the average number hunting days per bear harvested are summarized in Figure 47 and Figure 48. Note that there were changes to the licensing structure and season dates in about 1988 that reduced the units in which hunting was allowed. A significant change to the boundary of several WMUs, including 526, also occurred during this period, which makes it more difficult to interpret the hunter effort shown in Figure 47.

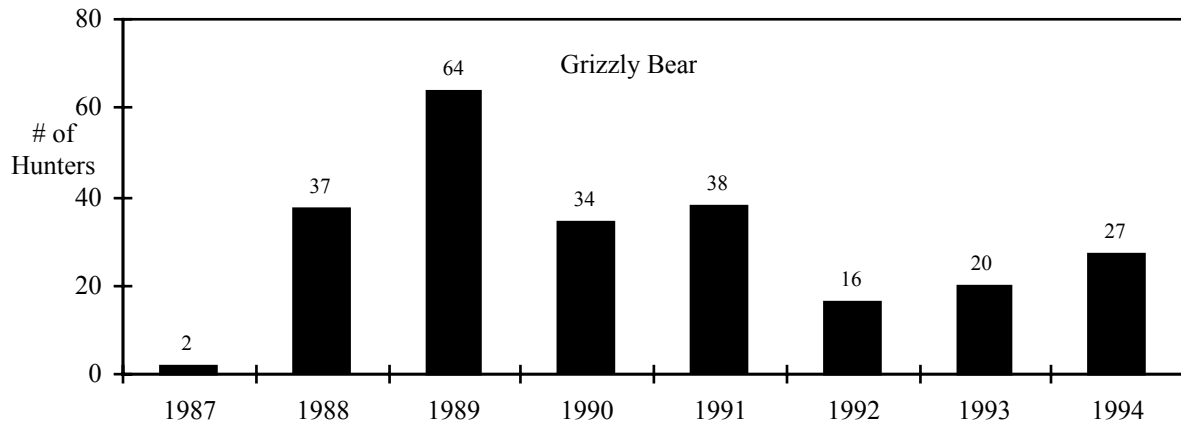


Figure 43. Estimate of number of grizzly bear hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

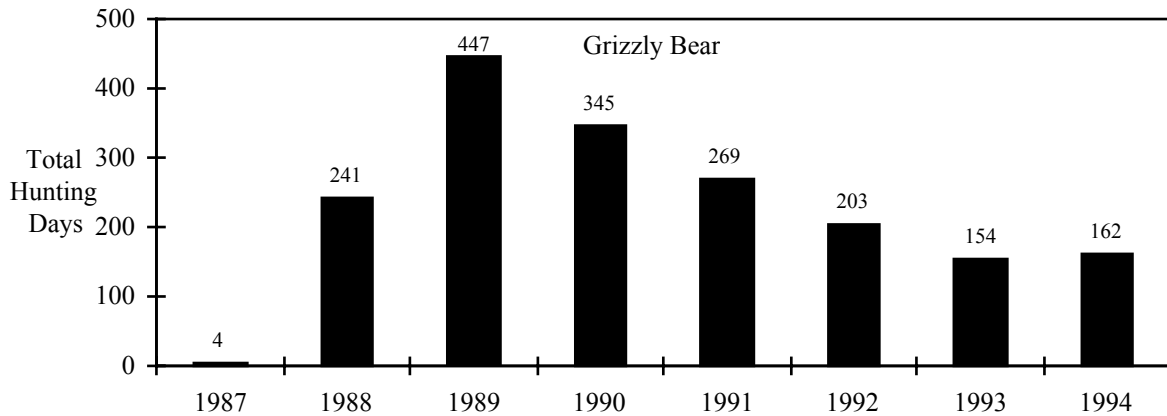


Figure 44. Estimate of total number of hunting days for grizzly bear during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

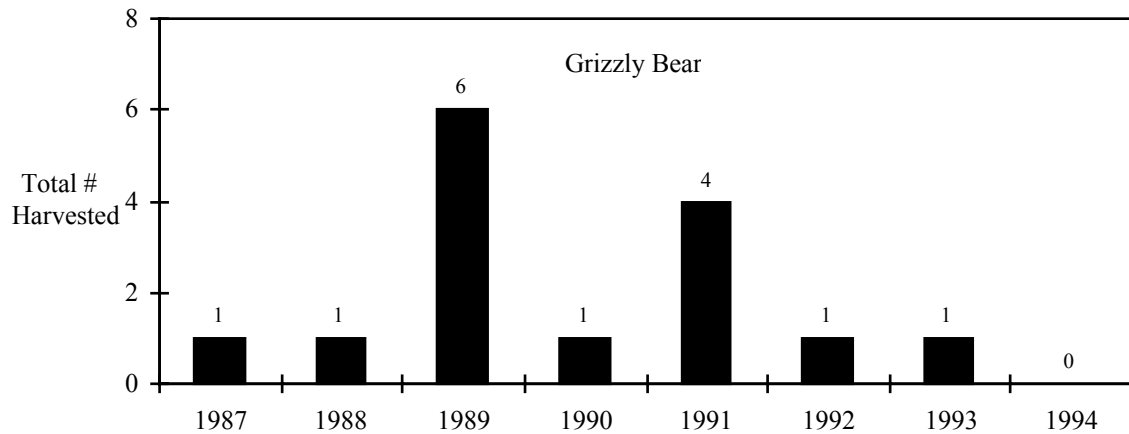


Figure 45. Estimate of number of grizzly bear killed by hunters during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

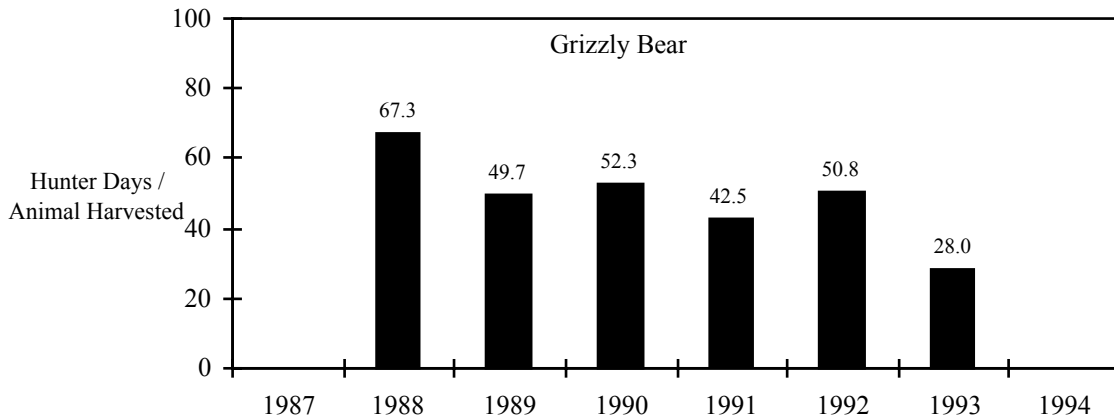


Figure 46. Estimate of average number of hunting days per grizzly bear killed during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

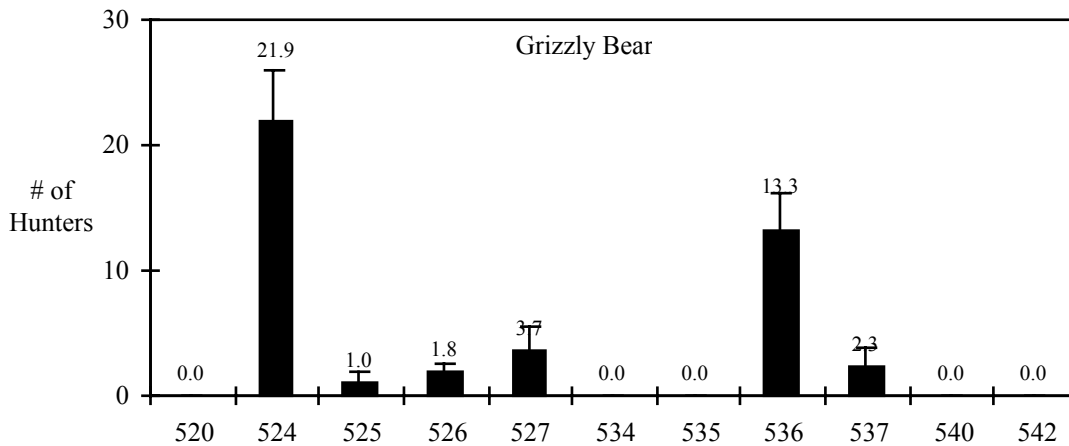


Figure 47. Comparison of average number of grizzly bear hunters (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

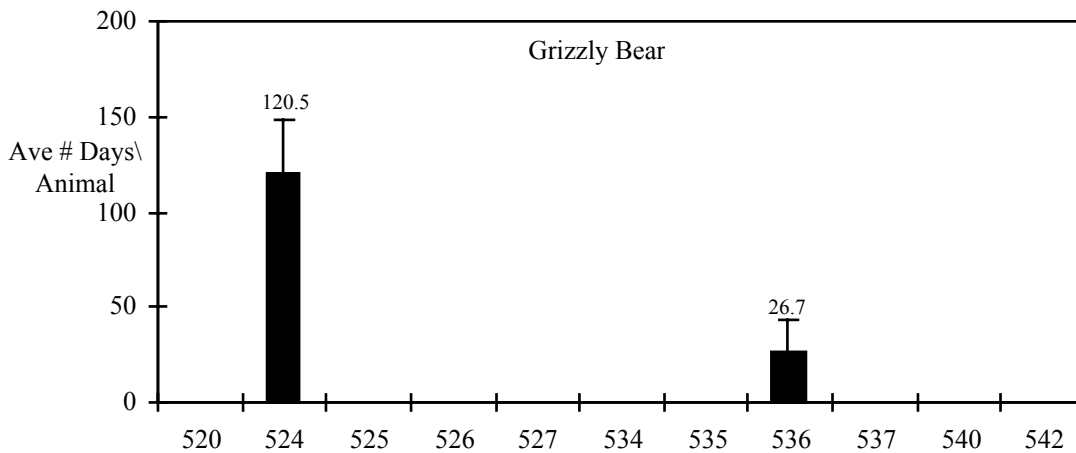


Figure 48. Comparison of average number of hunting days per grizzly bear killed (+ 1 S.D.) during 1987–1994 for WMUs in northwest Alberta. Data Source: Natural Resources Service.

## Woodland Caribou

The sport hunting season for woodland caribou was closed provincially in 1982 due to concerns over declining populations. Data regarding the license sales and harvest in northwest Alberta prior to 1982 have not been included in this synopsis. First Nations people can still legally harvest caribou on unoccupied crown land in Alberta.

## Temporal Changes in Hunting Participation

Although the number of hunters in Alberta generally increased along with the provincial human population from the 1950's to the late 1970's, there has been a noticeable decrease in hunting license sales since 1980 (Figure 49). There are several explanations for this recent downward trend, including reduced disposable income caused by a faltering petrochemical economy, loss of the hunting tradition as fewer parents introduce their children to hunting, continued urbanization, and a growing and more vocal anti-hunting community (Stelfox, 1993).

In recent decades, Alberta's hunting community has aged faster than the provincial population, and clearly has a problem recruiting significant numbers of young hunters. The proportion of hunters in the 15-19 and 20-24 year age-classes declined significantly from 1974 to 1984 (Boxall and Smith, 1986).

Although the majority of Albertans live in large urban centres, about 60 percent of Alberta's hunting community comes from rural settings or small towns. Urbanites from Edmonton, Calgary, Red Deer and Lethbridge represented about 40 percent of Alberta's resident hunters in 1984, and have declined by 8 percent since 1974 (Boxall and Smith, 1986). Continued urbanization of Alberta's population, and the apparent growing disinterest of young rural people for hunting (Boxall and Smith, 1986) suggest that hunting will continue to decline in the province (Stelfox, 1993).

Perhaps the most disturbing trend concerning hunting in Alberta today is the growing disfavor the public holds for hunters. As society's interest in non-consumptive use of wildlife grows, greater concern about the merits of sport hunting has been expressed (Stelfox, 1993).

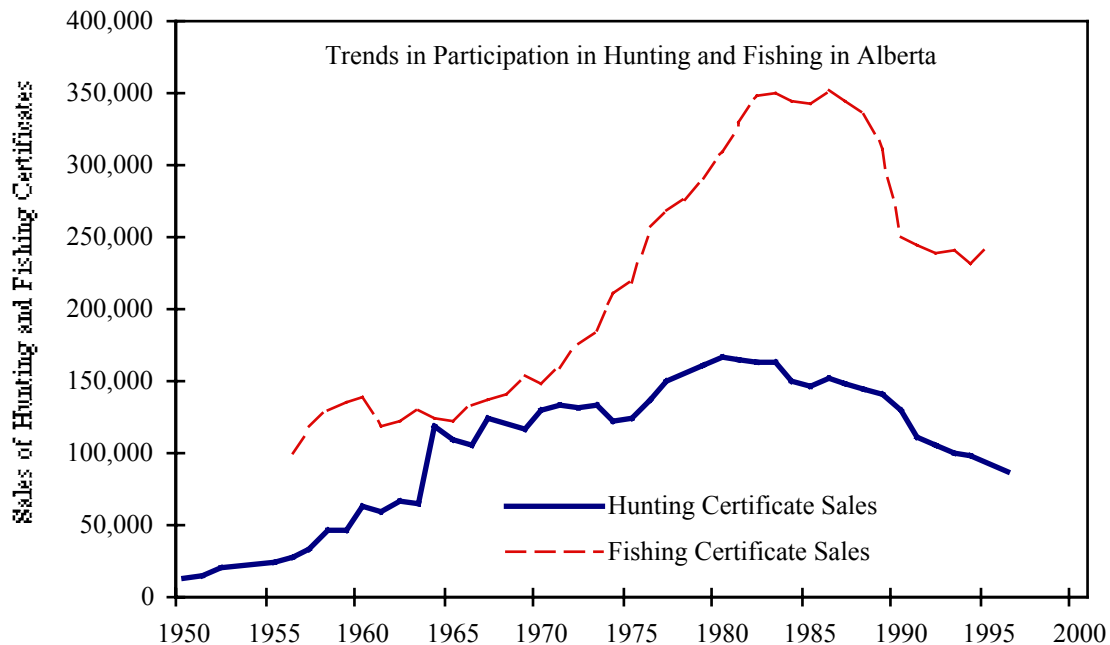


Figure 49. Trends in license sales for big game hunting and fishing in Alberta (1950–1997). Data Source: Natural Resources Service.

# Sport, Commercial, and Domestic Fishing

## Fisheries Management

The study area lies within Fisheries Management Area 6 (FMA 6), the Northwest Boreal Region designated by the Natural Resources Service of Alberta Environmental Protection. The region contains diverse ecoregions ranging from foothills to sub-Arctic and a wide diversity of fish species and habitats. Larger lakes in the region support commercial, sport and domestic fisheries for lake whitefish, walleye, pike, and perch. At present, sport fish populations in lakes are thought to be stable (D. Walty, Fisheries Biologist, Northwest Boreal Region, pers. comm.). In contrast, sport fisheries of pike and walleye have significantly declined throughout northeast and central Alberta, a pattern that has been attributed to overfishing associated with increased access and larger sportfisher population (M. Sullivan, Fisheries Biologist, Northeast Boreal Region, pers. comm.). Stocking trout in shallow, productive lakes in the region has increased angling opportunities, yet many of these lakes require aeration to overwinter fish. Because of the costs of stocking fish on a regular basis, attempts will be made, where possible, to establish self-sustaining populations.

Sport fish populations in the regions' rivers are generally thought to be stable (D. Walty, Fisheries Biologist, Northwest Boreal Region, pers. comm.). However, increased activity in the forestry and oil and gas industries have resulted in improved access to streams, habitat deterioration and large scale changes in the landscape (see Chapters 8 and 9). Programs that look at river and stream inventory, identification of critical habitats for protection planning and mitigation are being developed with help of both industries.

In the past, the Fisheries Management Division ran a spawn camp on the Petitot River in Alberta to collect walleye eggs for provincial fish hatcheries, and although the Petitot River is still designated as a source of walleye spawn, it has not been used in recent years. As well, in the past, Arctic grayling eggs have been collected from a spawn camp on the Beaverlodge River, and a portion of the fingerlings reared at provincial facilities have been released in streams within the study area.

