

# **SPORT FISHING IN ALBERTA 2010**

Summary Report from the Eighth Survey of  
Recreational Fishing in Canada



**Fisheries Management Branch  
Alberta Sustainable Resource Development**

**March 2012**

**Government  
of Alberta** 

# **SPORT FISHING IN ALBERTA 2010**

Summary Report from the Eighth  
Survey of Recreational Fishing in Canada

Alberta Sustainable Resource Development

March 2012

For copies of this document, please contact:

Fisheries Management Branch  
Fish and Wildlife Division  
Alberta Sustainable Resource Development  
Great West Life Building  
9915-108<sup>th</sup> Street  
Edmonton, Alberta  
T5K 2G8

Correct citation for this document:

Zwickel, H. 2012. Sport fishing in Alberta 2010: summary report from the eighth survey of recreational fishing in Canada. Alberta Sustainable Resource Development, Fisheries Management Branch. Edmonton, Alberta, Canada. 46 pp.

## **PREFACE**

The *2010 Survey of Recreational Fishing in Canada* was the eighth in a series of nationally coordinated studies conducted by Fisheries and Oceans Canada, also known as Department of Fisheries and Oceans (DFO), and provincial and territorial fisheries agencies. The objective of the survey was to obtain information about recreational fisheries across Canada from licenced anglers, including those who do not reside in the jurisdictions in which they fished or in Canada. Questionnaires (resident and non-resident) were drafted based on the national survey design to facilitate the assemblage of final results while still providing the opportunity for jurisdictions to incorporate survey components specific to their particular needs. Survey design and implementation were coordinated by the Resource Management Division of Fisheries and Oceans Canada, in Ottawa. Alberta Sustainable Resource Development (ASRD), Fisheries Management Branch, mailed surveys to anglers in the spring of 2011 to obtain results based on the 2010 sport fishing season. Primary data analyses were conducted by Brilev Consulting Inc. Additional data analyses were performed in-house. This document summarizes Alberta's information.

## **ACKNOWLEDGEMENTS**

The author gratefully acknowledges the assistance of David Park (Fisheries Biologist, Fisheries Management Branch, ASRD), who provided the basic format of this report, in addition to guidance on various technical aspects of the data collection procedure. Kieth Brickley (Brilev Consulting Inc.) again assumed the role of coordinator of this survey and led the data analyses for DFO. Sally MacSephney (Licensing, Revenue & Resource Data Management, ASRD) assisted with the data collection components for the Alberta portion of the survey. Matt Besko (Head, Fisheries Allocation and Use, Fisheries Management Branch, ASRD) reviewed this report, as well as providing support throughout.

On behalf of the Fisheries Management Branch, the author would also like to thank the anglers who gave of their time and input to help with this survey. Without their participation, it would not have been possible.

## Table of Contents

PREFACE .....	iv
ACKNOWLEDGEMENTS .....	iv
1.0 INTRODUCTION .....	1
1.1 Alberta's Recreational Fishery Resource Base .....	1
1.2 Survey Background and Purpose .....	2
2.0 METHODS .....	3
2.1 Survey Design .....	3
2.2 Survey Implementation .....	3
2.3 Data Analysis .....	5
3.0 RESULTS AND DISCUSSION .....	6
3.1 Survey Response .....	6
3.2 Angler Numbers and Participation .....	6
3.3 Angler Characteristics .....	8
3.3.1 Angler Residence .....	8
3.3.2. Angler Gender and Age .....	11
3.4 Angling Effort .....	13
3.5 Fish Catch and Harvest .....	15
3.6 Trip Characteristics for Non-resident Anglers Travelling to Alberta .....	18
3.7 Fishing on More Than One Water Body .....	20
3.8 Angler Expenditures and Investments .....	23
3.8.1 Value of Sport Fishing in Alberta .....	23
3.8.2 Direct Expenditures .....	23
3.8.3 Major Investments .....	24
3.8.4 Fishing Packages .....	25
3.8.5 Value of Ice Fishing .....	26
3.9 Angler Opinion and Perception .....	27
3.9.1 Assessment of the Quality of the Angling Experience .....	27
3.9.2 Relative Importance of Various Aspects of Fisheries Management .....	28
4.0 TRENDS .....	31
5.0 SUMMARY .....	37
6.0 REFERENCES .....	38
7.0 APPENDIX .....	39

## 1.0 INTRODUCTION

### 1.1 Alberta's Recreational Fishery Resource Base

Owing to its varied topography and relatively arid climate, Alberta has a small, but diverse, array of aquatic habitats. This assortment includes small streams in the mountains and foothills; large rivers extending through the prairie, parkland, and boreal regions; alpine lakes; prairie potholes and reservoirs; and large lakes of the northern boreal forest. In all, only about 2.5% of Alberta's area is covered by water bodies. Surveys of lakes throughout the province have shown that only about 800 lakes in Alberta have natural sport fish-producing capabilities. Another 300 lakes and ponds are stocked annually with hatchery-source rainbow trout.

The fish resources of Alberta are limited by both the paucity of suitable habitat and the relatively low productivity associated with moderately high northern latitudes. Alberta's aquatic environs contain a comparatively sparse fish fauna made up of 62 species, of which 52 are native and 10 have been introduced, intentionally or otherwise. Nineteen species are important in recreational, commercial, or domestic fisheries. The remaining 43 species, the majority of whose individuals are small, are indices of biodiversity and play an important role in the food chain for predatory fish and fish-eating birds and mammals.

Most of Alberta's recreational anglers reside in central Alberta, along the Edmonton–Red Deer–Calgary–Lethbridge corridor. The large lakes and reservoirs in this region attract numerous anglers, the majority of whom fish for walleye (*Sander vitreus*), but, to a lesser degree, will also target northern pike (*Esox lucius*), yellow perch (*Perca flavescens*), and lake whitefish (*Coregonus clupeaformis*). Small ponds throughout Alberta are stocked with introduced strains of rainbow trout (*Oncorhynchus mykiss*). In 2010, these ponds were provisioned with approximately 2.6 million trout to provide angling opportunities near urban centres. Fisheries for introduced species such as rainbow trout, brown trout (*Salmo trutta*), cutthroat trout (*Oncorhynchus clarkii*), and brook trout (*Salvelinus fontinalis*) have long been famous in the rivers of southwestern Alberta, and since 2005 have increased rapidly in popularity. Northern Alberta has relatively few lakes, but these do attract many anglers looking for walleye, northern pike, yellow perch, and, at a very few lakes, lake trout (*Salvelinus namaycush*).

Very high demand is placed on the fish resources of Alberta. Compared to the other Prairie Provinces, Alberta has more anglers, yet a tiny fraction of the number of lakes. The high demand for and limited supply of sport fish, coupled with liberal fisheries regulations in the past, have resulted in the decline of fish populations in Alberta in recent decades. Habitat alteration, as a consequence of human use of land and water, has also contributed to decreases in fish populations. For these reasons, several of Alberta's native fish species have attained an "at risk" or "threatened" status: bull trout (*Salvelinus confluentus*), lake sturgeon (*Acipenser fulvescens*), Athabasca rainbow trout (*O. mykiss athabascaae*), Westslope cutthroat trout (*O. clarkii lewisi*), and Arctic grayling (*Thymallus arcticus*). Recently, however, restrictive sport fishery regulations and extensive management activities (in particular, stocking hundreds of millions of walleye fry to re-establish lost populations) have led to the recovery of some populations of sport fish, most notably walleye and a few bull trout populations in protected parks.

## **1.2 Survey Background and Purpose**

The *2010 Survey of Recreational Fishing in Canada* was the eighth in a series of surveys that have been carried out every five years since 1975 through the cooperative efforts of all federal, provincial, and territorial fisheries management agencies. The results of these surveys provide authoritative and up-to-date information on activity and harvest in our recreational fisheries, as well as detailed information on the economic dimensions of recreational fisheries in all regions of the country. The national survey was coordinated by the Resource Management Division of Fisheries and Oceans Canada, also known as Department of Fisheries and Oceans (DFO), and was collaboratively delivered following common design and delivery protocols. The ongoing purpose of this national survey is to assess the economic and social importance of recreational fisheries to the country, consistently monitor trends in these fisheries, and provide provincial and territorial fisheries management agencies with high-level and comparable data with which to guide their management efforts. Fisheries management programs reflect the importance of achieving a balance between promotion of recreational fishing as a leisure activity and conservation of the resource.

As part of the national survey, Alberta Sustainable Resource Development (ASRD), Fisheries Management Branch, conducted the 2010 survey of sport fishing in Alberta to obtain information from licenced resident and non-resident anglers about their recreational fishing experiences in Alberta in the 2010 calendar year. These provincial-level data and the resulting report provide information on angler demographics, fishing pressure, fish catch and harvest, trip characteristics for non-residents, tendencies to clean gear before fishing on another water body, economic benefits to the province, and anglers' opinions of the Alberta sport fishery in 2010. Historical information is also presented to describe trends.

## **2.0 METHODS**

### **2.1 Survey Design**

The design of Alberta's questionnaires (resident and non-resident) was based on that of the national survey to facilitate the final compilation of results into a cohesive national report. Alberta questionnaires, however, also included questions specific to Alberta's recreational fisheries. The survey posed questions about recreational fishing licences held and fishing activity, including time spent fishing, types of waters fished, location/fishing area, numbers and species of fish caught and harvested, and satisfaction with the fishing experience. Anglers were also asked about their inclination to clean their waders or boots and boating and fishing equipment between trips when fishing on more than one water body, as well as their opinions regarding various aspects of fisheries management. Financial expenditure information was collected to determine the amount of money that anglers spent on sport fishing and the areas in which those purchases were made. Basic demographic information, such as age and gender, was also compiled. Visiting anglers were asked to complete some additional questions about their trips to the province. The survey form (Appendix 1) included a map of Alberta showing coarse watershed features within the boundaries of each of the Fish Management Watershed Units established in 1998 (Figure 1).

### **2.2 Survey Implementation**

Mailing lists were generated using Alberta's automated Licence Information System (LIS). Resident and non-resident anglers were selected using stratified, systematic random sampling<sup>1</sup> of data sets of residents and non-residents who purchased a sport fishing licence in Alberta between January 1, 2010 and December 31, 2010. Only licenced anglers were surveyed. The identities of unlicensed anglers are not known and cannot be included in a post-angling season survey. Mailing lists were screened and adjusted to ensure that there was no double counting of anglers who held multiple licences or more than one survey completed by anglers residing in the same household. Printed surveys were mailed to 5000 Albertans, 400 non-resident Canadians, and 400 non-resident foreigners via Canada Post. Alberta resident and non-resident surveys were printed on paper of differing colours to make them readily distinguishable. An internet link to a website that includes information on fish species identification was provided on the survey form. In addition, a covering letter explaining the purpose of the survey and encouraging respondents' participation was enclosed with the survey.

The initial mail-out was followed by a second, six weeks later, to all Alberta resident and non-resident Canadian anglers who had failed to respond the first time. This increased the response rate. Due to cost and logistic constraints, non-resident foreign anglers were not included in the second mail-out. Upon return, completed surveys were sorted by type and screened in-house. Any irregularities or missing data were identified and corrected, if possible. Screening and revision of irregularities was repeated by DFO during the coding and data-entry phase. Survey forms with significant levels of incomplete coding, missing information, or non-resolvable inaccuracies were set aside by DFO and not included in the final data set.

---

<sup>1</sup>A systematic random sample selects a portion of the total population that is being surveyed. The random nature of the sample means that any individual in the population is as likely to be included as any other; therefore, the sample is assumed to be representative of the population as a whole.





Figure 1. Map of Alberta showing Alberta Sustainable Resource Development's Fish Management Watershed Units and major watershed features.

### **2.3 Data Analysis**

Brilev Consulting Inc., working under contract for the Resource Management Division of Fisheries and Oceans Canada, used SPSS, Version 17, to analyze the collected data. Output programs were weighted to ensure that the data provided extrapolated estimates of the entire population of anglers by applying a simple inverse weighting by stratum (population of licence holders divided by resultant sample). Analyzed data were presented to ASRD by DFO in Microsoft Excel spreadsheet format, and in-house data were analyzed using this program.

### 3.0 RESULTS AND DISCUSSION

#### 3.1 Survey Response

The number of anglers who received this survey is unknown, as some were returned because they were sent to an incorrect address, there was a change in where the angler lived, or the angler had died. The overall response rate for 2010, therefore, could not be calculated. The trend, however, has been a decrease in response rate (61% in 1990, 46% in 1995, 45% in 2000, and 42% in 2005). Information in this report is based on 1606 useable returns (1392 Alberta residents, 110 Canadians from other provinces, and 104 non-Canadians).

#### 3.2 Angler Numbers and Participation

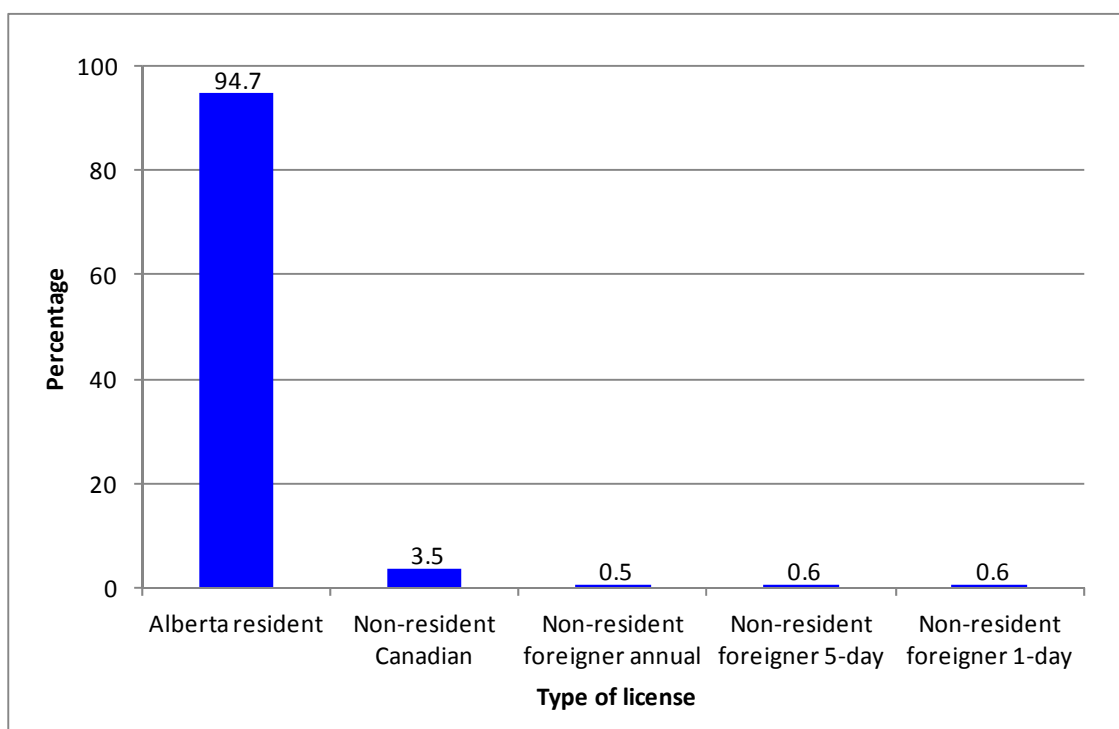
In 2010, 252,030 anglers held Alberta sport fishing licences (Table 1). Alberta residents accounted for 94.7% of all licenced anglers, with 3.5% being from other parts of Canada, and 1.8% from outside of Canada (Figure 2). Approximately 93.4% (223,007/238,789) of licenced Alberta anglers and 93.6% (12,400/13,241) of visiting licenced anglers actively fished in 2010. Random samples of active anglers from the three categories (i.e., Alberta residents, non-resident Canadians, and non-resident foreigners) formed the base groups of anglers used in the Alberta analysis of fishing activity, fish harvest, and expenditures.

**Table 1. Numbers of anglers in Alberta in 2010.**

	Alberta resident	Non-resident Canadian	Non-resident foreigner	Total
<b>Angling population</b>				
Licenced anglers <sup>1</sup>	238,789	8,887	4,354	252,030
Active anglers <sup>2</sup>				
Male	171,201	6,785	3,593	181,579
Female	51,806	1,454	567	53,827
Total	<b>223,007</b>	<b>8,239</b>	<b>4,160</b>	<b>235,406</b>
Estimated number of youth anglers (age <16)	74,218	1,010	354	75,582
Estimated number of senior anglers (age >64)	24,860	-	-	24,860
Estimated total anglers	<b>337,867</b>	<b>9,897</b>	<b>4,708</b>	<b>352,472</b>
Estimated total active anglers	<b>322,085</b>	<b>9,249</b>	<b>4,514</b>	<b>335,848</b>

<sup>1</sup>Total number of people with valid 2010 Alberta sport fishing licences.

<sup>2</sup>Estimated number of licenced anglers who actually fished in 2010.



**Figure 2. Licences held by licenced anglers in Alberta in 2010.**

Estimates of the total number of active anglers in Alberta must include unlicensed youth (age <16) and seniors (age >64). These estimates are extrapolated from the reported number of active youth and senior anglers living in surveyed households. The estimated number of active youth anglers, living in households of licensed anglers who also fished, was 75,582 (all licence types). This number, although it excludes youth anglers who did not reside in the households of licensed anglers, is considered to be reasonably accurate. The estimated number of active senior anglers living in households of licensed anglers was 13,548; however, this number excludes seniors living on their own, and therefore, represents only a small portion of the senior angler population. A more reliable estimate of 24,860 Alberta senior anglers (Table 1) was calculated using angler-age distributions obtained from creel surveys conducted at several lake fisheries between 2000 and 2005. The observed proportion of senior anglers at surveyed lake fisheries was 7.402% (Park and Sullivan 2006). For 2010, the number of active anglers (235,406) was added to the number of youth anglers (75,582), and the number of senior anglers was calculated to be 24,860, which is 7.402% of the total number of active anglers (335,848).

