

Staff Summary

**Oregon's 2006 Angler Preference Survey
of Annually Licensed Resident Anglers**

July 2007

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I. Introduction and Background Information

The Oregon Department of Fish and Wildlife's (ODFW) second angler preference survey has just been completed. We now know more about Oregon's anglers and how they think the state's fisheries should be used.

Responsive Management did the survey and analysis. This internationally recognized public opinion and attitude survey research firm specializes in natural resource and outdoor recreation issues. The firm's mission is to help natural resource and outdoor recreation agencies and organizations better understand and work with their constituents, customers, and the public. Responsive Management uses a variety of methodologies, including telephone, mail and web surveys; focus groups; and other research techniques.

The survey sampled annually licensed resident anglers over 18 years of age. Licenses surveyed included resident sportsperson's licenses ("Sport Pacs"), resident combination licenses, resident angling licenses, resident senior combination and angling licenses, and active resident pioneer and disabled veteran licenses.

An Angler Survey Committee (ASC) of ODFW staff members and Responsive Management jointly developed a series of questions. Some questions were designed to produce information comparable to that reported from Oregon's first angler preference survey in 1977. Slightly more than two thousand Oregon resident angling license holders in 2006 were contacted by telephone in November 2006. Responsive Management obtained completed telephone interviews from 1,501 anglers who had actually fished during the year.

The main purposes of the study were to determine licensed anglers' participation in fishing in Oregon, their motivations for fishing and constraints to fishing participation, and their opinions on various fishing regulations and fisheries management strategies. Once overall patterns of participation were identified, the survey focused on specific aspects of the freshwater sport fisheries for trout and warmwater fish species.

Several important features of the survey must be kept in mind when interpreting the results:

- The survey was conducted by sampling resident annual angling license holders over the age of 18. These people represent ODFW's core constituents in the community of anglers. Some senior and pioneer license holders were sampled, but no licensed juveniles or holders of daily angling licenses were contacted. Contacting daily license holders would have increased costs and yielded results not representative of our core group. A similar approach was used for the previous angler preference survey in 1977. Comparability between survey results was important so that changes in angler participation and preferences could be identified.
- Since fishing activities throughout the state were covered, results may not accurately reflect behavior and preferences for a specific location or water body. We did structure

the sample to obtain significant numbers of interviews from residents of Eastern Oregon and Western Oregon respectively, in order to identify possible differences among residents of the two sides of the state.

- Reported answers and preferences reflect what people say they did or would like to do; actual behavior in the field may differ.
- Statistical confidence intervals are generally not reported in this summary. The discussion here concerns general results and trends suggested by the data summaries.

Detailed survey results are presented in Responsive Management's survey report, which comprises nearly 600 pages of survey methodology, results and discussion. Information developed from the survey will be used to provide additional insights for decision-making and the structuring of regulations that affect Oregon's trout and warmwater anglers in particular. This report is a summary of the larger document developed by our survey contractor.

II. Participation in Fishing

Figure II-1 shows the percentage of license holder that did or did not fish during the last year. Not all people who obtain licenses actually go fishing during the license year.

Of the approximately two thousand 2006 resident annual angling (or equivalent) Oregon license holders contacted by telephone, about 77 percent said they had fished in the last year. In contrast, about 89 percent of anglers contacted during the 1977 angler preference survey said they had fished during the past year.

Some of the difference between the results of the 2006 and 1977 surveys may be associated with the survey mode. The earlier survey was done by mail, with a telephone follow-up survey of non-respondents to adjust for differences between those who completed the mail survey and those who did not.

Another possible source of the difference is that the 1977 survey did not include any permanent license holders (mostly pioneer anglers and disabled veteran angling license holders) in the sampling frame. For 2006, ODFW staff decided to include those permanent license who were believed to be still active because they had purchased some kind of tag or stamp from ODFW. Also included were those anglers who had obtained either a half-price senior combination or senior angler license. Both of these license types were first implemented in 2000.

Licensed non-participants in angling in 2006 were asked why they did not fish even though they had purchased a license. As we shall see in more detail later in this staff report, the main reason (60%) given was "not enough time", predominantly due to work or family obligations.

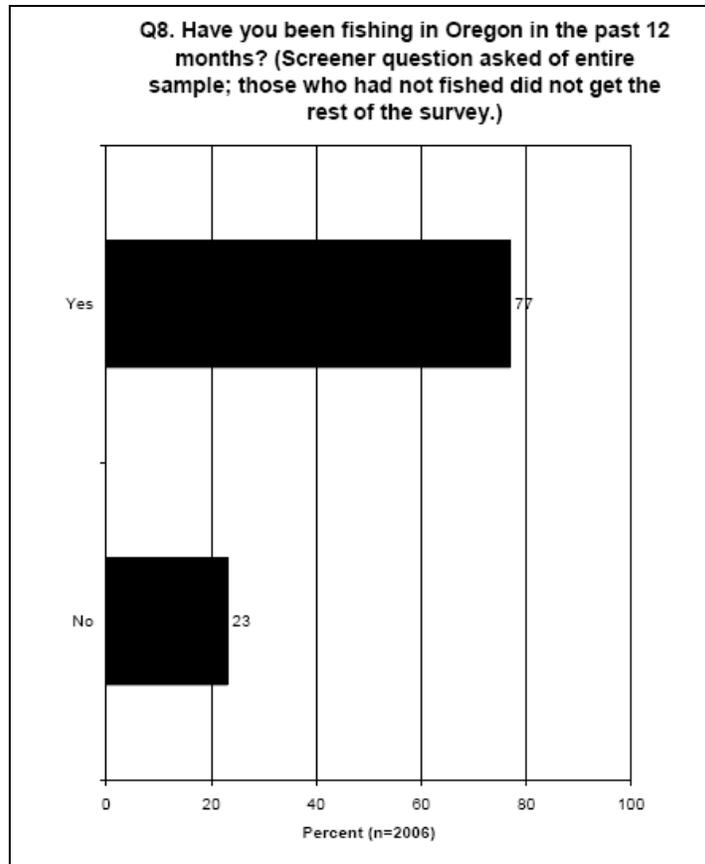


Figure II-1. License holders who reported they had fished in the last year.

License holders, who reported fishing activity in the last year, were subsequently asked if they were primarily coldwater or warmwater anglers. As shown in figure II-2, a large majority (64 percent) consider themselves coldwater anglers. An estimated 18 percent considered themselves warmwater anglers. Interestingly about 15 percent consider themselves both coldwater and warmwater anglers and three percent simply couldn't choose between the two types of waters.

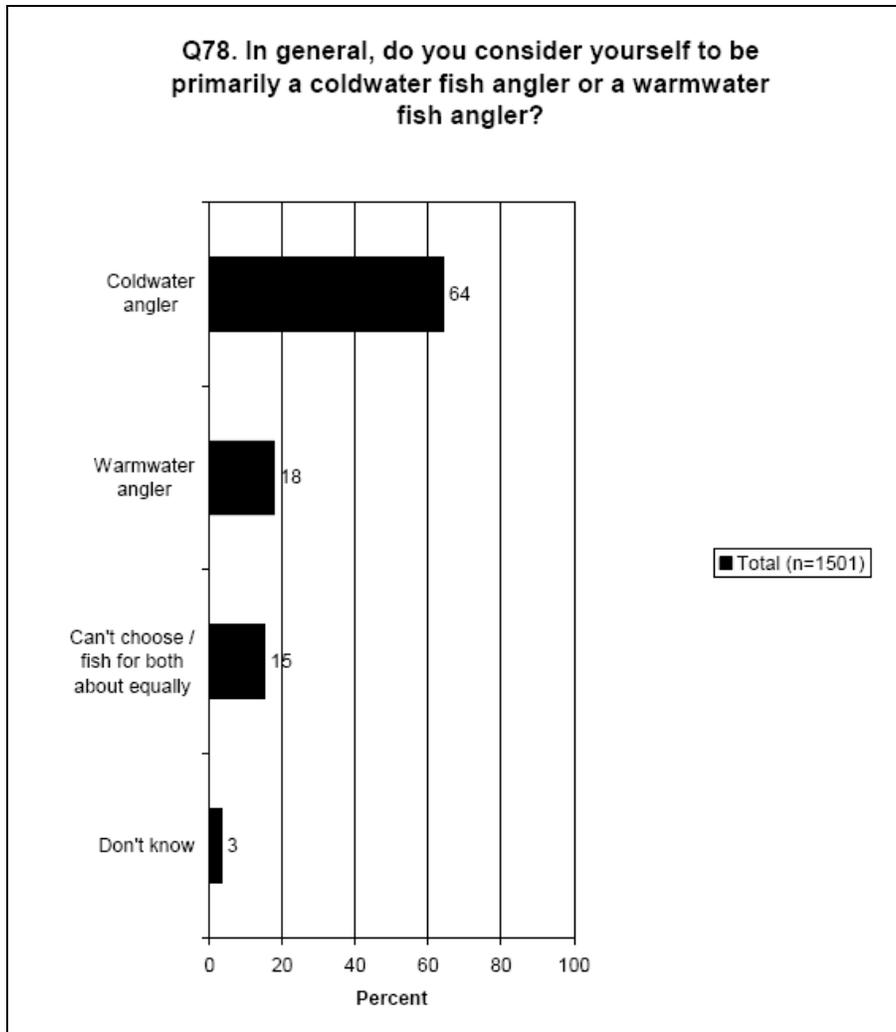


Figure II-2. Angler self-classification as coldwater or warmwater anglers (includes active anglers only)

These results are consistent with the results of more detailed questions that concerned a more specific classification for Oregon’s fisheries. Active anglers were asked whether they had fished in specific fisheries during the past year. At the same time they were asked to recall how many days they had fished in each individual fishery and water type. Figure II -3 shows the percentage of anglers who reported they had fished for the species and in locations shown in the graph.

The fisheries for trout had the largest number of participants. Some 73 percent of active respondents said they had fished for resident trout in the last year. The next three in descending order of active respondents were salmon in freshwater (33%); steelhead (30%) and warmwater game fish (26%).

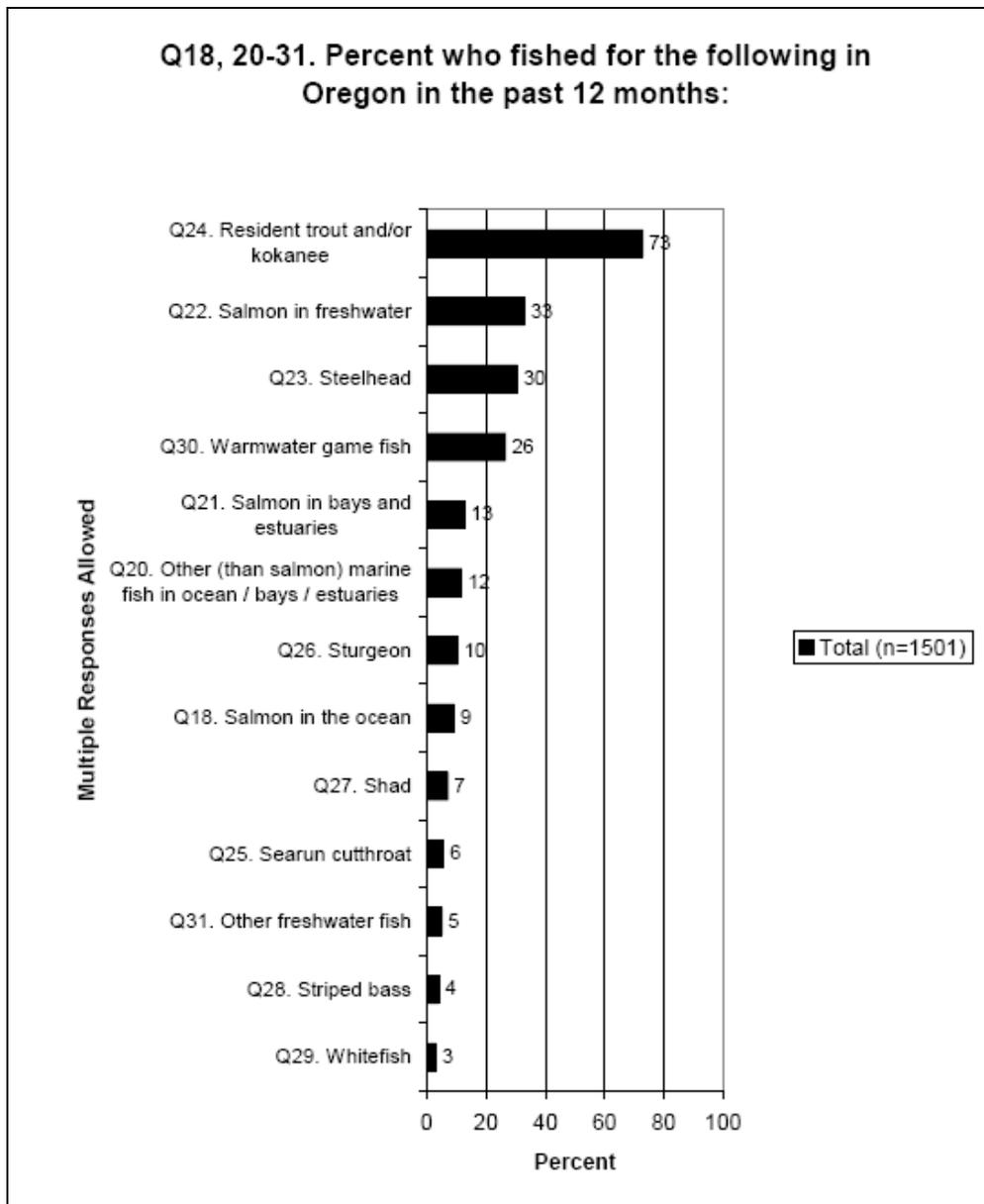


Figure II-3. Percent of active respondents who fished in various Oregon fisheries in the last year

The following section summarizes the percentage of active resident annual anglers who reported fishing in particular fisheries during 2006, and compares this with corresponding estimates from 1977.

Ocean Salmon

An estimated nine percent (9%) of active, annually licensed resident anglers fished for salmon in the ocean in 2006. In 1977, 41 percent of resident annual license holders reported fishing in the ocean sport salmon fishery (see Tables II-3 and II-4 below). In 1977, Oregon had just previously experienced one of the largest and best coho salmon ocean fisheries ever in 1976. Since then, the biological status of Oregon coastal coho salmon had worsened dramatically, leading to declines in ocean sport salmon fishing. More recently the need to protect wild coastal coho stocks has led to a selective fishery on fin-clipped coho only, in order to reduce ocean fishing mortality on the wild stocks of this species. Translated into effects on ocean salmon angler activity, total annual angler trips for the Oregon ocean fishery were more than six times as great in the 1976-1980 period as they were in 2006. Furthermore, during 2006 the ocean sport salmon fishery operated in an even more constrained environment than in recent years. As a result total 2006 angler trips were 48 percent fewer than the average for the previous five years (2001 - 2005) (See Pacific Fishery Management Council, 2007.)

Other Marine Fish

About 12 percent of annually licensed resident anglers reported fishing for other marine fish (bottomfish, halibut, tuna, and others) in 2006. In 1977, 31 percent of resident annual anglers said they fished in this fishery. Some hypotheses for the cause of the decline are --- in 1977 the ocean salmon fishery was much more robust, and some of the trips for other ocean fish may have been combination trips for both salmon and other marine fish; also, there have been considerable reductions in seasons and bag limits for marine fish since 1977.

Salmon in Freshwater, Bays and Estuaries

Thirty seven (37) percent of resident annual anglers said they fished for salmon – other than in the ocean - in 2006, in freshwater (33%) and/or bays and estuaries (13%). Many anglers who fished for salmon in inland waters were active in both water types. This percentage is similar to survey results reported in 1977, when 36 percent of resident annual anglers reported fishing for salmon other than in the ocean. The 2006 estimates for the percentage of anglers fishing for salmon in inland waters may be so much larger than those fishing for ocean salmon in 2006 because of the condition of salmon resources and associated regulations for ocean salmon fishing. Some other hypotheses might consider the effect of charter-boat trip costs, and whether an increase in the number of inland fishing guides who offer salmon fishing trips might produce angler shifts from ocean to inland.