## Sportfishing

### License Sales

The structure of Alberta's sport fishing database does not permit the delineation of license sales from different geographic regions. Provincial trends in fishing license sales (Figure 50) indicate a significant increase during the period 1955-1985, followed by a significant decline (1985-1990), and are currently in a period of relative stability.

### Sportfishing Opportunities

A listing of fish species occurrence within the study area, based on current inventories, can be found in Table 14 of Chapter 3. These tables include both flowing water and waterbodies.

The study area lies within Fisheries Management Area 6 (FMA 6), as designated by Alberta Environmental Protection, Natural Resources Service. Surveys of anglers in the province were done in 1990 and 1994. The 1994 data available regarding sportfishing effort in Alberta including FMA 7 are presented in Table 2. No detailed data for each individual FMA from the 1990 survey are available at this time. It should be noted that FMA 6 also includes waterbodies outside of the study area, including lakes and streams in the Grande Prairie, Valleyview and Slave Lake areas. Since these areas contain larger population centers (and presumably a proportionately larger number of anglers that may fish in local streams and lakes), the data may not be truly representative of the study area, but it should provide a good indication of angling within the study area.

In Alberta in 1990, anglers spent a total of \$321 million on sport fishing comprised of \$134.2 million spent on activities directly related to sport fishing, and \$186.8 million spent on major durable goods and properties associated with sport fishing (AEP 1996). Close to 250,000 adult anglers purchased an Alberta sportfishing license in 1990. Anglers fished a total of about 3.3 million days in 1990, with each licensed angler spending an average of 14.6 days fishing. Eighty-three percent of all fishing effort was done during the open-water season. Most fishing effort was spent in the Northeast Boreal region (FMA 7) of the province followed by the Central region (FMA 5) and Southern region (FMA 1). In 1990, anglers caught an estimated 13.7 million fish of all species, and kept an estimated 5.1 million. Perch, northern pike, trout and walleye accounted for 90% of the catch and 88% of the harvest.

In 1994, anglers spent a total of \$349 million on sport fishing, comprised of \$130 million spent on goods and services directly related to sport fishing, and an additional \$219 million spent on durable goods and properties used for sport fishing. This represents a 9% increase in expenditures compared to 1990. In 1994, 240,228 anglers purchased

sportfishing licenses, which is a decrease of 4% since 1990. Anglers fished a total of about 5.2 million days in 1994, an increase of almost 60% since 1990. On average, each licensed angler spent 22.8 days fishing in 1994 which is an increase of 55% over 1990 levels. Most fishing effort (83%) was done during the open-water season similar to the 1990 survey. Most fishing effort was spent in the Northeast Boreal region (FMA 7) of the province, followed by the Central region (FMA 5) and Southern region (FMA 1).

In 1994, licensed anglers in FMA 6 participated in 314,507 fishing trips and spent 476,768 days fishing. This fishing effort represents about 8–10% of the total fishing spent in the province as a whole during 1994. Similar to the provincial average, most anglers in FMA 6 fished in lakes compared to streams than in the province as a whole (Table 2).

#### Fishing Lodges

The only fishing lodges within the study area are located on Margaret Lake (Margaret Lake Lodge), Pitchimi Lake (Pitchimi Lake Lodge) and Bistcho Lake. The two former lodges are owned and operated by the Little Red River Cree Nation under the name of Caribou Mountain Wilderness based out of High Level. The Bistcho Lake Lodge is operated by J. Halverson based out of Manning. Satellite camps are operated on Wentzel, Eva and Thurston lakes from the Margaret and Pitchimi lodges. These camps are used to provide additional sport fishing opportunities for anglers based out of the main lodges.

#### Trophy Lakes

Gods Lake is classified by Alberta Environmental Protection as a “trophy lake” with special regulations and licensing. It is the only trophy lake in the study area.

#### Aeration

Several smaller waterbodies in the study area are stocked with fish to provide recreational fishing opportunities. These lakes include Figure 8 Lake, Junction Pond, Cummings Lake, Sulphur Lake, and community trout ponds in High Level and Fairview. A complete listing of stocked waterbodies can be found in Tables 19 and 20 of Chapter 3. Most of the lakes are stocked with trout species, primarily rainbow trout. These lakes tend to be very productive with fish showing good growth. However, survival of fish in these lakes over winter has historically been sporadic due to depletion of dissolved oxygen. Fisheries Management Division, in conjunction with the Alberta Conservation Association, has established mechanical aerators on many of these lakes to increase dissolved oxygen levels during critical times of the year. DMI has provided financial support towards an aeration project on Sulphur Lake. Recently, Fisheries Management Division, in conjunction with the University of Alberta, has investigated the effectiveness of several aeration systems (D. Walty, pers. comm.). The results of this research show that a spray-type diffuser is very effective in oxygenating lakes during winter. Several of the aeration projects have been converted to this type of system and are expected to further reduce winterkill of fish.

### **Commercial Fishing**

The commercial fishery in the province is divided into 8 Zones with the study area comprising a portion of Zones E and G.

Table 3 lists lakes in northwest Alberta that are periodically commercially fished, and those fish species that inhabit each lake. Most lakes within the study area are located within Zone E, which generally extends north and west from Lesser Slave Lake. Bistcho Lake is the only lake in Zone G that is within the study area. The commercial fishery is managed by Alberta Environmental Protection, Natural Resources Service, who set quotas on the maximum allowable catch for each waterbody. The length of season and quota can vary from year to year, depending upon sustainable harvest levels. In some years, a waterbody may be closed to commercial fishing if it is determined that fish stocks are not large enough to support a fishery. Some of the lakes in Table 3 have not been commercially fished for some time; for example, Driftwood Lake has not been commercially fished since 1970. Occasionally, some lakes are not commercially fished in a year, even though a quota and season have been provided.

A summary of the quota, catch, and wholesale value for the province (by zone) from 1992-1997 is presented in Table 4–Table 7. The annual quota for all species ranges from about 2,800 to 3,500 tonnes per year. Lake whitefish is the prime species allocated in the commercial fishery, followed by tullibee and pike. Walleye, perch and lake trout are the other species of fish with set quotas. The annual quota for lake whitefish is about 2,000 tonnes, while the quota for tullibee and pike is about 500 tonnes each. Together, these three species account for about 90% of the allowable harvest.

Study area lakes within Zone E and Zone G had an average quota of about 240 tonnes annually over the past five years (Table 8). The commercial fishery quota in Zone E and Zone G accounted for 7% of the total provincial quota. Lakes within Zone E accounted for about two-thirds of the quota, with the remainder allocated to Bistcho Lake in Zone G. Similar to the provincial trend, lake whitefish had the highest quota in both zones. However, the quota on pike was substantially higher than for tullibee, whereas provincially, the quota for these two species was similar.

Provincially, in terms of lake production, the harvest of most species was below the quota level in most years. Only 72% of the lake whitefish quota was harvested in the past five years. Similarly, tullibee (12% of quota), pike (53%), walleye (80%), and perch (13%) were below quota limits. Lake trout was the only species harvested above quota levels (17% above quota limits)(Table 4–Table 6). Compared to the provincial level, the harvest of lake whitefish in Zone E and Zone G was considerably lower, with only 46% of the quota for lake whitefish harvested. Harvest levels of lake trout (96% of quota), perch (7%), and tullibee (7%) were also lower than the provincial average. The harvest level of pike was higher (62% compared with 53%) than the provincial average, while walleye were at the same level as recorded provincially (Table 9).

The quota for commercially fished lakes within the study area make up about 7.5% of the provincial quota for all commercial fisheries. The quota for lake trout and walleye in Zone E and Zone G represent the highest proportion of the provincial quota, particularly for lake trout. The commercial fishery harvest in Zone E and Zone G are generally in similar proportion to the allowable quota. Of note is the lake trout harvest in the study area, which accounts for almost 50% of the total provincial harvest. The commercial fishery for lake trout in the study area is limited to Peerless Lake.

In the five year period from 1992/93 to 1996/97, the total catch for lakes within the study area amounted to 577 tonnes for all species (or an average of 115 tonnes per year)(Table 10). This compares to the 8,000 (1,600 tonnes per year) tonnes caught throughout the province over the same five years. The value of the catch in the study area over that five years was close to \$800,000, compared to the provincial total of almost \$13 million. In summary, the commercial fishery in the study area accounts for about 7% of the total catch and 6% of the value, compared to provincial totals.

### **Domestic Fishing**

Two types of domestic licenses may be issued for domestic harvest. Domestic Licenses historically were issued for subsistence when need could be demonstrated. This could include welfare situations, or trappers in remote circumstances. These licenses are rarely issued in recent years and no summaries regarding the number of licenses are included in this synopsis.

The second type of license is an Indian Domestic License. These licenses are only available to status Indians and are issued free of charge upon request. The licensing framework was established to provide fisheries managers some mechanism to gauge demand by status Indians, so this harvest can be considered in management decisions. It provides valuable information regarding the year to year trends of demand.

Table 11 provides a summary of the number of Indian Domestic Licenses issued for lakes and rivers in Zone E and G between 1981 and 1997. In northwest Alberta over the 17 year period, the most Indian Domestic Licenses were issued on Lesser Slave Lake (2,422). Most of the large lakes experience some demand. A clear trend of increasing license numbers is evident on most of the waterbodies. No harvest data is available for Indian Domestic Licenses.

Table 2. Number of fishing trips and number of days of fishing by licensed anglers in stream, open watered lakes and ice-covered lakes in Alberta, 1994. Data Source: Natural Resources Service.

	Fish Management Area 6					Alberta				
	Trips	%	Days	%	# Days /Trip	Trips	%	Days	%	# Days /Trip
Streams	64,236	20.4	94,686	19.9	1.47	1,369,822	33.7	1,697,261	33.3	1.24
Open-water Lakes	193,960	61.7	312,006	65.4	1.61	1,910,825	47.0	2,564,037	50.3	1.34
Ice-covered Lakes	56,311	17.9	70,076	14.7	1.24	787,522	19.4	837,160	16.4	1.06
Total	314,507	100.0	476,768	100.0	1.52	4,068,169	100.0	5,098,458	100.0	1.25

Table 3. Fish composition of lakes periodically or regularly commercially fished in northwest Alberta. Data Source: Natural Resources Service.

Lake Name	Twp-Rge-Meridian	Area (ha)	Northern Pike	Walleye	Lake Whitefish	Lake Trout	Yellow Perch	Tullibee
Bistcho Lake	124-6-W5	41,019	X	X	X			
Cranberry Lake	83-7-W5	622	X	X	X		X	X
Driftwood Lake	85-2-W5		X				X	
Equisetum Lake	89-5-W5	293	X	X	X			X
Goodfish Lake	89-5-W5	217	X	X	X			X
Goosegrass Lake	91-3-W5	239	X				X	
Graham Lake	87-4-W5	4,170	X	X	X		X	
Long Lake #1	89-4-W5	539	X	X	X			X
Long Lake #2 *	81-12-W5	995	X		X			X
Mink Lake #1	82-11-W5	992	X				X	X
Muskwa Lake	82-4-W5	2,859	X	X	X		X	X
Peerless Lake	88-5-W5	8,259	X	X	X	X		
Round Lake	89-4-W5	557	X	X	X		X	X
Vandersteene Lake	88-3-W5	2,073	X	X	X		X	
West Twin Lake	90-4-W5	337	X	X	X		X	X

\* Quotas for this lake are not generally set, rather sporadic commercial fisheries have been set up by NRS following requests.

**Habitat Limitations**

Flowing waters are by far the most common aquatic system within the study area. The main habitat limitations in the study area for all fish species are likely related to extreme runoff events (D. Walty pers. comm.). High flows tend to result in increased sedimentation and physical habitat disturbances. Under low flow conditions, suitable overwintering habitat is probably limited due to shallow water depths and low dissolved oxygen levels. Larger lakes in the study area are generally productive, and not susceptible to severe oxygen depletion during periods of ice cover.

Table 4. Summary of commercial fishery quota in Alberta (1992–1997). Zones found in northwest Alberta are in bold. Data Source: Natural Resources Service.

Year	Zone	# of Seasons	Quota (tonnes round weight)						Total
			Whitefish	Lake Trout	Walleye	Perch	Tullibee	Pike	
04/92-03/93	A	14	243.0	0.0	1.1	1.0	0.0	10.8	255.8
	B	8	199.0	0.0	0.9	0.9	0.0	21.4	222.2
	C	12	232.7	0.8	2.8	1.3	96.3	20.1	324.9
	D	28	238.1	0.1	8.5	5.6	256.7	59.2	568.2
	<b>E</b>	44	972.2	0.9	41.8	6.0	313.9	382.6	1,713.2
	F	1	55.0	0.0	0.5	0.5	0.0	0.5	56.4
	<b>G</b>	2	35.4	0.0	19.6	0.0	0.0	33.1	88.2
	H	1	50.0	0.0	80.0	0.0	0.0	45.0	175.0
	<b>Total</b>	110	2,025.4	1.8	155.3	15.2	666.8	572.6	3,404.0
04/93-03/94	A	16	216.6	0.0	1.4	0.2	0.0	11.3	229.5
	B	8	215.0	0.0	1.7	2.2	0.0	24.4	243.3
	C	10	191.9	0.8	1.7	0.7	96.6	17.9	305.5
	D	30	217.2	0.1	6.4	5.8	151.5	46.9	427.9
	<b>E</b>	39	1,240.9	0.9	64.6	15.9	353.2	284.5	1,953.5
	F	1	55.0	0.0	0.5	0.5	0.0	0.5	56.4
	<b>G</b>	2	34.0	0.0	18.0	0.0	0.0	34.0	86.0
	H	1	50.0	0.0	80.0	0.0	0.0	50.0	180.0
	<b>Total</b>	110	2,220.5	1.8	174.1	25.2	601.3	469.3	3,481.9
04/94-03/95	A	12	225.0	0.0	2.3	0.0	0.0	10.6	238.0
	B	5	181.0	0.0	1.6	1.7	0.0	24.4	209.1
	C	11	206.1	0.0	2.6	1.5	96.3	14.8	319.3
	D	30	203.0	0.1	6.6	5.7	135.3	62.8	408.3
	<b>E</b>	34	1,187.9	0.9	43.7	9.4	196.9	299.7	1,454.5
	F	1	30.0	0.0	0.5	0.5	0.0	0.5	31.4
	<b>G</b>	3	35.1	0.0	18.0	0.0	0.0	30.6	83.7
	H	1	50.0	0.0	80.0	0.0	0.0	45.0	175.0
	<b>Total</b>	97	2,118.0	1.0	155.2	18.7	428.5	488.3	2,839.9
04/95-03/96	A	18	250.7	0.0	2.6	0.0	0.0	11.5	264.8
	B	7	181.0	0.0	1.6	1.7	0.0	24.4	209.1
	C	11	164.6	0.4	2.1	0.7	96.6	10.6	273.1
	D	25	199.4	0.1	6.0	5.5	117.3	58.5	382.2
	<b>E</b>	40	1,133.6	0.9	41.8	8.5	237.5	351.7	1,764.3
	F	1	30.0	0.0	0.5	0.5	0.0	0.5	31.4
	<b>G</b>	3	35.1	0.0	18.0	0.0	0.0	30.6	83.7
	H	2	50.0	0.0	80.0	0.0	0.0	45.0	175.0
	<b>Total</b>	107	1,994.3	1.4	82.5	16.8	451.4	487.6	3,008.4
04/96-03/97	A	18	261.0	0.0	2.7	0.0	0.0	11.5	275.2
	B	5	181.0	0.0	1.6	1.7	0.0	24.4	209.1
	C	9	147.0	0.8	1.6	0.7	90.9	7.9	248.8
	D	24	220.3	0.1	6.3	6.0	127.3	70.1	425.5
	<b>E</b>	33	1,107.7	0.9	41.3	6.6	228.3	320.3	1,621.1
	F	1	30.0	0.0	0.5	0.5	0.0	0.5	31.4
	<b>G</b>	3	35.1	0.0	18.0	0.0	0.0	30.6	83.7
	H	1	50.0	0.0	80.0	0.0	0.0	45.0	175.0
	<b>Total</b>	93	2,032.0	1.8	151.9	15.4	446.5	510.1	3,069.6

Table 5. Combined harvested weight (tonnes) and value (in thousands of C \$) for whitefish, lake trout, walleye and perch in Alberta (1992–1997). Zones found in northwest Alberta are in bold. Data Source: Natural Resources Service.