The total estimated population of active anglers in Alberta in 2010 was 335,848, consisting of 223,007 resident anglers, 8,239 other Canadians, 4,160 non-Canadians, 75,582 youth anglers, and 24,860 Alberta seniors. This estimate does not include senior non-resident anglers, but their numbers are assumed to be small.

### 3.3 Angler Characteristics

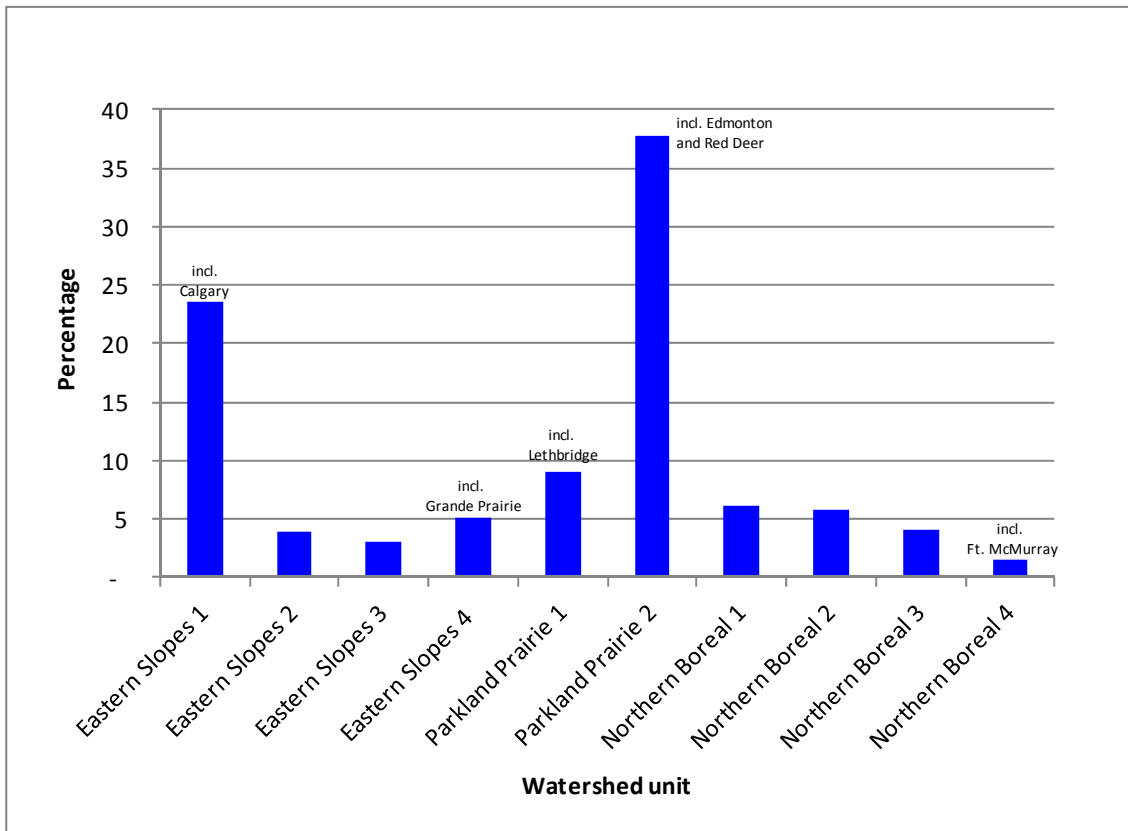
#### 3.3.1 Angler Residence

In 2010, almost half (46.9%) of Alberta resident anglers lived in the Parkland Prairie zone (Table 2; Figure 3), which is consistent with the place of residence of the majority of Alberta's population. The Eastern Slopes zone contained just over one-third of Alberta resident anglers, whereas the largest zone, the Northern Boreal, held the fewest.

**Table 2. Zone of residence of Alberta resident anglers in 2010.**

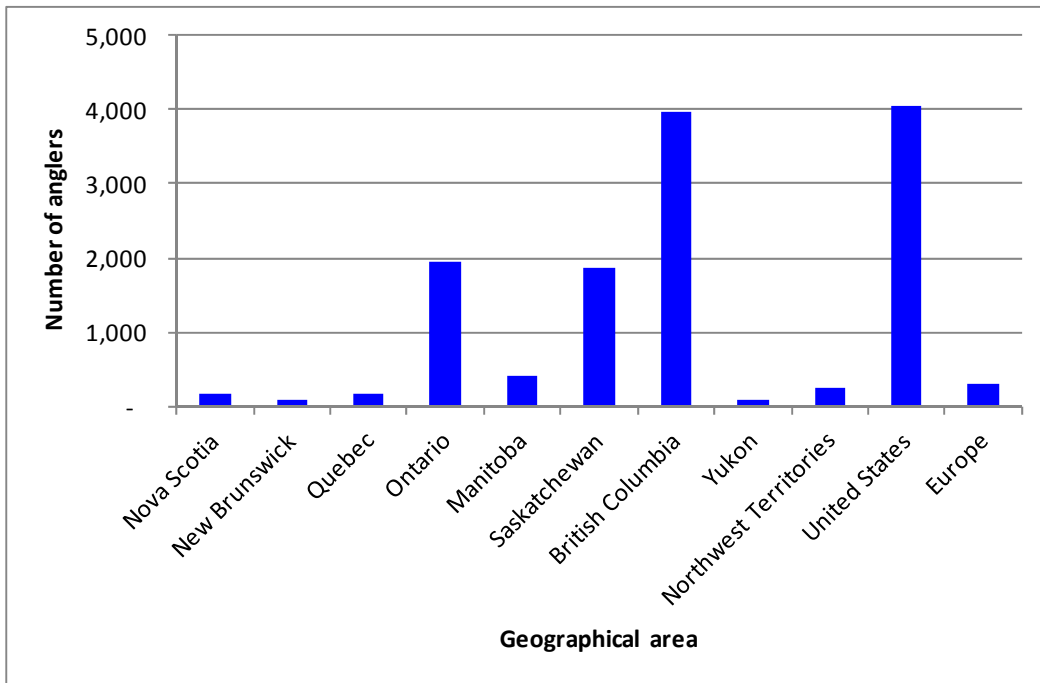
<b>Fish Management Zone</b>	<b>Number</b>	<b>Percentage</b>
<b>Fish Management Zone 1 – Eastern Slopes</b>		
Watershed Unit ES1	56,519	23.6
Watershed Unit ES2	9,280	3.9
Watershed Unit ES3	7,205	3.0
Watershed Unit ES4	12,432	5.2
<b>Subtotal</b>	<b>85,436</b>	<b>35.7</b>
<b>Fish Management Zone 2 – Parkland Prairie</b>		
Watershed Unit PP1	21,786	9.1
Watershed Unit PP2	90,404	37.8
<b>Subtotal</b>	<b>112,190</b>	<b>46.9</b>
<b>Fish Management Zone 3 – Northern Boreal</b>		
Watershed Unit NB1	14,581	6.1
Watershed Unit NB2	13,895	5.8
Watershed Unit NB3	9,606	4.0
Watershed Unit NB4	3,602	1.5
<b>Subtotal</b>	<b>41,684</b>	<b>17.4</b>
<b>Total</b>	<b>239,310<sup>1</sup></b>	<b>100</b>

<sup>1</sup>Total number of anglers is extrapolated from survey data and is within 0.2% of the estimated number of licenced Alberta resident anglers.

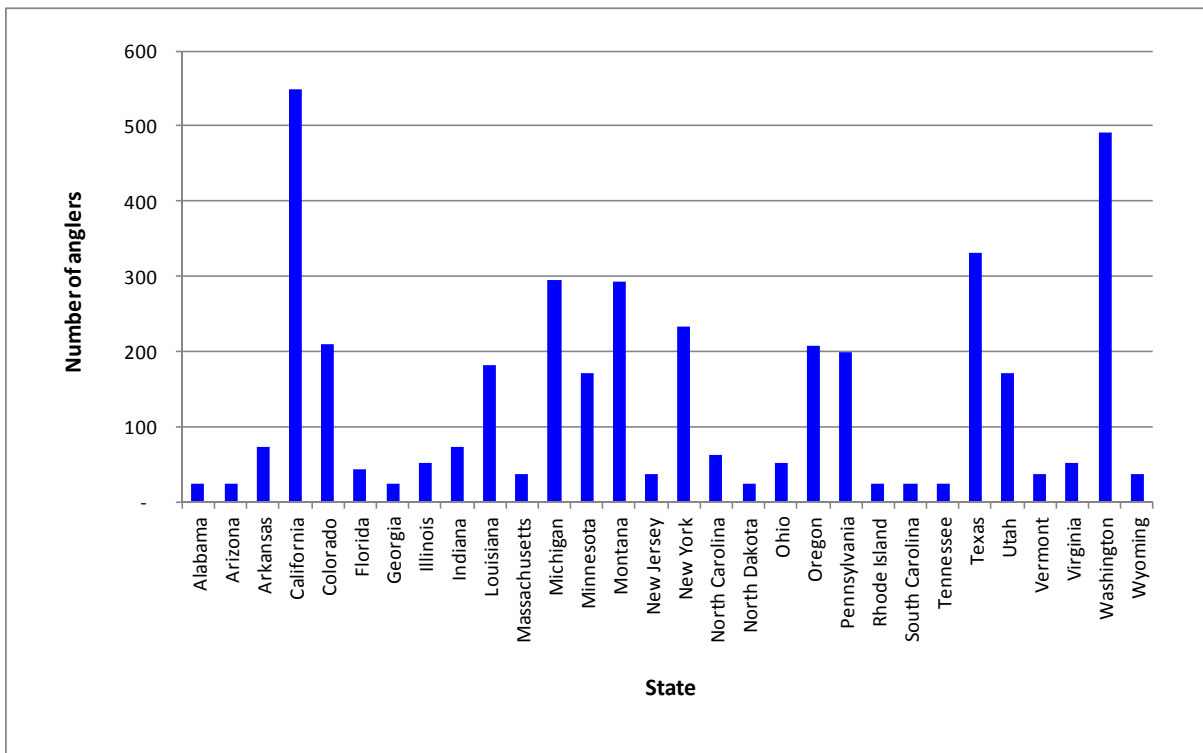


**Figure 3. Residence, by watershed, of licenced Alberta resident anglers in 2010 (including six of Alberta's major population centres).**

Just over two-thirds (67.1%) of all non-resident anglers in Alberta in 2010 lived elsewhere in Canada. Anglers residing in Ontario and neighboring Saskatchewan and British Columbia were the most numerous of non-resident Canadians (Figure 4). The majority (93.2%) of foreign (non-Canadian) anglers was from the United States, and the largest numbers of those were residents of California, Texas, and Washington (Figure 5). This is an interesting change from previous surveys, in which Montana residents comprised an important percentage of visiting anglers.



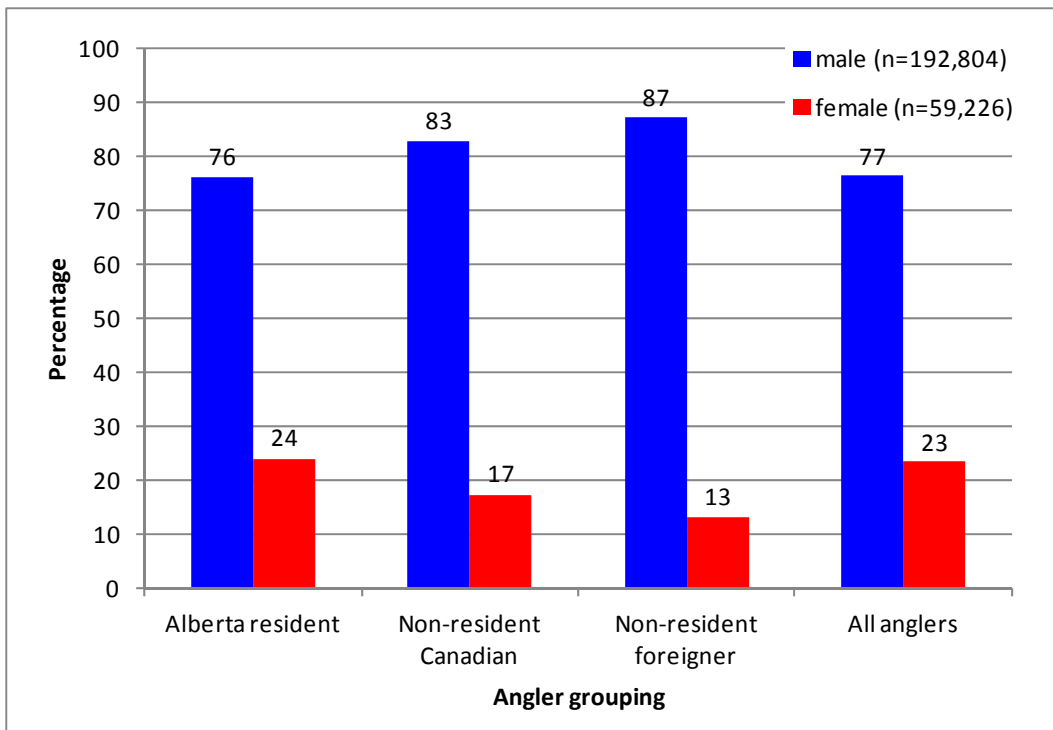
**Figure 4. Origin of non-resident anglers who fished in Alberta in 2010.**



**Figure 5. Origin of licenced U.S. anglers who fished in Alberta in 2010.**

### 3.3.2. Angler Gender and Age

The large majority of licenced anglers were male (Figure 6), the proportions of non-resident males being higher than resident males, when considered on their own. The age-class distributions of licenced anglers (Figure 7) show that the majority of Alberta resident anglers were 45-64 years old, with greater representation of older anglers in the non-resident licence categories. This may be a consequence of older non-resident anglers being better able to afford fishing trips abroad. Interestingly, the distribution of ages for non-resident female anglers shows notably dominant age-classes. The overall average age of male and female active anglers was 45 and 44, respectively. The overall average ages of all active anglers, by licence category, was 45 for Alberta residents, 53 for non-resident Canadians, and 55 for non-resident foreign anglers.



**Figure 6. Licenced anglers by gender in Alberta in 2010. Alberta resident anglers (n=238,789); non-resident Canadians (n=8,887); non-resident foreigners (n=4,354).**



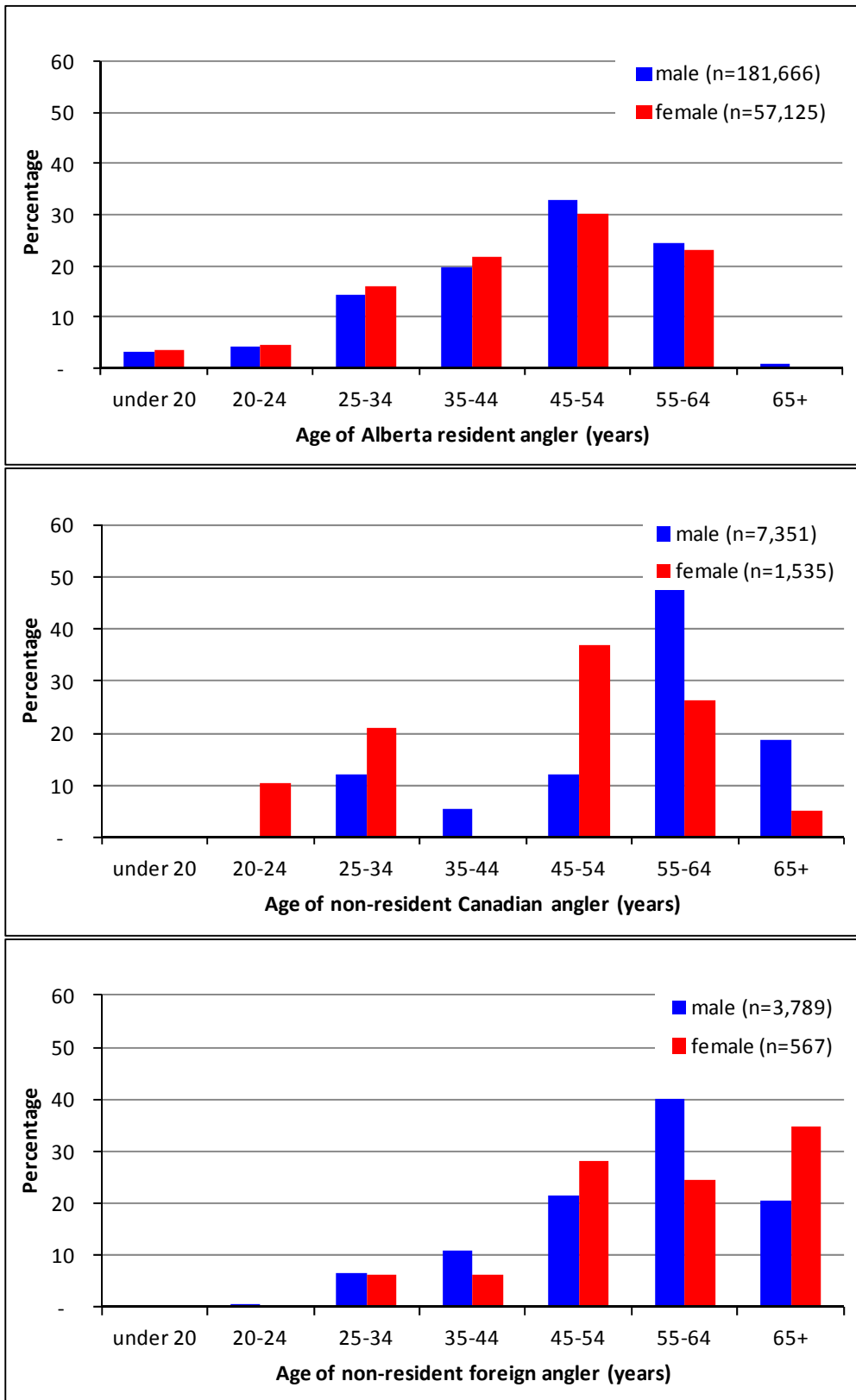


Figure 7. Age-class distributions of licenced anglers in Alberta in 2010.