Steelhead

Thirty (30) percent of the active annually licensed residents in 2006 fished for steelhead. In 1977, 47 percent of resident annual anglers reported fishing for steelhead. Several reasons for the decline can be hypothesized. First, more restrictive regulations were adopted in 1992 permitting retention of fin clipped steelhead only. Second, a relative difference in the abundance of steelhead between the survey years may also explain some of the reduction in participation.

Third, an aging angler population may be less inclined to fish for steelhead due to the relatively rigorous nature of the fishery compared to some other fisheries. Fourth, changes in lifestyle (less free time, other commitments, etc.) may have affected this fishery to a greater extent than other fisheries.

Resident Trout (including Kokanee)

The resident trout fisheries continue to attract the largest percentage of annually licensed residents. Seventy three (73) percent of respondents who fished indicated they had fished in the resident trout fisheries. The corresponding estimate for trout anglers in 1977 was 85 percent of those surveyed then. In subsequent sections of this summary, we present additional information on trout fishing and associated angler preferences.

Sea-run Cutthroat

In 1977, 23 percent of resident annual anglers fished for sea-run cutthroat during the year. However, by 2006, that figure had dropped to six (6) percent. Some hypotheses are that the drop is due to poorer returns of cutthroat since 1977; more stringent regulations, especially on the North Coast; a reduction in releases of cutthroat for the river fisheries and an increase in the inland salmon fisheries as a substitute.

Warmwater Game Fish

In 2006, the warmwater game fish fishery was the fourth most popular fishery drawing 26 percent of resident annual anglers. Somewhat surprisingly, that percentage is lower than the estimated 35 percent of Oregon annual anglers who said they fished for warmwater game fish in 1977. This result is somewhat unexpected and the reasons for it are not clear. It may be that some perceived constraints on access or other more general constraint are the causes. There is additional information on warmwater angling and angler preferences in the rest of this summary. This decline would be a good area for additional analysis of the survey data.

Shad

The percentage of resident annual anglers who went shad fishing in 2006 is estimated at seven (7) percent, the same percentage who reported fishing for shad in the 1977 angler preference survey.

Striped Bass

The 2006 striped bass fishery had a modest number of participants, as it did in 1977. Four percent of resident annual anglers indicated they participated in this fishery in 2006 versus five percent of 1977 active anglers. The closeness of these estimates is somewhat surprising as there have been no particularly good years of striped bass recruitment in recent years. It is possible that some anglers who fished for hybrid bass in 2006 mistakenly indicated activity in the striped bass fishery.

Sturgeon

Ten (10) percent of the sampled anglers for 2006 indicated they had fished in the sturgeon fishery, up from eight (8) percent in 1977. A separate annual sturgeon tag was required from 1986 through 1999 in addition to an annual angling license. Sturgeon tag sales increased from 37,918 in 1986 to 54,616 in 1999. In 2000, all "premium" fish tags were combined into one tag,

so we have no separate tag sales data for subsequent years. We can hypothesize about what may have caused the apparent increase. For example, an increase in sturgeon angling could be related to salmon closures and to increased attention from guides and charter boats in the lower Columbia River, or to a more general increase in coastal estuary angling. Since the beginning of 1999 there have been additional changes in harvest guidelines, seasons, length limits and bag limits that have affected the earlier apparent growth in the sturgeon fishery. By 2004 sturgeon angler trips on the Lower Columbia River were still over twice as great as in 1977; however, the number of sturgeon retained in the sport fishery had dropped to a level that was roughly equal to the level in 1977 (Takata and Watts, 2005). This is particularly interesting, because regulations have changed over time from a year round season with a 36 – 72 inch legal slot size and a three fish daily bag limit with no annual limit, to a much shorter open season(s) with a 42 – 60 inch legal slot size with bag limits of one fish daily and five fish annually.

Whitefish

Only two percent of annual anglers said they fished for whitefish in 2006. This percentage is unchanged from the 1977 survey results.

Table II-2 shows the extent to which anglers fished for more than one type of fish in 2006. The diagonal (bold) entries are the estimated percentages of all active adult resident anglers who fished for each of the specific species/fishery categories. The off-diagonal (non-bold) entries show estimates of the percentages of anglers who fished for both the types of fish shown in the associated row and column heading. This provides a partial picture of anglers’ versatility in switching between fisheries during the year. No doubt many anglers participated in more than two fisheries during the year. We hope to provide percentages for some of these other more complex combinations in the near future.

Table II-2. Percent of 2006 Anglers Who Fished For Each Type of Fish
Two-way Classification

2006 DATA	Q18. Salmon in the ocean	Q20. Other marine fish	Q21, Q22. Salmon in bays and estuaries and salmon in freshwater	Q23. Steelhead	Q24. Resident trout and/or kokanee	Q25. Searun cutthroat	Q26. Sturgeon	Q27. Shad	Q28. Striped bass	Q29. Whitefish	Q30. Warmwater game fish
Q18. Salmon in the ocean	9	4	6	5	5	1	3	2	0	0	1
Q20. Other marine fish		12	6	4	8	1	3	2	1	1	4
Q21, Q22. Salmon in bays and estuaries and salmon in freshwater			37	21	20	3	7	5	1	1	9
Q23. Steelhead				30	18	3	5	3	1	1	8
Q24. Resident trout and/or kokanee					73	4	5	4	3	2	18
Q25. Searun cutthroat						6	1	1	0	1	2
Q26. Sturgeon							10	3	1	1	3
Q27. Shad								7	1	1	3
Q28. Striped bass									4	1	2
Q29. Whitefish										3	2
Q30. Warmwater game fish											26

Table II-3 compares the “participation matrices” for the 1977 and 2006 angler surveys. In this table the numbers on the left side in each cell are the percentages of anglers estimated for the 1977 angler preference survey. The numbers separated by the “/” to the immediate right are the corresponding percentages from Table II-2 estimated in the 2006 survey.

Table II-3. Comparison of 1977 and 2006 Participation Percentages by Species/Fishery

1977 DATA / 2006 DATA	Salmon in the ocean	Other marine fish*	Salmon in bays and estuaries and salmon in freshwater	Steelhead	Resident trout and/or kokanee	Searun cutthroat	Sturgeon	Shad	Striped bass	Whitefish	Warmwater game fish
Salmon in the ocean	41/9	22/4	17/6	23/5	33/5	11/1	4/3	4/2	3/0	1/0	14/1
Other marine fish*		31/12	14/6	18/4	26/8	11/1	3/3	4/2	3/1	1/1	14/4
Salmon in bays and estuaries and salmon in freshwater			36/37	29/21	31/20	14/3	5/7	5/5	3/1	1/1	14/9
Steelhead				47/30	40/18	18/3	5/5	5/3	4/1	2/1	18/8
Resident trout and/or kokanee					85/73	20/4	7/5	6/4	5/3	2/2	31/18
Searun cutthroat						23/6	3/1	3/1	3/0	1/1	11/2
Sturgeon							8/10	2/3	1/1	1/1	4/3
Shad								7/7	1/1	1/1	4/3
Striped bass									5/4	1/1	4/3
Whitefish										2/3	2/2
Warmwater game fish											35/26

*Note: The 1977 survey asked about “Other ocean fish”; the 2006 survey asked about “Other marine fish in the ocean or in bays and estuaries.” While not *exactly* comparable, they are very close.

In a number of major fisheries, the percentages estimated for 2006 are less than the corresponding percentages estimated for 1977. There are a number of possible hypotheses that might help explain the apparent declines in participation. Before formulating some of the hypotheses, the survey staff thought it important to estimate the confidence intervals for the main diagonal cells in Table II-2 and the 2006 estimates in Table II-3 to see what a 95 percent confidence interval on the estimates would be. ODFW’s statistician produced the following table, Table II-4, using data provided by the survey contractor.

Table II-4. Confidence intervals on 2006 Percentages by Fishery

Species and Water type	Percentage yes	LCB	UCB
Salmon in the ocean	9%	7%	11%
Other marine fish	12%	10%	14%
Salmon in bays and estuaries	13%	11%	15%
Salmon in freshwater	33%	31%	36%
Steelhead	31%	28%	34%
Resident trout and kokanee	73%	70%	76%
Sea-run cutthroat	6%	4%	7%
Sturgeon	10%	8%	12%
Shad	7%	6%	9%
Striped bass	4%	3%	5%
Whitefish	3%	2%	4%
Warmwater game fish	26%	23%	29%
Other freshwater fish	5%	4%	6%
Notes:			
LCB = lower confidence bound at the 95% level			
UCB = upper confidence bound at the 95% level			

Table II-4 suggests there were probably significant differences between the 1977 and 2006 participation percentages for ocean salmon, other marine fish, steelhead, resident trout, sea-run cutthroat and warmwater game fish. This observation assumes confidence intervals for the 1977 survey were not substantially different from those for the 2006 survey.

Several hypotheses on causes of the changes are presented here. As we saw in Figure II-1 above, fewer angling license holders seem to have actively participated in 2006 (77%) than in 1977 (89%). Second, regulations driven by species abundance or other related management concerns were more stringent in some fisheries in 2006 than in 1977. Third, the percentages in the “off-diagonal” cells in Table II-3 are lower in a number of cases, suggesting the possibility of a higher degree of fishery specialization by active anglers in 2006 than 1977, possibly due to increases in constraints on anglers’ choices or in available time (see also Figures IV-4a and IV-4b ahead).

Also, as mentioned above, the large decline in participation in the ocean salmon fishery is probably the result of the decline in wild Oregon coastal coho salmon, which has led to the extremely limited ocean sport salmon seasons for 2006. Oregon monitors the ocean salmon fishery very closely during salmon seasons under the provisions of the Pacific Fishery Management Council’s Salmon Fishery Management Plan. According to estimates from the ocean salmon sampling program, the aggregate number of ocean sport salmon fishing trips taken in 2006 was 48 percent fewer than the 2001 – 2005 average and even more dramatically reduced from the number of trips during an era of greater salmon abundance back in 1977. (Pacific Fishery Management Council, 2007)

The decline in percentages of anglers who fished in particular fisheries also seems consistent with information from a recent ODFW license study (Carter and Upton, 2006) that showed a decline in the percentage of Oregonians who purchased fishing licenses (including daily as well

as annual licenses) between 1991 and 2003. Considering the information in the survey along with the license study suggests the hypotheses that not only are a smaller percentage of Oregonians sport fishing, but also that active anglers may have been active in fewer fisheries in 2006 than in 1977. In order to get more information on these apparent trends, we asked Responsive Management to help provide relevant data so we could prepare estimates of the average days fished by fishery for all active anglers surveyed that could be compared with similar estimates from the 1977 survey.

The results of this additional analysis are shown in Tables II-5a and II-5b on the following page. The numbers in the tables represent the average days or trips (defined equivalently) fished in particular fisheries across all active anglers.

A quick inspection of these tables suggests some similarities and some differences in the patterns of participation among active anglers. For 2006, active anglers reported fishing an average annual number of days for steelhead, shad, striped bass and whitefish that were similar to the 1977 averages. Average annual days fished for other marine fish, resident trout, searun cutthroat and warmwater game fish were fewer in 2006 than in 1977. Average days fished for salmon and sturgeon were greater in 2006 than in 1977. Within individual water types there were some shifts. For example, fewer average days were taken for salmon in the ocean, but more days were taken in other water types. Fewer days of trout fishing were taken on average in streams in 2006 than in 1977.

Several notes of caution about these average days fished estimates must be considered. First, we have not determined whether the differences in average days fished for each cell in the tables were statistically significant. Second, because anglers were asked to recall the number of days they fished for an annual period, there is considerable potential for recall bias. Usually it is preferable to conduct angler use (e.g., numbers of days and trips) surveys using a multi survey-wave approach of at least three or four waves to reduce the effect of recall bias.

Table II-5a.

1977 Number of Angler Trips Taken by All Respondents by Type of Fish and Type of Water Body							
Type of Fish	Ocean		Lakes/Reservoirs		Streams		TOTAL
	Average	Range	Average	Range	Average	Range	Average
Salmon	2.3	0-99	0.3	0-40	3.0	0-99	5.5
Other ocean fish	1.7	0-99					1.7
Steelhead			0.2	0-45	4.6	0-99	4.8
Resident trout			6.2	0-99	7.5	0-99	13.7
Sea-run Cutthroat			0.4	0-50	1.5	0-99	1.9
Warm-water game fish			2.7	0-99	1.2	0-99	3.9
Shad			0.0	0-20	0.2	0-20	0.3
Striped bass			0.2	0-50	0.2	0-80	0.4
Sturgeon			0.1	0-15	0.4	0-60	0.4
Whitefish			0.1	0-40	0.1	0-80	0.2
TOTAL	4.0		10.1		18.7		32.8

Table II-5b.

2006 Number of Angler Days Taken by All Respondents by Type of Fish and Type of Water Body									
Type of Fish	Ocean		Bays/Estuaries		Lakes/Reservoirs		Streams		TOTAL
	Average	Range	Average	Range	Average	Range	Average	Range	Average
Salmon	0.5	0-60	1.3	0-90	1.6	0-160	3.8	0-123	7.3
Other marine fish	0.8	0-99							0.8
Steelhead					1.5	0-90	3.4	0-90	4.8
Resident trout					6.4	0-104	4.0	0-120	10.4
Sea-run Cutthroat					0.2	0-30	0.4	0-60	0.6
Warm-water game fish					2.3	0-125	1.2	0-90	3.4
Shad					0.1	0-40	0.2	0.3	0.4
Striped bass					0.3	0-60	0.1	0-60	0.4
Sturgeon					0.3	0-90	0.8	0-120	1.2
Whitefish					0.1	0-60	0.1	0-60	0.3
TOTAL	1.3		1.3		12.8		14.0		29.6

III. Focus on Trout and Warmwater Fishing

Characteristics of Trout and Warmwater Angling Activity

After identifying overall participation patterns for annually licensed resident anglers, the survey focused on the freshwater sport fisheries for trout and warmwater fish species. In addition to gaining additional information on the fishing patterns and preferences of trout and warmwater anglers, ODFW wanted to find out more about angler's opinions on regulations, their motivations, and what produced satisfaction and dissatisfaction with fishing. So, our survey contractor, Responsive Management, asked trout and warmwater game fish anglers a detailed series of questions about their involvement with these specific fisheries.

Anglers who fished for warmwater game fish species were asked to indicate the three species for which they most preferred to fish. Table III-1 shows the preferences. Bass (largemouth or smallmouth) were by far the most preferred species (77%). About five (5) percent of bass anglers reported they had taken part in a bass tournament in the previous twelve months.

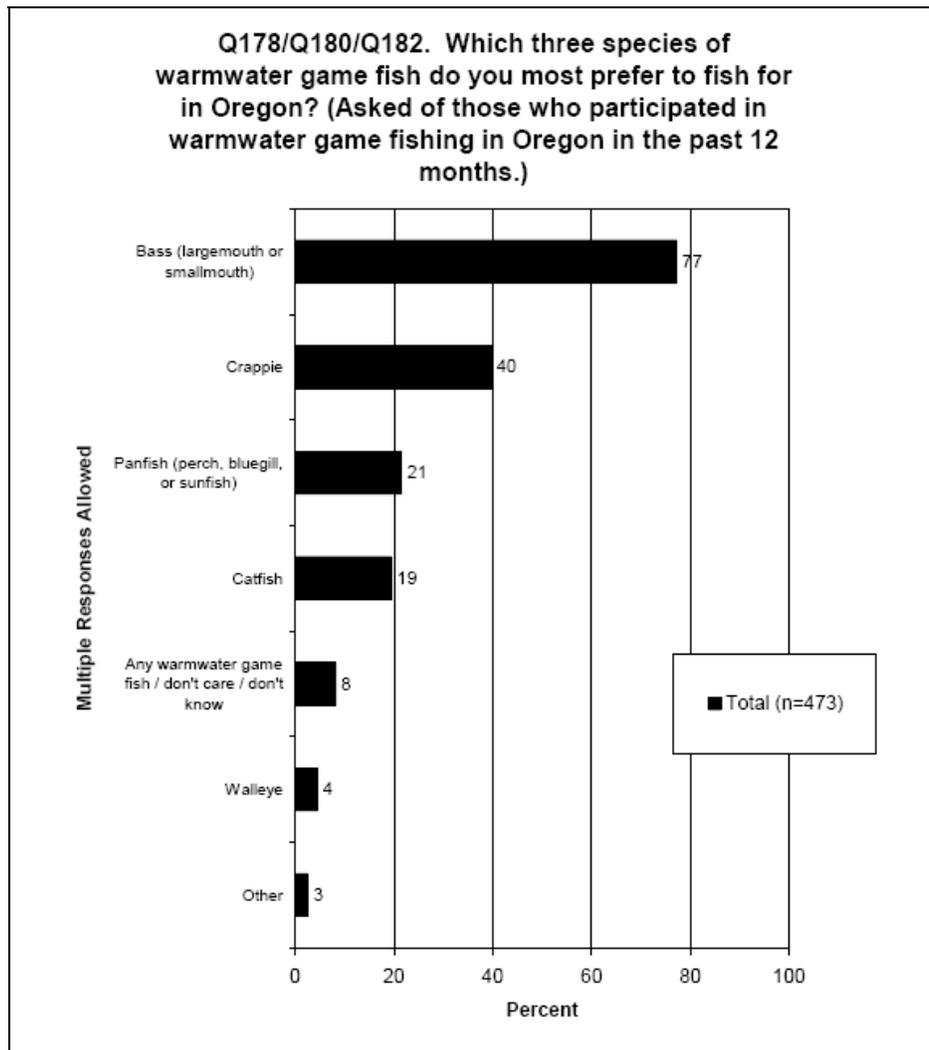


Figure III-1. Species preferred by Oregon warmwater anglers

Crappie was the second most preferred warmwater game fish (40%). Following were panfish (21%) and catfish (19%). Eight (8) percent of the choices made were “no preferred species”. Only four percent of warmwater anglers listed walleye as a preferred species, possibly due to the walleye fishery being relatively new to Oregonians, a limited distribution of walleye around the state, and because a boat is needed for the fishery.