Year	Zone	# of Seasons	Whitefish		Lake Trout		Walleye		Perch	
			Weight	\$	Weight	\$	Weight	\$	Weight	\$
04/92-03/93	A	14	164.0	274.4	0.0	0.1	0.7	2.8	0.0	0.0
	B	8	223.4	381.4	0.0	0.0	0.1	0.3	0.0	0.0
	C	12	80.5	96.9	1.1	6.2	2.9	10.5	0.0	0.0
	D	28	126.5	128.1	0.0	0.0	3.3	9.3	0.2	0.5
	<b>E</b>	44	716.5	534.6	0.8	1.2	19.9	60.8	5.2	12.2
	F	1	38.3	42.5	0.0	0.0	0.1	0.3	0.0	0.0
	<b>G</b>	2	29.9	8.8	0.0	0.0	13.4	24.3	0.0	0.0
	H	1	2.7	0.0	0.0	0.0	79.2	124.6	0.0	0.0
	<b>Total</b>	110	1,381.8	1,466.8	2.0	7.4	119.6	232.9	5.4	12.7
04/93-03/94	A	16	162.8	260.3	0.1	0.5	1.5	5.9	0.0	0.0
	B	8	184.5	325.5	0.0	0.0	0.1	0.5	0.0	0.0
	C	10	55.8	111.9	0.9	5.1	1.5	7.5	0.0	0.0
	D	30	101.8	106.5	0.0	0.0	2.0	5.7	0.3	0.6
	<b>E</b>	39	812.0	820.8	0.5	2.0	30.0	57.1	3.1	7.5
	F	1	35.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>G</b>	2	19.7	12.5	0.0	0.0	19.8	64.3	0.0	0.0
	H	1	20.1	0.0	0.0	0.0	61.7	122.2	0.0	0.0
	<b>Total</b>	110	1,391.7	1,682.5	1.5	7.6	116.7	263.2	3.4	8.1
04/94-03/95	A	12	195.3	349.5	0.1	0.2	1.5	6.8	0.0	0.0
	B	5	175.5	403.4	0.0	0.0	0.2	0.6	0.0	0.0
	C	11	70.5	122.4	1.3	7.4	1.4	6.7	0.0	0.0
	D	30	159.0	203.3	0.0	0.0	2.3	7.6	0.1	0.5
	<b>E</b>	34	1,015.8	1,244.9	1.2	2.7	40.1	122.1	0.0	0.0
	F	1	31.7	36.7	0.0	0.0	0.0	0.1	0.0	0.0
	<b>G</b>	3	14.7	15.1	0.0	0.0	18.2	67.9	0.0	0.0
	H	1	0.0	0.0	0.0	0.0	44.2	116.8	0.0	0.0
	<b>Total</b>	97	1,662.4	2,375.3	2.6	10.3	108.0	328.7	0.2	0.5
04/95-03/96	A	18	200.3	349.6	0.1	0.1	3.1	10.2	0.0	0.0
	B	7	176.7	332.9	0.0	0.0	0.1	0.3	0.0	0.0
	C	11	47.6	82.7	1.0	5.6	2.6	12.1	0.0	0.0
	D	25	108.5	150.8	0.0	0.0	3.2	9.5	0.1	0.4
	<b>E</b>	40	839.4	934.1	1.3	1.3	34.0	146.6	0.3	0.9
	F	1	21.4	22.9	0.0	0.0	0.0	0.1	0.0	0.0
	<b>G</b>	3	16.0	21.0	0.0	0.0	17.6	71.1	0.0	0.0
	H	2	0.0	0.0	0.0	0.0	73.2	274.7	0.0	0.0
	<b>Total</b>	107	1,410.0	1,894.1	2.3	7.0	133.8	524.7	0.4	1.3
04/96-03/97	A	18	247.0	405.7	0.1	0.2	1.7	10.7	0.0	0.0
	B	5	177.7	345.3	0.0	0.0	0.3	1.5	0.0	0.0
	C	9	49.8	101.9	0.2	1.4	1.1	1.1	0.0	0.0
	D	24	134.7	171.5	0.0	0.0	1.6	5.7	0.1	0.3
	<b>E</b>	33	968.0	942.1	0.5	0.6	21.3	77.0	2.1	8.3
	F	1	38.4	42.2	0.0	0.0	0.0	0.0	0.0	0.0
	<b>G</b>	3	15.1	21.3	0.0	0.0	16.5	58.8	0.0	0.0
	H	1	0.0	0.0	0.0	0.0	51.6	257.7	0.0	0.0
	<b>Total</b>	93	1,630.7	2,030.0	0.8	2.3	94.1	412.4	2.2	8.6

Table 6. Combined harvested weight (tonnes) and value (in thousands of C \$) for tullibee, pike, burbot and suckers in Alberta (1992–1997). Zones found in northwest Alberta are in bold. Data Source: Natural Resources Service.

Year	Zone	# of Seasons	Tullibee		Pike		Burbot		Suckers	
			Weight	\$	Weight	\$	Weight	\$	Weight	\$
04/92-03/93	A	14	0.0	0.0	9.8	14.4	0.4	0.3	1.9	0.3
	B	8	0.0	0.0	16.9	23.3	0.5	0.1	2.1	1.1
	C	12	2.1	1.0	8.2	12.1	3.2	0.8	4.6	0.4
	D	28	29.2	1.8	41.5	45.8	5.0	2.6	1.4	0.0
	E	44	16.7	9.9	248.8	235.5	16.3	7.4	0.0	0.0
	F	1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	G	2	0.0	0.0	34.6	27.3	0.0	0.0	0.0	0.0
	H	1	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0
	Total	110	48.0	12.7	393.9	358.5	25.5	11.1	10.0	1.8
04/93-03/94	A	16	0.0	0.0	8.5	12.6	0.4	0.3	2.2	0.8
	B	8	0.0	0.0	9.5	10.7	2.2	0.7	2.7	0.0
	C	10	5.9	0.9	6.4	11.2	4.2	1.2	4.0	0.8
	D	30	66.8	5.6	23.3	21.5	1.6	0.0	0.2	0.0
	E	39	7.4	3.0	167.0	150.1	0.4	0.0	0.0	0.0
	F	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	G	2	0.0	0.0	23.1	26.4	0.0	0.0	0.0	0.0
	H	1	0.0	0.0	38.0	0.0	0.0	0.0	0.0	0.0
	Total	110	80.2	9.5	275.7	232.6	8.7	2.2	9.2	1.5
04/94-03/95	A	12	0.0	0.0	6.9	12.4	0.3	0.3	0.5	0.3
	B	5	0.0	0.0	6.2	7.0	0.1	0.0	0.1	0.1
	C	11	1.8	0.5	4.6	8.3	2.2	0.5	1.8	0.3
	D	30	28.5	5.0	44.4	49.6	1.1	0.0	4.5	0.0
	E	34	10.8	6.8	90.2	68.8	0.0	0.0	0.0	0.0
	F	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	G	3	0.0	0.0	13.1	9.4	0.0	0.0	0.0	0.0
	H	1	0.0	0.0	39.0	0.0	0.0	0.0	0.0	0.0
	Total	97	41.2	12.4	204.4	155.5	3.8	0.9	6.9	0.7
04/95-03/96	A	18	0.0	0.0	8.8	11.3	0.4	0.3	2.1	0.6
	B	7	0.0	0.0	7.4	8.2	0.4	0.0	0.1	0.0
	C	11	0.5	0.3	6.0	8.5	1.7	0.4	3.8	1.0
	D	25	40.8	21.2	36.0	37.8	0.5	0.0	9.0	2.9
	E	40	24.9	9.8	178.9	180.9	0.2	0.1	0.3	0.1
	F	1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	G	3	0.0	0.0	11.3	11.1	0.0	0.0	0.0	0.0
	H	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	107	66.1	31.3	248.5	257.8	3.2	0.9	15.2	4.6
04/96-03/97	A	18	0.0	0.0	7.1	8.4	0.6	0.1	1.1	0.1
	B	5	0.0	0.0	4.0	4.8	0.0	0.0	0.0	0.0
	C	9	0.4	0.1	2.7	4.4	0.8	0.2	0.7	0.1
	D	24	33.9	17.6	16.9	22.6	0.5	0.0	0.1	0.0
	E	33	43.2	26.8	156.5	155.7	0.1	0.0	1.7	0.1
	F	1	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0
	G	3	0.0	0.0	19.5	22.7	0.0	0.0	0.0	0.0
	H	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	93	77.5	44.5	206.7	218.8	2.3	0.4	3.5	0.3

Table 7. Harvested weight (kg) and value for roe, and for all fish species, number of sportfishers, and number of nets/day. Zones found in northwest Alberta are in bold. Data Source: Natural Resources Service.

Year	Zone	# of Seasons	Roe		All Fish and Roe		# of Sportfishers	# of Nets Day
			Weight	\$	Weight	\$		
04/92-03/93	A	14	0.0	0.0	177.3	292.2	304	1,904
	B	8	0.0	0.0	243.0	406.2	887	4,462
	C	12	0.0	0.0	102.6	131.7	87	1,139
	D	28	0.0	0.0	206.0	188.1	167	2,834
	<b>E</b>	44	0.0	0.0	1,025.0	861.4	640	7,745
	F	1	0.0	0.0	38.5	42.9	105	88
	<b>G</b>	2	0.0	0.0	78.0	61.4	40	233
	H	1	0.0	0.0	115.9	124.6	18	108
	<b>Total</b>	110	0.0	0.0	1,986.2	2,108.3	2,248	18,513
04/93-03/94	A	16	0.0	0.0	173.4	279.6	307	2,309
	B	8	0.0	0.0	199.1	337.4	991	2,658
	C	10	0.0	0.0	78.8	138.5	61	819
	D	30	0.0	0.0	195.8	139.7	187	2,196
	<b>E</b>	39	0.0	0.0	1,020.1	1,083.0	410b	5,478
	F	1	0.0	0.0	35.0	45.0	n/a	n/a
	<b>G</b>	2	0.0	0.0	62.6	112.0	28	220
	H	1	4.8	11.3	124.7	133.6	16	n/a
	<b>Total</b>	110	4.8	11.3	1,889.4	2,268.8	2,000	13,680
04/94-03/95	A	12	0.0	0.0	205.8	369.6	160	1,286
	B	5	0.0	0.0	182.1	358.0	880	2,635
	C	11	0.0	0.0	83.7	146.2	70	561
	D	30	0.5	2.3	240.6	267.5	162	2,259
	<b>E</b>	34	1.9	8.1	1,158.1	1,452.0	400	7,127
	F	1	0.0	0.0	31.7	36.8	60	82
	<b>G</b>	3	0.0	0.0	50.1	107.4	22	240
	H	1	0.0	0.0	83.1	116.8	14	80
	<b>Total</b>	97	2.5	10.4	2,035.3	2,854.2	1,768	14,270
04/95-03/96	A	18	0.0	0.0	213.9	372.2	229	1,680
	B	7	0.0	0.0	184.7	341.4	590	2,817
	C	11	0.0	0.0	63.2	110.6	89	1,119
	D	25	2.5	17.7	197.6	240.3	137	2,044
	<b>E</b>	40	3.0	39.6	1,078.7	1,310.0	588	6,535
	F	1	0.0	0.0	21.5	23.0	61	72
	<b>G</b>	3	0.0	0.0	44.9	103.3	23	239
	H	2	10.2	27.9	83.5	302.7	20	81
	<b>Total</b>	107	15.7	85.2	1,887.9	2,803.5	1,869	14,587
04/96-03/97	A	18	0.0	0.0	275.4	425.3	168	1,521
	B	5	0.0	0.0	181.9	352.0	419	1,560
	C	9	0.0	0.0	55.6	109.3	47	341
	D	24	2.2	14.4	188.7	251.0	107	4,606
	<b>E</b>	33	5.9	75.2	1,193.4	1,286.0	280	3,961
	F	1	0.0	0.0	38.7	42.3	48	93
	<b>G</b>	3	0.0	0.0	51.1	102.7	34	169
	H	1	2.4	10.0	54.0	267.7	23	136
	<b>Total</b>	93	10.5	99.6	202.8	2,836.3	1,126	12,387

Table 8. Summary of commercial fishing quota (tonnes) for lakes in northwest Alberta. Data Source: Natural Resources Service.

	Lake	Lake Whitefish	Lake Trout	Walleye	Perch	Tullibee	Pike	TOTAL
<b>1992 - 1993</b>								
Zone E	Cranberry	1.4		0.3	0.4	2.0	3.0	7.1
	East Twin	1.0		0.2			0.6	1.8
	Equisetum	2.3		0.1		2.6	0.6	5.6
	Goodfish	4.0		1.0		2.0	0.4	6.5
	Goosegrass				0.3		1.0	1.3
	Graham	18.0		1.2	0.2		5.0	24.4
	Mink #1				0.3	4.5	2.0	6.8
	Muskwa	13.0		0.3	0.5	13.0	5.0	31.8
	Peerless	60.0	0.9	0.5			5.0	66.4
	Round	2.5		0.2		0.5	0.7	3.9
	West Twin	1.5		0.1	0.1	1.5	0.9	4.1
	Sub-total	103.7	0.9	3.8	1.7	26.1	24.2	159.7
Zone G	Bistcho	35.4		19.6			33.1	88.2
Total		139.1	0.9	23.4	1.7	26.1	57.2	247.6
<b>1993 - 1994</b>								
Zone E	Cranberry	1.4	0	0.3	0.4	2.4	4.5	6.0
	Goodfish	2.0	0	0.1	0	1.0	0.2	3.3
	Graham	18.0	0	1.2	0.2	0	5.0	24.4
	Long	2.5	0	0.2	0	2.5	0.4	5.6
	Peerless	60.0	0.9	0	0	0	5.0	65.9
	Round	2.5	0	0.2	0.0	0.5	0.7	3.9
	Vandersteene	9.0	0	0.9	0.2	0	2.5	12.6
	West Twin	3.0	0	0.1	0.1	1.5	1.7	6.5
	Sub-total	98.4	0.9	3.0	0.9	7.9	20.0	128.2
Zone G	Bistcho	34.0	0	18.0	0	0	34.0	86.0
Total		132.4	0.9	21.0	0.9	7.9	54.0	214.2
<b>1994 - 1995</b>								
Zone E	Cranberry	1.4	0	0.3	0.4	1.4	1.5	5.0
	Equisetum	1.3	0	0.1	0	1.3	0.3	3.0
	Graham	18.0	0	1.2	0.2	0	5.0	24.4
	Long	2.5	0	0.2	0	2.5	0.4	5.6
	Peerless	60.0	0.9	0	0	0	5.0	65.9
	Vandersteene	9.0	0	0.9	0.2	0	2.5	13.6
	Sub-total	92.2	0.9	2.7	0.8	5.2	14.7	117.5
Zone G	Bistcho	30.6	0	18.0	0	0	30.6	79.2
Total		122.8	.9	20.7	.8	5.2	45.3	196.7
<b>1995 - 1996</b>								
Zone E	Cranberry	1.4	0	0.3	0.4	1.4	1.5	5.0
	Equisetum	1.3	0	0.1	0	1.3	0.3	3.0
	Goosegrass	0	0	0	0.3	0	1.0	1.3
	Graham	18.0	0	1.2	0.2	0	5.0	24.4
	Long	2.5	0	0.2	0	2.5	0.4	5.6
	Mink #1	0	0	0	0.3	4.5	2.0	6.8
	Muskwa	13.0	0	0.3	0.5	13.0	5.0	31.8
	Peerless	60.0	0.9	0	0	0	5.0	65.9
	Vandersteene	9.0	0	0.9	0.2	0	2.5	13.6
	Sub-total	105.2	0.9	3.0	1.9	22.7	22.7	157.4
Zone G	Bistcho	30.6	0	18.0	0	0	30.6	79.2
Total		135.8	.9	21.0	1.9	22.7	53.3	236.6
<b>1996 - 1997</b>								
Zone E	Graham	18.0	0	1.2	0.2	0	5.0	24.4
	Long	2.5	0	0.2	0	2.5	0.4	5.6
	Muskwa	13.0	0	0.3	0.5	13.0	5.0	31.8
	Peerless	60.0	0.9	0	0	0	5.0	65.9
	Vandersteene	9.0	0	0.9	0.2	0	2.5	13.6
	Sub-total	102.5	0.9	2.6	0.9	15.5	17.9	141.3
Zone G	Bistcho	30.6	0	18.0	0	0	30.6	79.2
Total		133.1	.9	20.6	.9	15.5	48.5	220.5
<b>All Years</b>								
Zone E		502.0	4.5	15.1	6.1	77.4	99.5	704.1
Zone G		161.2	0	91.6	0	0	158.9	411.8
Total		663.2	4.5	106.7	6.1	77.4	258.4	1,115.9
Province		10,390.2	7.8	719.0	91.3	2,594.5	2,527.9	15,803.8
<b>Zone E (% of Alberta)</b>								
		4.9	57.7	2.4	6.7	4.7	4.1	4.8
<b>Zone G (% of Alberta)</b>								
		1.6	0	12.7	0	0	6.3	2.6
<b>Zones E &amp; G (% of Alberta)</b>								
		6.5	57.7	15.1	6.7	4.7	10.4	7.5

Table 9. Summary of commercial fishing production for lakes in northwest Alberta. Data Source: Natural Resources Service.