### 3.4 Angling Effort

Licensed anglers (which excludes youth and Alberta seniors) fished an estimated 3,358,295 days in 2010 (Table 3). The overall average time spent fishing per angler, for all licensed anglers in Alberta, was 14.3 days. Alberta resident anglers fished 2.7 times as many days as visiting anglers. Alberta resident licensed anglers expended 98% of the total fishing effort in 2010. Unlicensed youth and senior anglers sharing households with licensed anglers reported fishing an estimated total of 512,742 days and 128,801 days, respectively. Overall, the fishing effort estimated for the 2010 survey in Alberta totaled 3,999,838 days; however, this value does not include unlicensed senior anglers not sharing households with licensed anglers. The 2010 survey reported an estimated 1797 non-resident senior anglers.

A more accurate estimate of the days fished by senior anglers (Table 3) is derived by using the reported average of 9.5 days fished per surveyed senior and the number of Alberta senior anglers (24,860) estimated using data from this survey and Park and Sullivan's (2006) proportion of senior anglers interviewed during creel surveys. Seniors in 2010 are, in this way, estimated to have spent 236,170 angler-days fishing. Using this approach, the total fishing effort in Alberta in 2010 was 4,107,207 angler-days.

**Table 3. Fishing effort (angler-days) in Alberta in 2010.**

	<b>Alberta resident</b>	<b>Non- resident Canadian</b>	<b>Non- resident foreigner</b>	<b>Total</b>
Estimated days fished by active licensed anglers	3,289,524	48,787	19,984	3,358,295
Average days fished per active angler	14.8	5.9	4.8	14.3
Estimated days fished by youth (age <16)	503,269	7,875	1,598	512,742
Estimated days fished by seniors (age >64) living in households of licensed anglers	115,578	7,727	5,496	128,801
Estimated total days fished <sup>1</sup>	<b>3,908,371</b>	<b>64,389</b>	<b>27,078</b>	<b>3,999,838</b>

<sup>1</sup>These figures underestimate the number of days fished by seniors because they only include seniors who lived in the households of licensed anglers. A more accurate estimate of the total fishing effort in Alberta in 2010 includes the fishing effort of all anglers, and is, therefore, 4,107,207 angler-days.

Anglers were asked to identify the amount of time that they spent fishing at each of the following: a) in rivers or streams during the open water period, b) on lakes, reservoirs, and/or ponds during the open water period, and c) through the ice (winter ice fishing). Most (58.7%) of all fishing effort occurred on lakes, reservoirs, and ponds during the open-water season, whereas fishing in rivers and streams accounted for about 29.2% of the total effort (Table 4). Although a few flowing waters are open to fishing all year, the majority of river and stream fishing takes place during summer. Combined, fishing in flowing waters and in still waters during the open-water season represented nearly 88% of all fishing, with ice fishing making up the remaining 12.1%.

**Table 4. Fishing effort (angler-days) by water body type in Alberta in 2010.**

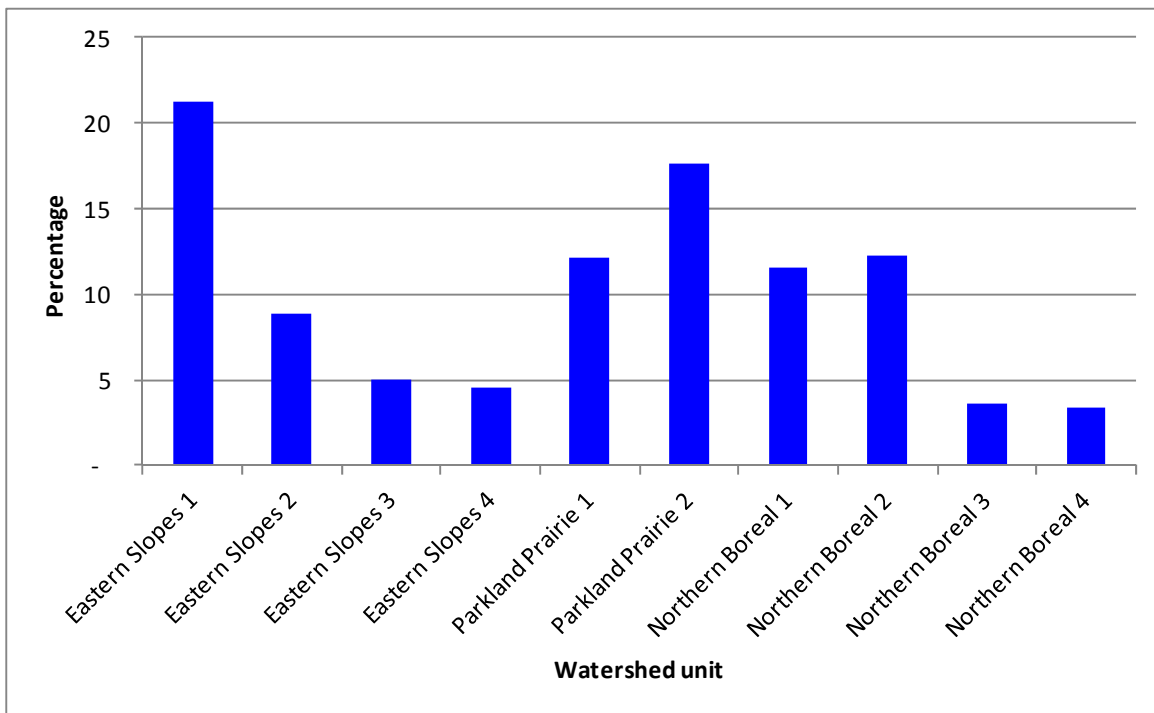
		Alberta resident	Non-resident Canadian	Non-resident foreigner	Total	% of days <sup>1</sup>
<b>Type of activity</b>						
Fishing in rivers or streams	Days <sup>2</sup>	950,095	16,155	13,478	979,728	29.2
Fishing on lakes, reservoirs, and/or ponds	Days	1,934,928	29,563	6,382	1,970,873	58.7
Fishing through ice	Days	404,500	3,069	123	407,692	12.1
Fishing in stocked trout waters <sup>3</sup>	n/a	n/a	n/a	n/a	n/a	n/a

<sup>1</sup>The number of anglers and days reported fished are higher than elsewhere in this report because some anglers fished in streams and lakes on the same days, and some fished in both summer and winter.

<sup>2</sup>A day was defined in the survey question as: "all or any part of a day fished."

<sup>3</sup>Unlike in previous surveys, anglers were not asked about their fishing effort in stocked trout waters in 2010.

Alberta is divided into three Fish Management Zones, each subdivided into Watershed Units (Figure 1). The distribution of fishing pressure in Alberta in 2010 shows marked differences between watershed units (Figure 8). Eastern Slopes 1 (including Calgary and southwestern Alberta, particularly the popular Crowsnest Pass area) received the most effort (21.2%), and Northern Boreal 4 (including Fort McMurray and northeastern Alberta) received the least (3.4%). It is also interesting to note that the few lakes in the Edmonton–Red Deer region (Parkland Prairie 2) were more heavily fished than the numerous lakes in the traditionally heavily fished Lac La Biche–Lakeland area (Northern Boreal 2).



**Figure 8. Percentage of reported sport fishing effort (days fished) in Fish Management Watershed Units in Alberta in 2010 (n=4,107,207 days).**

### 3.5 Fish Catch and Harvest

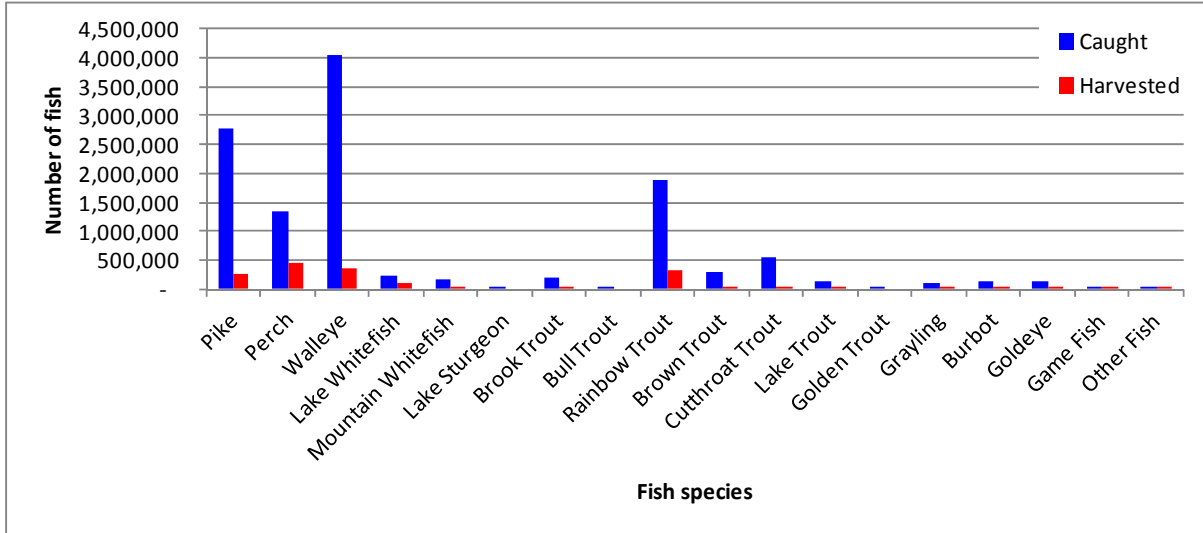
An estimated 12.1 million fish were caught by active licenced anglers, of which 1.67 million were kept (Table 5), for overall annual catch and harvest rates of 51.4 and 7.1 fish per angler, respectively. Using these per-angler rates, an estimated total of 17.3 million fish were caught and 2.4 million fish were harvested by active anglers (n=335,848) in Alberta in 2010. Alberta resident anglers accounted for 97.6% and 98.5% of the fish caught and harvested, respectively (Table 5).

**Table 5. Summary of fish caught and kept (harvested) by licenced anglers, by category of residence, in Alberta in 2010.**

	Alberta resident		Non-resident Canadian		Non-resident foreigner		Total <sup>1</sup>	
	Caught	Kept	Caught	Kept	Caught	Kept	Caught	Kept
Number of fish	11,811,477	1,643,563	175,682	19,870	114,235	4,497	12,101,394	1,667,930

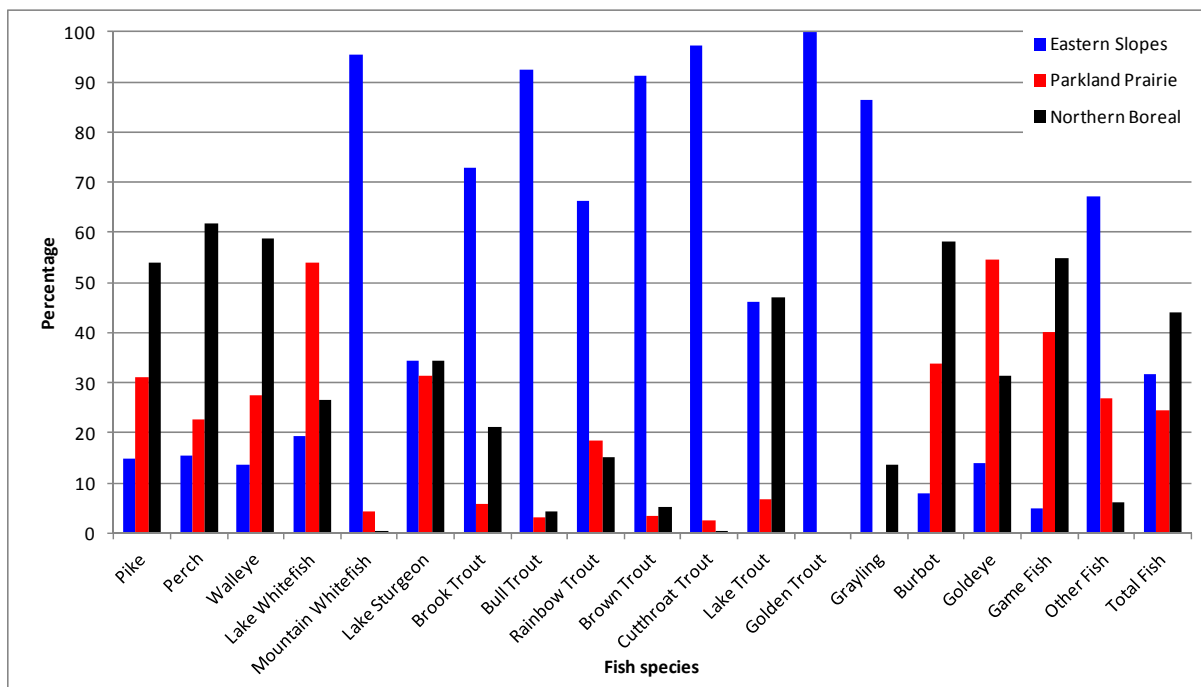
<sup>1</sup>This total only includes catch and harvest figures for licenced anglers. The total catch by all anglers was 17.3 million fish; total harvest, 2.4 million fish.

Northern pike, yellow perch, walleye, and rainbow trout were the most numerous species in the estimated total catch and harvest (Figure 9). These four species alone accounted for approximately 83% of the total number of fish caught and harvested. Of these four species, anglers harvested approximately 9% of their pike catch, 35% of their perch catch, 9% of their walleye catch, and 17% of their rainbow trout catch.

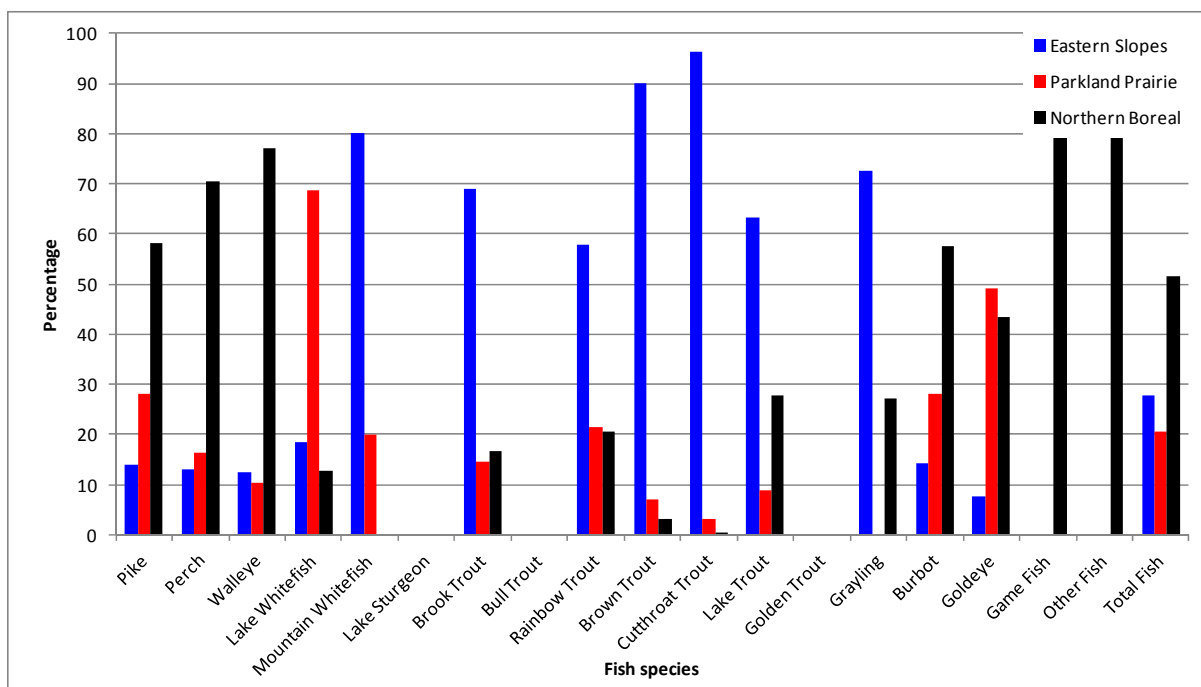


**Figure 9. Estimated total number (n=12,101,394) of fish (by species) reported to have been caught and harvested by active licenced anglers in Alberta in 2010.**

In terms of proportions, the highest percentage of salmonids (including trouts, charrs, grayling, and mountain whitefish) were caught and harvested in the Eastern Slopes zone. The highest proportions of pike, perch, and walleye were caught and harvested in the Northern Boreal zone (Figures 10 and 11).