Anglers who reported fishing for resident trout were also asked to indicate the species for which they most preferred to fish. Figure III-2 shows the most preferred species in the trout fisheries was rainbow trout (69%).

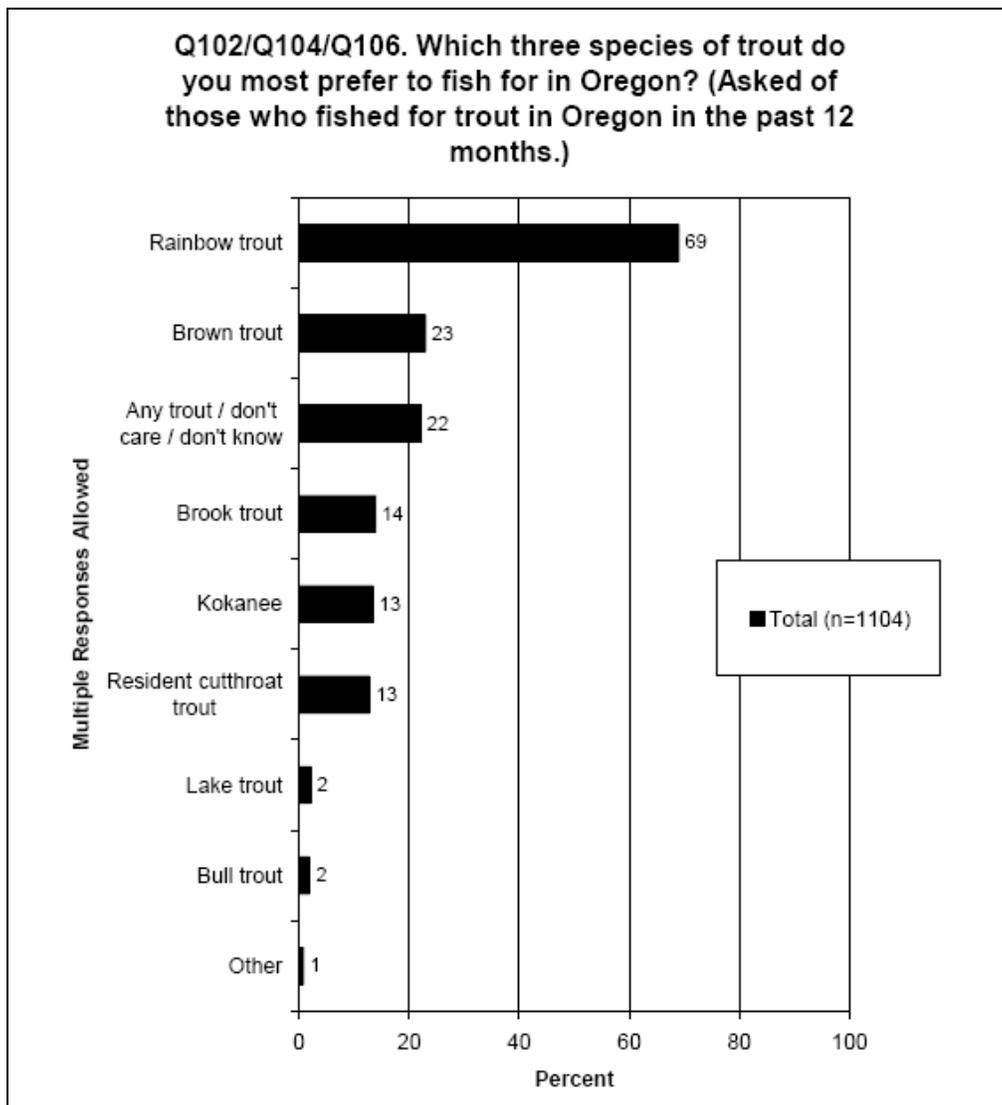


Figure III-2. Species preferred by Oregon trout anglers

Brown trout was the second most preferred species (23%), and a large percentage of respondents (22%) chose the “Any trout/don’t care/don’t know” category. Anglers selected brook trout (14%), kokanee (13%) and resident cutthroat trout (13%) with about the same frequency. The

percentage who said they preferred brown trout was greater than expected compared to the other trout species. We have no good hypothesis why this occurred, but hope to consider this in greater depth in the near future.

In addition to preferred species, anglers were also asked whether they preferred to fish for wild trout or hatchery trout. Although more anglers said they preferred wild trout (34%) than hatchery trout (5%), the largest percentage (60%) said that it did not matter whether they fished for wild or hatchery trout. It appears that a large proportion of the trout angling public doesn't care whether the trout they catch were wild or from hatchery releases. With regard to catch preferences, Figure III-3 shows the breakout. (Responses to survey questions about catch and release of wild trout do suggest anglers strongly favor regulating the catch of wild trout – see Figure III-18, ahead.)

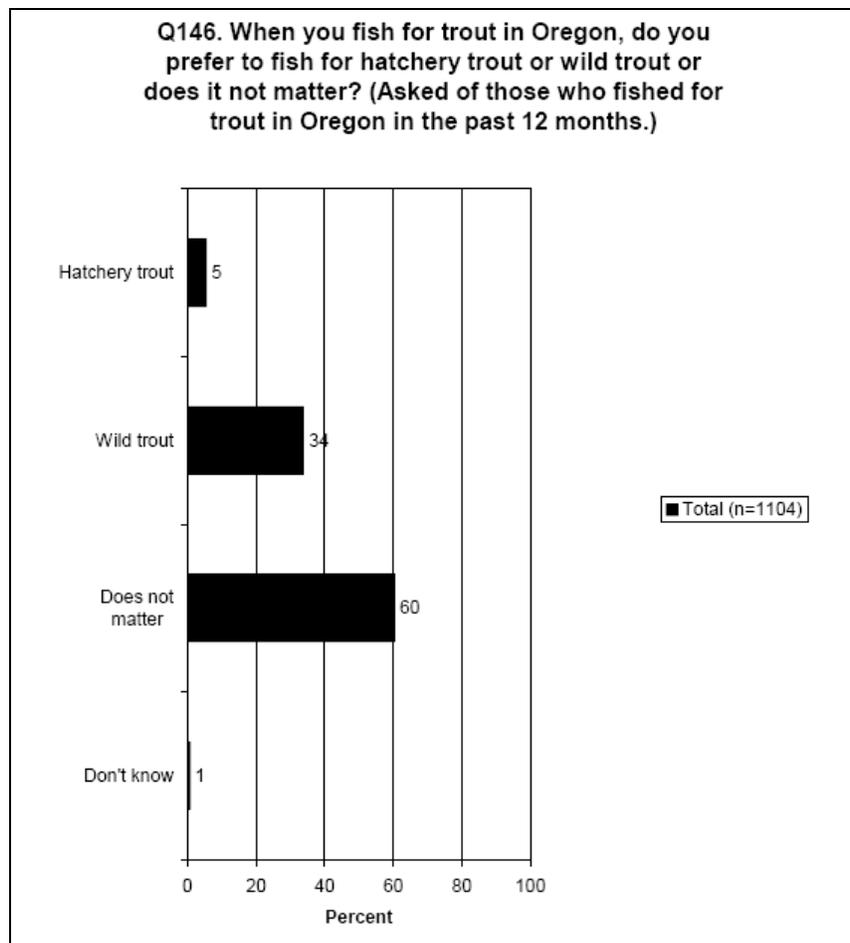


Figure III-3. Trout angler preferences between wild and hatchery origin trout.

In terms of methods of fishing, a majority of trout anglers (54%) prefer to use multiple baits and gear types. Twenty-one percent (21%) prefer bait only, but 16 percent prefer flies only, while nine percent (9%) prefer lures only. A majority of warmwater game fish anglers (53%) also prefer to use multiple baits and gear types. Otherwise, 21 percent prefer lures only, 18 percent

prefer bait only and seven (7) percent prefer flies. Figures III-4a and III-4b compare these gear preferences.

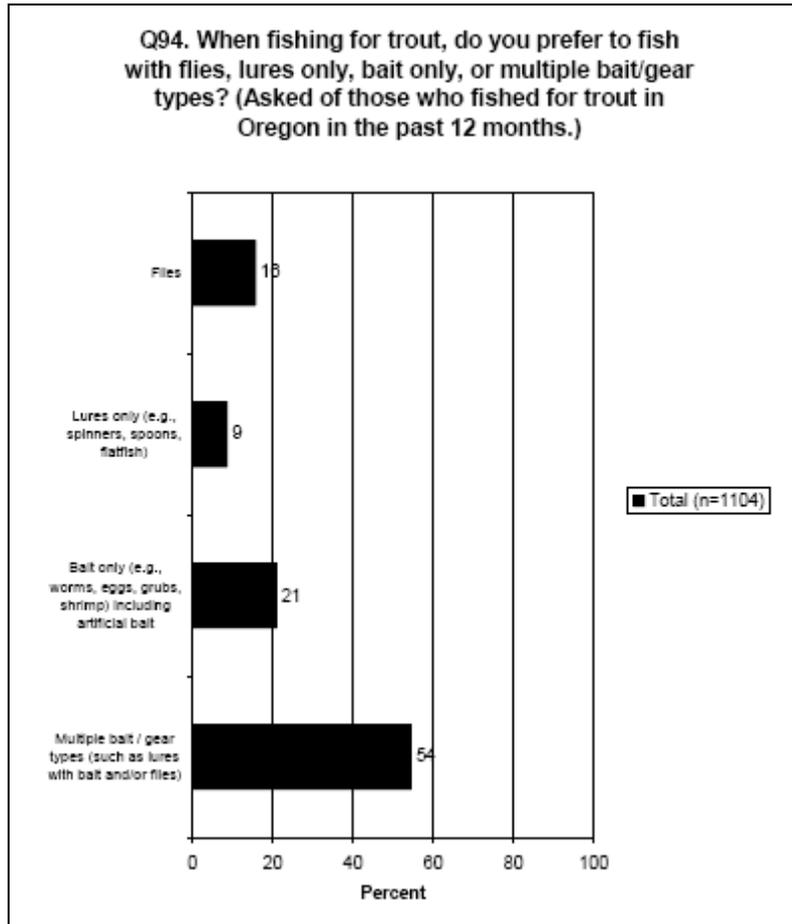


Figure III-4a. Gear and bait preferences for trout anglers.

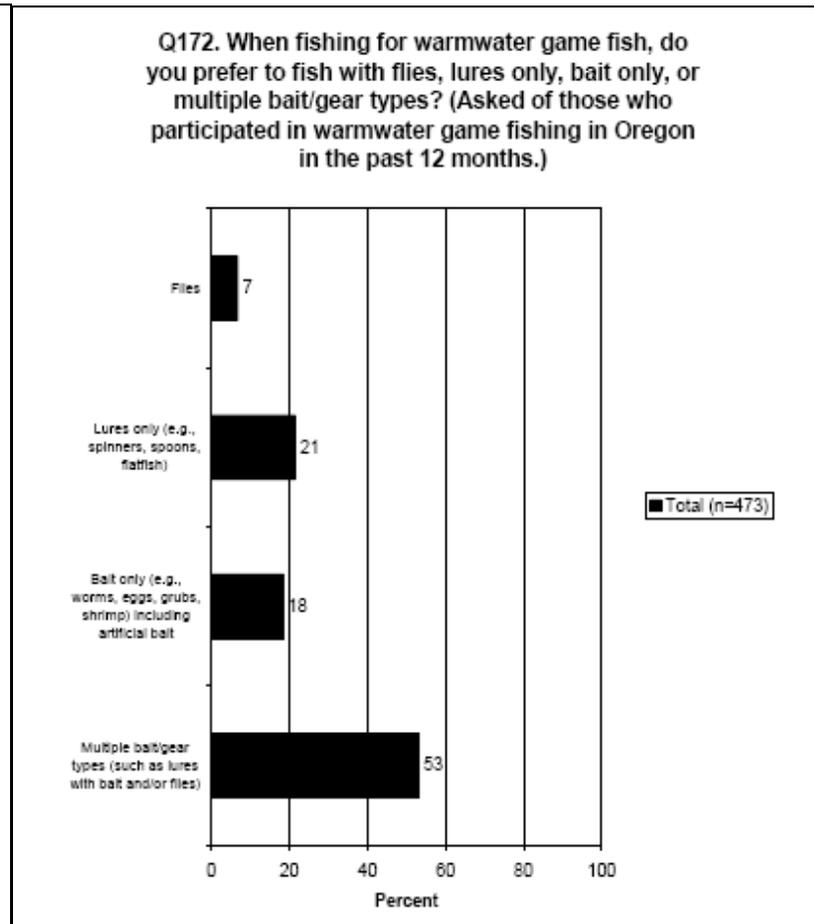


Figure III-4b. Gear and bait preferences for warmwater anglers,

We also asked anglers which was their preferred water type. Trout anglers most often (36%) said they had no particular preference for any type of water body when they go fishing. Twenty-five (25) percent expressed a preference for high mountain lakes; 24 percent favored rivers/streams; eight percent (8%) chose reservoirs and seven percent (7%) indicated lowland lakes were their preferred place to fish for trout. ODFW staff thinks there was ambiguity in the way “high mountain lakes” was understood by respondents. If asked, interviewers were instructed to define “high mountain lakes” as “lakes at high altitude that are typically accessed only by hiking to the lake”. We suspect that many respondents might have included more accessible lakes, such as Paulina Lake and those along the Century Drive in Central Oregon in the definition of high mountain lakes. Therefore the breakout into preferred water type should probably be interpreted with some caution.

Most warmwater anglers (40%) also said they had no preference among water body types for fishing. Twenty-one percent (21%) said they preferred fishing in lakes, and 18 percent said they preferred rivers. Twenty percent of warmwater anglers indicated they liked to fish for warmwater game fish in reservoirs (12%) or ponds (8%).

Figures III-5a and III-5b compare the water type preferences for trout and warmwater game fish anglers.