Year and Zone	Lake	Lake Whitefish		Lake Trout		Walleye		Perch		Tullibee		Pike	
		kg	\$	kg	\$	kg	\$	kg	\$	kg	\$	kg	\$
<b>1992 - 1993</b>													
Zone E	Cranberry	0.1	0.3	0		0		0.1	0.2	1.3	1.0	3.4	3.9
	East Twin	0		0		0		0		0		0	
	Equisetum	1.7	1.5	0		0		0		0		0.1	0.2
	Goodfish	1.0	1.0	0		0		0		0		0.3	0.3
	Goosegrass	0		0		0		0		0		1.1	1.3
	Graham	12.4	5.1	0		0.02	0.1	0		0		3.9	3.3
	Mink #1	0		0		0		0.1	0.2	0.5	0.4	4.7	5.4
	Muskwa	0		0		0		0		0		0	
	Peerless	43.7	34.2	0.8	1.2	0		0		0		3.1	2.3
	Round	2.1	3.6	0		0.1	0.4	0		0		0.3	0.4
	West twin	0.1	0.2	0		0		0		0		0.0	0.0
	Sub-total	61.1	38.0	0.8		0.1		.1		0		16.9	
Zone G	Bistcho	29.9	8.8	0		13.4	24.3	0		0		34.6	27.3
Total		91.0		.8		13.5		.1		0		51.5	
<b>1993 - 1994</b>													
Zone E	Cranberry	0		0		0		0		0		0	
	Goodfish	0		0		0		0		0		0	
	Graham	3.3	4.0	0		0.1	0.4	0		0		2.6	3.3
	Long	3.1	3.4	0		0.1	0.2	0		2.0	0.5	0.4	0.5
	Peerless	24.8	28.5	0.5	2.0	0		0		0		1.7	2.0
	Round	1.7	3.2	0		0.1	0.3	0		0		0.3	0.4
	Vandersteene	2.4	2.6	0		0.1	0.3	0		0		3.0	3.7
	West twin	0		0		0		0		0		0	
	Sub-total	35.3		.5		.4		0		2.0		8.0	
Zone G	Bistcho	19.7	12.5	0		19.8	64.3	0		0		23.1	26.4
Total		55.0		.5		20.2		0		2.0		31.1	
<b>1994 - 1995</b>													
Zone E	Cranberry	2.4	3.2	0		0		0		0.7	0.3	0.1	0.1
	Equisetum	2.1	2.9	0		0		0		0		0.0	0.0
	Graham	10.4	7.3	0		0.1	0.5	0		0		3.2	3.3
	Long	2.3	3.1	0		0		0		0		0.1	0.1
	Peerless	33.3	35.0	1.2	2.7	0		0		0		3.7	3.5
	Vandersteene	0		0		0		0		0		0	0
	Sub-total	50.5		1.2		0.1		0		.7		7.1	7.1
Zone G	Bistcho	10.5	6.6	0		18.2	67.9	0		0		12.9	9.2
Total		61.9	59.9	1.2	2.7	18.6	69.5	0		0.7	0.4	20.0	16.3
<b>1995 - 1996</b>													
Zone E	Cranberry	1.2	2.1	0		0		0.01	0.1	0.9	0.4	0.2	0.0
	Equisetum	2.5	4.0	0		0.01	0.02	0		0.5	0.2	0.1	0.1
	Goosegrass	0		0		0		0.01	0.03	0		0.7	0.8
	Graham	11.8	8.3	0		0.02	0.1	0		0		3.7	3.2
	Long	1.9	3.0	0		0.1	0.4	0		0		0.3	0.4
	Mink #1	0.0	0.0	0		0		0.2	0.7	0.1	0.1	5.4	5.5
	Muskwa	0.1	0.1	0		0.1	0.3	0.03	0.1	0		0.6	0.5
	Peerless	20.9	37.9	1.3	1.3	0		0		0		3.1	2.7
	Vandersteene	0.5	0.7	0		0		0		0		0.1	0.1
	Sub-total	38.9		1.3		0.2		0.3		1.5		14.2	
Zone G	Bistcho	8.7	5.6	0		17.6	71.1	0		0		11.1	10.9
Total		49.7	65.4	1.3	1.3	18.1	72.8	0.2	0.9	1.6	0.7	25.7	24.4
<b>1996 - 1997</b>													
Zone E	Graham	8.8	7.6	0		0.2	0.8	0		0		5.7	6.6
	Long	3.8	4.2	0		0.1	0.3	0		0.6	0.4	3.2	3.6
	Muskwa	0		0		0		0		0		0	
	Peerless	24.0	30.0	0.5	0.6	0		0		0		5.3	5.5
	Vandersteene	0		0		0		0		0		0	
	Sub-total	36.6		0.5		0.3		0.0		0.6		14.2	
Zone G	Bistcho	8.1	7.0	0		16.5	58.8	0		0		19.2	22.3
Total		44.7	53.7	0.5	0.6	16.8	60.4	0		.6	0.5	33.4	38.3
<b>All Years</b>													
Zone E		206.8	262.0	4.3	7.8	1.1	8.8	0.4	1.3	8.7	4.5	60.4	65.7
Zone G		76.9	40.4	0		85.5	286.4	0		0		100.9	96.1
Total		285.7	302.4	4.3	7.8	86.6	295.2	0.4	1.3	8.7	4.5	161.3	161.8
Province		7,476.6	9,448.7	9.2	34.6	572.2	1,761.9	11.6	31.2	313.0	110.4	1,329.2	1,223.2
Zone E (% of Alberta)		3.1	2.8	46.9	22.5	0.4	0.5	3.6	4.3	2.8	4.1	4.7	5.4
Zone G (% of Alberta)		1.0	0.4			14.9	16.3					7.6	7.9
Zones E & G (% of Alberta)		4.2	3.2	46.9	22.5	15.4	16.8	3.6	4.3	2.8	4.1	12.3	13.2
% Of quota		46.3		96.0		81.0		6.8		7.1		62.4	

Table 10. Summary of total catch weight, value of landed catch (in thousands of C \$) and number of sportfishers. Data Source: Natural Resources Service.

Year and Zone	Lake	Total Catch Weight (Tonnes)	Landed Catch Value (\$ ,000)	Number of Sportfishers
<b>1992 - 1993</b>				
Zone E	Cranberry	4.9	5.4	9.0
	East Twin	0	0	1.0
	Equisetum	1.8	1.7	2.0
	Goodfish	1.3	1.3	1.0
	Goosegrass	1.1	1.3	2.0
	Graham	16.3	8.5	8.0
	Mink #1	5.3	6.0	14.0
	Muskwa	0	0	0.0
	Peerless	47.6	37.6	49.0
	Round	2.5	4.3	9.0
	West twin	0.1	0.2	1.0
	Sub-total	80.9	66.3	96.0
Zone G	Bistcho	78.0	61.4	40.0
Total		158.9	127.7	136.0
<b>1993 - 1994</b>				
Zone E	Cranberry	0	0	0.0
	Goodfish	0	0	0.0
	Graham	6.0	7.7	2.0
	Long	5.5	4.5	4.0
	Peerless	27.0	32.5	22.0
	Round	2.1	1.0	2.0
	Vandersteene	5.5	6.7	2.0
	West twin	0.0	0.0	0.0
	Sub-total	46.1	52.4	32.0
Zone G	Bistcho	62.6	112.0	28.0
Total		108.7	164.4	60.0
<b>1994 - 1995</b>				
Zone E	Cranberry	3.2	3.7	3.0
	Equisetum	2.2	2.9	2.0
	Graham	13.8	11.1	4.0
	Long	2.3	3.1	1.0
	Peerless	38.2	41.1	21.0
	Vandersteene	0.0	0.0	0.0
	Sub-total	59.7	61.9	31.0
Zone G	Bistcho	41.6	98.7	18.0
Total		101.3	160.6	49.0
<b>1995 - 1996</b>				
Zone E	Cranberry	2.3	2.5	2.0
	Equisetum	3.1	4.3	7.0
	Goosegrass	0.7	0.9	1.0
	Graham	15.6	11.5	7.0
	Long	2.4	3.8	9.0
	Mink #1	5.7	6.4	17.0
	Muskwa	0.8	0.9	2.0
	Peerless	25.3	41.9	19.0
	Vandersteene	0.9	0.9	1.0
	Sub-total	56.8	73.1	65.0
Zone G	Bistcho	37.4	87.6	18.0
Total		94.2	160.7	83.0
<b>1996 - 1997</b>				
Zone E	Graham	14.7	15.0	4.0
	Long	7.7	8.5	0.0
	Muskwa	0	0	0.0
	Peerless	29.9	36.2	18.0
	Vandersteene	0	0	0.0
	Sub-total	52.3	59.7	22.0
Zone G	Bistcho	43.8	88.1	24.0
Total		96.1	147.8	46.0
<b>All Years</b>				
Zone E		314.4	347.2	246.6
Zone G		263.2	447.7	128.0
Total		577.6	794.9	374.6
Province		8,001.6	12,871.1	9,011.0
Zone E (% of Alberta)		3.9	2.7	3.3
Zone G (% of Alberta)		3.3	3.5	1.4
Zones E & G (% of Alberta)		7.2	6.2	4.7
% Of quota				

Table 11. Annual Indian domestic fisheries licenses for lakes (and rivers) in Zones E and G. Data Source: Natural Resources Service.

Lake Name	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	TOTAL
<b>Zone E</b>																		
Baptiste	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Brintnell	1	1	1	1	1	0	0	0	0	1	0	1	0	0	2	2	1	12
Calling	8	11	14	10	20	14	19	26	29	29	40	42	46	40	47	55	52	502
Chain	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Deep	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
East Marten	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	4
Equisetum	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	7	6	21
Fawcett	1	2	0	0	0	0	1	2	1	3	9	7	6	7	9	13	10	71
Freeman	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	3
Gift	0	0	0	0	0	0	0	1	0	3	3	0	0	0	1	2	0	10
Gods	0	0	1	0	0	0	0	0	0	0	1	8	15	18	15	19	19	96
Golden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Goodfish	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	1	7
Goosegrass	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	4	8
Graham	3	3	3	7	0	1	4	15	15	22	20	25	29	31	35	35	46	294
Haig	4	5	9	3	6	6	9	11	10	21	19	12	18	17	21	19	16	206
Hebephrenic	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	5
Iosegun	1	1	1	1	2	2	1	5	5	9	2	8	6	3	14	11	8	80
Island 67	0	0	0	0	1	0	0	0	0	1	2	1	2	1	2	0	6	16
Island 79	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	3
Joker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Lesser Slave	28	27	36	41	30	75	137	153	159	192	221	218	199	223	218	221	244	2422
Little Sandy	0	1	1	7	5	3	1	2	3	1	1	1	1	0	1	0	0	28
Little Whitefish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Long	0	0	2	5	3	3	4	2	3	2	2	7	9	11	17	16	13	99
Lubicon	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Lylich	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
McLeod	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0	0	6
McMillan	0	0	0	0	0	0	0	0	1	1	1	0	1	2	3	1	1	11
Meekwap	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	4
Middle Marten	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2	3	9
Mink 1	0	0	0	1	0	0	0	0	0	0	3	3	7	5	5	6	1	31
Mink 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	5
Mistehae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Muskwa	0	0	0	0	0	0	0	0	0	1	0	1	1	2	3	1	1	10
Nipisi	0	0	1	1	0	3	0	5	0	1	2	2	5	1	4	2	2	29
North Chain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Wabasca	8	19	14	20	19	20	21	27	30	40	61	69	62	63	63	71	52	659
Orloff	0	2	1	0	0	1	21	32	28	31	42	46	45	35	42	44	36	406
Peerless	9	8	17	9	23	21	20	21	29	30	33	49	49	43	51	61	56	529
Pegasis	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3
Round	1	3	9	3	3	3	4	1	4	4	5	9	10	11	15	17	16	118
Sander	0	0	1	0	0	2	0	0	0	0	4	2	2	1	3	4	2	21
Sandy	25	32	31	39	40	37	37	38	38	56	60	76	103	102	85	90	72	961
Sawn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smoke	2	2	4	8	4	4	10	9	11	18	17	16	31	44	39	35	28	282
Snipe	0	0	0	1	6	12	33	51	80	96	136	157	143	158	171	156	179	1379
South Wabasca	5	10	14	8	11	13	24	16	18	20	22	23	23	26	21	27	35	316
Twin	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	2	8
Unnamed	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Utikuma	28	57	65	56	48	49	77	87	6	2	7	7	8	10	47	51	50	655
Utikumasis	26	29	27	47	21	21	32	22	28	36	34	22	18	20	17	18	19	437
Vandersteen	0	0	0	0	0	0	0	0	1	0	0	1	1	1	8	8	6	26
West twin	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Winagami	0	0	0	5	10	39	93	82	45	80	65	52	42	69	75	76	64	797
<b>Zone G</b>																		
Bistcho	4	15	7	7	7	5	5	5	11	14	15	20	10	11	10	24	10	180
Burnt	0	0	0	0	0	0	2	1	1	1	2	1	2	0	0	0	1	11
Chipewyan	3	4	7	3	0	0	0	0	4	5	5	5	5	5	2	2	5	55
Cladonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gardiner	0	0	3	1	4	7	3	4	3	4	3	3	7	3	5	4	3	57
Hay river	0	0	0	0	0	0	3	0	0	1	0	1	5	1	6	4	10	31
Margaret	1	1	2	1	1	1	1	2	4	2	2	1	2	0	1	1	0	23
Meander River	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	5
Namur	0	0	1	3	2	6	2	1	2	3	5	3	4	5	4	4	5	50
Peace River	0	0	1	2	10	6	3	1	3	4	2	4	2	2	1	0	0	41
Pitchimi	0	0	0	0	1	0	0	0	0	3	3	1	1	1	0	2	0	12
Rainbow	0	0	0	0	0	0	1	0	0	0	0	0	2	1	0	0	0	4
Semo	0	0	1	0	0	0	0	0	0	2	2	2	2	1	0	0	0	8
Wadlin	2	0	0	0	0	9	4	5	0	2	1	5	2	2	1	0	0	33
Wasbasca River	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Wentzel	1	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	1	7

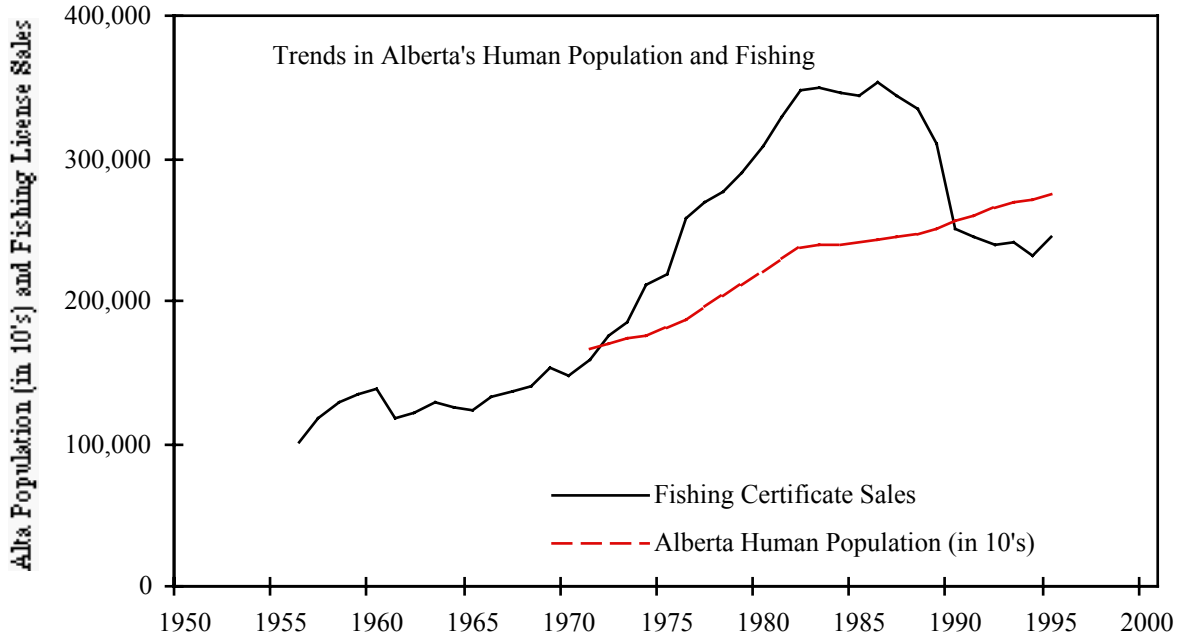


Figure 50. Trends in Alberta human population and participation in sport fishing (1955–1997). Data Source: Natural Resources Service.