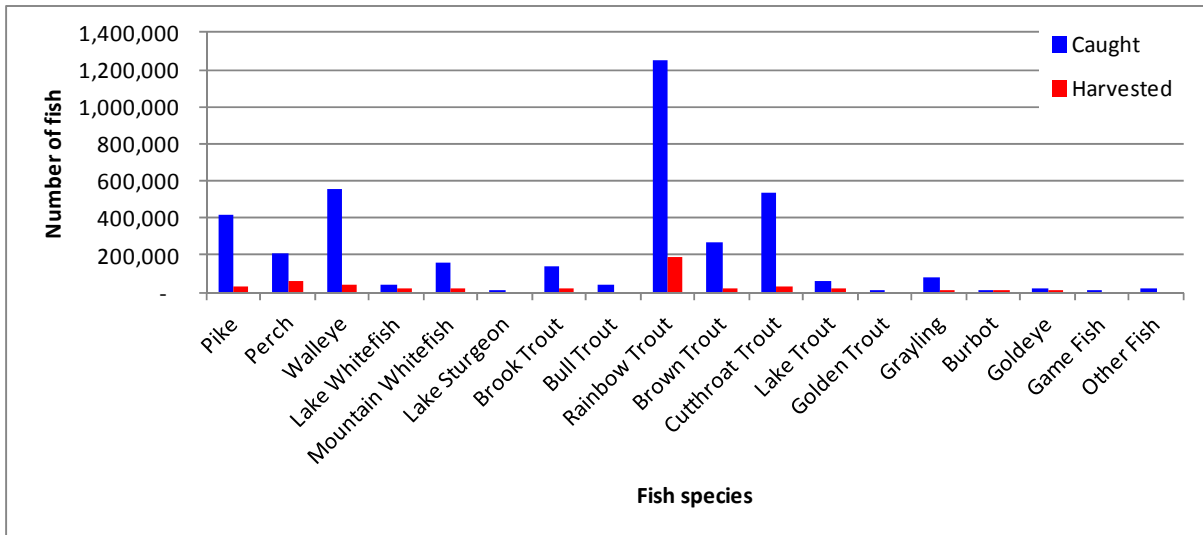


**Figure 10. Percentage of province-wide totals of fish species reported to have been caught by licenced anglers in Alberta in 2010, by Fish Management Watershed Unit.**

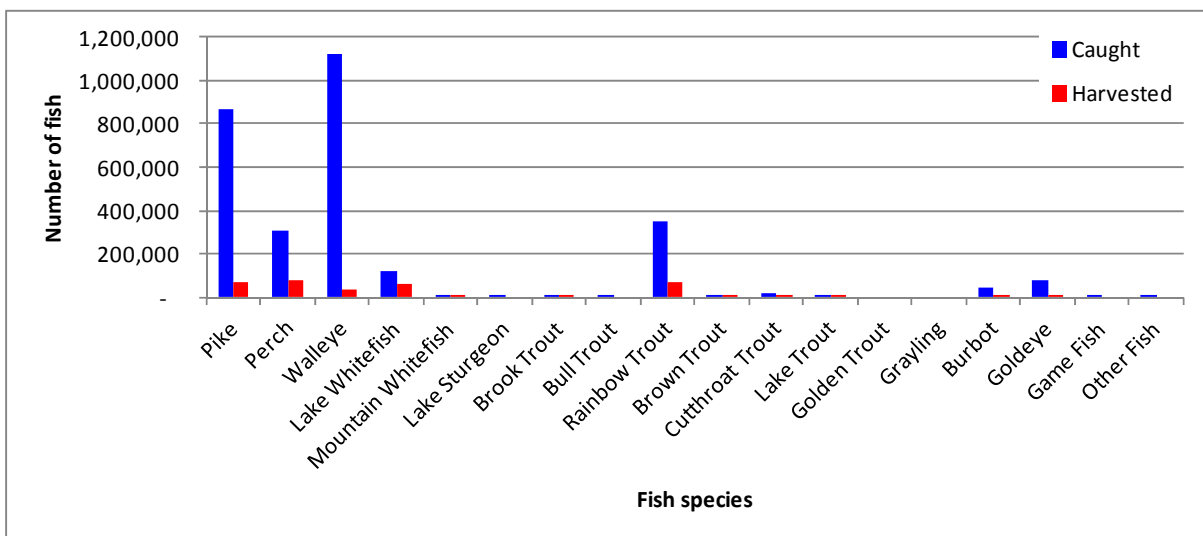


**Figure 11. Percentage of province-wide totals of fish species reported to have been harvested by licenced anglers in Alberta in 2010, by Fish Management Watershed Unit.**

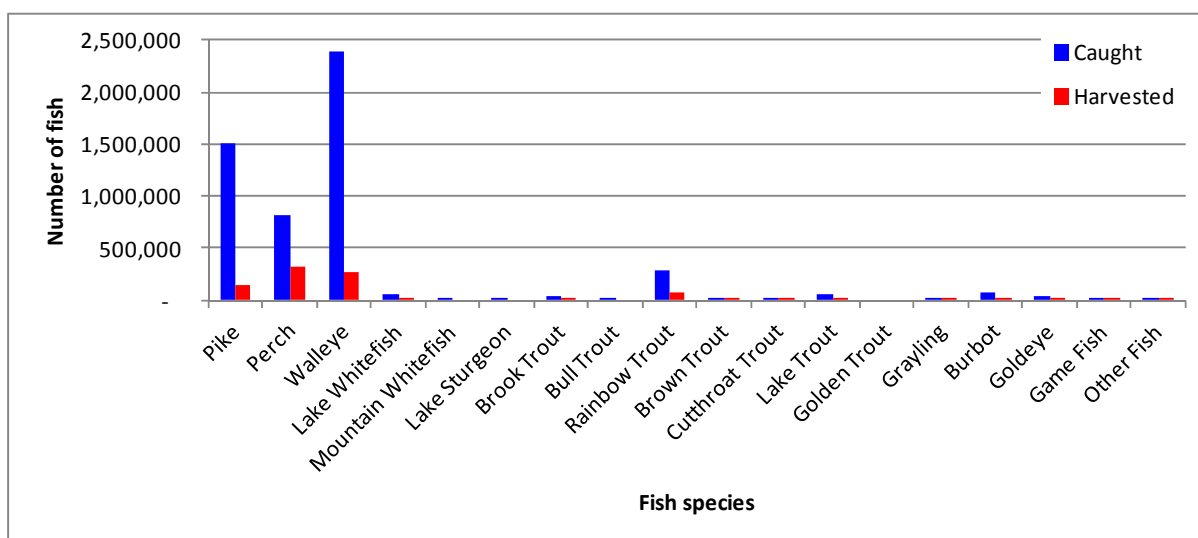
In the Eastern Slopes zone, the catch of rainbow trout dominated, followed by walleye, cutthroat trout, and pike (Figure 12). In the Parkland Prairie zone, walleye, pike, and rainbow trout were the dominant catches (Figure 13), although anglers released most of their catch of these species. Release rates were 97% for walleye, 92% for pike, and 80% for rainbow trout. Walleye, pike, and perch were the predominant species caught in the Northern Boreal zone (Figure 14). The release rates for these species were 89% for walleye, 90% for pike, and 60% for perch. It is interesting to note that all of the rainbow trout caught in the Northern Boreal zone would be from stocked trout ponds, yet the release rate for this put-and-take fishery was high, at 77%.



**Figure 12. Number of fish (by species) reported to have been caught (n=3,820,144) and harvested (n=462,981) by anglers in the Eastern Slopes zone in Alberta in 2010.**



**Figure 13. Number of fish (by species) reported to have been caught (n=2,954,619) and harvested (n=343,085) by anglers in the Parkland Prairie zone in Alberta in 2010.**



**Figure 14. Number of fish (by species) reported to have been caught (n=5,326,631) and harvested (n=861,865) by anglers in the Northern Boreal zone in Alberta in 2010.**

Although in recent years the improvement of anglers' ability to correctly identify fish species, particularly trout species, has been the focus of educational efforts, misidentification of fish species remains a concern. Errors in fish identification reduce the validity of information obtained by surveys such as this. Despite steps taken to assist with correct identification (provision of brochures, signs at popular fishing sites, and internet-accessible charts), evidence of misidentification was apparent in the resulting data set. Both bull trout and lake trout were reported to have been caught in the Parkland Prairie zone, a region in which they are not known to occur. This is believed to be the result of species misidentification, not an error in map-reading. The reported catch of lake trout is most likely a case of mistakenly referring to a trout (e.g., rainbow trout) caught in a lake as a "lake trout." Such occurrences may also account for a considerably higher-than-expected catch of lake trout in the Eastern Slopes (n=59,714).

Unlike in previous years, anglers in 2010 complied with the law for zero harvest of bull trout and lake sturgeon. None were reported to have been kept by respondents. In 2005, 0.3% of the bull trout that were caught were reported to have been harvested, a small amount compared to the 4.6% (6,102/132,546) non-compliance rate reported in the 2000 survey (Berry and Bodden 2004). These results may demonstrate an improvement in compliance, or they may simply be a consequence of statistical error caused by the relatively small sample sizes of respondents being extrapolated to provincial-scale estimates.

### **3.6 Trip Characteristics for Non-resident Anglers Travelling to Alberta**

Licensed anglers visiting Alberta in 2010 made 91,179 trips, of which 24.3% were for fishing (Table 6). These anglers stayed a total of 312,232 days. On average, non-resident Canadians spent roughly 4 times more days in Alberta than did foreign visitors. Just over half of all fishing trips by non-residents (54.4%; 12,074/22,196) were longer than one day, resulting in an estimated 112,196 nights spent on fishing trips in the province. Almost twice as many nights were spent by non-resident Canadians than non-resident foreign anglers.

**Table 6. Trip characteristics for non-resident anglers in Alberta in 2010.**

	<b>Number of trips to Alberta</b>	<b>Number of days spent in Alberta</b>	<b>Number of fishing trips to Alberta</b>	<b>Number of one-day fishing trips</b>	<b>Number of nights spent on fishing trips</b>
<b>Non-resident Canadian</b>					
Total	<b>84,811</b>	<b>252,819</b>	<b>17,447</b>	<b>8,804</b>	<b>72,857</b>
Average	9.5	28.4	2.0	1.0	8.2
Anglers	8,887	8,887	8,887	8,887	8,887
<b>Non-resident foreigner</b>					
Total	<b>6,368</b>	<b>59,413</b>	<b>4,749</b>	<b>1,318</b>	<b>39,339</b>
Average	1.5	13.6	1.1	0.3	9.0
Anglers	4,354	4,354	4,354	4,354	4,354
<b>Total</b>					
Total	<b>91,179</b>	<b>312,232</b>	<b>22,196</b>	<b>10,122</b>	<b>112,196</b>
Average	6.9	23.6	1.7	0.8	8.5
Anglers	13,241	13,241	13,241	13,241	13,241

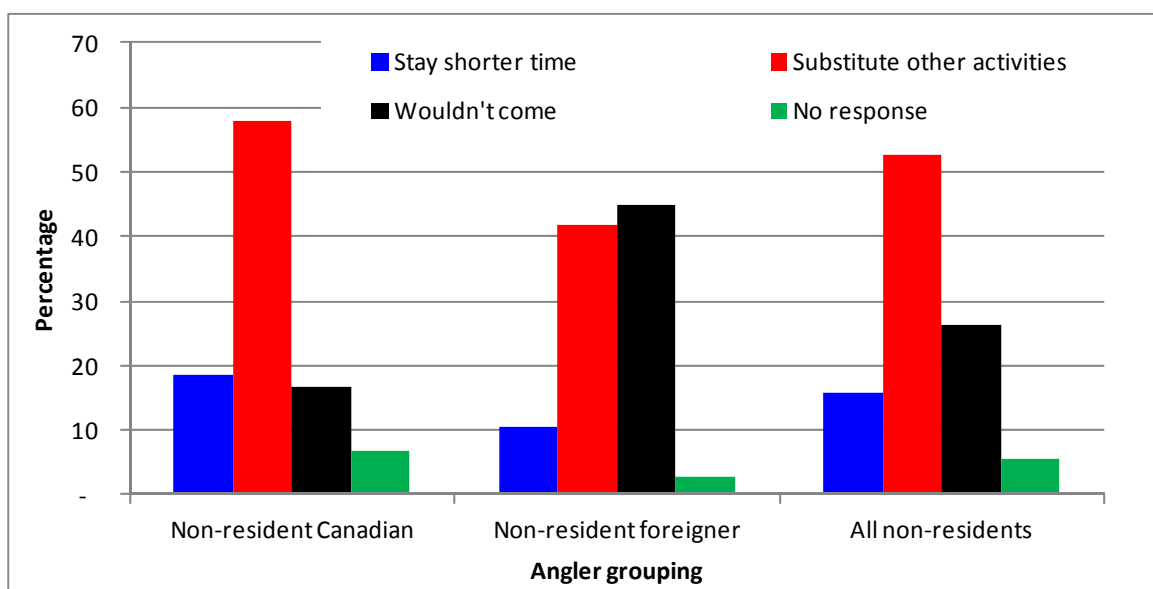
Survey respondents were asked to indicate for how many of their fishing trips to Alberta was fishing the main reason for visiting, a secondary reason, or a decision made only after arriving in the province. Almost two-thirds (61.8%) of all non-resident anglers contended that fishing was the main reason for their visit to Alberta (Table 7).

**Table 7. Relative importance for non-resident anglers of making the trip to Alberta for fishing in 2010.**

	<b>Main reason</b>	<b>Secondary reason</b>	<b>Decided after arrival</b>
<b>Non-resident Canadian</b>			
Total	<b>10,985</b>	<b>4,927</b>	<b>1,535</b>
Average	1.2	0.6	0.2
Anglers	8,887	8,887	8,887
<b>Non-resident foreigner</b>			
Total	<b>2,733</b>	<b>1,732</b>	<b>284</b>
Average	0.6	0.4	0.1
Anglers	4,354	4,354	4,354
<b>Total</b>			
Total	<b>13,718</b>	<b>6,659</b>	<b>1,819</b>
Average	1.0	0.5	0.1
Anglers	13,241	13,241	13,241

Visitors were asked to select from options regarding what they would have done had no fishing opportunities existed in Alberta in 2010 (Figure 15). A relatively small percentage (15.9%) would have stayed for a shorter length of time. Roughly half (52.5%) of all non-resident anglers indicated that they would have substituted other activities. When comparing Canadian versus foreign non-resident anglers, however, 57.8% of Canadians versus 41.9% of foreigners stated that they would have substituted other activities. Just under half (44.9%) of non-resident foreign anglers indicated that they would not have come to Alberta at all in the absence of angling opportunities. This suggests that angling may be a more important factor for non-resident foreign anglers compared to non-resident Canadian anglers when deciding whether or not to travel to Alberta.

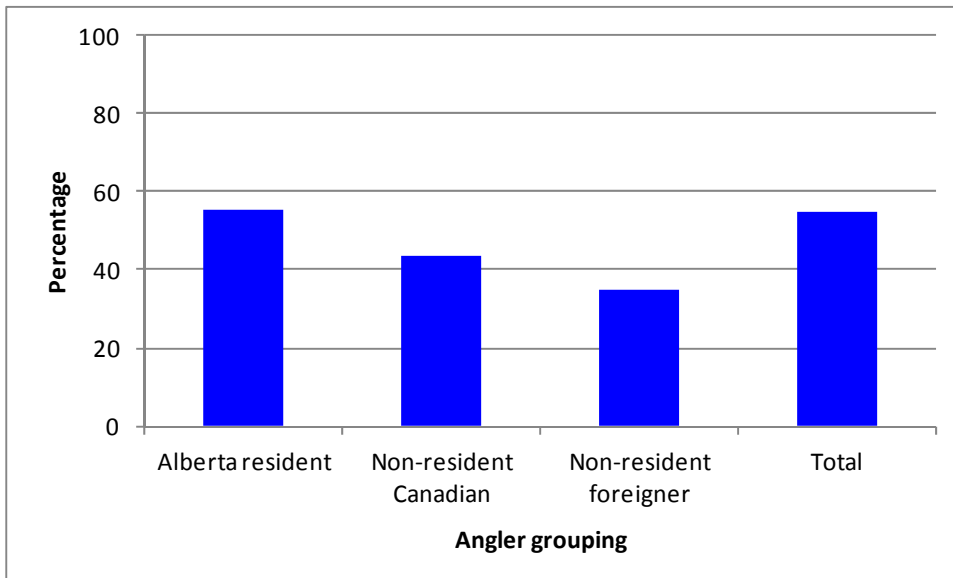




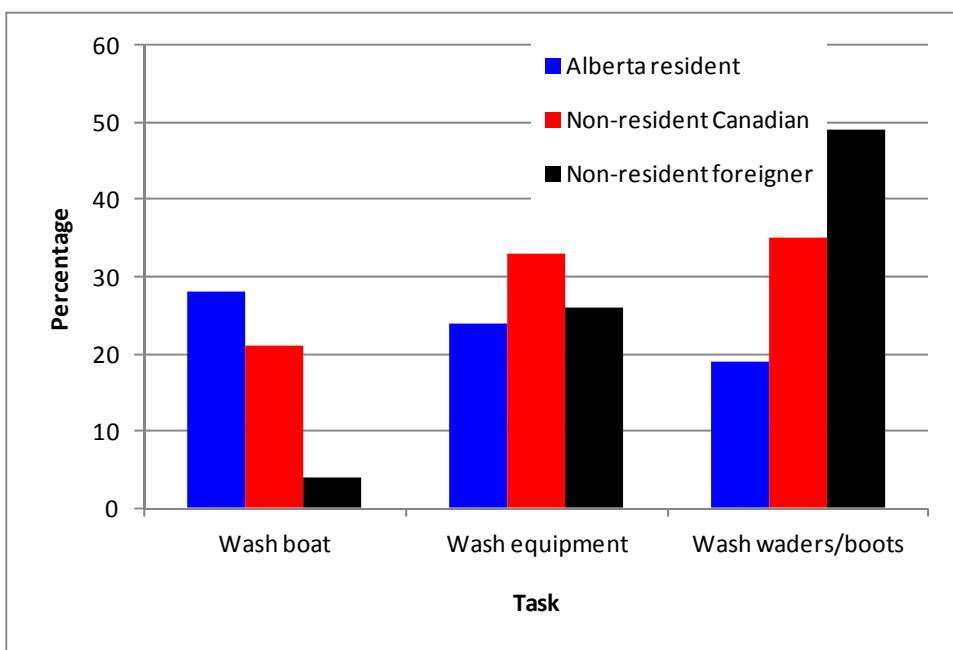
**Figure 15. Reported retrospective reactions of visiting anglers to a theoretical lack of fishing opportunities in Alberta in 2010.**

### **3.7 Fishing on More Than One Water Body**

Aquatic invasive species are plants and animals that are introduced into an ecosystem to which they are not native. As their populations flourish, these introduced species often disrupt the local ecosystem by feeding on native species, competing for food or space, and introducing diseases and parasites to the native populations. Once established in a body of water, aquatic invasive species are very difficult to control or eradicate. They can cause environmental, economic, recreational, and health effects, and can be a serious threat to biodiversity. Many of these invaders are unintentionally and unknowingly transported into non-native waters by way of boats, boat trailers, boating equipment, fishing gear, waders, boots, etc. Anglers can prevent the introduction of invasive species by thoroughly cleaning and drying their boats, equipment, gear, and clothing before using any of it again on a different water body. Because of this important issue, anglers were asked whether or not they had fished on more than one body of water in Alberta in 2010 and whether or not they had fished outside of the province before coming to Alberta. Those who had were subsequently requested to indicate if they had cleaned their boating equipment, fishing equipment, and waders or boots before fishing on a different water body. More than half (56%) of all Alberta resident anglers fished on more than one water body in the province in 2010. Smaller proportions of non-resident anglers also did (Figure 16). Of those who did, non-residents were more fastidious about cleaning their equipment and waders/boots than were Alberta resident anglers, who seemed more concerned about their boats (Figure 17).