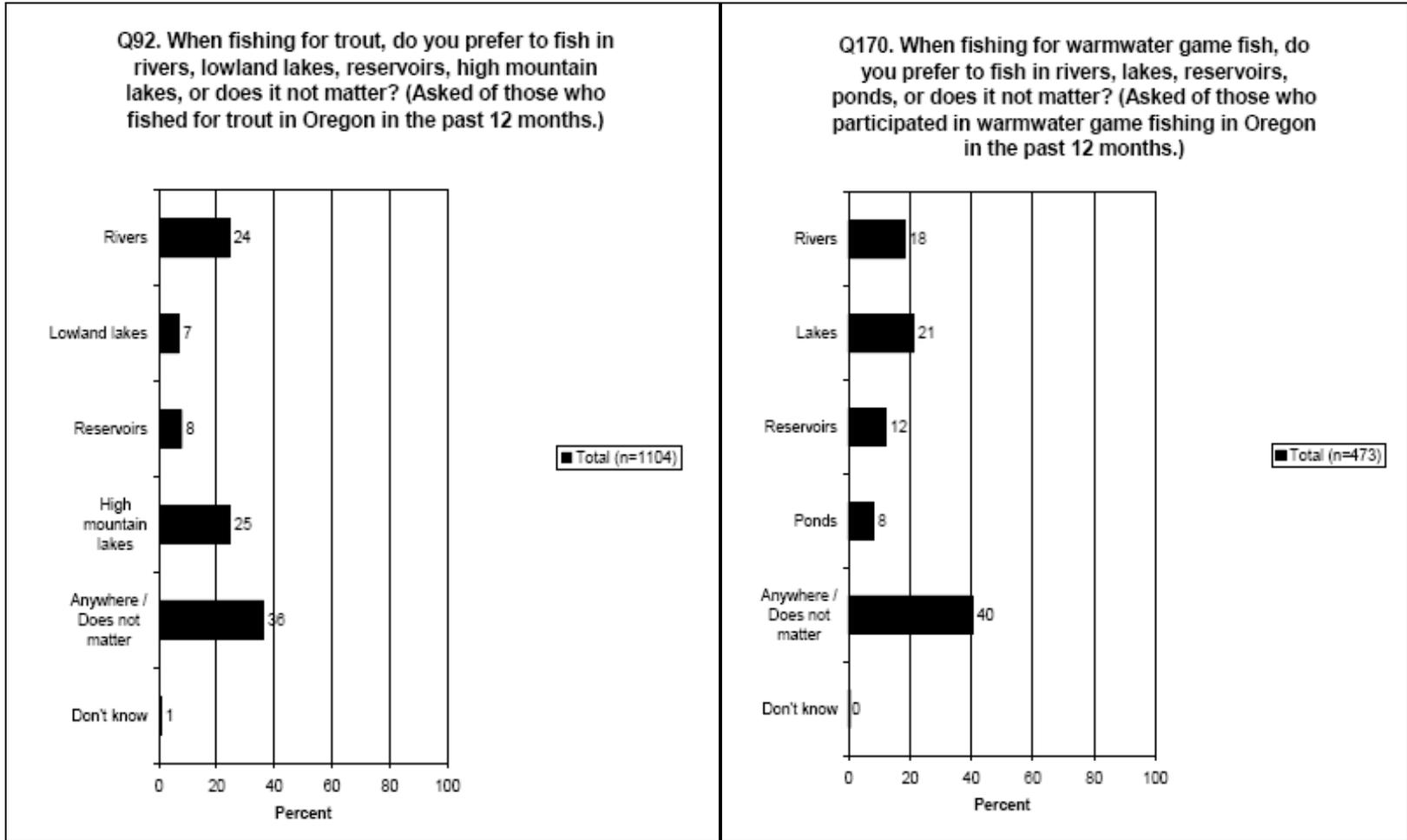


Figure III-5a. Water type preference for trout anglers.

Figure III-5b. Water type preference for warmwater anglers

We also wanted to identify anglers' preferences for particular modes of fishing, for example, what proportion of anglers fish from boats versus banks. We also included some other modes of fishing such as float tubes, piers or docks and a catch-all "other" category.

In contrast, trout anglers most often said (45%) said they fished from the bank, and 38 percent said they fished from a boat. 11 percent of trout anglers fished equally among modes. A few others indicated they fished from some other place. See Figure III-6a.

Among warmwater anglers, 46 percent usually fish from a boat, while 38 percent indicated they usually fish from the bank. A few said they fished from some other location (float tubes, pier/dock and other). Similar to trout anglers, ten percent (10%) felt they fished about equally using all modes. See figure III-6b.

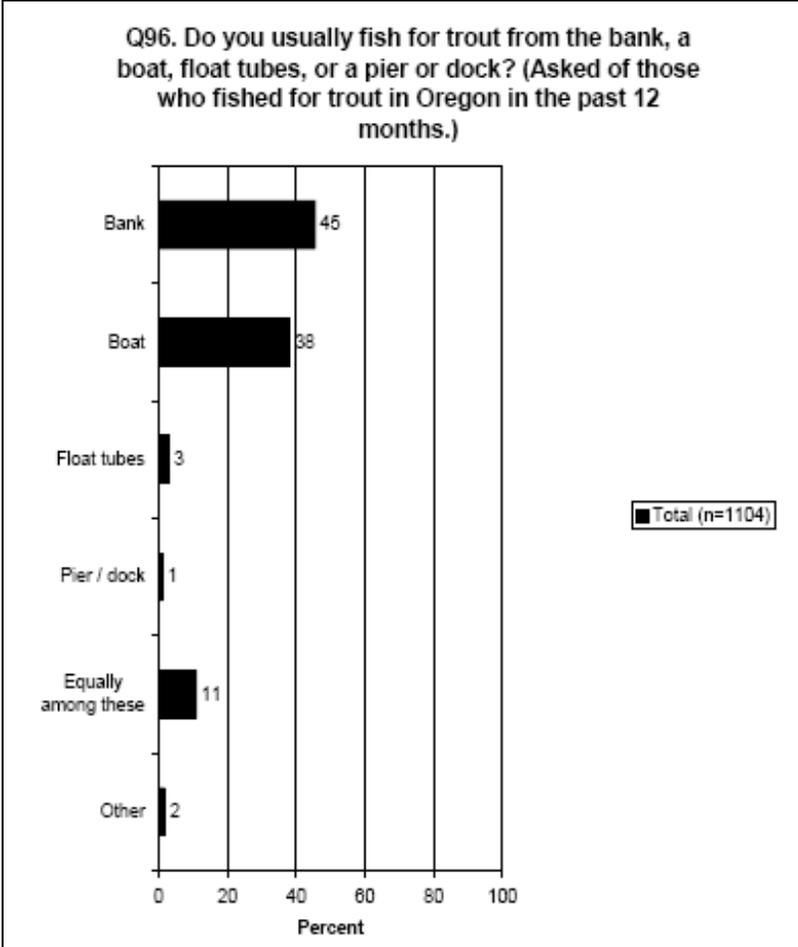


Figure III-6a. Modes of fishing for trout anglers

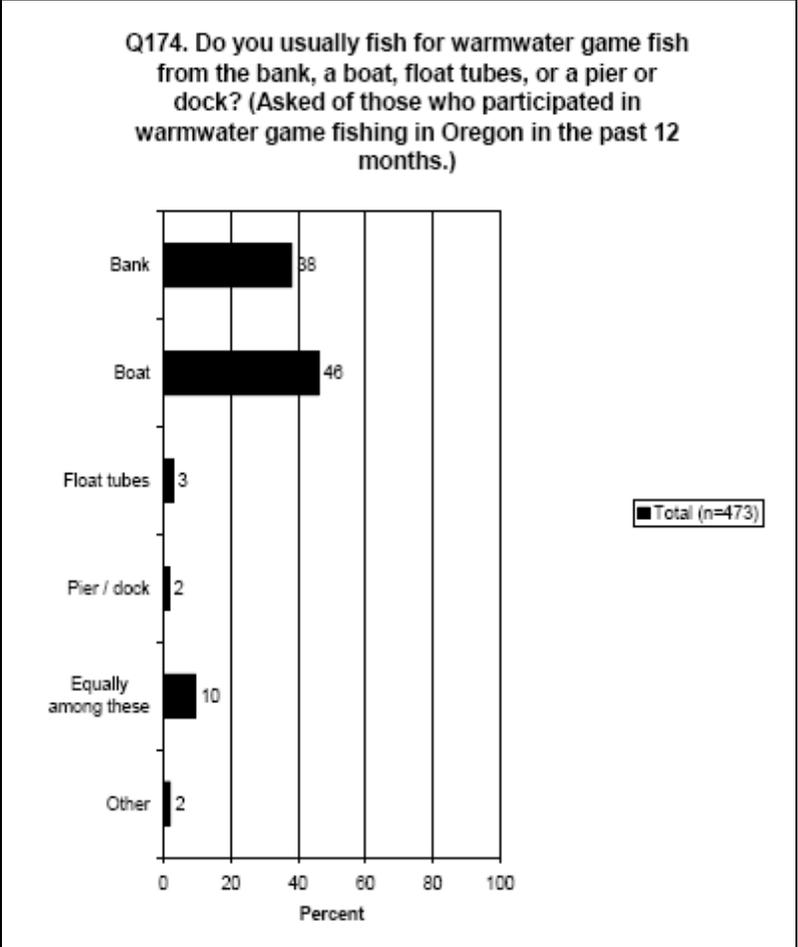


Figure III-6b. Modes of fishing for warmwater anglers

Another characteristic of angler trips is the amount of time typically spent by an angler in order to go fishing. We were curious about the distribution of trip time among some approximate descriptions of the length of time anglers spend on fishing trips.

Figures III-7a and III-7b show the amounts of time usually spent on fishing trips for trout and warmwater game fish respectively. These figures are not exactly comparable due to the difference in categories for describing times spent fishing.

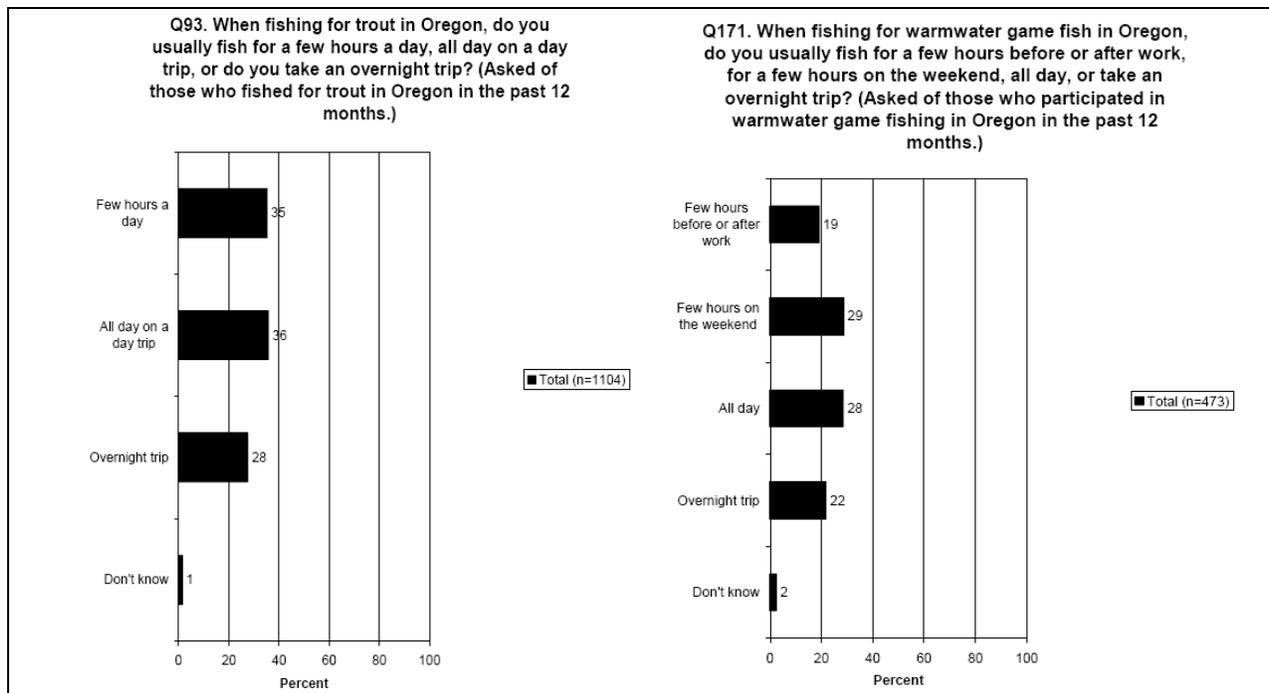


Figure III-7a Lengths of usual trout trip

Figure III-7b Lengths of usual warmwater trip

Trout and warmwater anglers were also asked about their main reasons for fishing. The two most commonly cited reasons were “for relaxation/to get away” and “to be with family and friends”. The results were similar for the two fisheries, although being close to nature was more important for trout anglers, while the sport/competition/skill testing aspects were more important for warmwater anglers as shown in Figures III-8a and III-8b below.

Not surprisingly, catching fish was also quite important, as indicated in the figures. Over one third of trout and warmwater anglers listed catching fish to eat as one of their main reasons for fishing. Other popular answers were catching a large fish, or catching lots of fish. This is one attribute of angling that ODFW can affect through regulations and hatchery/stocking policies. We will touch on this again later in our discussion of constraints to fishing and satisfaction with fishing.

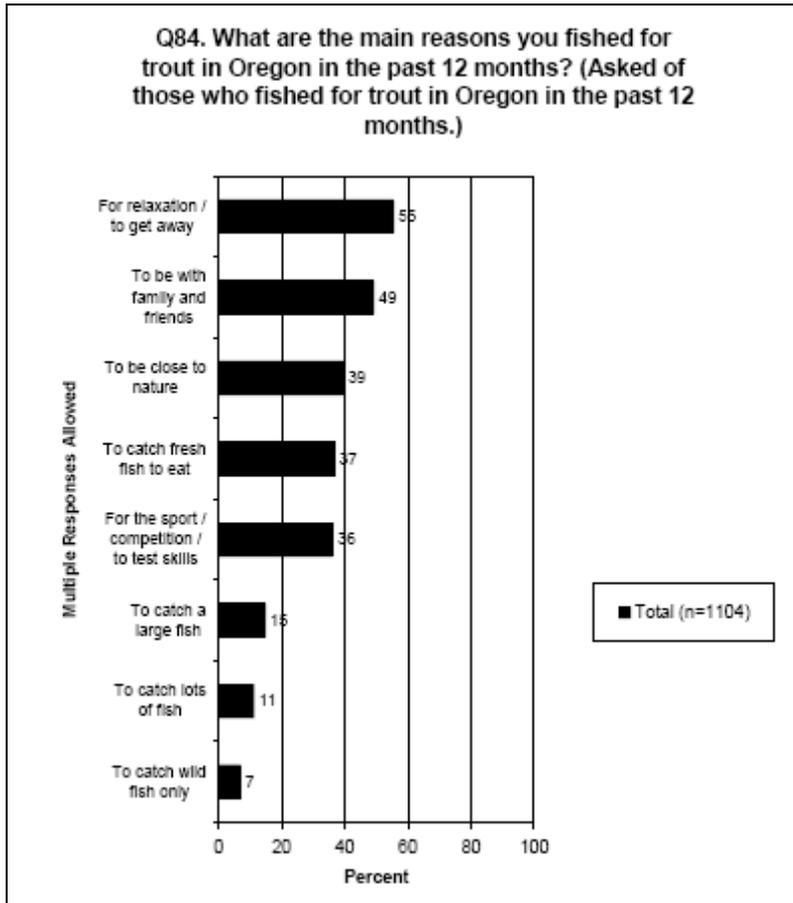


Figure III-8a Main reasons anglers fished for trout

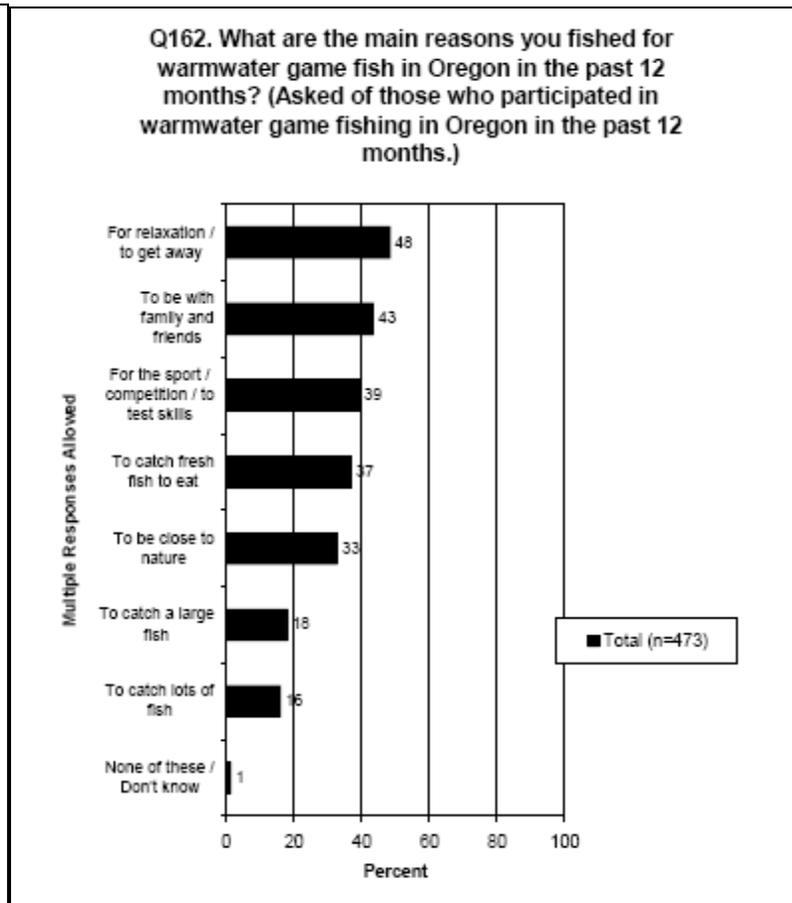


Figure III-8b Main reasons anglers fished for warmwater fish

We also wanted to find out from anglers how their levels of participation in these fisheries had changed over the past five years. For warmwater anglers, the same percentage (27%) said their level of warmwater fishing activity had increased as those who said it had decreased. Figure III-9a shows graphically the results for this question. Forty four percent (44%) of warmwater game fish anglers said their participation level had stayed the same.