**Personal Communications.**

Sullivan, M. 1998. Fisheries Biologist, Northeast Boreal Region. Department of Environmental Protection.

Walty, D. 1998. Head, Fisheries Management, Northwest Boreal Region. Department of Environmental Protection.

# Fur Trapping Industry

## Introduction

Subsistence trapping of fur-bearing species by First Nations communities for meat and furs likely dates back to the first appearance of aboriginal peoples. Commercial fur trapping has occurred in northwest Alberta since the earliest of North American explorers in the 1700's. The Hudson's Bay Company formalized the fur industry by establishing a network of forts (Vermilion, Dunvegan, Chipewyan, and St. John) and trading routes throughout the region based on the distribution of fur trapping by aboriginal people. The major aboriginal peoples of northwest Alberta who trapped furs and traded with the Hudson's Bay Company were the Cree, Beaver, and Sekani Indians.

Although fur trapping still occurs throughout northwest Alberta, the number of people who are dependant on this industry has declined during the last several decades. Today, few trappers rely on fur sales as their sole source of income.

## Distribution of Registered Trapping Areas

Fur trapping is now administered by the Natural Resources Service of the provincial government. Trappers are given Registered Trapping Areas (RTA) with designated boundaries in which they harvest furbearing species in accordance with the trapping regulations.

Registered Trapping Areas generally occupy all public lands in each of the Forest Management Units (FMU) of northwest Alberta, including both the Green Area and White Area (Figure 51–Figure 53). The total area of RTAs in northwest Alberta is 13,383,782 ha. The number and area covered by RTAs found within each FMU are shown in Table 12, and Figure 54. As the RTA boundaries frequently cross the FMU boundaries, the number of RTAs was tallied by attributing the RTA only to the FMU in which the majority of its area occurred.

Forest Management Unit S11 contains the largest number of RTAs (25), however the area of RTAs in S11 ranks 22nd at 306,168 ha. (Figure 54). This management unit contains relatively small traplines. F10 and F20 FMUs rank highest in terms of area of RTA at 1,231,530 and 1,049,677 ha respectively, however these FMUs rank 6th and 28th in terms of number of traplines. RTAs in these FMUs are relatively large. There appears to be a trend towards larger RTAs as you progress north, and away from settled portions of the study area (Figure 53). In recent years, managers have been encouraging amalgamation of traplines to create bigger RTAs. This will provide the trappers with more flexibility to manage the fur harvest from their lines, and to deal with human land use practices such as forestry, and oil and gas, as well as disturbance from forest fires.

## Fur Harvest Records

Based on electronic records maintained by Natural Resources Service from 1978–1993, it is possible to reconstruct the fur harvest history of northwest Alberta. For the purpose of the data that are presented, 1978 represents the 1977/78 trapping season, 1979 represents the 1978/79 trapping season, and so on.

In northwest Alberta during the period of 1978 - 1993, squirrel was the most common furbearer harvested, with an annual average of 37,046. Other furbearers harvested, in decreasing rank order were muskrat (9,790), beaver (8,361), marten (5,117), weasel (2,960), mink (2,825), lynx (1,815), coyote (890), fisher (789), fox (320), timber wolf (63), otter (30), wolverine (30), and Black Bear (26)(Table 13 and Figure 55). Small numbers of skunk and badgers occurred in the electronic database, but it is thought to be unlikely that many, if any of these furbearers were harvested from RTAs in northwestern Alberta. It is possible that trappers obtained these pelts from other trapping areas further south, or there were data entry errors.

The most common mammalian families contributing to the fur harvest in northwest Alberta between 1978–1993 were the rodent families, followed by the weasel, cat, dog and bear families (Table 14 and Figure 56).

Table 15, Table 16, and Figure 57–Figure 64 show the annual fluctuation in the number of each species that were harvested in the same 16 year period. Many factors influence the number of animals harvested, but one of the main factors is pelt price. Other factors include population levels, climatic conditions, trapline access, disturbance from industrial activity, and trapper motivation. The cyclical nature of populations of some species such as lynx can be observed in the annual harvest (Figure 60). A clear decline in furbearer harvest level in recent years can be observed in Figure 64. The primary cause of this decline is the social disfavor for trapping, and the resulting drop in fur prices.

### **Revenue Generated from Fur Sales**

The mean sale price of furs from northwest Alberta between 1978–1993 are summarized in Table 17 and Figure 65. The most valuable pelts were lynx, with a mean of \$312.91. This value is almost twice that of the next most valuable, which was wolverine, with a mean value of \$177.42. The descending rank order of the remaining species, based on mean pelt value, were fisher, timber wolf, cross fox, marten, coyote, black bear, silver fox, otter, red fox, mink, beaver, white fox, blue fox, muskrat, weasel and squirrel.

There was considerable fluctuation in the total value of the fur harvest in northwest Alberta between 1978 and 1992 (Table 18 and Figure 66). The value peaked in 1981, with a total value of \$2,993,094. Not surprisingly, this peak coincides with the maximum level of lynx harvest (Figure 60). The last two years of the period showed the lowest value of furs, with values of \$354,293 and \$576,281 for 1991 and 1992 respectively (Table 18 and Figure 66). In the 1970's and 80's, the average annual value of the fur harvest was \$1,592,162. In the 1990's the average annual value of the fur harvest was \$524,846, or approximately one third of the annual value compared to previous decades (Table 18). The total fur harvest over the 15 year period exceeds \$20 million.

In terms of the species contributions to the value of the fur harvest over the 15 year period from 1978–1992, it is not surprising that lynx ranks first (Table 19, Figure 67). Interestingly, although wolverine had the second highest mean pelt price, it ranks a distant eleventh in contribution to total value of fur harvested over the 15 year period. The species contribution to total fur value in descending rank order were lynx, marten, beaver, fisher, coyote, squirrel, muskrat, cross fox, weasel, red fox, wolverine, timber wolf, silver fox, otter, black bear, mink, blue fox, and white fox.

## Trapline Boundaries

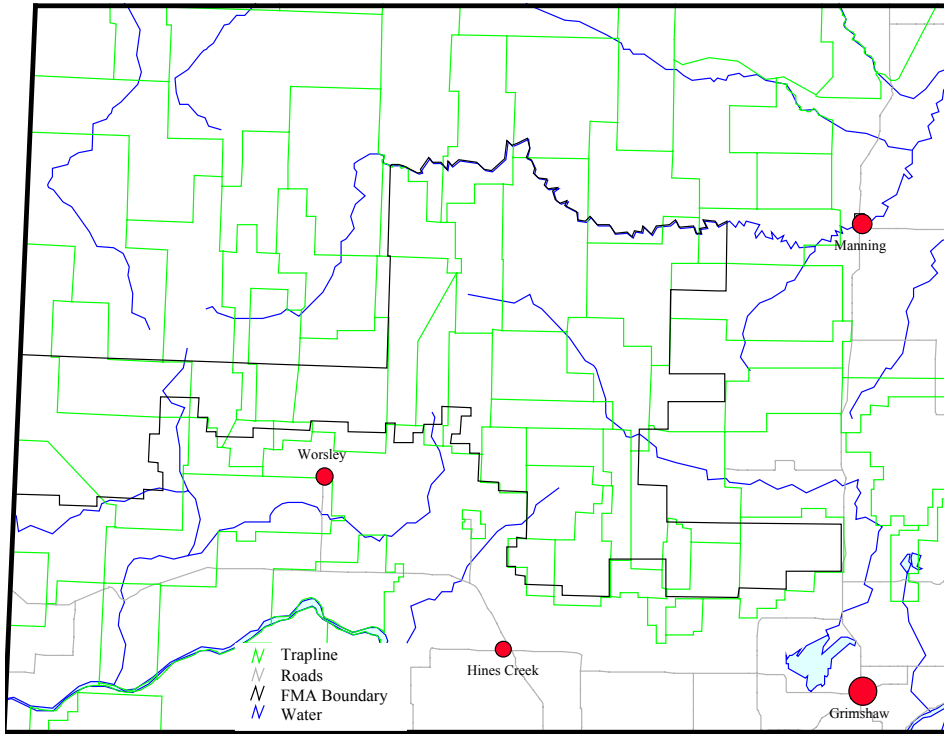


Figure 51. Registered trap area boundaries in P1 and P2. Data Source: DMI GIS Library.

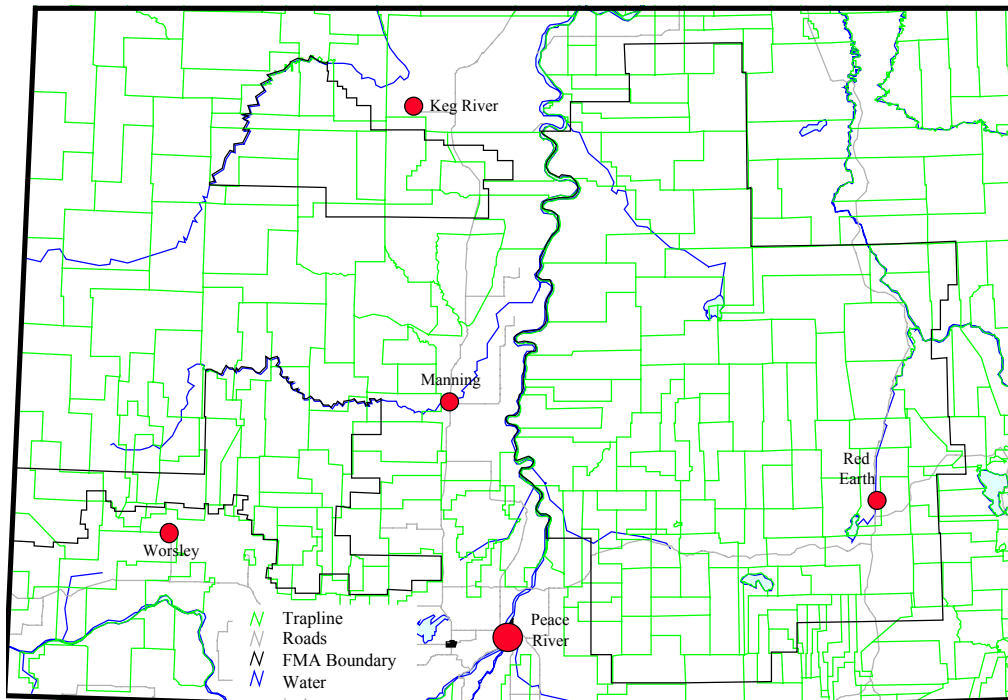


Figure 52. Registered trap area boundaries in the FMA. Data Source: DMI GIS Library.

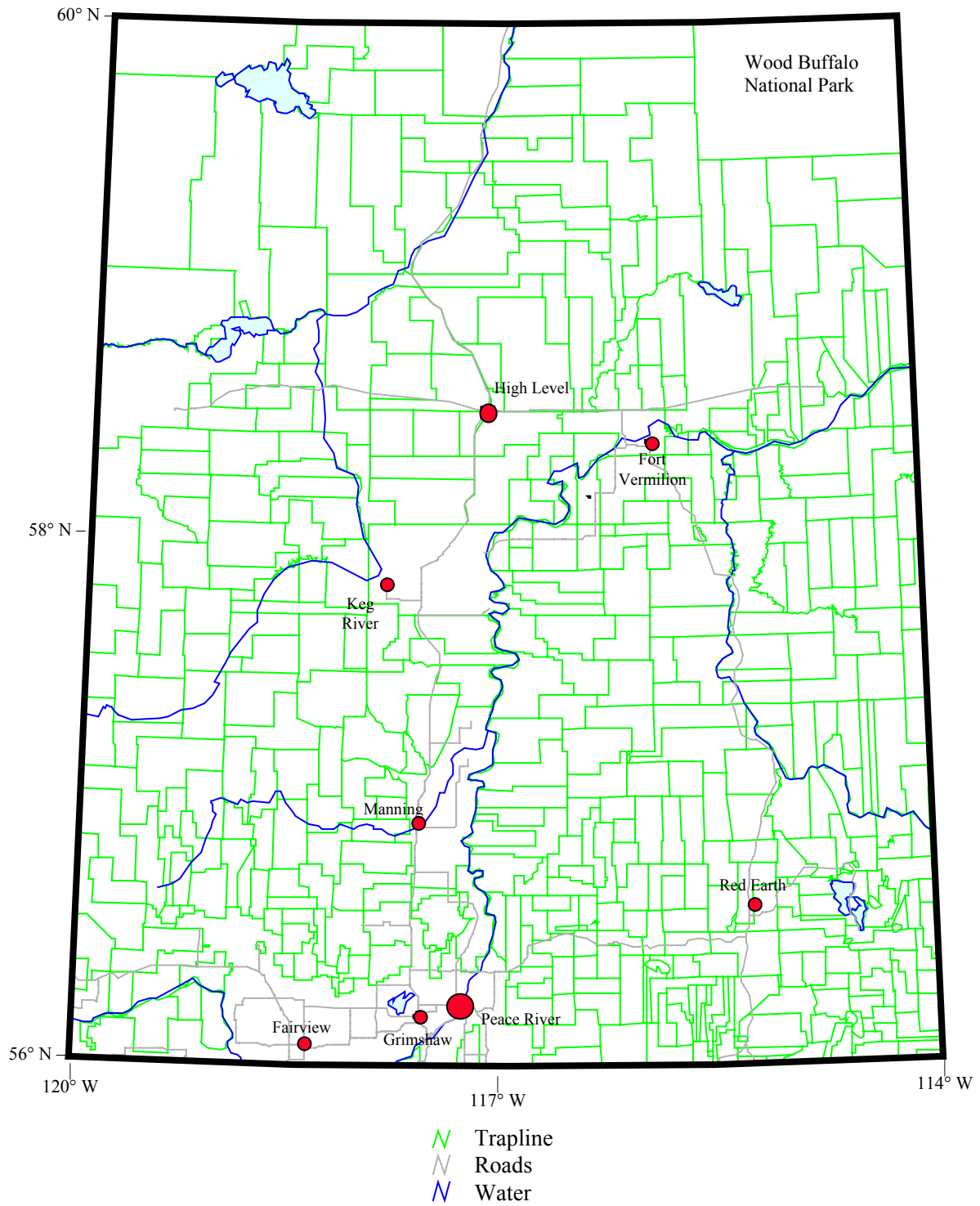


Figure 53. Registered trap area boundaries in northwest Alberta. Data Source: DMI GIS Library.

Table 12. Number and area of traplines in each FMU of northwest Alberta. Data Source: DMI GIS Library.