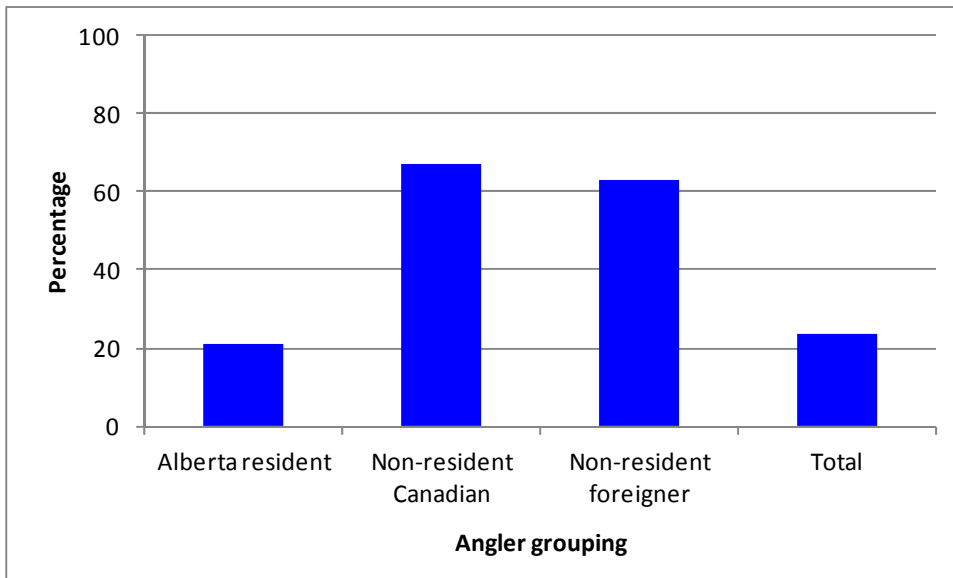
**Figure 16. Anglers fishing more than one water body in Alberta in 2010.**



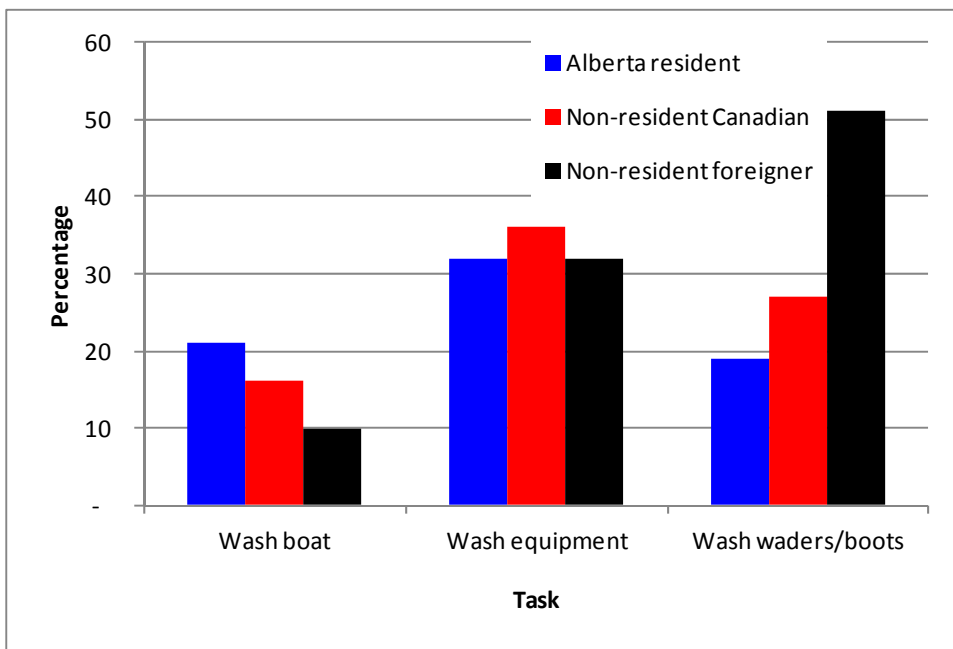
**Figure 17. Anglers washing or cleaning vehicles/gear after fishing on one water body, before fishing on another.**

More than 60% of non-resident Canadian and foreign anglers fished outside of Alberta, as well as in Alberta, in 2010. As might be expected, a much smaller percentage of Alberta resident anglers did the same (Figure 18). Of those who fished outside of the province, greater percentages of non-resident anglers, once again, tended to concentrate more on cleaning their equipment and waders/boots than did Alberta residents, whereas resident

anglers were more apt than non-residents to clean their boats before fishing again in the province (Figure 19).



**Figure 18. Anglers fishing in Alberta and outside of Alberta in 2010.**



**Figure 19. Anglers washing or cleaning vehicles/gear after fishing outside of Alberta, before fishing again inside the province.**

### 3.8 Angler Expenditures and Investments

#### 3.8.1 Value of Sport Fishing in Alberta

In 2010, the overall amount of expenditures and investments attributed to sport fishing was \$1,967 per licenced angler (Table 8). Alberta resident anglers spent considerably more per person (\$2,018) than did non-residents. On a per-day basis, however, they spent the least, 88% of the daily amount spent by non-resident Canadians and half of that spent by non-resident foreigners. Overall, excluding Alberta seniors, expenditures and investments attributed directly to sport fishing in Alberta totaled \$463 million in 2010 (Table 8).

The survey data did not estimate the value to sport fishing contributed by Alberta seniors. By assigning an average expenditure of \$1,009 (50% of that spent by Alberta resident anglers under the age of 65 years, assuming that seniors have both less disposable income to spend on fishing and that major expenses such as boats have already been purchased) to each of the estimated 24,860 senior anglers, however, it was calculated that roughly \$25 million was spent directly on sport fishing by Alberta seniors. The total estimated value of sport fishing in Alberta in 2010, including Alberta seniors, was approximately \$488.1million.

**Table 8. Estimated economic value of sport fishing in Alberta in 2010 (CDN\$).**

	<b>Alberta resident</b>	<b>Non-resident Canadian</b>	<b>Non-resident foreigner</b>	<b>Total</b>
<b>Direct expenditures</b>	161,232,869	5,135,145	5,311,487	171,679,501
Percentage	93.9	3.0	3.1	100
Average per active angler	723	623	1,276	729
Average per angler day	49	105	266	51
<b>Purchases and investments attributed to sport fishing</b>	288,759,407	2,483,768	141,775	291,384,950
Percentage	99.1	0.85	0.05	100
Average per active angler	1,295	301	34	1,238
Average per angler day	88	51	7	87
<b>Value of sport fishing (excluding Alberta seniors)</b>	449,992,276	7,618,913	5,453,262	463,064,451
Percentage	97.2	1.6	1.2	100
Average per active angler	2,018	925	1,311	1,967
Average per angler day	137	156	273	138
Estimated value of sport fishing by Alberta seniors <sup>1</sup>	25,083,740	(included as licenced anglers)	(included as licenced anglers)	25,083,740
<b>Total value of sport fishing (including Alberta seniors)</b>	<b>475,076,016</b>	<b>7,618,913</b>	<b>5,453,262</b>	<b>488,148,191</b>

<sup>1</sup> Number of senior anglers in 2010 (24,860) multiplied by estimated average expenditure per senior angler (estimated at 50% of total expenditures of non-senior anglers = \$1009).

#### 3.8.2 Direct Expenditures

Anglers, excluding Alberta seniors, spent \$171.7 million in Alberta in 2010 on activities and supplies directly connected with sport fishing (Table 9). Almost 95% of that total amount was

spent by Albertans, at an average rate of roughly \$50/day and more than \$700/angler/year. Visiting anglers spent approximately \$10.4 million. The per-angler and per-day expenditures of non-resident foreign anglers in Alberta were 2 to 2.5 times higher than those of non-resident Canadians. Food, lodging, and transportation accounted for 84% of the expenditures of Alberta anglers and 65% of the expenditures of visiting anglers. Resident anglers spent just over \$14.5 million, or roughly 9% of their total expenditures, on fishing supplies (bait, tackle, etc.). Non-resident anglers, particularly foreigners, spent comparatively little in Alberta on fishing supplies, suggesting that they either had brought tackle with them or that it was provided by friends, relatives, or guides.

**Table 9. Estimated expenditures directly attributable to sport fishing in Alberta in 2010, by expenditure category (CDN\$).**

		Alberta resident	Non- resident Canadian	Non- resident foreigner	Total
<b>Expenditure category</b>					
<b>Food and lodging</b>	Food	37,223,616	1,164,626	845,459	39,233,701
	Accommodation	3,585,408	698,926	1,039,184	5,323,518
	Campsite fees	16,248,112	393,488	97,612	16,739,212
	Access fees (park fees, etc.)	1,209,172	20,664	11,093	1,240,929
	<b>Subtotal</b>	<b>58,266,308</b>	<b>2,277,704</b>	<b>1,993,348</b>	<b>62,537,360</b>
<b>Transportation</b>	Travel costs	58,838,040	1,390,720	927,844	61,156,604
	Boat expenses	18,446,879	150,237	9,949	18,607,065
	<b>Subtotal</b>	<b>77,284,919</b>	<b>1,540,957</b>	<b>937,793</b>	<b>79,763,669</b>
<b>Fishing services</b>	Rentals	696,347	32,309	25,980	754,636
	Guide services	731,091	173,661	253,398	1,158,150
	Licence fees	6,432,975	239,362	219,774	6,892,111
	<b>Subtotal</b>	<b>7,860,413</b>	<b>445,332</b>	<b>499,152</b>	<b>8,804,897</b>
Fishing supplies (bait, tackle, etc.)		14,531,042	264,952	144,719	14,940,713
Fishing packages purchased <sup>1</sup>		2,812,781	563,390	1,719,591	5,095,762
Other		477,406	42,810	16,884	537,100
<b>Total</b>		<b>161,232,869</b>	<b>5,135,145</b>	<b>5,311,487</b>	<b>171,679,501</b>

<sup>1</sup>See also Table 11.

### 3.8.3 Major Investments

In 2010, licenced anglers invested approximately \$676.5 million on durables and property, of which \$291.4 million (43%) was attributed directly to sport fishing in Alberta (Table 10). Nearly half (46%) of resident anglers reported making a major investment, whereas non-resident Canadian and non-resident foreign anglers only invested 29% and 11%, respectively. Alberta resident anglers invested \$288.8 million (99.1%) directly to sport fishing, whereas visiting anglers invested about \$2.6 million. Resident anglers attributed varying proportions of their major 2010 investments to sport fishing. Between one-quarter and one-third (29%) of the value of recreational vehicles, such as campers and ATVs, was ascribed to angling. The same percentage (29%) of the value of land and building purchases was attributed to sport fishing by resident anglers. Notably, this latter figure is half of that calculated for the 2005 survey (59%). More than half (57%) of expenditures on boating equipment by Alberta resident anglers was ascribed to angling.

**Table 10. Estimated value of major purchases or investments attributable to sport fishing in Alberta in 2010 (CDN\$).**

		Alberta resident	Non- resident Canadian	Non- resident foreigner	Total
Expenditure category					
<b>Fishing equipment</b>	<b>Amount</b> <sup>1</sup>	23,284,726	667,250	96,507	24,048,483
(rods, reels, fish finders)	% of total amount spent <sup>2</sup>	100	100	100	100
<b>Boating equipment (new)</b>	<b>Amount</b>	43,629,527	1,141,157	6,360	44,777,044
(boats, motors, trailers)	% of total expenditures	48	97	100	49
<b>Boating equipment (used)</b>	<b>Amount</b>	34,449,724	15,145	-	34,464,869
(boats, motors, trailers)	% of total expenditures	74	75	-	74
<b>Camping equipment</b>	<b>Amount</b>	98,581,585	241,056	4,875	98,827,516
(tents, trailers)	% of total expenditures	45	51	21	45
<b>Special vehicles (new)</b>	<b>Amount</b>	23,957,421	315,014	-	24,272,435
(4x4's, campers, ATVs)	% of total expenditures	26	30	-	26
<b>Special vehicles (used)</b>	<b>Amount</b>	21,981,819	-	-	21,981,819
(4x4's, campers, ATVs)	% of total expenditures	32	-	-	32
<b>Land and/or buildings</b>	<b>Amount</b>	35,335,120	-	-	35,335,120
(land, cabins, cottages)	% of total expenditures	29	-	-	29
<b>Other</b>	<b>Amount</b>	7,539,485	104,146	34,033	7,677,664
(special clothing, waders)	% of total expenditures	91	86	83	91
<b>Combined categories</b>	<b>Amount</b>	<b>288,759,407</b>	<b>2,483,768</b>	<b>141,775</b>	<b>291,384,950</b>
	% of total expenditures	43	71	85	43

<sup>1</sup>Expenditure directly attributable to sport fishing.

<sup>2</sup>Percentage of total amount spent by an angler in 2010 on that category of expenditure that is attributable to sport fishing.

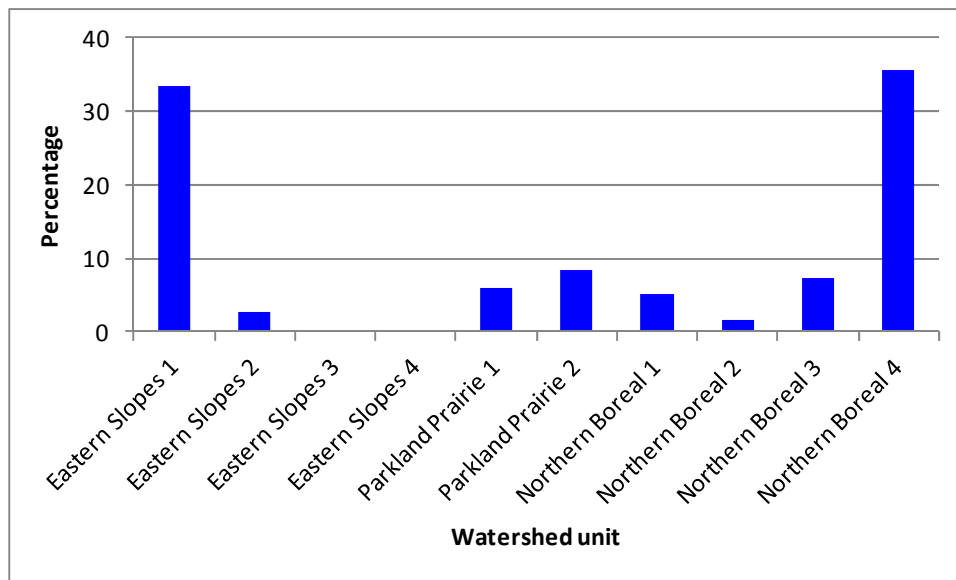
#### 3.8.4 Fishing Packages

In 2010, anglers spent \$5 million purchasing fishing trip packages in Alberta (Table 11) from fishing lodges and guides or outfitters, who provide a range of services, from lodging and food to transportation. Despite the very small percentage of Alberta resident anglers who purchased packages (1.8%), in total, they spent roughly 1.2 times as much on fishing packages as did non-resident Canadian and foreign anglers combined. Surprisingly, only 38.3% of non-resident foreign anglers purchased fishing trip packages. This suggests that

most such anglers were self-directed in their fishing activities. The overall average cost of fishing packages was just over \$1000. As might be expected, visiting foreign anglers spent more per package than did other anglers. In terms of regions, package deals were most often (69%) purchased by anglers in the Eastern Slopes 1 and Northern Boreal 4 regions (Figure 20). Almost half (47.8%) of the funds invested on packages at lodges was spent in the Northern Boreal 4 zone. The entire Northern Boreal zone accounted for 78.6% of the total amount spent on lodge packages. More than half (57.9%) of the money invested on packages with outfitters was spent in the Eastern Slopes 1 zone, followed by the Northern Boreal 4 zone (25.8%). This suggests that anglers fishing the rivers of southwestern Alberta (e.g., Bow, Crowsnest, and Castle rivers) employed guides, but did not stay at lodges. Anglers flying into remote lakes in northeastern Alberta (e.g., Andrew, Namur, and Athabasca lakes) made use of lodges.