There was a different conclusion when we asked trout anglers about their participation trends for the last five years. Figure III-9b shows that 38 percent of trout anglers said their level of participation had decreased in the last five years. Twenty-eight percent (28%) said their trout fishing activity level had increased. The remaining 35 percent said their trout fishing activity had remained about the same, except for two percent who said they didn't know. ODFW staff thinks these changes in trout angling participation should be investigated more thoroughly to identify the causes, such as the cause and extent of constraints to angling, particularly the kinds of constraints ODFW might be able to address. We also hope to see how the responses varied among anglers of different ages, and among river/stream versus lake/reservoir anglers.

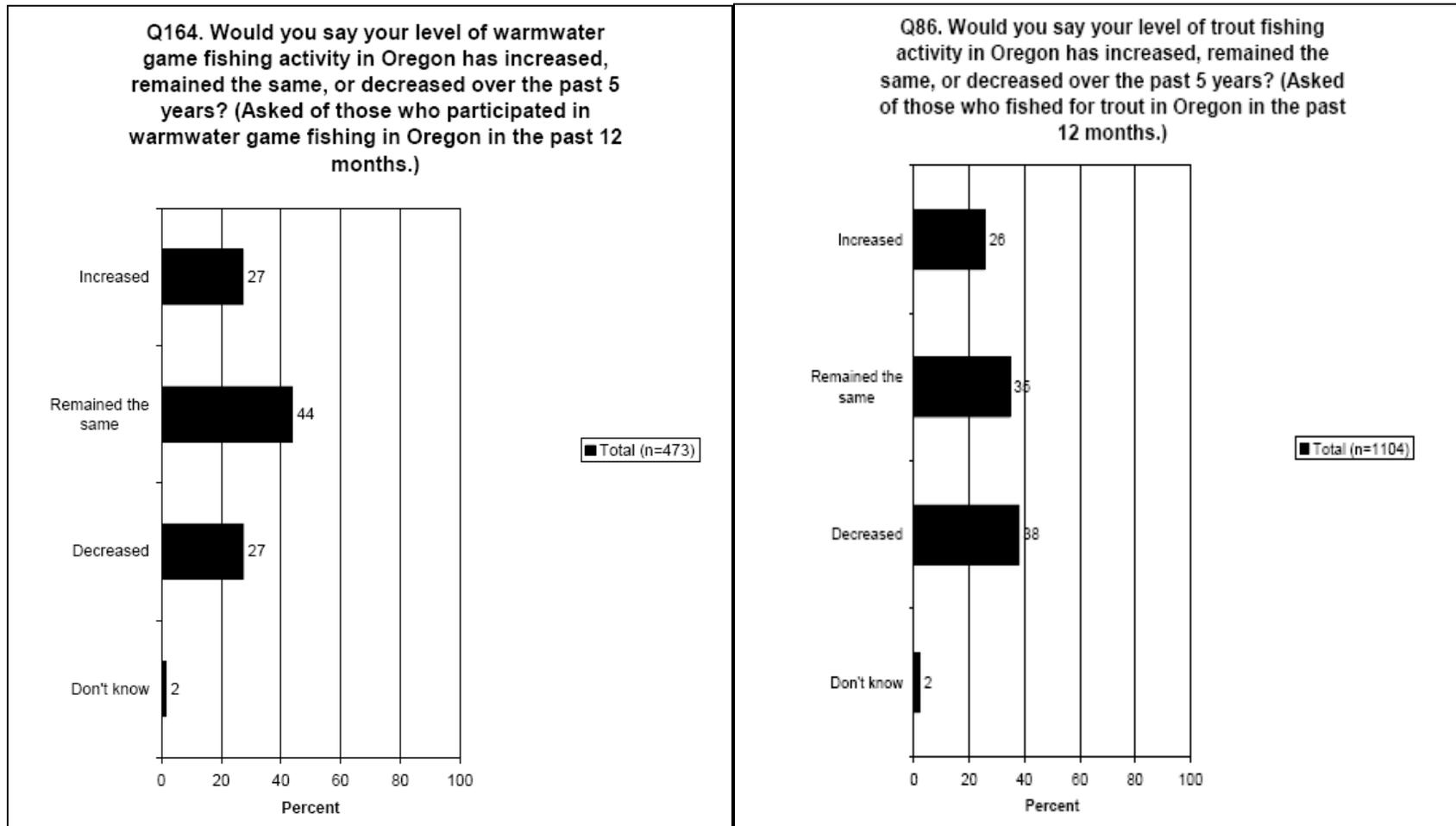


Figure III-9a. Trends in participation in the warmwater game fish fishery Figure III-9b Trends in participation in the trout fishery

Angler Opinions on Fishing and Fishing Regulations

A majority of active anglers either agree or strongly agree that Oregon’s freshwater fishing regulations are clear and easy to understand. However, a substantial percentage disagree with this statement as shown in Figure III-10.

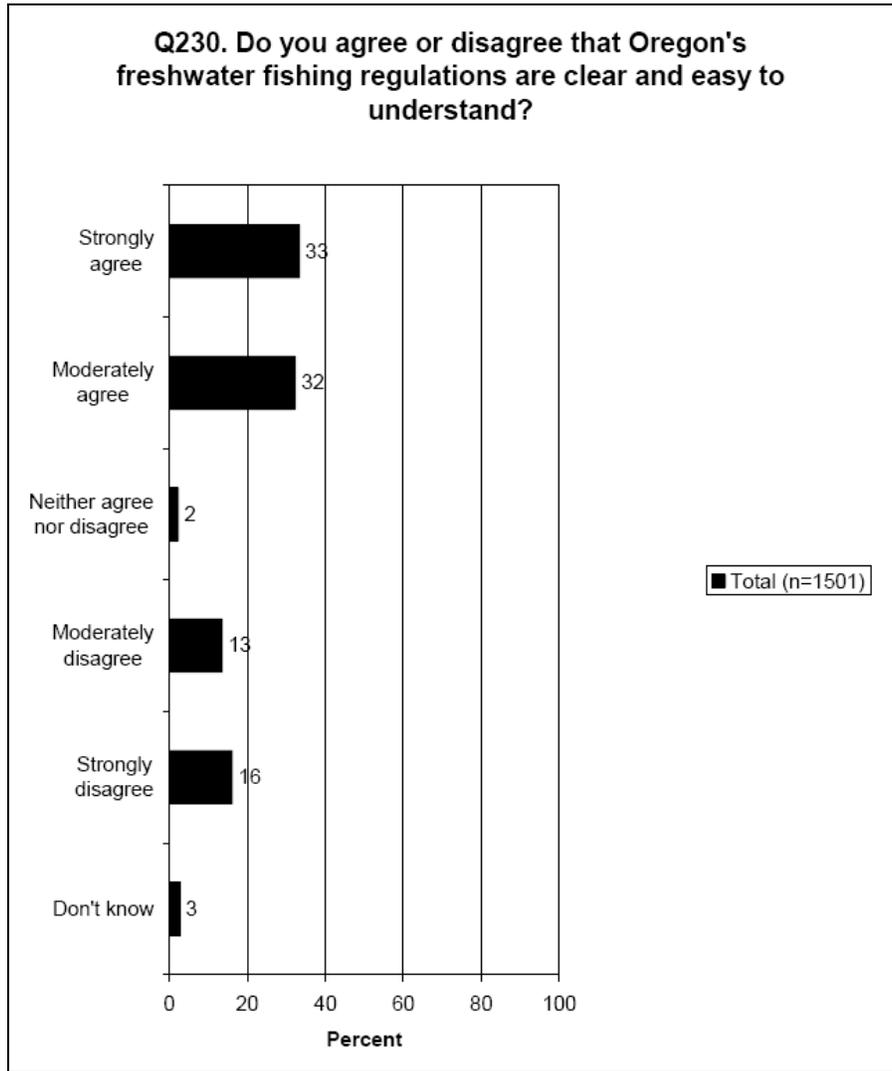


Figure III-10. Oregon’s fishing regulations – clear, and easy to understand?

Those who disagreed with the statement that Oregon’s freshwater fishing regulations were clear and easy to understand were next asked why they disagreed. Multiple responses were allowed; and, the opinions that emerged from these responses are shown in Figure III -11.

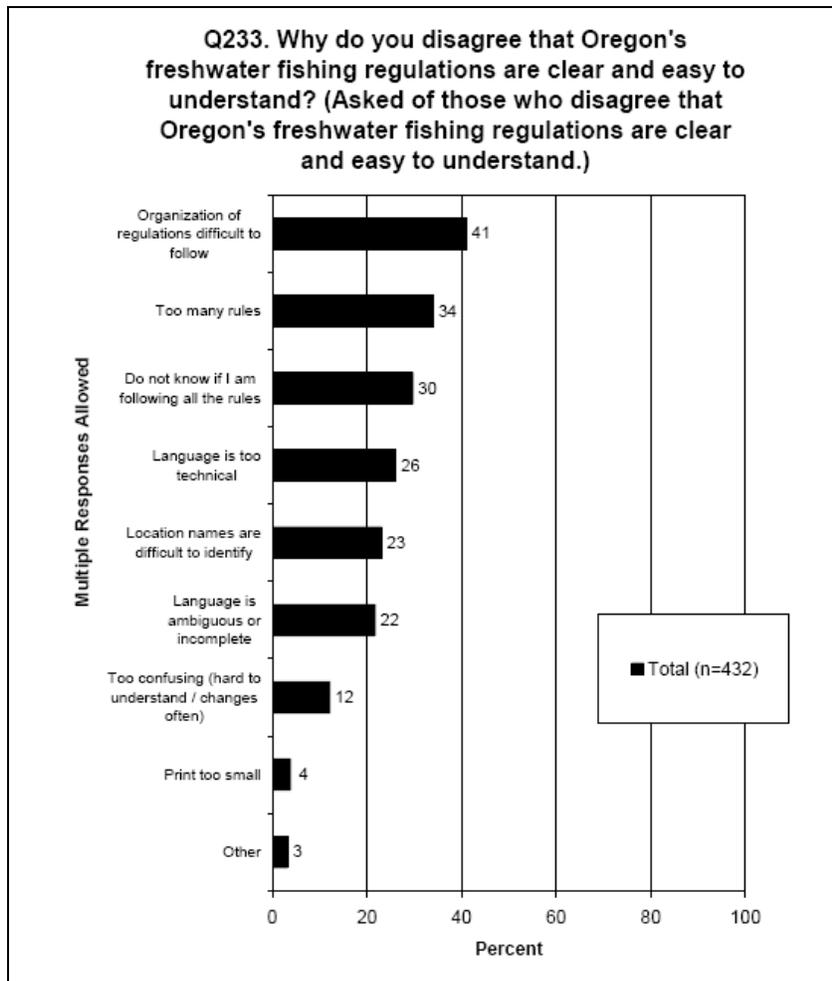


Figure III-11. Why do some anglers think Oregon’s angling regulations are not clear and easy to understand?

Interestingly, we learned from answers to other questions that older males and people who fished for salmon and steelhead were more likely to feel that the angling regulations were not clear and easy to understand. At this time we have not identified the specific reasons why some of these types of anglers were more likely to feel this way about the clarity of regulations. It should also be noted that 61 percent of anglers age 60 and over strongly or moderately agreed that Oregon’s regulations were clear and easy to understand.

ODFW staff hopes to do some more extensive analyses of this question. For example, the analyses of the cross-tabulations of age, gender and salmon/steelhead fishing activity on the question posed in Figure III-10 and III-11 would be useful to begin honing in on the reasons why these angler subsets believe ODFW regulations are not easy to use.

Active anglers were also asked their opinions on whether or not ODFW makes a good effort to obtain input from the public about freshwater fishing regulations. Again, the majority agreed, but a noticeable percentage expressed some disagreement. Figure III-12 shows the distribution of opinions on the regulatory process.

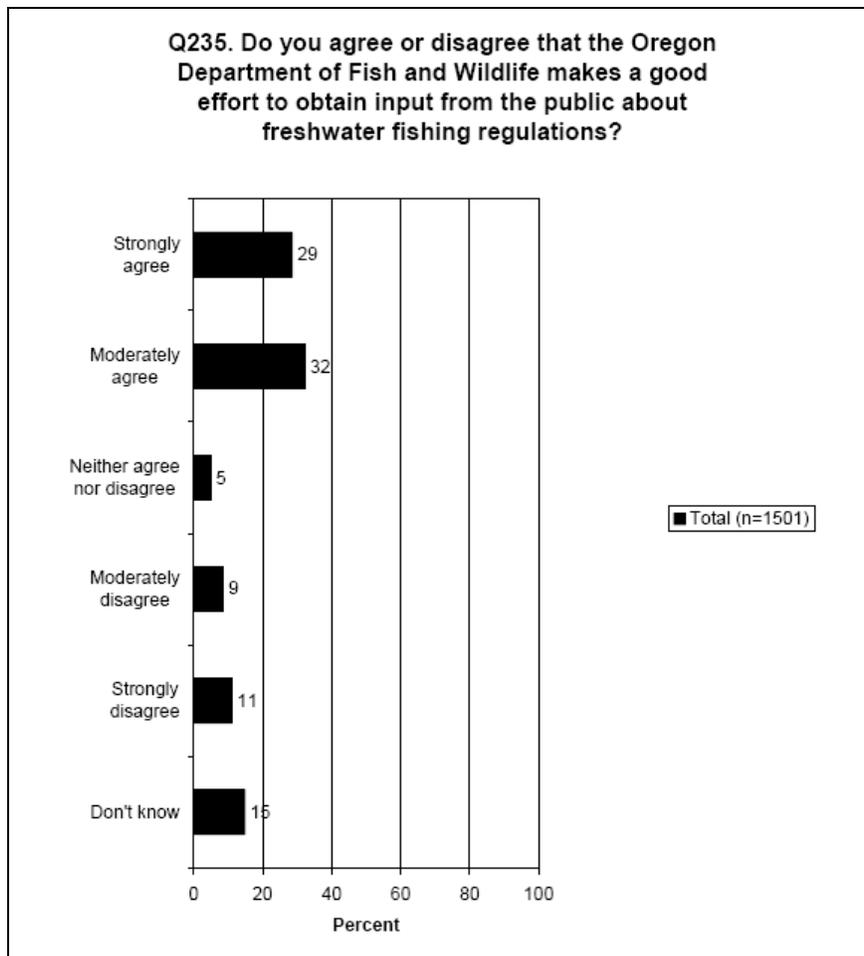


Figure III – 12. Does ODFW make a good effort to get public input?

Active anglers were next asked whether they would support or oppose additional freshwater fishing regulations either to:

- Maintain current freshwater fishing opportunities, or
- Increase current freshwater fishing opportunities

As shown in figures III-13a and II-13b, a majority of anglers indicated support for additional freshwater regulations in these cases; however, there was a noteworthy percentage who moderately or strongly opposed additional regulations in either case. ODFW staff thinks some additional cross-tabulations and analysis by region of the state might produce additional insight on this regulatory question.