FMU	Number of Traplines	Total Area of Traplines
F10	19	1,231,530.2
F20	8	1,049,677.2
F21	9	819,364.0
F22	14	716,475.7
F5	23	615,687.6
S15	15	452,338.7
P7	10	445,278.2
F2	11	434,109.8
F13	9	412,359.4
F1	12	410,574.8
P03	15	407,944.1
P4	23	387,962.1
F12	7	385,403.7
S10	22	379,914.0
S14	18	368,281.0
P5	12	357,767.0
F7	9	347,697.8
P8	7	336,595.8
F11	9	324,529.3
P1	9	324,209.1
P2	19	309,830.5
S11	25	306,167.9
P10	10	301,420.9
F6	12	292,301.3
F01	11	276,084.9
F4	10	265,629.4
P6	6	262,345.3
P9	6	248,603.8
P3	12	215,867.7
F15	4	198,955.2
S9	17	189,459.7
S8	14	153,540.2
PO2	10	141,040.3
PO1	3	56,958.6
Total	420	13,783,782.0

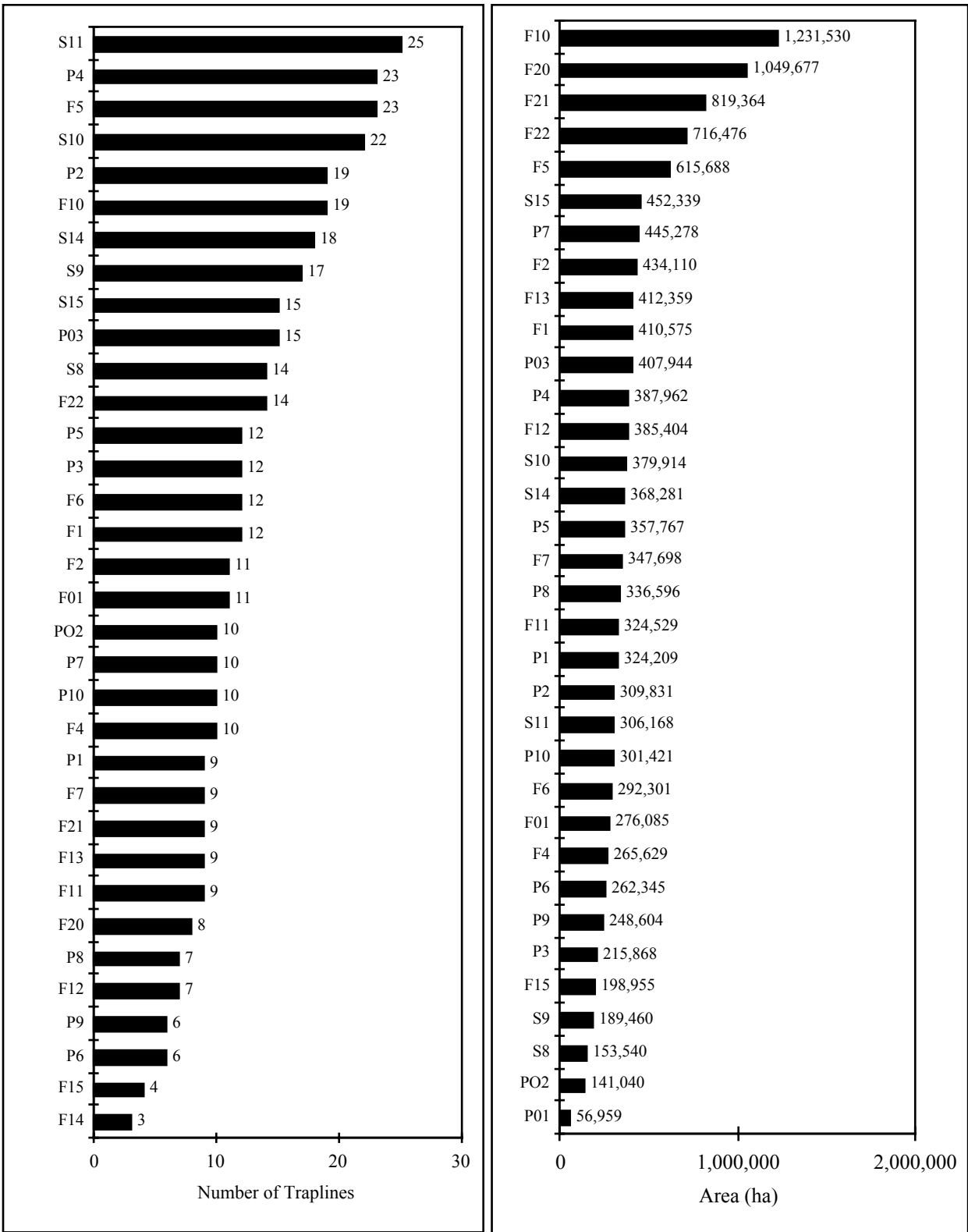


Figure 54. Ranked order of frequency and area of Registered Trapping Areas in each FMU of northwest Alberta. Data Source: DMI GIS Library.

Table 13. Ranked order of furbearer harvest in northwest Alberta (1977–1992). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Species	Average Annual Harvest	Total Harvest (1978–1993)
Squirrel	37,046	592,739
Muskrat	9,790	156,632
Beaver	8,361	133,773
Marten	5,117	81,867
Weasel	2,960	47,352
Mink	2,825	45,192
Lynx	1,815	29,043
Coyote	890	14,235
Fisher	789	12,622
Fox	320	5,127
Timber Wolf	63	1,008
Otter	30	483
Wolverine	30	476
Black Bear	26	408

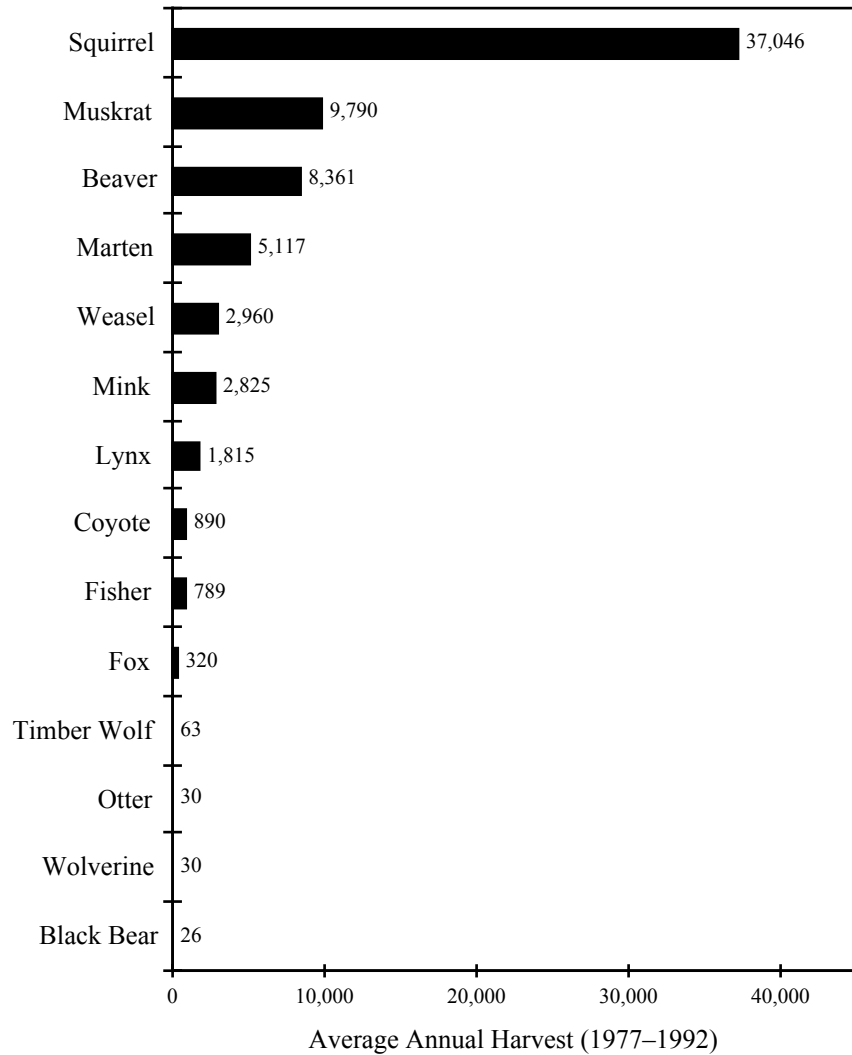


Figure 55. Average annual harvest of furbearer species commonly trapped (left) and less commonly trapped (right) in total harvest in northwest Alberta (1977–1992). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Table 14. Ranking of harvest (1977–1992) of furbearers in northwest Alberta by family grouping. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Family Groupings	Total Harvest (1977–1992)	Average Annual Harvest
Rodent Families	883,144	55,196.5
Weasel Family	190,481	11,905.0
Cat Family	29,058	1,816.1
Dog Family	20,370	1,273.1
Bear Family	408	25.5
Total		

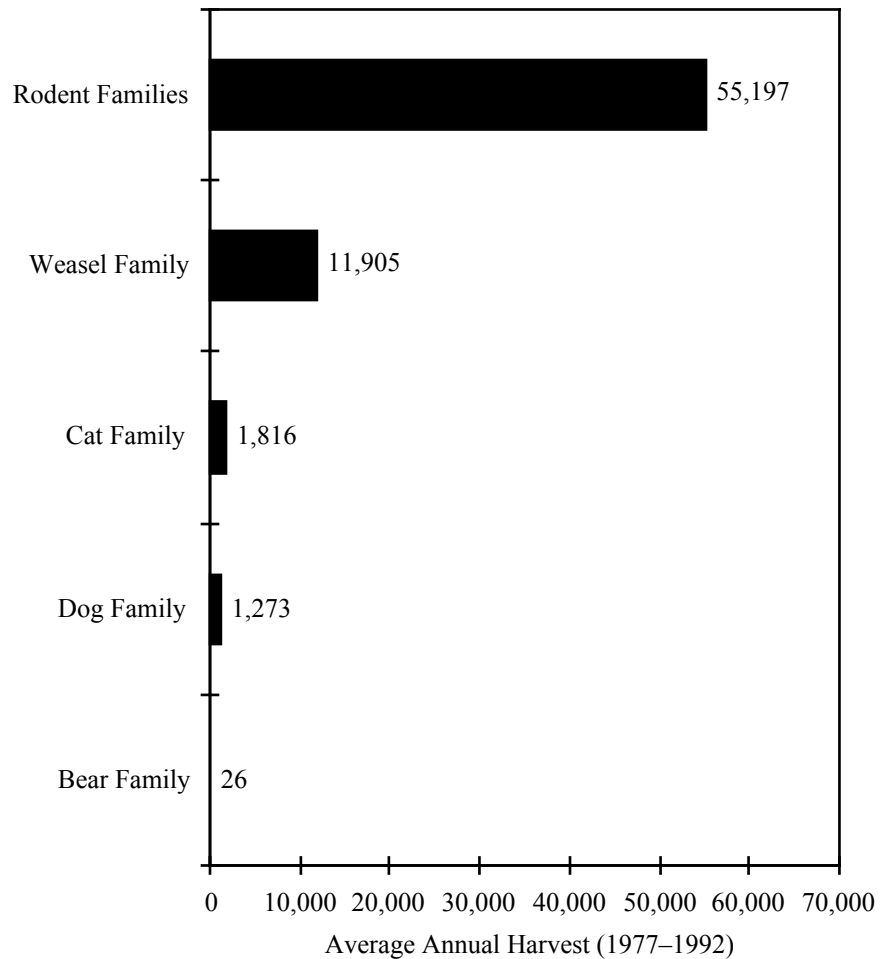


Figure 56. Ranking of harvest (1977–1992) of furbearers in northwest Alberta by family grouping. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

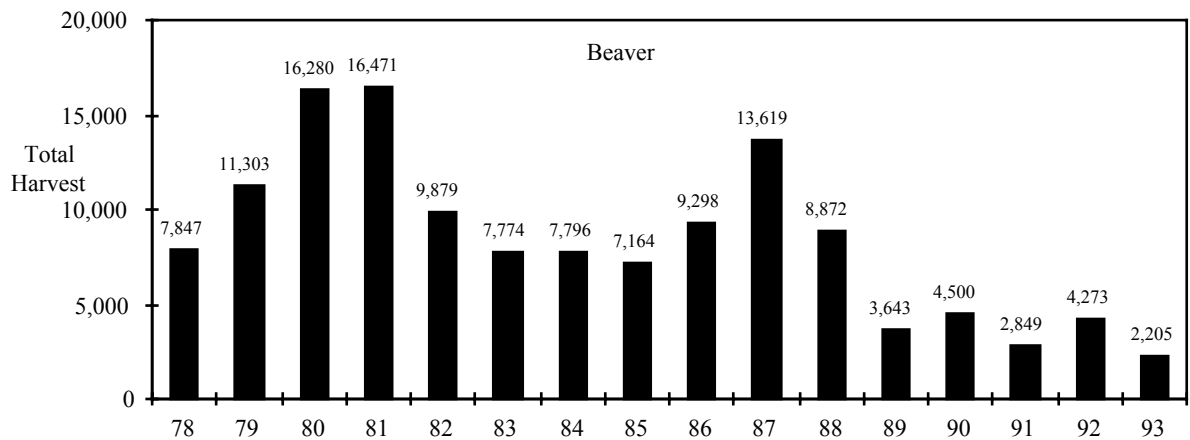
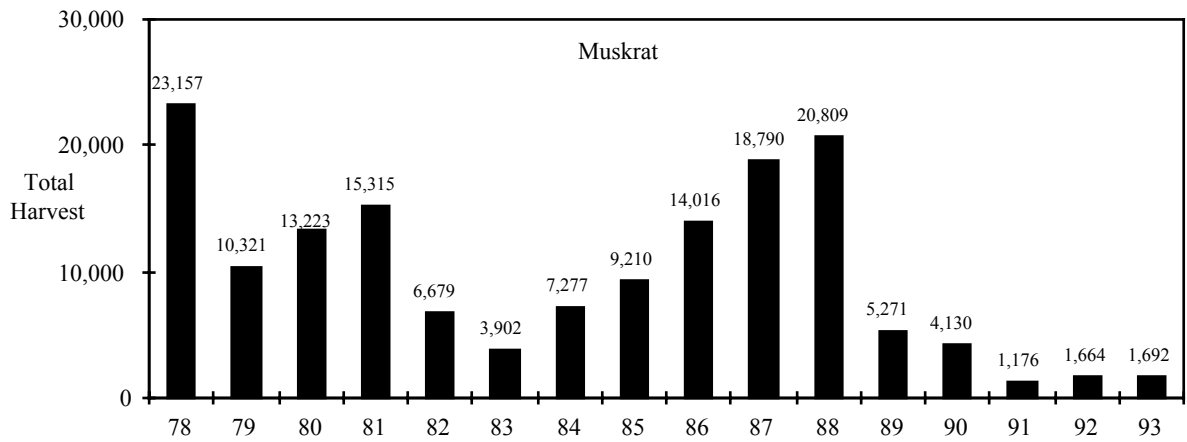
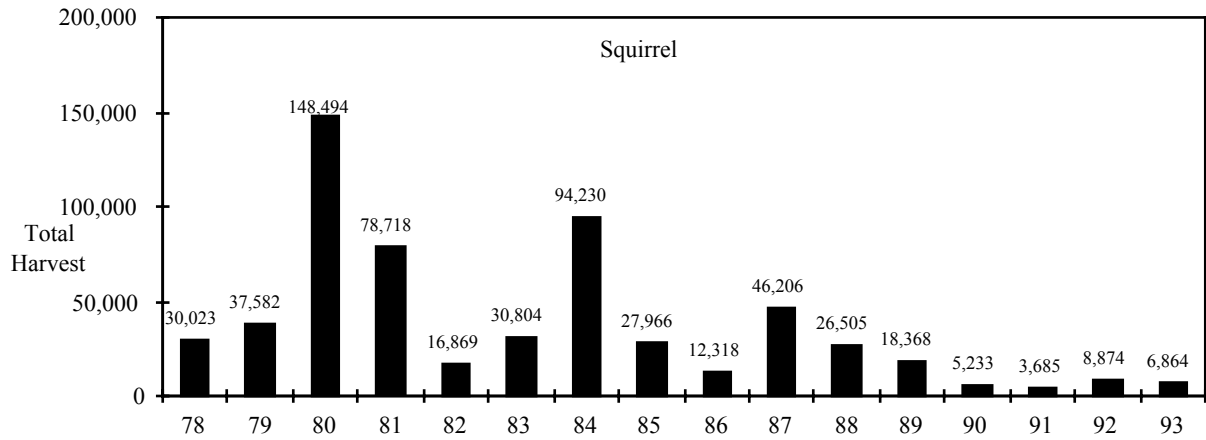


Figure 57. Annual harvest of rodents (squirrel, muskrat, and beaver) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