**Table 11. Fishing packages purchased in Alberta in 2010 (CDN\$).**

	Alberta resident	Non- resident Canadian	Non- resident foreigner	Total
Number of active licenced anglers who made purchases	2,779	747	1,440	4,966
Percentage of total active licenced anglers	1.8	10.3	38.3	3.0
Value of packages purchased	2,812,781	563,390	1,719,591	5,095,762
Average cost per purchaser	1,012	754	1,194	1,026



**Figure 20. Overall percentage spent on package deals, by region, in Alberta in 2010.**

### 3.8.5 Value of Ice Fishing

Anglers were asked to identify the amount of their total expenditures and investments that was spent solely for ice fishing in 2010. In total, \$20.4 million was spent on ice fishing in

Alberta, or \$23 per day of fishing (Table 12). This is a small fraction (4.4%) of the total amount of expenditures and investments attributable to sport fishing (\$463 million, not including seniors' expenditures). Alberta resident anglers contributed more than 99% of the value of ice fishing.

**Table 12. Value of ice-fishing in Alberta in 2010 (CDN\$).**

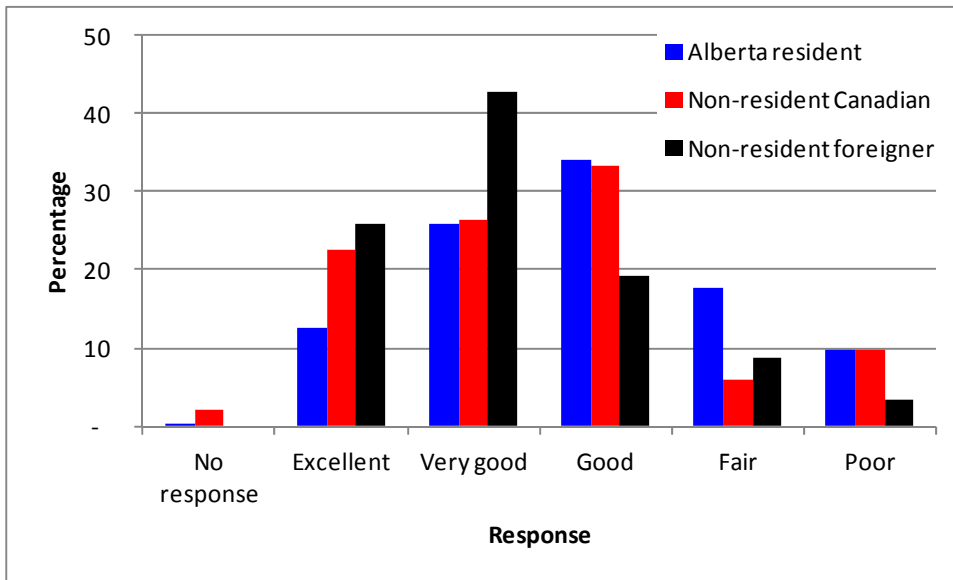
	<b>Alberta resident</b>	<b>Non- resident Canadian</b>	<b>Non- resident foreigner</b>	<b>Total</b>
<b>Expenditures directly attributable to ice fishing</b>	9,336,025	68,064	13,447	9,417,536
Percentage	99.1	0.7	0.1	100
<b>Purchases and investments attributed to ice fishing</b>	10,888,943	31,636	16,324	10,936,903
Percentage	99.6	0.3	0.1	100
<b>Value of ice fishing</b>	20,224,968	99,700	29,771	20,354,439
Percentage	99.4	0.5	0.1	100
Days spent ice fishing	404,500	3,069	123	407,692
Cost per day	23	22	109	23

### **3.9 Angler Opinion and Perception**

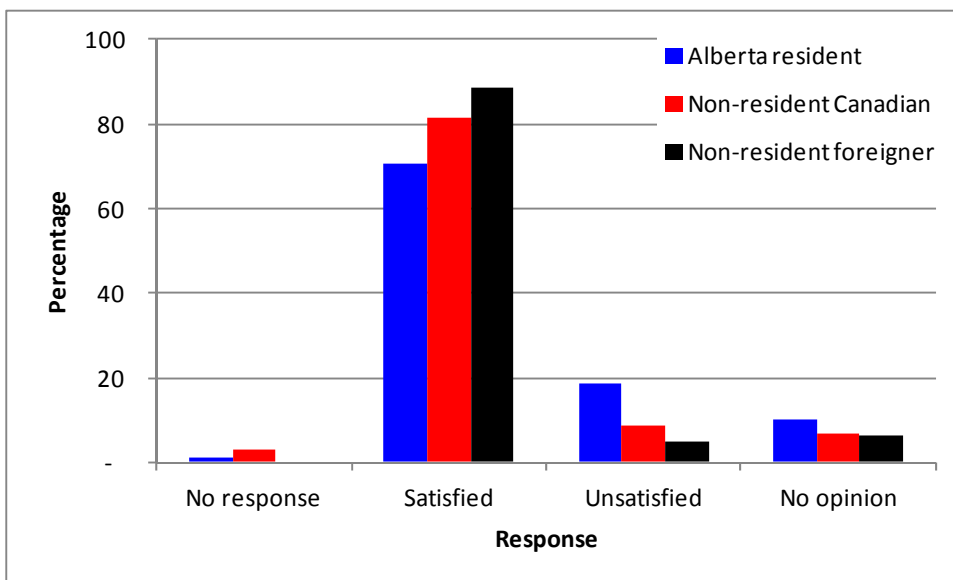
#### **3.9.1 Assessment of the Quality of the Angling Experience**

Anglers were asked to rate the quality of, and satisfaction with, their 2010 recreational fishing experience. Recreational fishing was rated as being good to excellent by 73% of Alberta resident anglers (n=223,007), 82% of non-resident Canadian anglers (n=8,239), and 88% of non-resident foreign anglers (n=4,160) (Figure 21). Overall, the majority of licenced anglers (71%) were satisfied with the quality of their recreational fishing experience (Figure 22). Alberta resident anglers generally reported a more pessimistic view of fishing in Alberta than did non-residents, perhaps because the angling activities of non-residents tend to be more focused on high-quality fisheries (e.g., remote or guided fisheries). This perspective may also be a consequence of differing expectations of resident versus non-resident anglers.





**Figure 21. Anglers' rating of their overall recreational fishing experience in Alberta in 2010.**

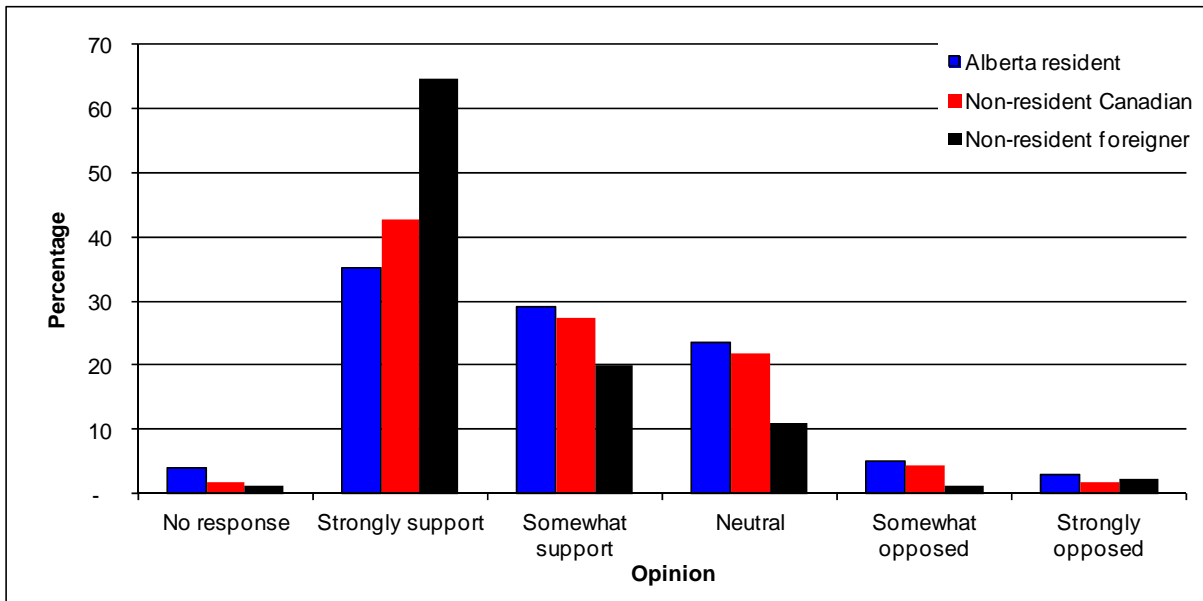


**Figure 22. Anglers' satisfaction with the overall quality of their recreational fishing experience in Alberta in 2010.**

### 3.9.2 Relative Importance of Various Aspects of Fisheries Management

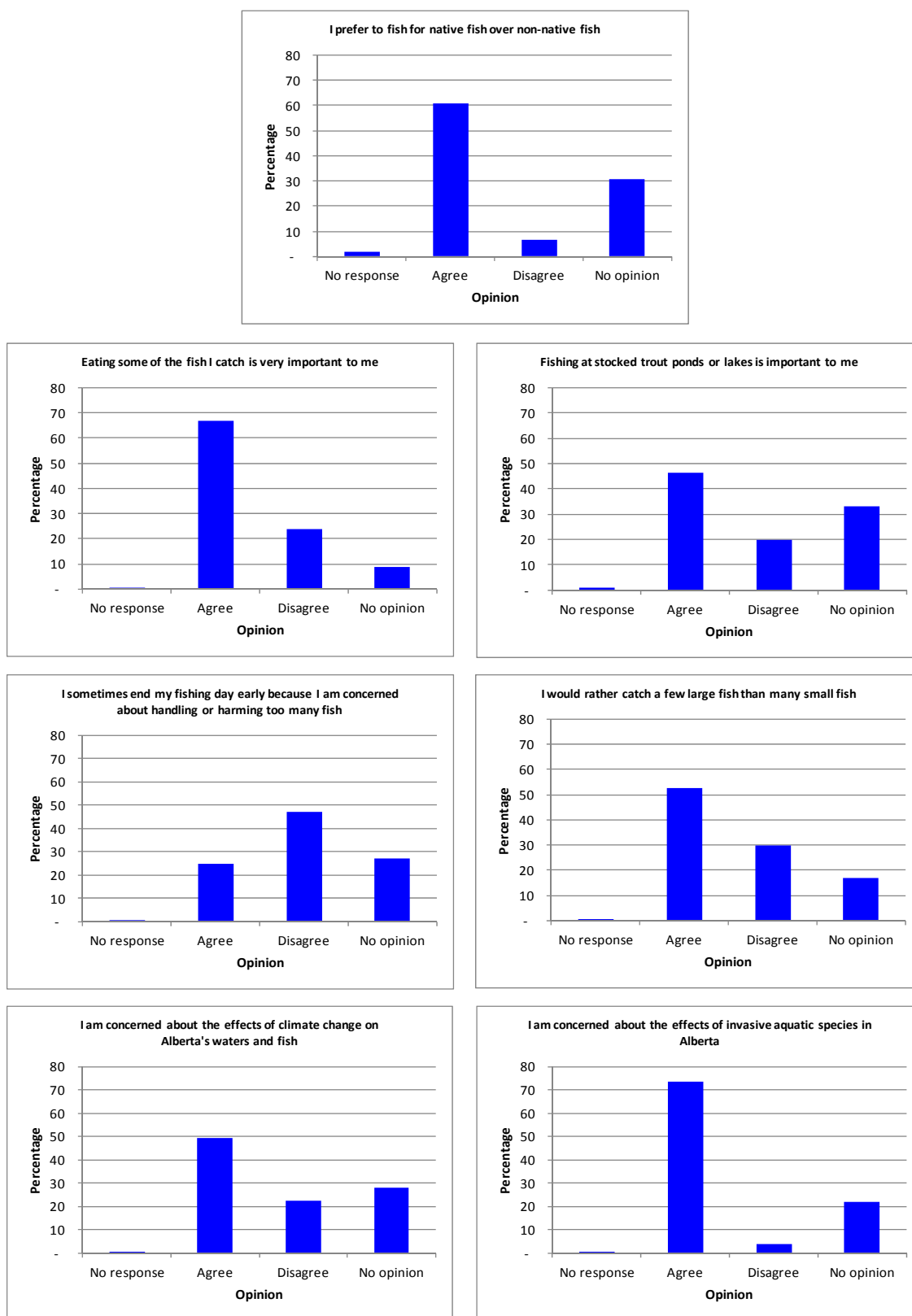
Anglers were asked to what extent they would support the use of special regulations and equipment restrictions to create a small number of high-quality fisheries in Alberta in order to provide an exceptional angling experience for native fish (e.g., large, abundant fish). Overall angler support for this proposal was relatively high (65%), with the greatest support coming

from non-resident foreign anglers (84%) and the least from Alberta resident anglers (64%) (Figure 23).



**Figure 23. Anglers' support for special regulations/restrictions to create a small number of high-quality fisheries in Alberta.**

Anglers were asked their opinions of certain factors relevant to the management of Alberta fisheries (Figure 24). Nearly two-thirds (62%) of all anglers reported that they preferred to fish for native versus non-native fish, and a similar proportion (66%) felt that eating some of the fish that they caught was important to them. Less than half (45%) of anglers indicated that, to them, fishing at stocked trout ponds or lakes was an important feature of angling in Alberta. Only one-quarter (25%) of anglers were concerned enough about handling or harming too many fish in a day to end their fishing day early. Just over half (53%) of anglers would choose to catch a few large fish in preference to catching a greater number of small fish, the latter chosen by 30% of anglers. Fully half (50%) of all anglers are concerned about the effects of climate change on Alberta's fisheries, whereas less than one-quarter (22%) are not worried about this controversial issue. Not surprisingly, a majority of anglers (74%) are disturbed by the effects of invasive aquatic species on the water bodies of Alberta.



**Figure 24. Anglers' responses to questions regarding management of Alberta's fisheries in 2010.**

## 4.0 TRENDS

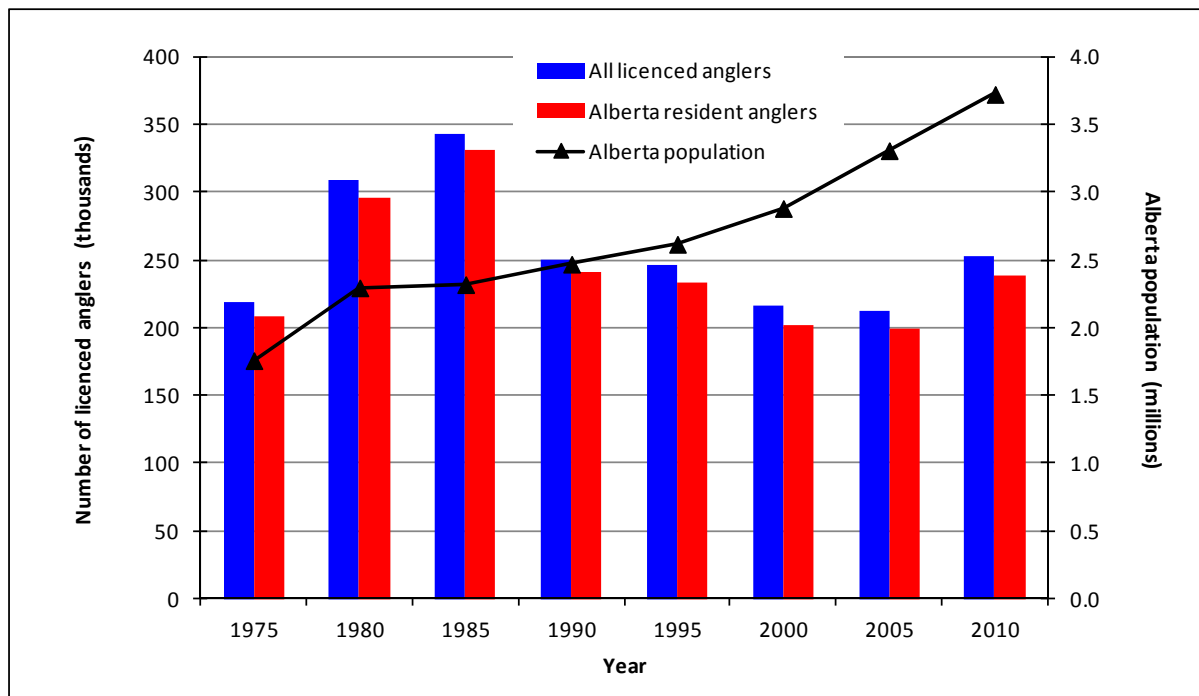
Although the general trend since 1985 has been fewer and fewer anglers, 2010 saw an upsurge in the number of anglers fishing Alberta waters (Table 13; Figure 25). Since the last survey (2005), both the total number of licences sold and the total number of active licenced anglers have increased. In comparison to the population of the province, however, fishing effort remains low at 6.4% of the resident population.