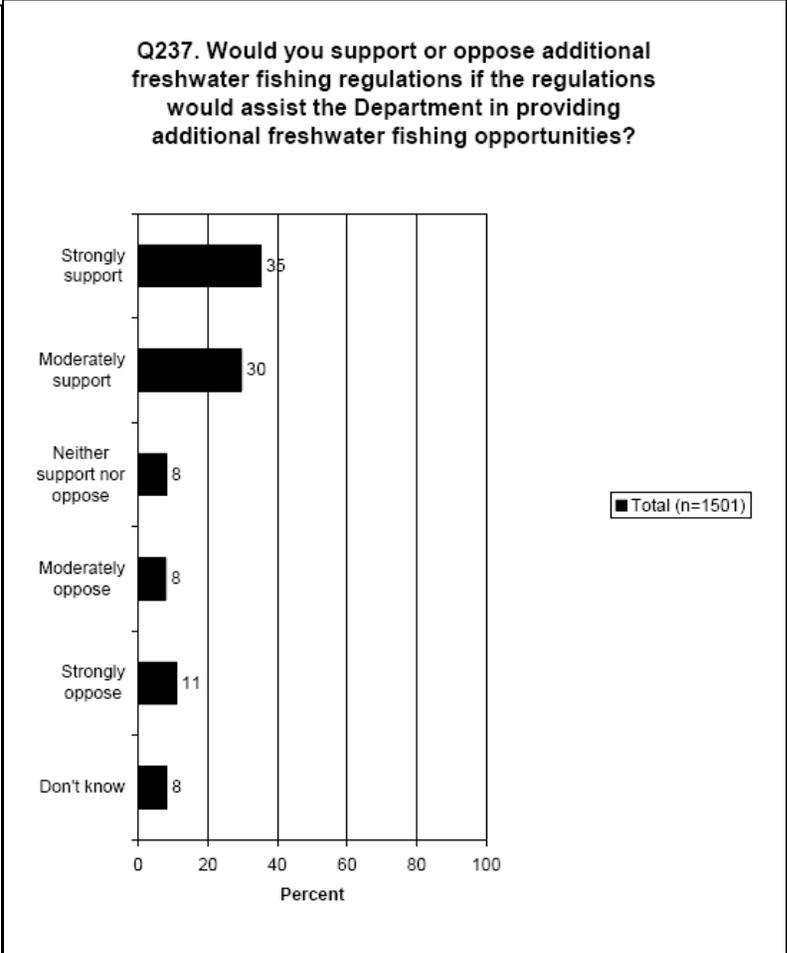
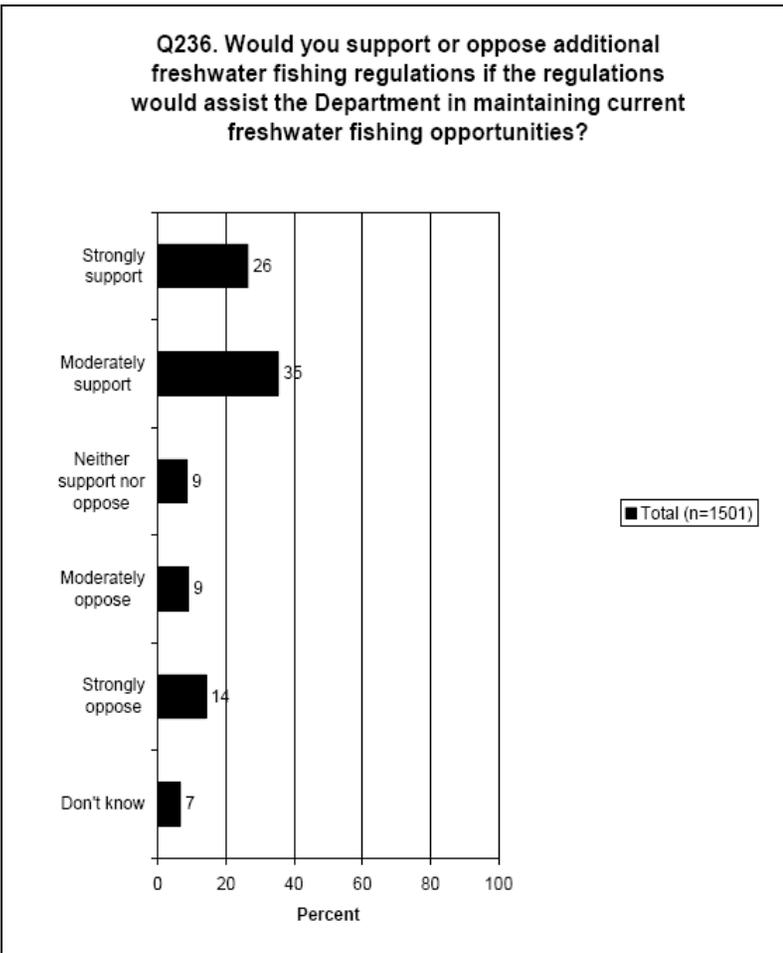


Figure III-13a. Support more regulations to maintain opportunity

Figure III-13b. Support more regulations to increase opportunity

From other questions we also learned that relatively younger anglers were more likely to support additional regulations to maintain or increase opportunity. The reasons for this are not known, but we may hypothesize that younger anglers are more “environmentally sensitive” or aware of the changes in fish stock status that create the need for additional regulation. Alternatively we may also hypothesize that older anglers might better remember days with fewer, less complex regulations and “better” opportunities.

There is an interesting contrast between anglers’ main sources of information on fishing opportunities and their sources of information on angling regulations. Figure III-14 shows the main sources of information on fishing opportunity reported by active anglers.

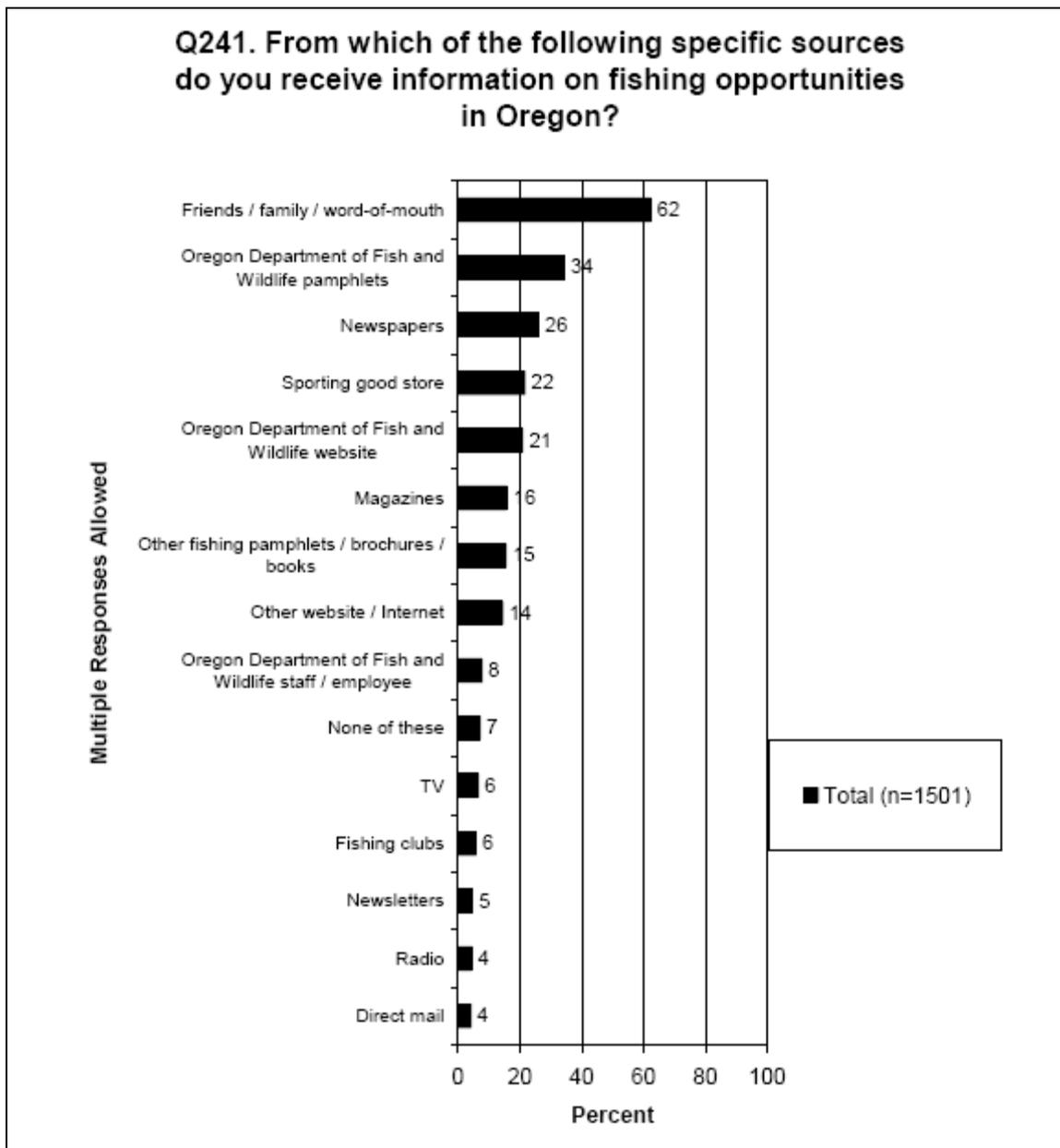


Figure III-14. Active anglers’ main sources of information on fishing opportunities

Word-of-mouth from friends and family is the most common source of information (62%) on fishing opportunities. Several other important sources of information come from ODFW – pamphlets (34%), the agency website (21%), and ODFW staff (8%).

When asked about their sources of information on angling regulations, the responses are somewhat different, as shown in Figure III-15. The most often mentioned source of information was the angling regulations handbook (77%), followed by word-of-mouth from friends and family (34%). At this point we don't know if those who did not mention the regulations were the same people who found the regulations hard to read and understand, but that is a reasonable hypothesis. ODFW staff will investigate this possibility using the data for these two questions.

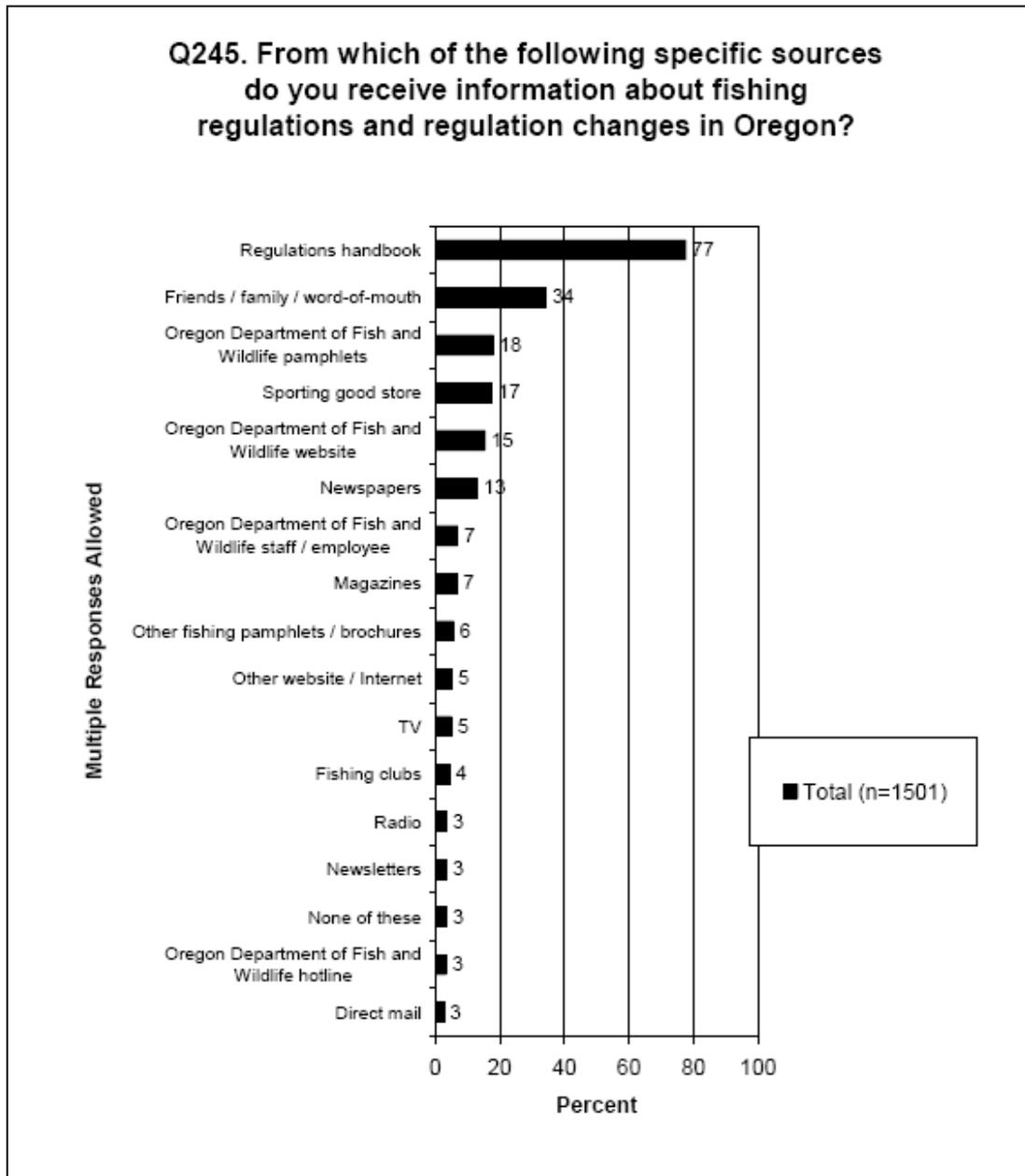


Figure III-15. Active anglers' sources of information on regulations and changes

We also wanted to check on the opinions of trout and warmwater anglers with regard to some specific kinds of regulations. Therefore, those anglers were asked to respond to some fishery-specific preference questions. Trout anglers were asked, “If a trout population is healthy, do you agree or disagree that the Oregon Department of Fish and Wildlife should manage fisheries for larger trout rather than maximize the number of trout?” Although there was moderate support for managing for larger trout, the range of responses were fairly wide as shown in Table III-1

Table III-1. Manage for larger trout rather than maximize the number harvested if trout population is healthy?

Response	Percent of trout anglers (n=1104)
Strongly agree	25
Moderately agree	23
Neither agree nor disagree	15
Moderately disagree	15
Strongly disagree	9
Don't know	12

Had this question been asked about specific sites, the responses of anglers who fish at those sites may have been much different. So the resolution of this management approach should await information from specific situations, rather than the results of such a general approach.

We asked warmwater anglers to express their support or opposition to the establishment of bag limits for particular species for which there are currently no bag limits. There was considerable opposition to establishing bag limits for crappie, panfish or catfish as shown in Table III-2.

Table III-2. Question: Establish bag limits for certain warmwater game fish species?

Response	Species and Percent of warmwater anglers		
	Crappie (n=208)	Panfish (n=86)	Catfish (n=106)
Strongly support	13	12	9
Moderately support	15	19	19
Neither support nor oppose	7	8	14
Moderately oppose	23	13	15
Strongly oppose	39	39	40
Don't know	4	9	3

Again, responses of anglers at specific warmwater fishing locations may differ from the responses in the table. Determination of support or opposition for bag limits for specific sites and species will require some localized information.

Another fisheries conservation approach that is being followed more often by anglers and regulators in recent years is catch and release. In this survey we made no distinction between mandatory catch and release regulations imposed by ODFW, and voluntary catch and release used by anglers for their own reasons. Anglers' use of catch and release when fishing is widespread for both warmwater and trout. Figures III-16a and III-16b show us the percentages of anglers who use catch and release when fishing.