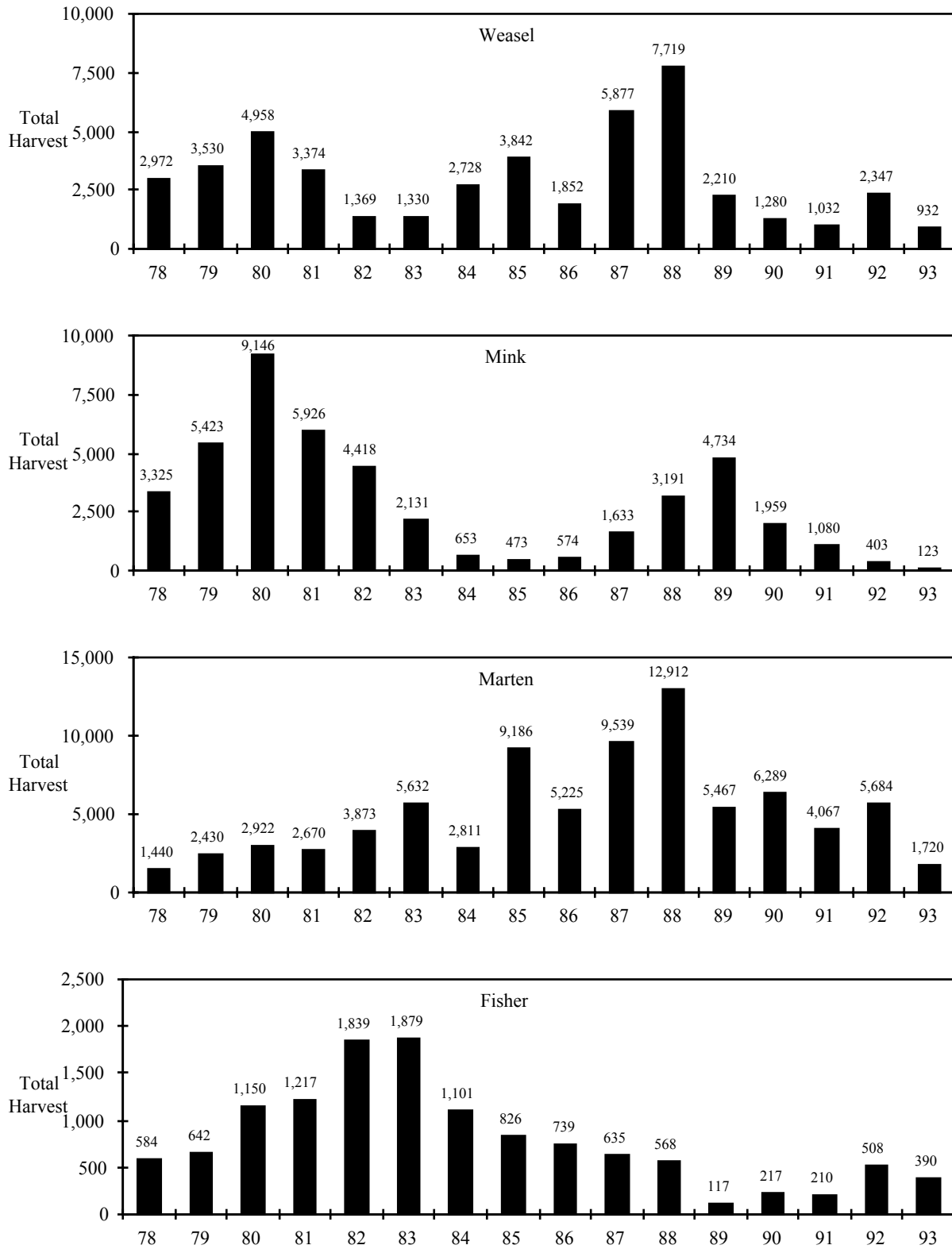


Figure 58. Annual harvest of mustelids (weasel, mink, marten, fisher) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

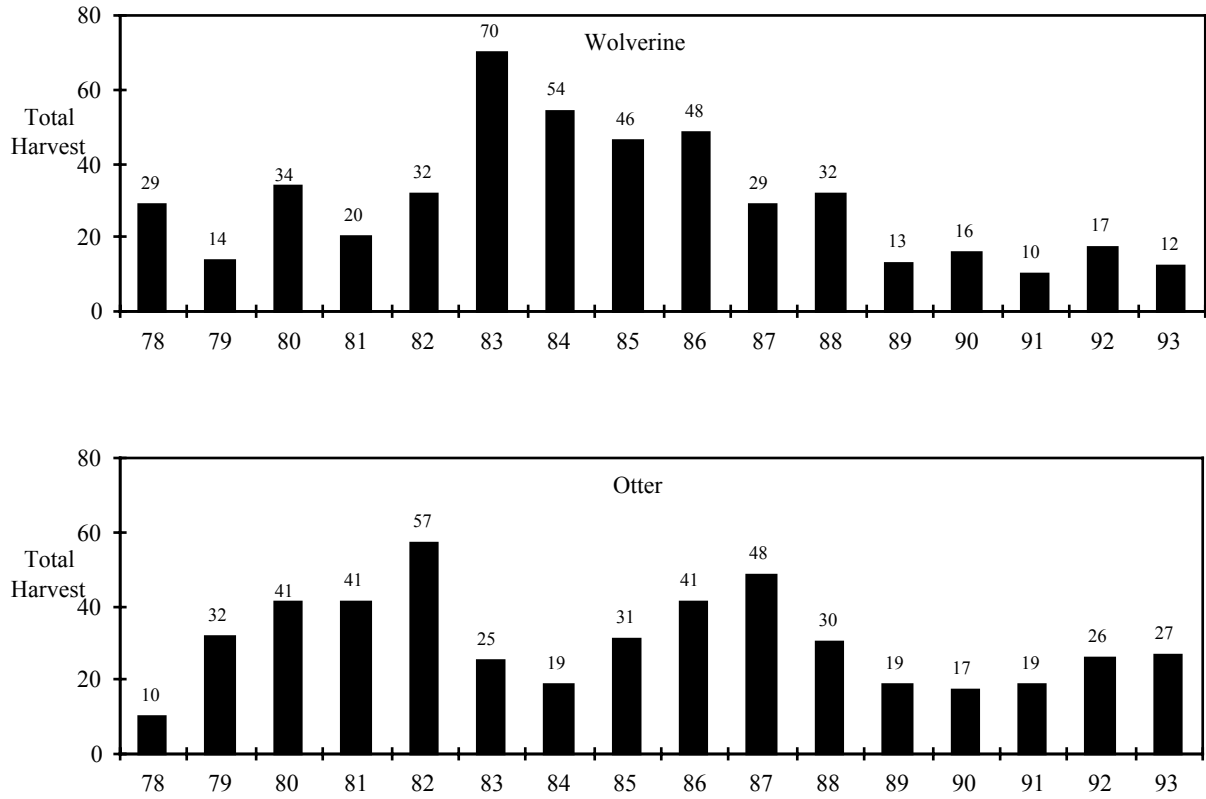


Figure 59. Annual harvest of mustelids (wolverine, otter) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

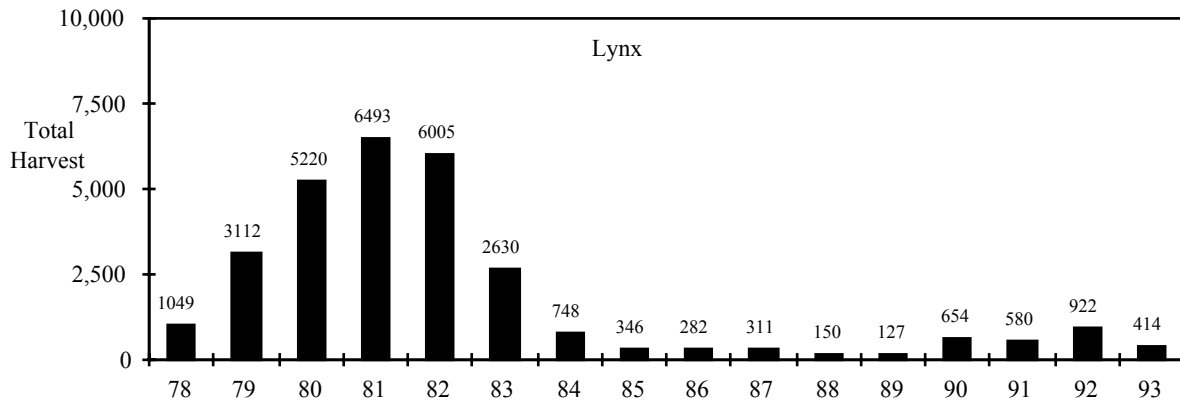


Figure 60. Annual harvest of felids (lynx) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

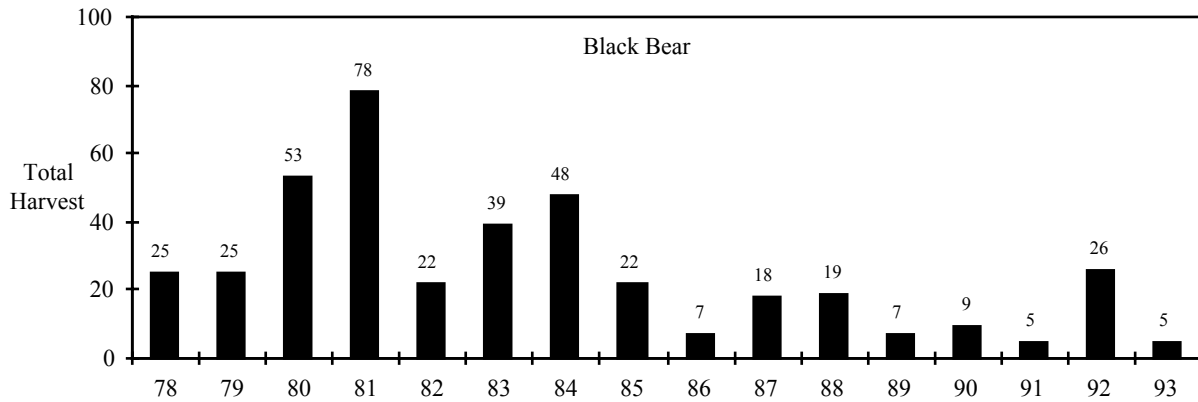


Figure 61. Annual harvest of ursids (black bear, grizzly bear) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

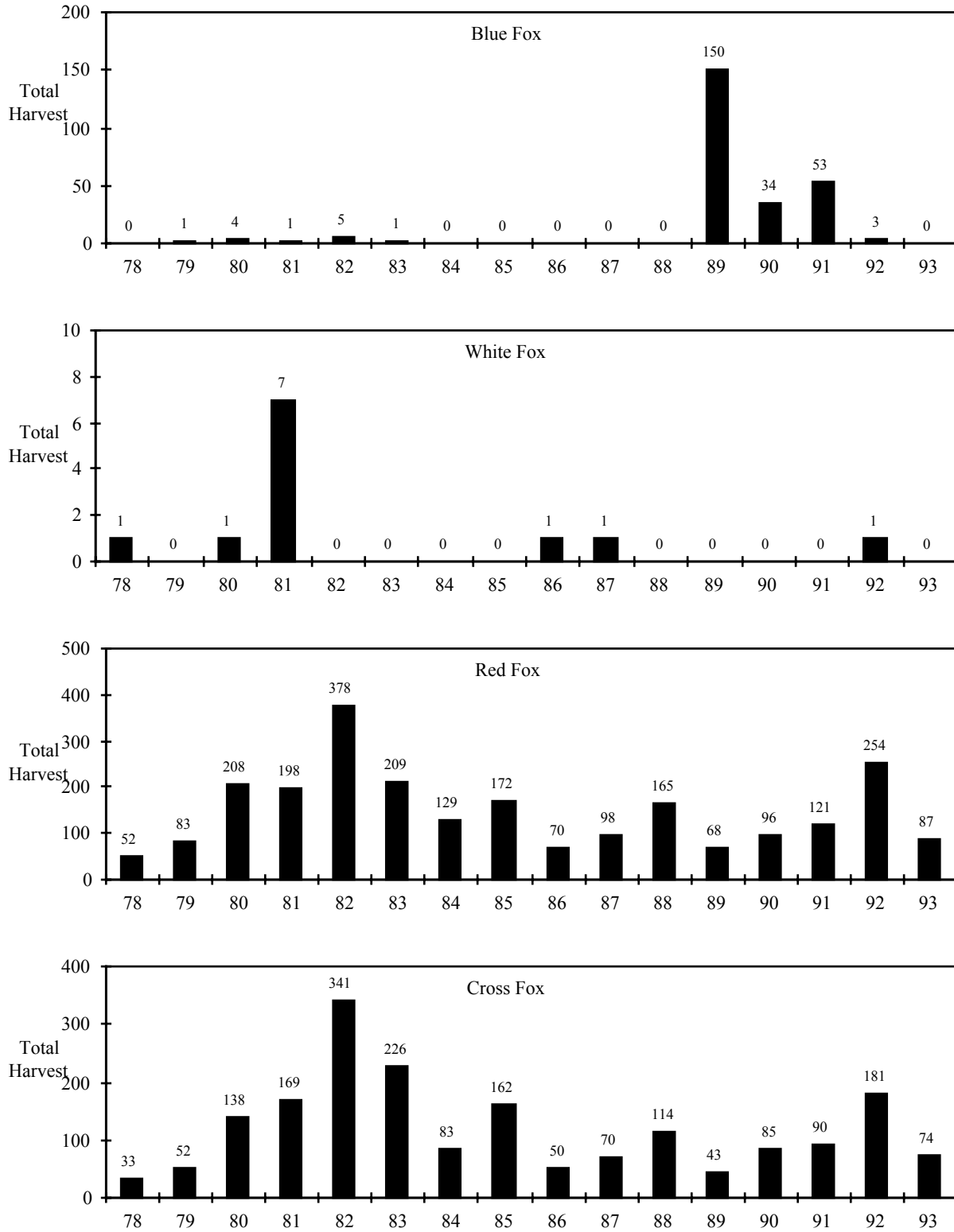


Figure 62. Annual harvest of canids (blue fox, white fox, red fox, cross fox,) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

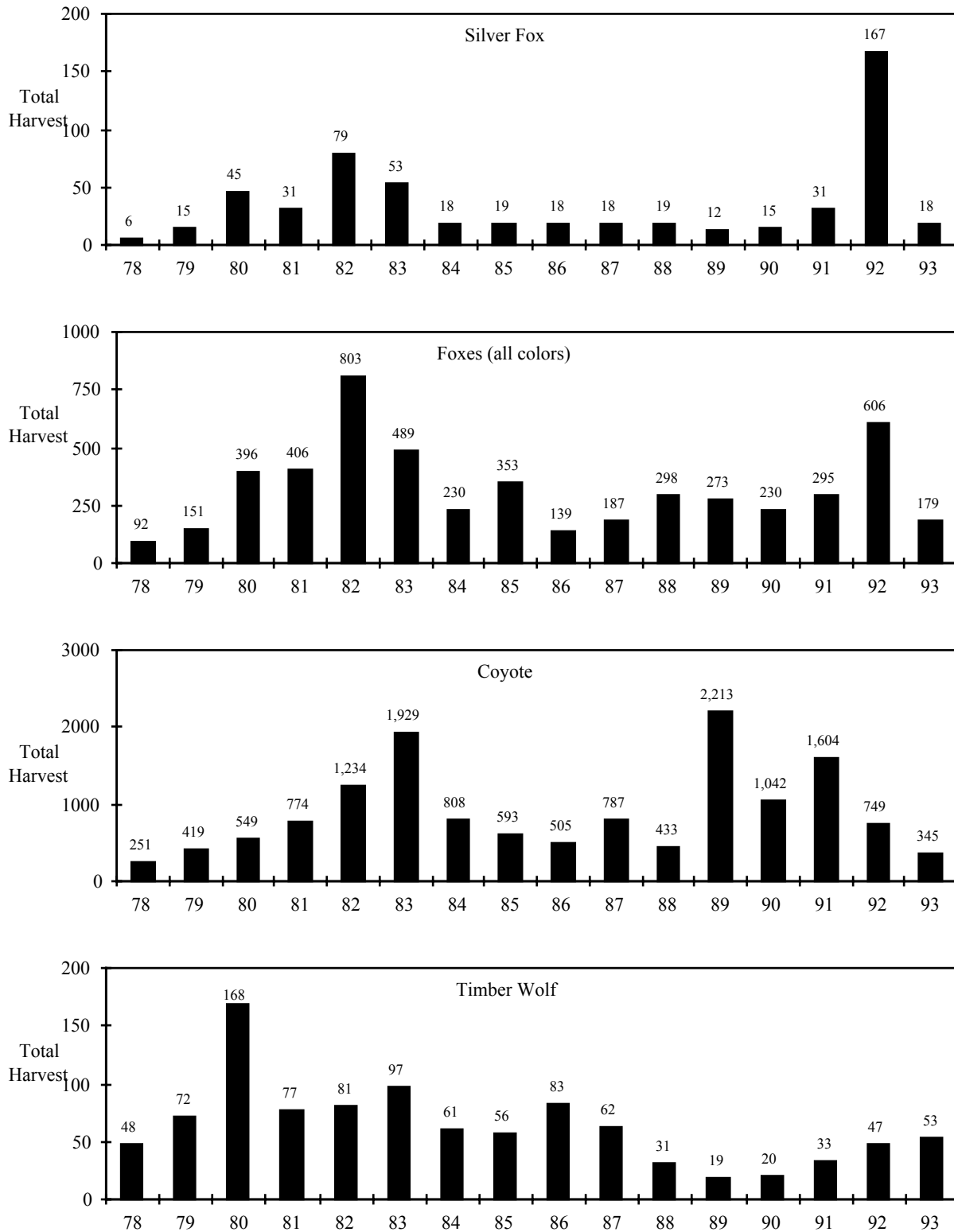


Figure 63. Annual harvest of canids (silver fox, all foxes, coyote, timber wolf) in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