**Table 13. Comparison of key trend parameter estimates related to sport fishing by licenced anglers in Alberta: 1975 to 2010. Data from surveys prior to 2010 are taken from Park (2007).**

	Year of Survey							
	1975	1980	1985	1990	1995	2000	2005	2010
<b>Number of anglers</b>								
Total licenced anglers	218,460	308,444	343,310	249,978	246,113	216,623	211,666	252,030
Total active licenced anglers	196,397	263,471	305,749	229,035	232,465	195,959	191,859	235,407
Alberta resident licenced anglers	208,476	295,771	331,152	240,728	232,967	202,113	198,685	238,789
% of population	11.9	12.9	14.3	9.7	8.9	7.0	6.0	6.4
Alberta population <sup>1</sup>	1,758,260	2,294,212	2,318,408	2,469,069	2,615,873	2,879,743	3,306,000	3,720,900
<b>Fishing effort</b>								
Licenced angler days (millions)	2.3	4.5	5.4	3.3	3.7	2.9	2.7	3.4
Days per active angler	11.4	17.1	17.6	14.6	15.9	14.9	13.9	14.3
<b>Fish catch</b>								
Total fish caught (millions)	n/a	n/a	19.6	13.7	15.3	12.4	12.3	12.1
Average fish caught per active licenced angler	–	–	63	59	66	65	64	51
<b>Fish harvest (kept)</b>								
Total fish kept (millions)	4.6	10.6	11.2	5.1	4.6	2.0	1.7	1.7
Average fish kept per active licenced angler	24	40	37	22	20	10	9	7
<b>Value of sport fishing</b>								
Total spent on expenditures and investments (millions CDN\$)	107.6	154.5	294.7	320.9	311.6	339.4	416.3	463.1
Average dollars per angler	493	587	530	1401	1340	1732	2,170	1967
Average dollars per day	48	34	55	96	84	117	156	138
Direct expenditures (millions CDN\$)	37.5	62.6	132.5	134.2	125.3	115.9	133.9	171.7
Investments and major purchases attributable to sport fishing (millions CDN\$)	70.2	92.0	162.2	186.8	186.3	223.5	282.4	291.4

Value of fishing packages (millions CDN\$)	–	–	3.9	3.6	3.2	3.9	5.3	5.1
Value of ice fishing (millions CDN\$)	–	–	–	–	–	17.7	19.3	20.4

<sup>1</sup>Data obtained from Statistics Canada.



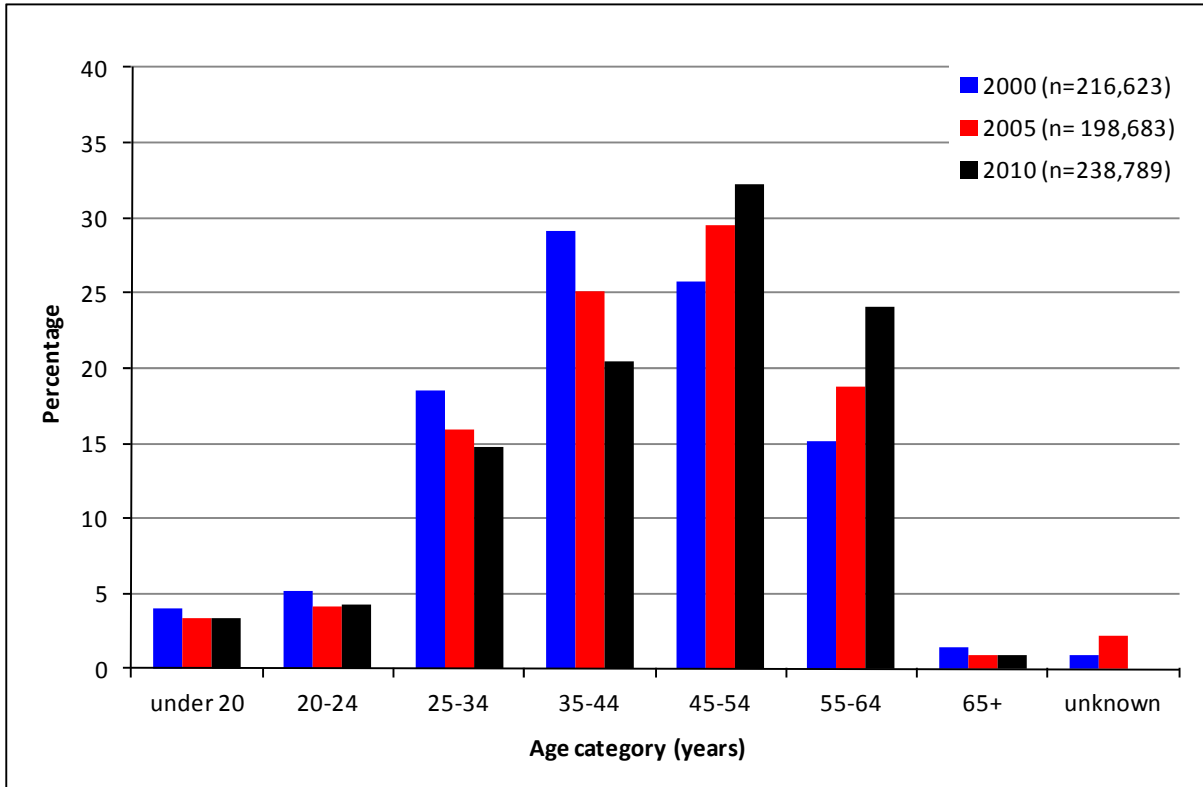
**Figure 25. Trends in Alberta's population and number of anglers.**

Nationwide, licenced angler numbers dropped from approximately 6.9 million in 1985 to just over 3.2 million in 2005 (Fisheries and Oceans Canada 2012), a decrease of 54%. No statistics are available yet for 2010, but it appears that the decline in angler numbers in Alberta has not been as precipitous as it has nationwide. From the peak in 1985, the number of active anglers in Alberta has only decreased by 23%. The proportion of Alberta residents who angle has decreased by 28%. The total angling effort in Alberta in 2010, however, has increased approximately 30% since 2005 (Table 13).

Licence sales to non-resident foreign anglers dropped 25% between 2000 and 2005 (Park 2007) and 30% between 2005 and 2010. At the same time, the proportion of non-resident Canadian anglers has risen steadily from 43% in 2000 (Berry and Bodden 2004) to 52% in 2005 (Park 2007) and 67% in 2010.

While there are surely many reasons for declining participation in sport fishing, increasing angler age and low recruitment of young anglers are basic factors. The 2010 age-class distribution of licenced resident anglers shows an increasing proportion of anglers 45 years and older and a decreasing proportion of anglers under 45 years of age (Figure 26), when compared to the 2000 (Berry and Bodden 2004) and 2005 surveys (Park 2007). Popular belief holds that because they have more time to fish, retirees spend more of their time

angling than they did when younger. This, however, does not appear to be true, as the percentage of seniors (age 65+) who spend time angling is very small (Figure 26). At several recent creel surveys in Alberta, Park and Sullivan (2006) noted a steep decline in participation of senior anglers as age increased. No doubt, mortality rates and financial limitations are the cause. Although unlicensed young anglers outnumber senior anglers three to one (Table 1), it appears that the former are not recruiting to the ranks of licensed sport fishers in numbers sufficient to create strong cohorts in the under-25 age category (Figure 26).

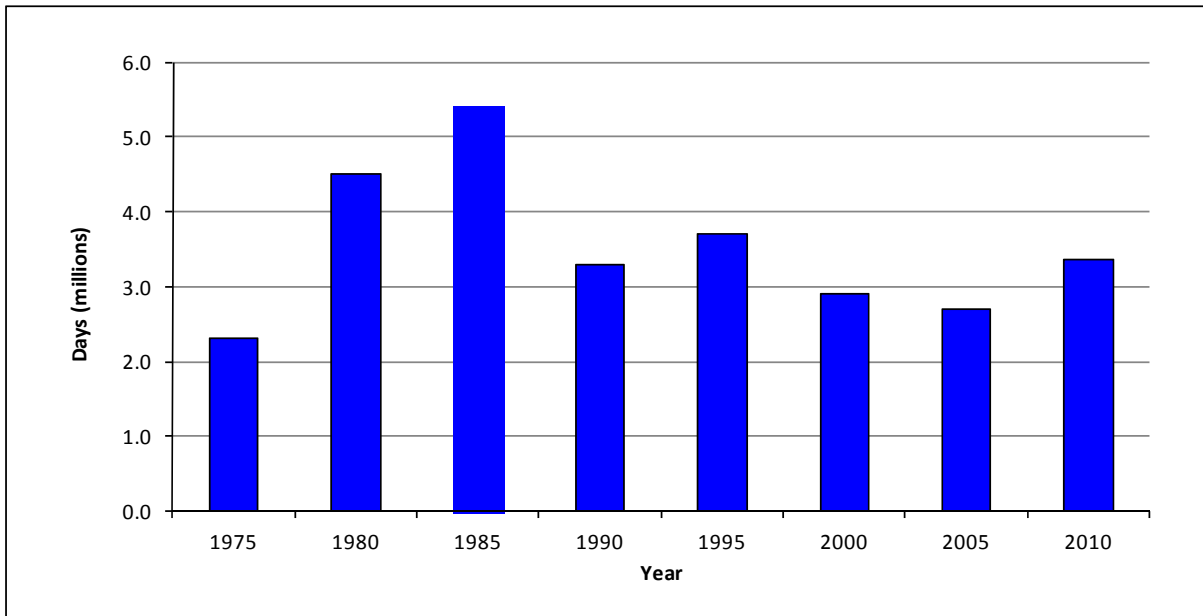


**Figure 26. Comparison of age-class distributions of licensed Alberta resident anglers in 2000, 2005, and 2010.**

In spite of demographic factors that suggest future decreases in angling participation, the marked difference in the Alberta decline (23%) versus the nationwide decline (54%) is encouraging. In Alberta, angling is apparently remaining a more attractive activity than it is in other provinces.

The declining trend in angling needs to be viewed in a larger ecological context. Alberta sport fishing effort in 2010 was nearly 1.5 times higher than it was in 1975 (Figure 27). The overall declines and collapses of populations of sport fish in many Alberta waters occurred as a consequence of fishing pressure exerted prior to the 1980's (Post et al. 2002; Sullivan 2003). Angling pressure in 2010 was much higher than that which caused fish population declines in the past (Sullivan 2003). Many sport fish populations are still recovering from these declines, and any efforts to increase angling participation should be considered in this context and in balance with the ability of fish populations to support current angling pressure. Given the

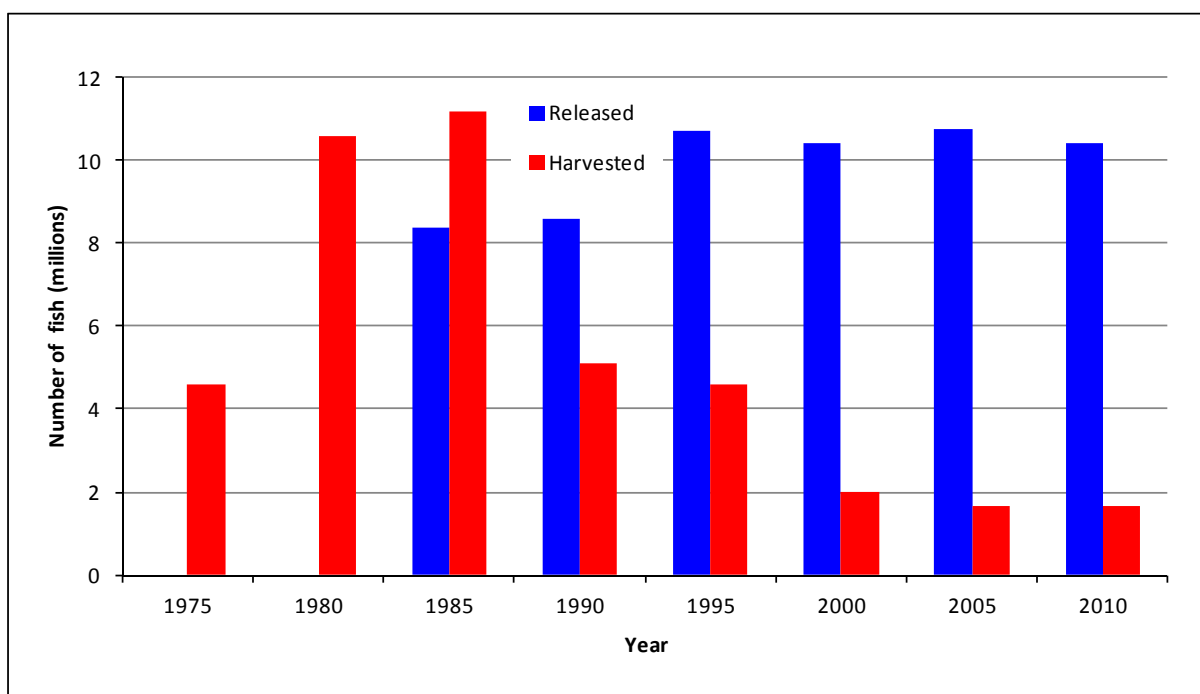
limitations of Alberta's fisheries resource, increasing levels of industrial and agricultural land and water use, and the potentially negative effects of climate change, reducing the number of anglers and/or imposing increasingly severe restrictions on catch and harvest may be necessary courses of action to ensure the long-term sustainability of sport fish populations.



**Figure 27. Trends in licenced angling effort in Alberta.**

In comparing trends over time, evidence of success in finding a better balance between fishing pressure and fisheries productivity is evident in the latest angler catch figures and ratings of satisfaction obtained from those who participated in this survey. Although nationwide fisheries have experienced conspicuous economic and ecological declines (Nikiforuk 2002; Post et al. 2002), some Alberta fisheries have improved over the past decade. Walleye populations, along with bull trout fisheries in protected parks, have shown noteworthy recoveries. These fisheries have been the targets of the most restrictive management strategies in Alberta's history, and this is undoubtedly the reason for the lower level of decline in angler numbers in Alberta and high ratings from anglers for the quality of and satisfaction with their recreational fishing experiences in 2010.

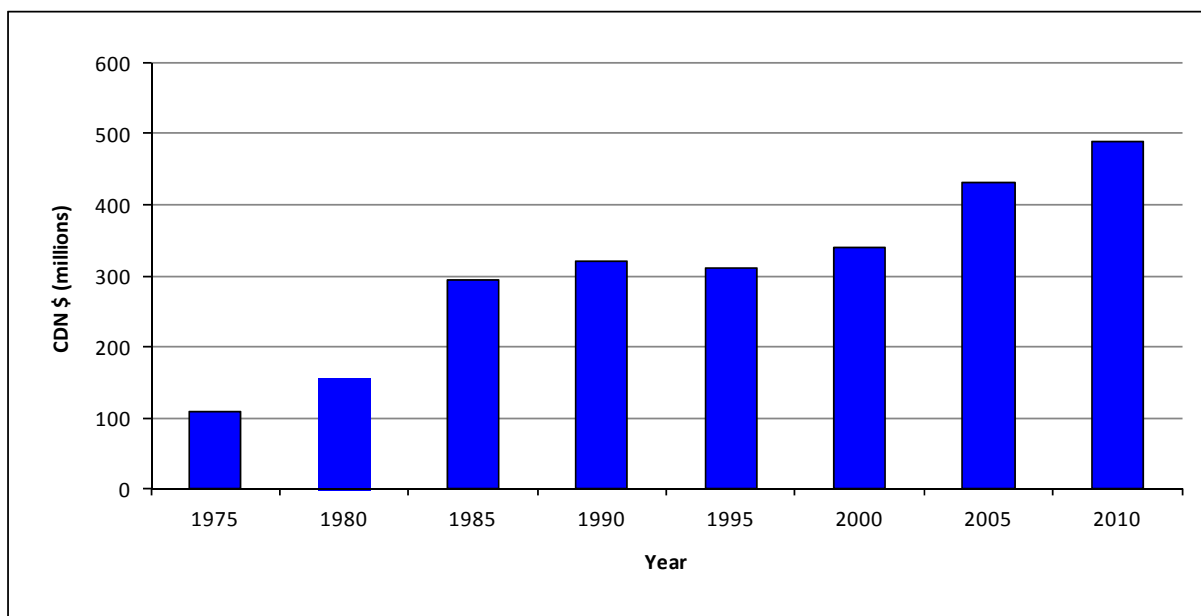
Since 1985, there has generally been a decrease in the number of fish caught by anglers in Alberta waters. In 2010, fish catch and harvest figures were similar to those from 2005; although fish harvest remained the same as it was in 2005, the average number of fish kept by each angler was lower (Table 13) because there were more licenced anglers fishing. Over the past two decades, the trend has been for a substantial proportion of the fish being caught to be released (Figure 28). In 2010, the large percentage of anglers who released the rainbow trout that they caught from stocked put-and-take ponds suggests that an increased catch-and-release ethic may be partly responsible for the decrease in harvest.