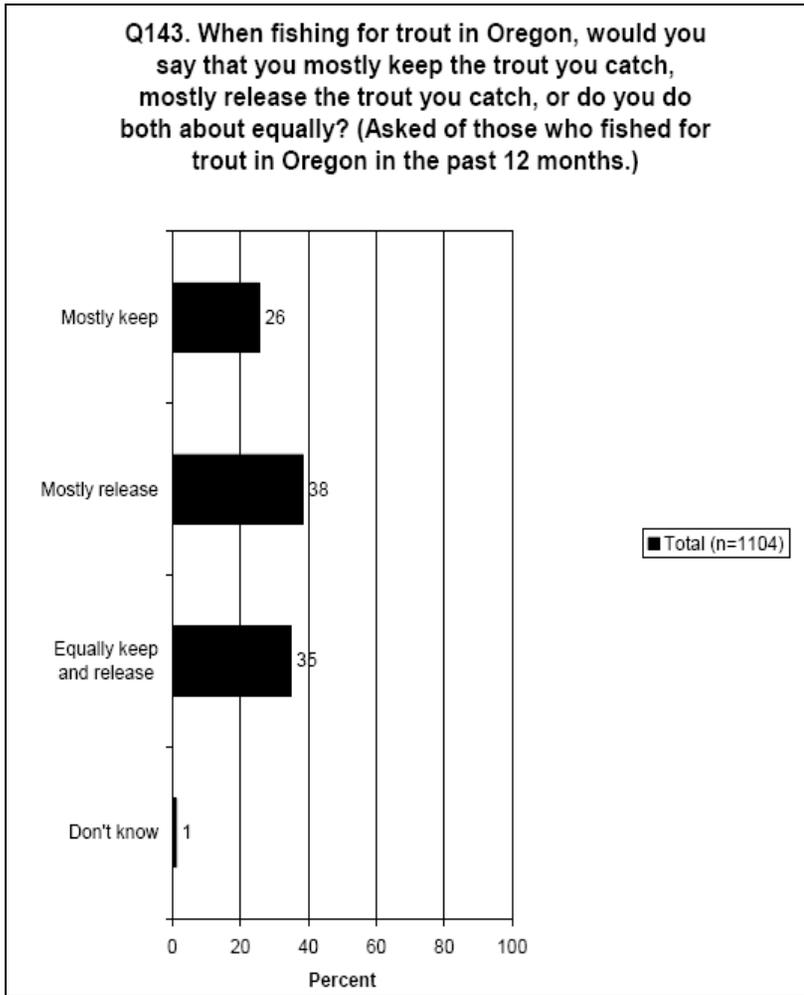


Figure III-16a. Percent of trout anglers using catch and release

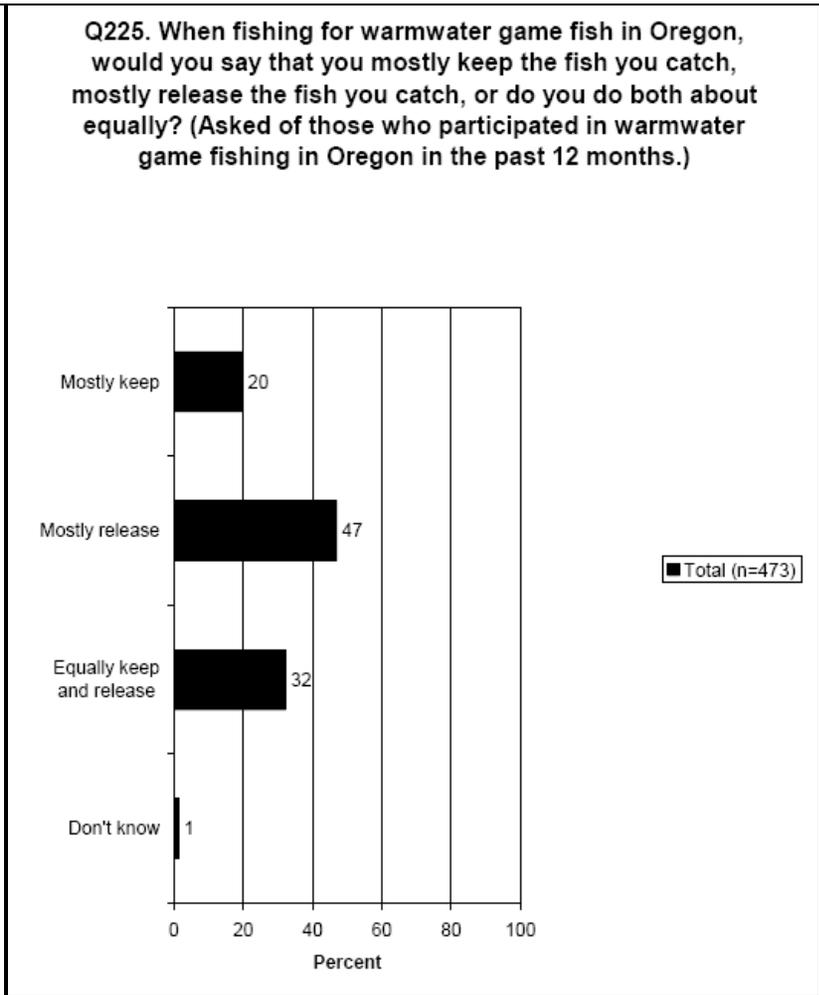


Figure III-16b. Percent of warmwater anglers using catch and release.

If sample sizes permit, ODFW staff is interested in analyzing the results of Figure III-16b in more detail. For example, it would be useful to know if opinions about catch and release differ among those warmwater game fish anglers who prefer to fish for bass versus those who prefer to fish for crappie.

Trout anglers were asked what the effect of using catch and release had on their level of trout fishing activity, and also how it affected their enjoyment of angling for trout. The survey results are shown in Figures III-17a and III-17b.

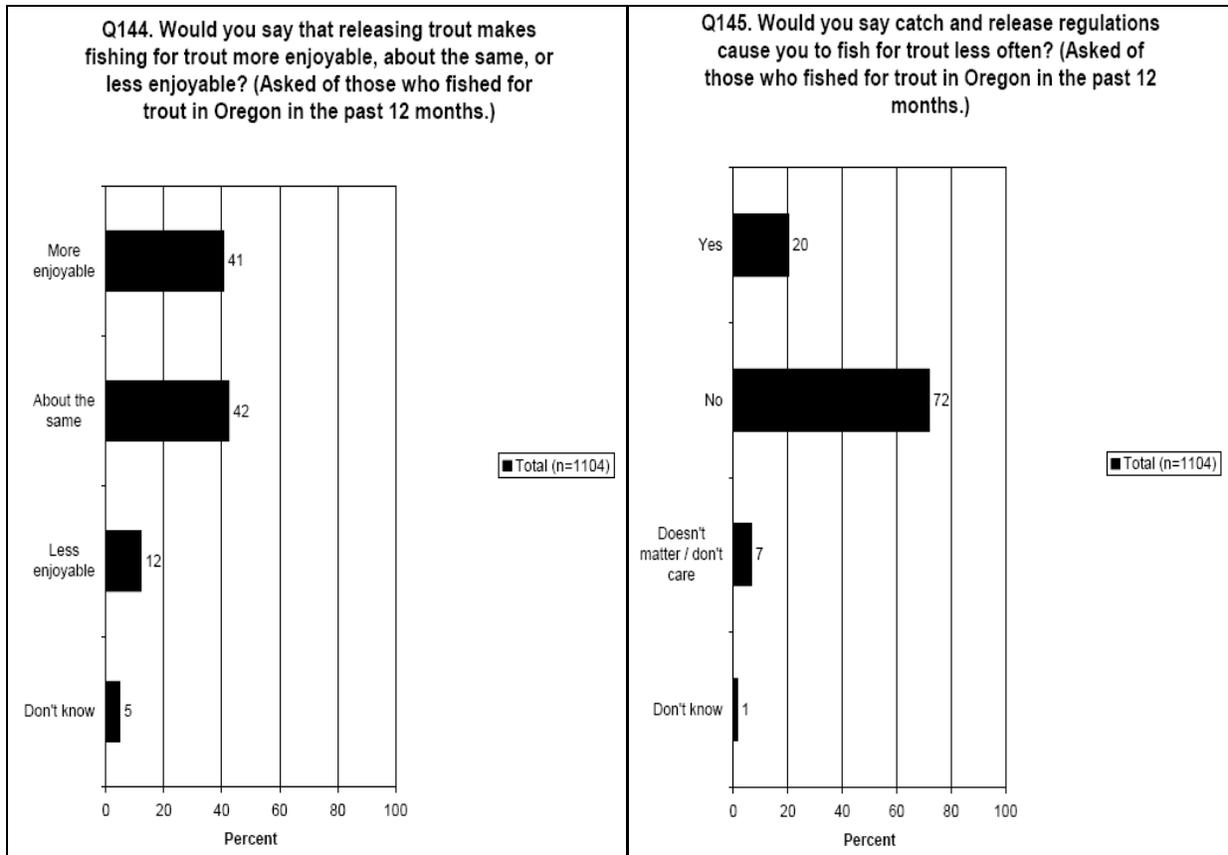


Figure III-17a. Catch and release effect on enjoyment

Figure III-17b. Catch and release effect on level of activity

Positive responses were much more frequent than negative ones. A likely hypothesis, as indicated in the next question on use of catch and release regulations to protect wild fish, is that anglers generally support these regulations when they serve a good purpose.

We also asked trout anglers about their attitude toward catch and release of wild trout. There seemed to be wide support for the use of catch and release regulations for wild trout, especially when it helps maintain the health of wild fish populations, and when it is necessary to maintain fishing opportunity. Figure III-18 shows the attitude of trout anglers toward catch and release of wild fish.

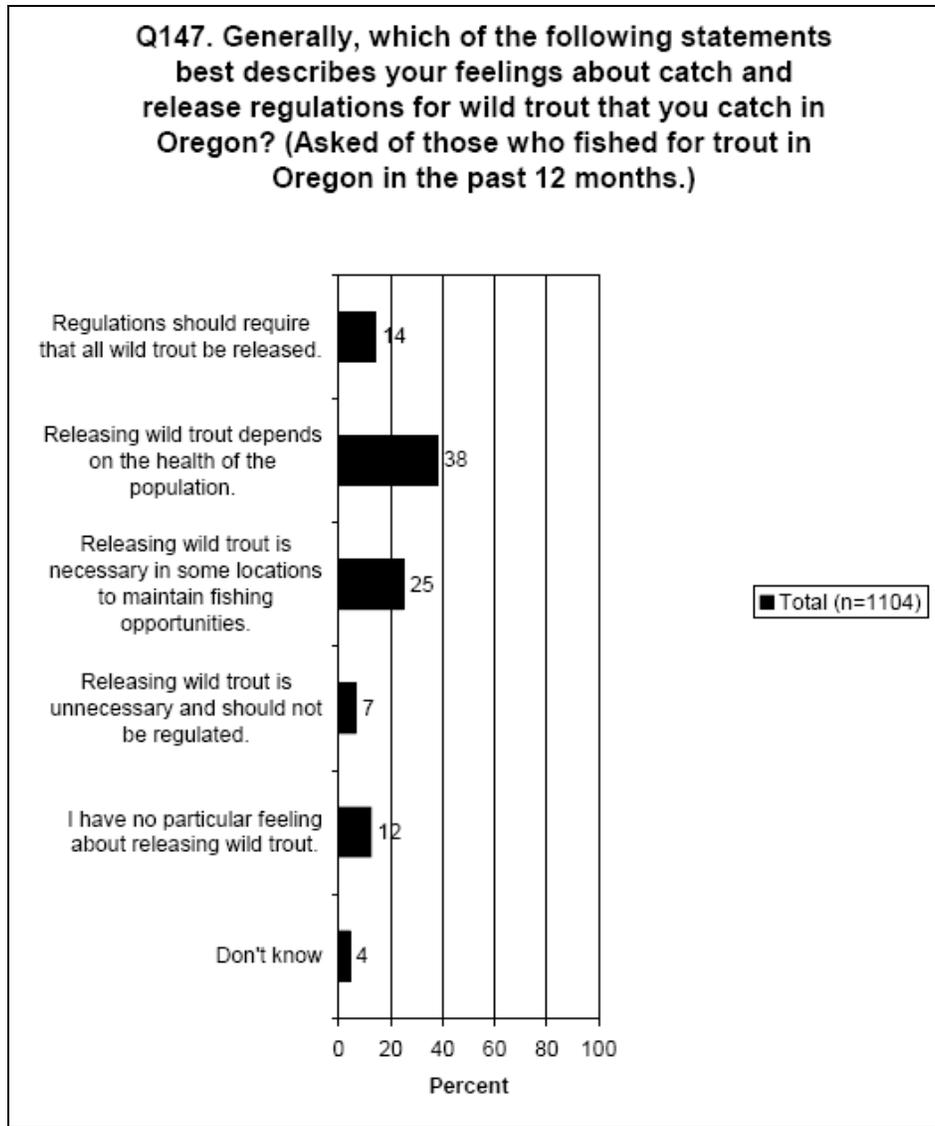


Figure III-18. Trout angler attitudes toward catch and release regulations for wild trout

In the warmwater fisheries, catch and release is also a regulatory option or an angler practice in some situations. We wanted to measure warmwater angler's attitudes and opinions on catch and release in general, and as applied to bass fishing. Most of these anglers said catch and release did not detract from their enjoyment. When anglers who prefer to fish for bass were asked whether the use of catch and release for bass at a specific site for the purposes of developing a trophy fishery, the response was generally positive; however, there was a noticeable minority who opposed the use of this tool for this purpose. Figures III-19a and III-19b provide details. It should be noted that adoption of catch and release regulations at a specific site may not be sufficient to establish a trophy bass fishery at that site.

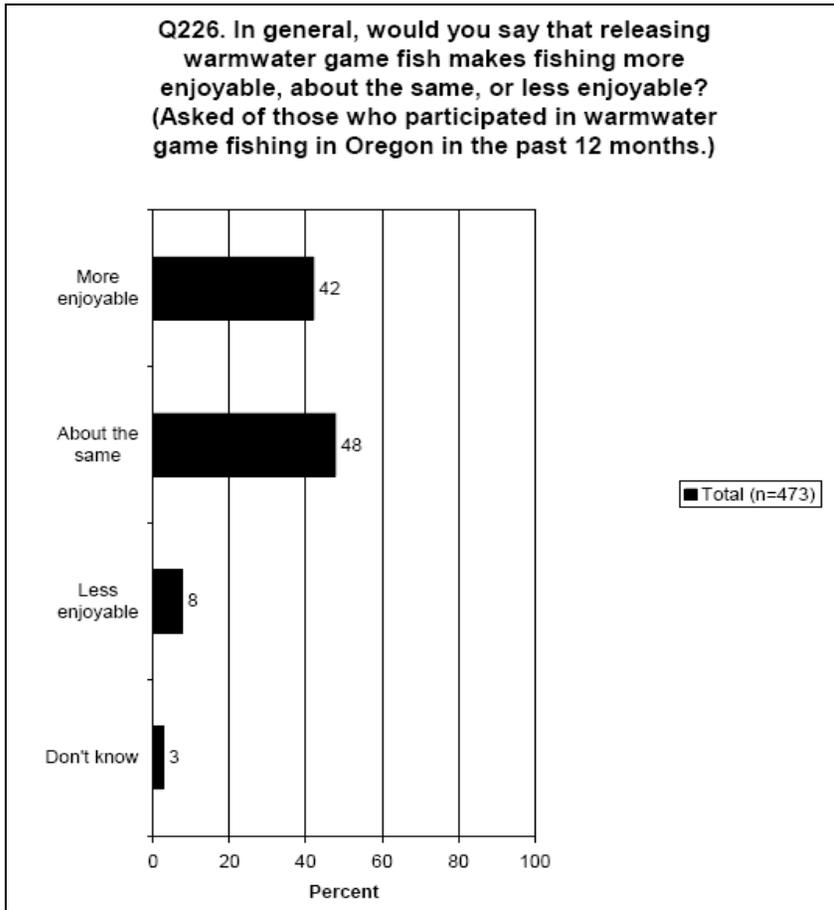


Figure III-19a. Effect of catch and release on angler's enjoyment.