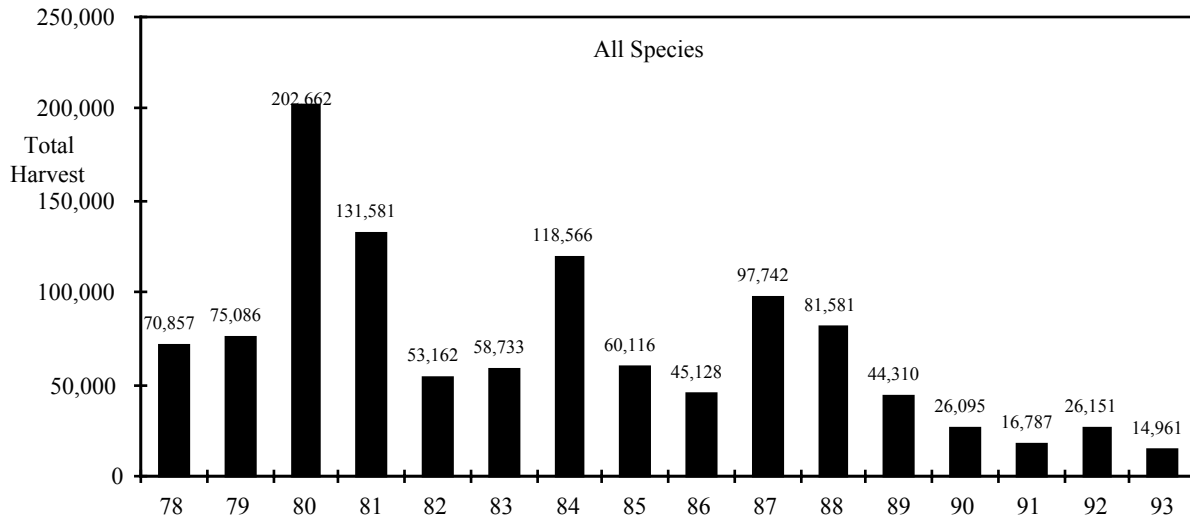


Figure 64. Annual harvest of all furbearer species in northwest Alberta (1978–1993). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Table 15. Historical furbearer harvest records (1977–1984) in northwest Alberta. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
<b>Rodents</b>								
Squirrel	30,023	37,582	148,494	78,718	16,869	30,804	94,230	27,966
Muskrat	23,157	10,321	13,223	15,315	6,679	3,902	7,277	9,210
Beaver	7,847	11,303	16,280	16,471	9,879	7,774	7,796	7,164
<b>Weasel Family</b>								
Weasel	2,972	3,530	4,958	3,374	1,369	1,330	2,728	3,842
Mink	3,325	5,423	9,146	5,926	4,418	2,131	653	473
Marten	1,440	2,430	2,922	2,670	3,873	5,632	2,811	9,186
Fisher	584	642	1,150	1,217	1,839	1,879	1,101	826
Wolverine	29	14	34	20	32	70	54	46
Otter	10	32	41	41	57	25	19	31
<b>Cat Family</b>								
Lynx	1,049	3,112	5,220	6,493	6,005	2,630	748	346
<b>Bear Family</b>								
Black Bear	25	25	53	78	22	39	48	22
<b>Dog Family</b>								
Fox (Blue)	0	1	4	1	5	1	0	0
Fox (White)	1	0	1	7	0	0	0	0
Fox (Red)	52	83	208	198	378	209	129	172
Fox (Cross)	33	52	138	169	341	226	83	162
Fox (Silver)	6	15	45	31	79	53	18	19
Fox (all)	92	151	396	406	803	489	230	353
Timber Wolf	48	72	168	77	81	97	61	56
Coyote	251	419	549	774	1,234	1,929	808	593

Table 16. Historical furbearer harvest records (1985–1992) in northwest Alberta. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93
<b>Rodents</b>								
Squirrel	12,318	46,206	26,505	18,368	5,233	3685	8,874	6,864
Muskrat	14,016	18,790	20,809	5,271	4,130	1176	1,664	1,692
Beaver	9,298	13,619	8,872	3,643	4,500	2849	4,273	2,205
<b>Weasel Family</b>								
Weasel	1,852	5,877	7,719	2,210	1,280	1032	2,347	932
Mink	574	1,633	3,191	4,734	1,959	1080	403	123
Marten	5,225	9,539	12,912	5,467	6,289	4067	5,684	1,720
Fisher	739	635	568	117	217	210	508	390
Wolverine	48	29	32	13	16	10	17	12
Otter	41	48	30	19	17	19	26	27
<b>Cat Family</b>								
Lynx	0	0	2	3	0	1	1	0
<b>Bear Family</b>								
Black Bear	7	18	19	7	9	5	26	5
<b>Dog Family</b>								
Fox (Blue)	0	0	0	150	34	53	3	0
Fox (White)	1	1	0	0	0	0	1	0
Fox (Red)	70	98	165	68	96	121	254	87
Fox (Cross)	50	70	114	43	85	90	181	74
Fox (Silver)	18	18	19	12	15	31	167	18
Fox (all)	139	187	298	273	230	295	606	179
Timber Wolf	83	62	31	19	20	33	47	53
Coyote	505	787	433	2,213	1,042	1,604	749	345

Table 17. Mean sale price of furs from northwest Alberta sold between 1978–1993. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Species	Mean Price (\$ Canadian)
Lynx	\$312.91
Wolverine	\$177.42
Fisher	\$126.41
Timber Wolf	\$79.61
Cross Fox	\$72.48
Marten	\$55.88
Coyote	\$54.34
Black Bear	\$53.45
Silver Fox	\$48.47
Otter	\$44.16
Red Fox	\$43.34
Mink	\$33.30
Beaver	\$24.20
White Fox	\$15.63
Blue Fox	\$7.13
Muskrat	\$3.34
Weasel	\$2.34
Squirrel	\$1.22

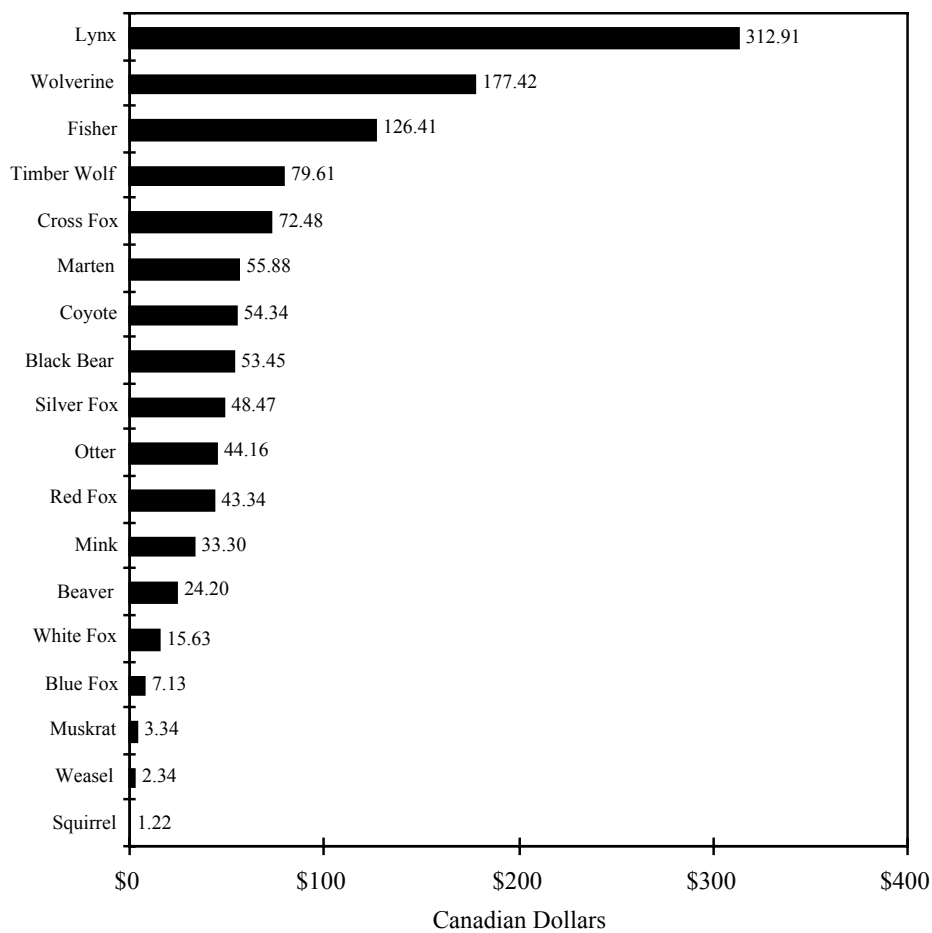


Figure 65. Mean price of furs (1978–1993) sold from northwest Alberta. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

## Revenue Generated from Fur Sales

### Annual Variation

Table 18. Annual (1977–1991) variation in revenue generated from fur sales from northwest Alberta. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Year	Total
1977–78	\$619,832
1978–79	\$1,707,083
1979–80	\$2,501,120
1980–81	\$2,993,094
1981–82	\$2,290,472
1982–83	\$1,565,618
1983–84	\$880,221
1984–85	\$1,167,001
1985–86	\$1,015,085
1986–87	\$1,936,903
1987–88	\$1,821,782
1988–89	\$652,694
1989–90	\$643,964
1990–91	\$354,293
1991–92	\$576,281
Total Revenue (1977–1991)	\$20,680,487

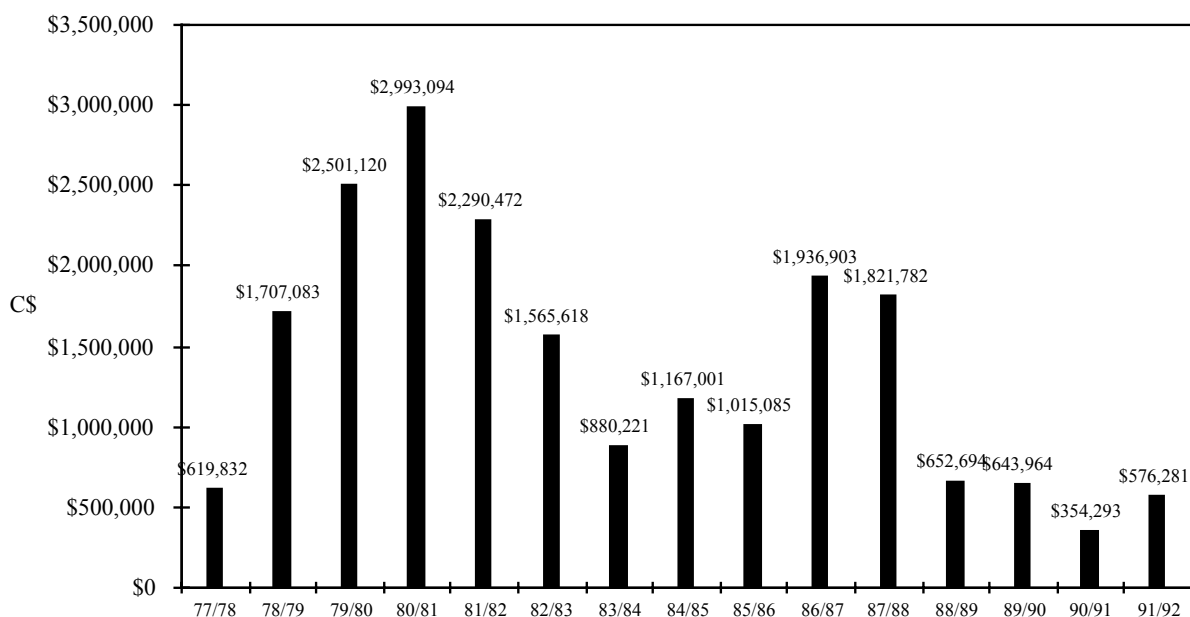


Figure 66. Annual (1977–1991) variation in revenue generated from fur sales from northwest Alberta. Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Species Composition

Table 19. Total and average annual revenue generated from fur sales from northwest Alberta (1977–1991). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

Species	Total Revenue	Average Annual Revenue
Lynx	\$11,125,338	\$695,334
Marten	\$10,466,978	\$654,186
Beaver	\$5,572,167	\$348,260
Fisher	\$2,898,127	\$181,133
Coyote	\$1,187,516	\$74,220
Squirrel	\$1,086,569	\$67,911
Muskrat	\$249,123	\$15,570
Cross Fox	\$231,625	\$14,477
Weasel	\$184,793	\$11,550
Red Fox	\$162,210	\$10,138
Wolverine	\$154,284	\$9,643
Timber Wolf	\$117,415	\$7,338
Silver Fox	\$36,901	\$2,306
Otter	\$33,308	\$2,082
Black Bear	\$30,841	\$1,928
Mink	\$21,372	\$1,336
Blue Fox	\$4,399	\$275
White Fox	\$326	\$20

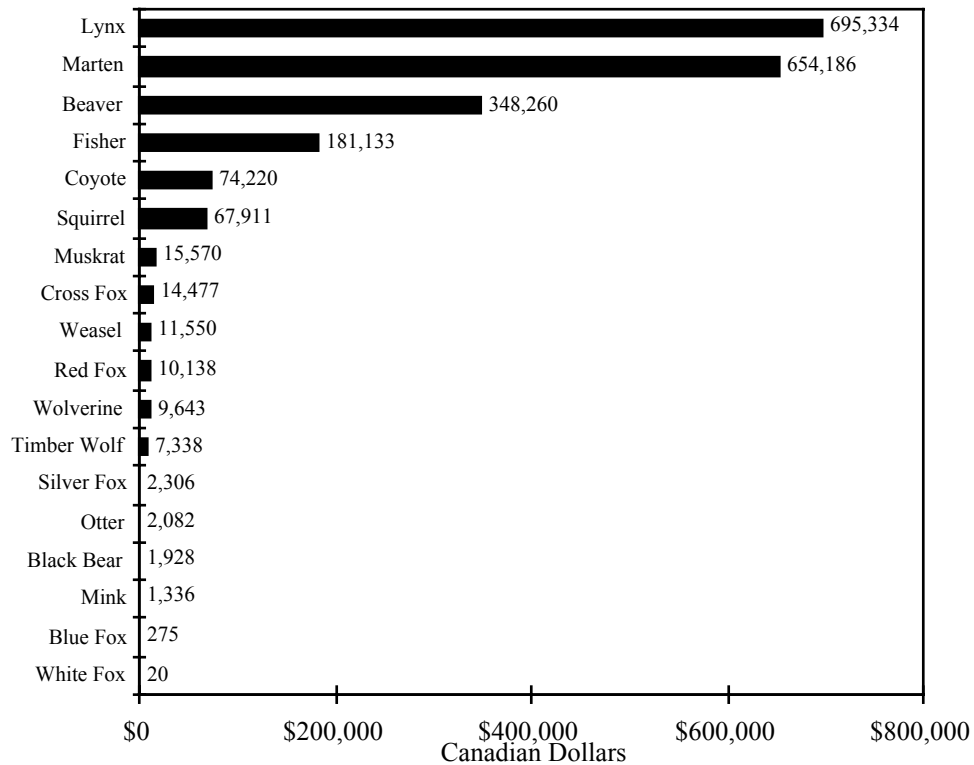


Figure 67. Average annual revenue generated from fur sales for different species from northwest Alberta (1977–1991). Data Source: Furbearer Harvest Dataset of Natural Resources Service.

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