**Figure 28. Trends in fish release vs. harvest.**

The economic significance of recreational fishing has generally increased since the beginning of the national survey in 1975, despite changes in angler numbers (Figure 29). Since the 2005 survey, angling participation increased, but the amount of money spent per angler decreased. The economic recession in 2008-2009 no doubt had a lingering effect on the financial situation in which anglers found themselves in 2010. Often with less disposable income, sometimes without a job, people were more cautious in how they managed their money. The overall effect, however, was for the value of sport fishing to increase. In examining expenditure trends over the full 35-year period (Table 13), it is interesting to note a large (2- to 3-fold) increase in per-angler and per-day spending between 1985 and 1990. This is testament to increased personal purchasing power and affluence during that period and is the basis for the growth of the fishing tackle and recreational vehicle industries over the past twenty-five years. The expenditure trend corresponds with a period of greatly increased interest in walleye angling in North America, overall. Anglers normally fish for walleye on lakes, from boats, using specialized terminal tackle and fish-locating electronics. The trend also coincides with the emergence of all-terrain vehicles. Many stream-oriented anglers use ATVs to get to their fishing destinations. Common to all anglers is the use of recreational vehicles such as campers, trailers, and motor homes. The purchase of these valuable items has very likely contributed to the increasing value of recreational fishing in Alberta. Another cause for increased expenditures over time is the inflation-based increase in the costs of goods and services, which is not quantified in this report.





**Figure 29. Trends in the total value of sport fishing in Alberta (licensed anglers only).**

## **5.0 SUMMARY**



The results of this survey reveal that sport fishing remained a socially and economically valuable recreational activity in Alberta in 2010. Approximately 336,000 active anglers, representing a wide range of ages, spent 4.1 million days fishing in Alberta. In the process, Alberta anglers caught and harvested millions of sport fish of a variety of species, from a variety of waters, and contributed more than \$488 million to the provincial economy. As elsewhere in Canada, angling has declined in Alberta since its peak in 1985; however, although participation in sport fishing is lower than it was in the 1980s, it has increased in the last five years. Because there is a general downward trend in angling nationwide, it is not entirely attributable to the status or management of fisheries in any one jurisdiction. It is more likely a result of Canadian population demographic shifts and general lifestyle changes, perhaps related to increasing urban residency. Alberta's marked departure from the nationwide rate of decline over the past three decades, as well as the recent increase in numbers of Alberta anglers from 2005 to 2010, suggests that fishing in Alberta is more attractive than in other provinces. Anglers' overall satisfaction with the quality of their recreational fishing experience in Alberta in 2010 was rated as being good to excellent. A lower rate of long-term decline in angler numbers in Alberta compared to the rest of the country, short-term increases in angler numbers, and high angler satisfaction are, perhaps, indicators of the success of fisheries management in Alberta in balancing fishing pressure and the expectations of anglers against the ability of Alberta's waters to produce sustainable sport fish populations.

## 6.0 REFERENCES

- Berry, D.K., and K. Bodden. 2004. Sport fishing in Alberta 2000: summary report from the sixth survey of recreational fishing in Canada. Alberta Sustainable Resource Development, Fish and Wildlife Division, Fisheries Management Branch. Edmonton, Alberta, Canada. 25 pp.
- Fisheries and Oceans Canada. Last modified 2012-02-01. Survey of Recreational Fishing in Canada. <http://www.dfo-mpo.gc.ca/stats/rec/canada-rec-eng.htm>.
- Nikiforuk, A. 2002. Gone Fishin': And as Canada's multibillion-dollar sportfishing industry hits troubled waters, it might not come back. Canadian Business Magazine. November 25, 2002.
- Park, D. 2007. Sport fishing in Alberta 2005: summary report from the seventh survey of recreational fishing in Canada. Alberta Sustainable Resource Development, Fisheries Management Branch. Edmonton, Alberta, Canada. 38 pp.
- Park, D., and M. Sullivan. 2006. Participation of senior anglers in Alberta's sport fisheries. Alberta Sustainable Resource Development, Fish and Wildlife Division, Fisheries Management Branch. Edmonton, Alberta, Canada. Memorandum. 2 pp.
- Post, J., M. Sullivan, S. Cox, N. Lester, C. Walters, E. Parkinson, A. Paul, L. Jackson, and B. Shuter. 2002. Canada's recreational fisheries: the invisible collapse? Fisheries 27(1):6-17.
- Sullivan, M. 2003. Active management of walleye fisheries in Alberta: dilemmas of managing recovering fisheries. North American Journal of Fisheries Management 23:1343–1358.

## 7.0 APPENDIX

### Appendix 1. 2010 survey form.

	 Fisheries and Oceans Canada Pêches et Océans Canada
---	--

### 2010 SURVEY OF RECREATIONAL FISHING IN CANADA

**PROVINCE OF ALBERTA**

Le présent questionnaire est également disponible en français

Questions? → [info2010@dfo-mpo.gc.ca](mailto:info2010@dfo-mpo.gc.ca)

**NOTE TO ANGLERS**

In order to complete this document as easily as possible, the following instructions may be of assistance:

- the questions are to be answered only by the person to whom the questionnaire was addressed;
- this survey covers all fishing activity between January 1 and December 31, 2010;
- the term "household members" refers only to individuals living in your residence.

**THANK YOU IN ADVANCE FOR YOUR COOPERATION AND ASSISTANCE**

### CONFIDENTIAL WHEN COMPLETED

**LICENCE INFORMATION**

1. Which of the following Alberta recreational fishing licences did you personally hold in 2010? For 5-day or 1-day nonresident licences, please indicate also how many you purchased.

Annual licence <input type="radio"/>	Nonresident 5-day licence <input type="radio"/>	→ number purchased _____
	Nonresident 1-day licence <input type="radio"/>	→ number purchased _____

**YOUR PERSONAL RECREATIONAL FISHING ACTIVITIES**

2a) Did you personally fish for recreation in Alberta in 2010?

Yes <input type="radio"/> → please continue	No <input type="radio"/> → go to question 8
---	---

b) How many days in total did you spend fishing for recreation in Alberta in 2010?  
(a "day" is all or any part of a day fished)

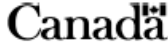
\_\_\_\_\_ days fished

c) Of the total days fished, how many were spent fishing:

during the open water period in rivers or streams?	None <input type="radio"/> or _____ days fished
during the open water period on lakes, reservoirs and/or ponds?	None <input type="radio"/> or _____ days fished
through the ice?	None <input type="radio"/> or _____ days fished

Printed on recycled paper  
DFO / PPP-045-04215





3. For each Fish Management Watershed Unit (see map) in which you fished, please indicate the number of days fished and the number of fish caught and kept. If required, please refer to the fish identification information presented on the MyWildAlberta website at <http://www.mywildalberta.com/Fishing/GameFish.aspx>

Even if you did not catch any fish, please provide the number of days you fished in each watershed unit.

If you fished in more than four watershed units in 2010, please provide additional information on a separate sheet of paper or print a copy of these tables at <http://www.dfo-mpo.gc.ca/stats/rec/can/2010/effort-eng.htm>.

Please include only your personal fishing activities from January to December 2010.

Watershed Unit (from map) _____			Days fished _____					
	Number of fish Caught	Kept		Number of fish Caught	Kept		Number of fish Caught	Kept
Northern pike	_____	_____	Brook trout	_____	_____	Golden trout	_____	_____
Perch	_____	_____	Bull trout	_____	_____	Arctic grayling	_____	_____
Walleye (pickerel)	_____	_____	Rainbow trout	_____	_____	Burbot (ling)	_____	_____
Lake whitefish	_____	_____	Brown trout	_____	_____	Goldeye	_____	_____
Mountain whitefish	_____	_____	Cutthroat trout	_____	_____	Other "game" fish	_____	_____
Lake sturgeon	_____	_____	Lake trout	_____	_____	Other fish	_____	_____

Watershed Unit (from map) _____			Days fished _____					
	Number of fish Caught	Kept		Number of fish Caught	Kept		Number of fish Caught	Kept
Northern pike	_____	_____	Brook trout	_____	_____	Golden trout	_____	_____
Perch	_____	_____	Bull trout	_____	_____	Arctic grayling	_____	_____
Walleye (pickerel)	_____	_____	Rainbow trout	_____	_____	Burbot (ling)	_____	_____
Lake whitefish	_____	_____	Brown trout	_____	_____	Goldeye	_____	_____
Mountain whitefish	_____	_____	Cutthroat trout	_____	_____	Other "game" fish	_____	_____
Lake sturgeon	_____	_____	Lake trout	_____	_____	Other fish	_____	_____

Watershed Unit (from map) _____			Days fished _____					
	Number of fish Caught	Kept		Number of fish Caught	Kept		Number of fish Caught	Kept
Northern pike	_____	_____	Brook trout	_____	_____	Golden trout	_____	_____
Perch	_____	_____	Bull trout	_____	_____	Arctic grayling	_____	_____
Walleye (pickerel)	_____	_____	Rainbow trout	_____	_____	Burbot (ling)	_____	_____
Lake whitefish	_____	_____	Brown trout	_____	_____	Goldeye	_____	_____
Mountain whitefish	_____	_____	Cutthroat trout	_____	_____	Other "game" fish	_____	_____
Lake sturgeon	_____	_____	Lake trout	_____	_____	Other fish	_____	_____

Watershed Unit (from map) _____			Days fished _____					
	Number of fish Caught	Kept		Number of fish Caught	Kept		Number of fish Caught	Kept
Northern pike	_____	_____	Brook trout	_____	_____	Golden trout	_____	_____
Perch	_____	_____	Bull trout	_____	_____	Arctic grayling	_____	_____
Walleye (pickerel)	_____	_____	Rainbow trout	_____	_____	Burbot (ling)	_____	_____
Lake whitefish	_____	_____	Brown trout	_____	_____	Goldeye	_____	_____
Mountain whitefish	_____	_____	Cutthroat trout	_____	_____	Other "game" fish	_____	_____
Lake sturgeon	_____	_____	Lake trout	_____	_____	Other fish	_____	_____

Show next page (Right Arrow)

4. How would you rate your overall recreational fishing experience in Alberta in 2010?

Excellent <sub>1</sub> ☐ Very Good <sub>2</sub> ☐ Good <sub>3</sub> ☐ Fair <sub>4</sub> ☐ Poor <sub>5</sub> ☐

5. How satisfied were you with the overall quality of your recreational fishing experience in Alberta in 2010?

Satisfied <sub>1</sub> ☐ Unsatisfied <sub>2</sub> ☐ No opinion <sub>3</sub> ☐

#### FISHING ON MORE THAN ONE WATER BODY

- 6a) Did you fish in more than one body of water in Alberta in 2010?

Yes <sub>1</sub> ☐ → please continue No <sub>2</sub> ☐ → go to question 7

- b) Each time you moved between two water bodies did you wash or clean:

	Yes	No	Does not apply
your boating equipment?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
your fishing equipment?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
your waders or boots?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>

- 7a) Did you fish outside of Alberta in 2010?

Yes <sub>1</sub> ☐ → please continue No <sub>2</sub> ☐ → go to question 8

- b) Before fishing in Alberta, but after fishing outside the province, did you wash or clean:

	Yes	No	Does not apply
any boating equipment you owned?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
your fishing equipment?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
your waders or boots?	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>

#### RESOURCE MANAGEMENT

8. To what extent would you support the use of special regulations and equipment restrictions to create a small number of high quality fisheries in Alberta, which would be managed to provide an exceptional angling experience for native fish (e.g., abundant, large fish)?

Strongly support <sub>1</sub> ☐ Somewhat support <sub>2</sub> ☐ Neutral <sub>3</sub> ☐ Somewhat opposed <sub>4</sub> ☐ Strongly opposed <sub>5</sub> ☐

9. Please indicate your agreement with the following statements (check only one circle in each row):

	Agree	Disagree	No Opinion
I prefer to fish for native fish over non-native fish	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
Eating some of the fish I catch is very important to me	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
Fishing at stocked trout ponds or lakes is important to me	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
I sometimes end my fishing day early because I am concerned about handling or harming too many fish	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
I would rather catch a few large fish than many small fish	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
I am concerned about the effects of climate change on Alberta's waters and fish	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>
I am concerned about the effects of invasive aquatic species in Alberta	<sub>1</sub> <input type="radio"/>	<sub>2</sub> <input type="radio"/>	<sub>3</sub> <input type="radio"/>

### HOUSEHOLD EXPENDITURES ON RECREATIONAL FISHING

10a) Did you or any member of your household make any major purchases or investments in Alberta in 2010 related in whole or in part to recreational fishing? (e.g., fishing rods, boats, motors, 4x4s, snowmobiles, cabins, camping gear, trailers, ice fishing gear, etc.)

Please Note: Purchases of fishing supplies (lures, line, tackle, bait, etc.) are covered in question 12.

Yes ☐ → please continue

No ☐ → go to question 11

b) For each investment category, please indicate the amount of money spent in Alberta in 2010 by you and members of your household and estimate the percentage of the total amount you consider was directly attributable to fishing.

Investment Category	Amount Spent in Alberta	% Attributable to Recreational Fishing
Fishing Equipment (rods, reels, fish finders, etc.)	\$ _____ .00	100%
Camping Equipment (tents, camper trailers, etc.)	\$ _____ .00	_____
Boating Equipment (boats, motors, trailers, etc.)		
Purchased new	\$ _____ .00	_____
Purchased used	\$ _____ .00	_____
Special Vehicles (4x4s, camper truck, ATVs, snowmobiles, etc.)		
Purchased new	\$ _____ .00	_____
Purchased used	\$ _____ .00	_____
Land-Buildings (cabins, cottages, land, etc.)	\$ _____ .00	_____
Other (special clothing, waders, ice-huts, etc.)	\$ _____ .00	_____

c) Of the above investments, how much was spent solely for ice fishing?  
(include ice-huts, ice augers, floater coats and suits, ice fishing rods, etc.) \$ \_\_\_\_\_ .00

#### 11. FISHING TRIP PACKAGES PURCHASED IN 2010

The following question refers only to fishing trip packages purchased in Alberta from a fishing lodge, guide or outfitter (or their agent) which include a complete range of services such as lodging, food, transportation, etc.

For self-organized trips, please include expenditures in question 12.

a) Did you or any member of your household purchase any such packages to fish in Alberta in 2010?

Yes ☐ → please continue

No ☐ → go to question 12

b) If yes, please provide the following information for each package taken in Alberta. If the package was purchased by a group, please include only your household's share.

Package	Watershed Unit (from map)	Days Spent	Cost	Please indicate if this package was taken with a lodge or an outfitter
1.	_____	_____	\$ _____ .00	Lodge <input type="radio"/> Outfitter <input type="radio"/>
2.	_____	_____	\$ _____ .00	Lodge <input type="radio"/> Outfitter <input type="radio"/>
3.	_____	_____	\$ _____ .00	Lodge <input type="radio"/> Outfitter <input type="radio"/>



12a) **EXCLUDING** expenditures on major purchases and package deals, please estimate the amount of money you and other members of your household spent on the following to fish for recreation in Alberta in 2010.

Expenditure Category	Amount
Accommodation (hotels, motels, etc.)	\$ _____ .00
Campsite fees (private, provincial, etc.)	\$ _____ .00
Food (groceries, restaurant meals, alcoholic beverages)	\$ _____ .00
Travel costs within Alberta for recreational fishing - vehicle expenses (including gas, repairs), rentals, air fares, etc.	\$ _____ .00
Household owned boat costs (gas, repairs, launch/ramp fees, moorage, insurance, etc.)	\$ _____ .00
Rentals for fishing (boats, gear, snowmobiles, ice-huts, etc.)	\$ _____ .00
Fishing supplies (lures, line, tackle, bait, etc.)	\$ _____ .00
Fishing guide services or float trip services (not included in question 11)	\$ _____ .00
Fishing licence fees	\$ _____ .00
Access fees (park fees, etc.)	\$ _____ .00
Other (please specify) _____	\$ _____ .00

b) Of the above expenditures, approximately how much was spent on ice fishing? \$ \_\_\_\_\_ .00

#### INFORMATION ABOUT YOU AND YOUR HOUSEHOLD

In order for us to analyze the data collected in this survey in a meaningful way, we require some personal information about you and the members of your household. This will allow us to accurately estimate the number of anglers in the province, their use of the resource and the economic benefits generated by recreational fishing in the province of Alberta.

#### YOUR ANSWERS WILL REMAIN STRICTLY CONFIDENTIAL

13. If you live in Alberta, please indicate the Watershed Unit (from map) in which you lived most of the year in 2010.

Watershed Unit \_\_\_\_\_

14. In what year were you born? 19\_\_\_\_

15. Are you: Male ☐ Female ☐

16. Excluding yourself, how many members of your household 16 to 64 years of age held an Alberta fishing licence in 2010?

\_\_\_\_\_ household members

17. How many members of your household under 16 years of age or 65 years of age and over fished for recreation in Alberta in 2010 and for how many days in total did they fish?

Age category	Number in household who fished	Total days fished
Under 16 years of age	_____	_____
65 years of age and over	_____	_____

If you were a visitor to Alberta, please complete these questions.

- 18a) How many trips did you make to Alberta in 2010?  
(a trip should be counted each time you crossed the border into the province) \_\_\_\_\_ trips
- b) How many days in total did you spend in Alberta in 2010 for all reasons? \_\_\_\_\_ days
- c) On how many of your trips to Alberta in 2010 did you fish? \_\_\_\_\_ trips
- d) How many of your fishing trips to Alberta in 2010 were day-trips requiring no accommodation? \_\_\_\_\_ day-trips
- e) For the remaining fishing trips, how many nights were spent in Alberta? \_\_\_\_\_ nights
- f) For how many of your fishing trips to Alberta was fishing:  
(number)
- the main reason for visiting \_\_\_\_\_
  - a secondary reason \_\_\_\_\_
  - decided after arrival \_\_\_\_\_

stayed a shorter time, ☐ substituted other activities, ☐ not come at all, ☐

**COMMENTS:**

**COMMENTS:**

**THANK YOU FOR YOUR ASSISTANCE**