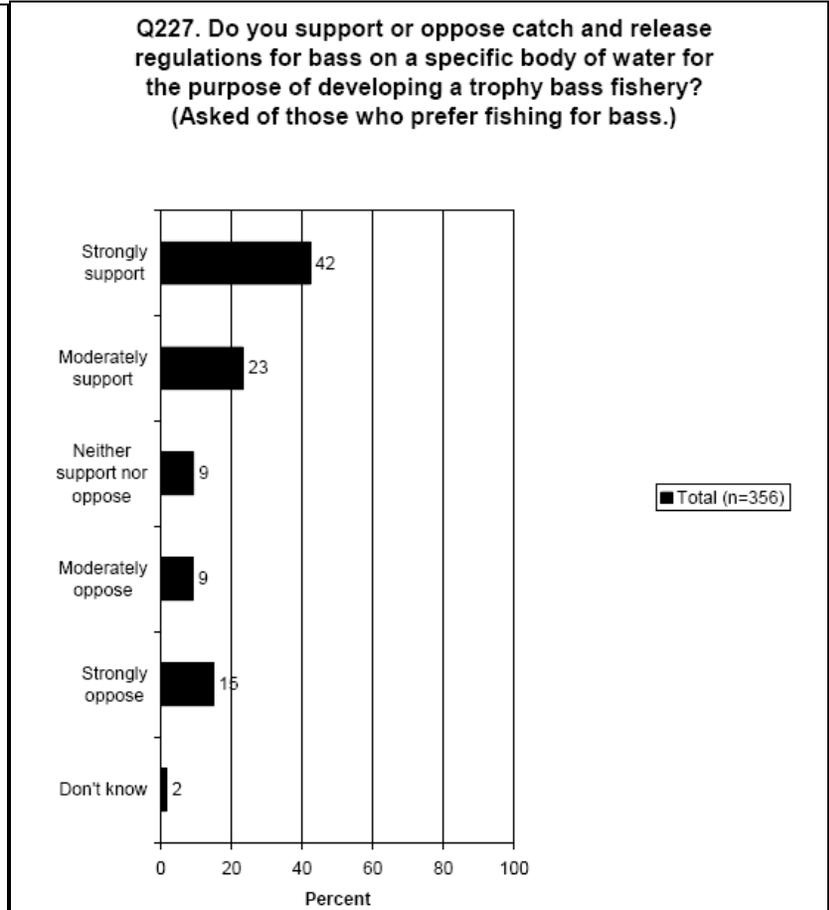


Figure III-19b. Attitude on catch and release to develop trophy fishery

IV. Fishing Satisfaction and Constraints

Warmwater and trout anglers satisfaction with their fishing experiences is another subject of the survey. We hoped to measure the prevailing level of satisfaction or dissatisfaction of Oregon's resident anglers who engaged in these fisheries. We also wanted to identify the things they said were constraints to their participation, so we could see which constraining factors we could reasonably expect to affect through recreational fisheries management policies.

Angler Satisfaction

The level of angler satisfaction during the last year was similar for both trout and warmwater angling. Figures IV-1a and IV-1b show the survey estimates.

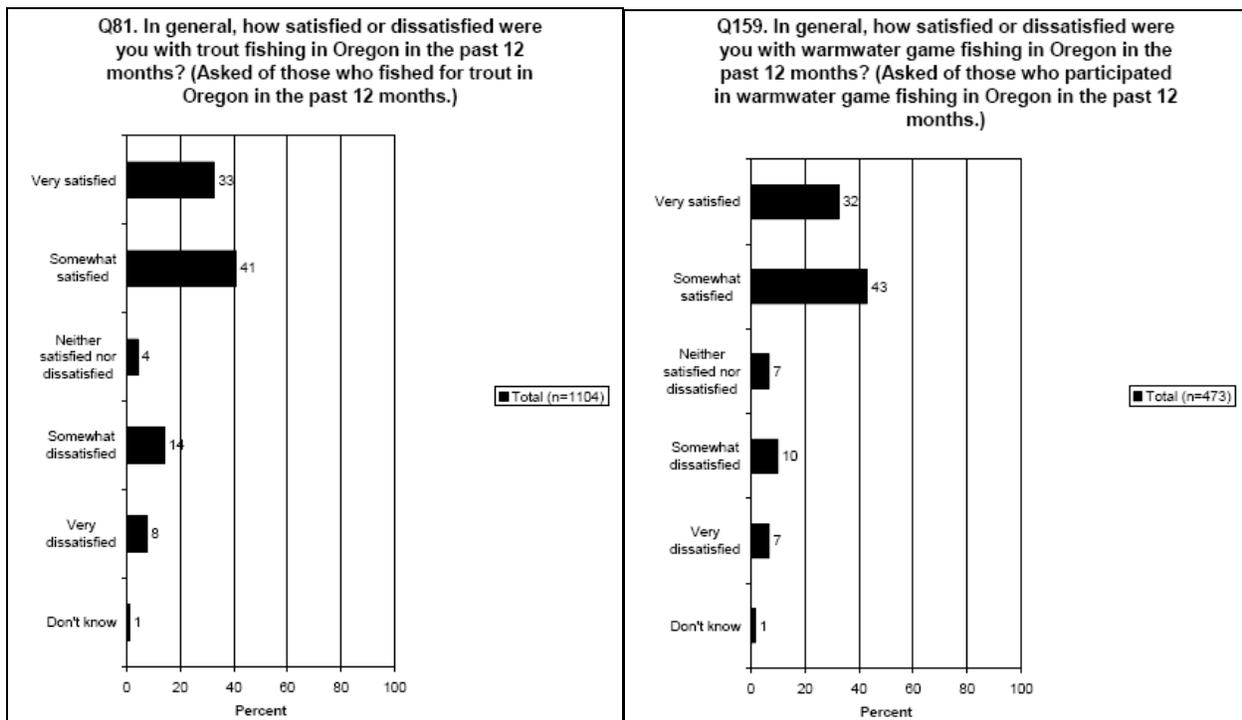


Figure IV-1a. Angler satisfaction with trout fishing

Figure IV-1b. Angler satisfaction with warmwater fishing

While a majority of both sets of anglers were either somewhat or very satisfied, the potential for increasing angler satisfaction appears to be a reasonable goal. Another way to ask the question was to ask anglers to rate their fishing experiences on a slightly different scale. So both trout and warmwater anglers were asked to rate their experiences in the last year from excellent to poor. As shown in Figures IV-2a and IV-2b, the responses were similar for both.

The next thing to check was whether anglers thought things were getting better or worse. So we asked both types to indicate whether the satisfaction with their trout and warmwater fishing was increasing, decreasing or staying about the same. Figures IV-3a and IV-3b show the responses. Again, the distribution of responses was remarkably similar for both fisheries. Slightly more anglers believed their satisfaction had decreased than said it increased.

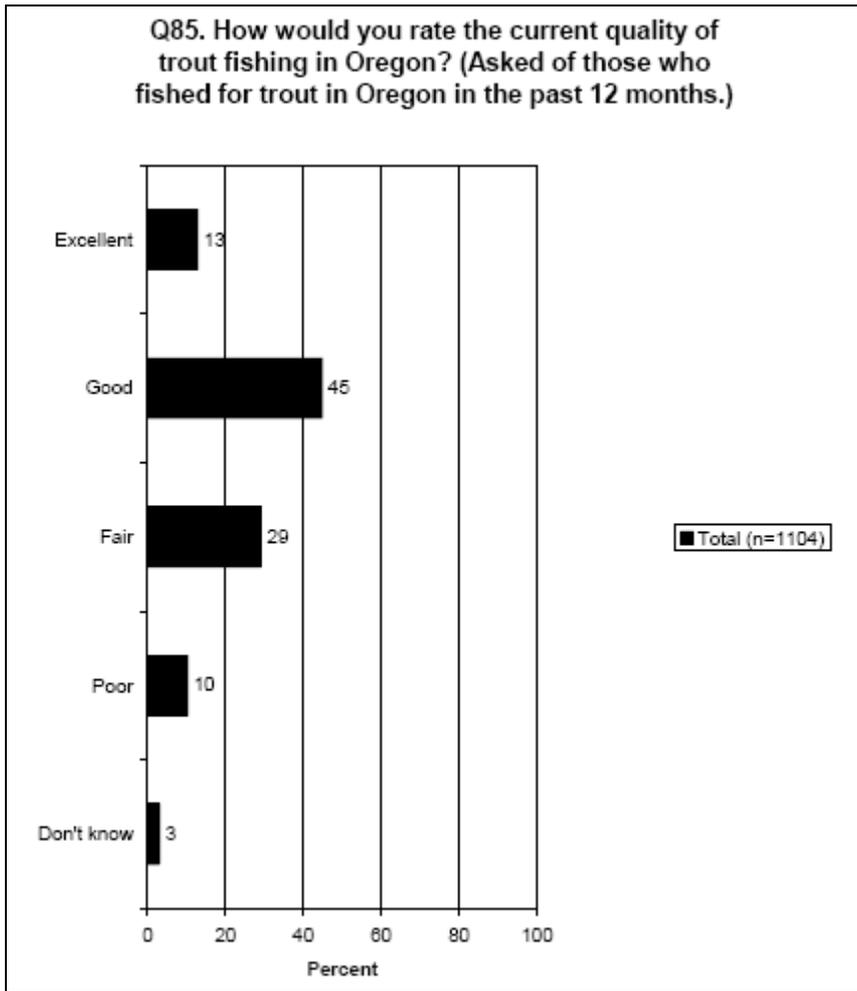


Figure IV-2a. Trout anglers rating of the current fishery

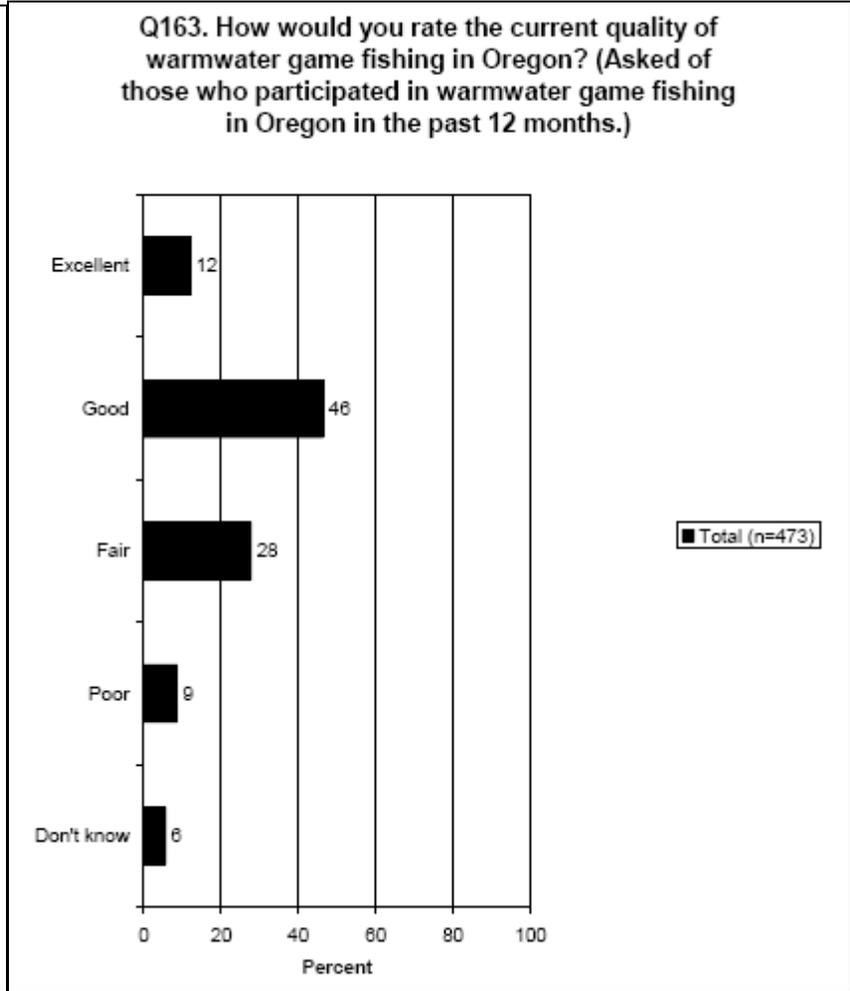


Figure IV-2b. Warmwater anglers rating of the current fishery

Q87. Would you say your satisfaction with your trout fishing experiences in Oregon has increased, remained the same, or decreased over the past 5 years? (Asked of those who fished for trout in Oregon in the past 12 months.)

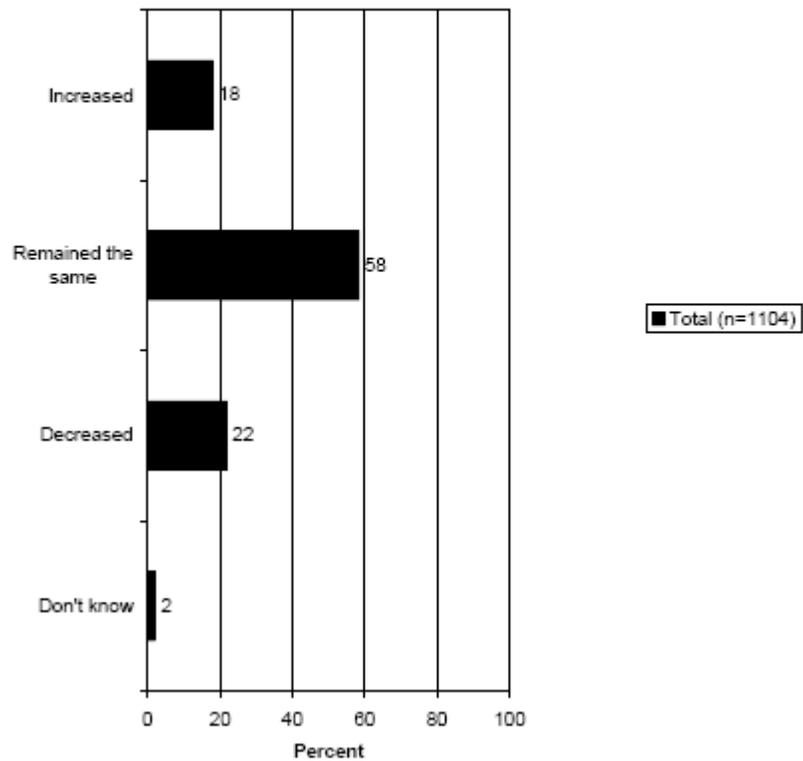


Figure IV-3a. Change in trout angler satisfaction over last five years

Q165. Would you say your satisfaction with your warmwater game fishing experiences in Oregon has increased, remained the same, or decreased over the past 5 years? (Asked of those who participated in warmwater game fishing in Oregon in the past 12 months.)

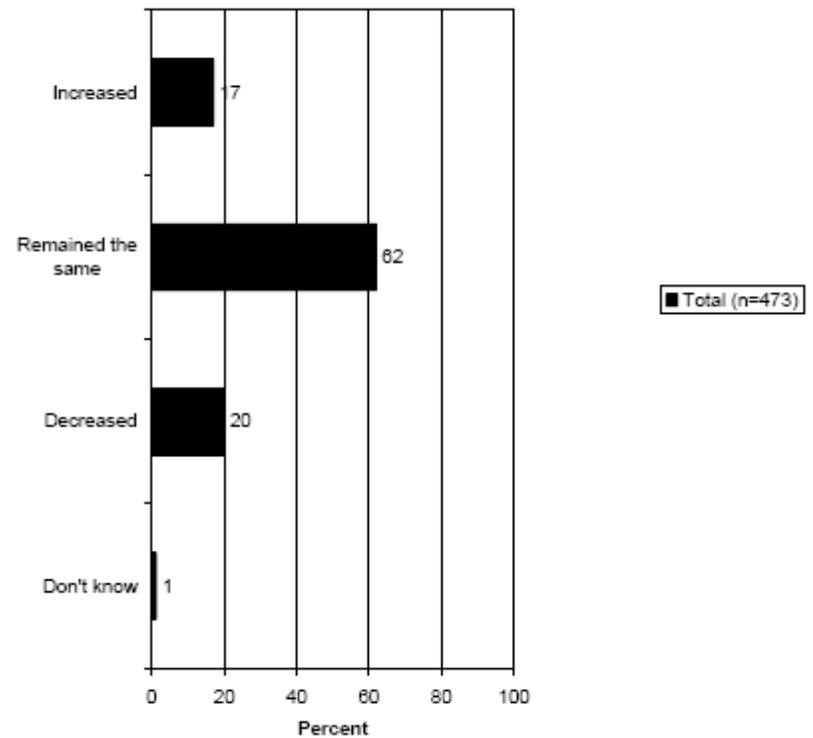


Figure IV-3b. Change in warmwater angler satisfaction over last five years

Some of the factors that influence angler satisfaction were touched on earlier. For example, catch and release was a relatively minor dissatisfier, and for most trout anglers either increased satisfaction or had no effect on enjoyment. A large majority of anglers (82%) said that stocked trout improve the quality of trout fishing in Oregon. More difficult questions for ODFW are whether and how trout stocking can be improved or increased.

We asked anglers what they considered to be a “quality” fish for trout, several species of warmwater game fish and for the general category of warmwater game fish. The results are summarized in Table IV-1.

Table IV-1. Lengths of game fish considered to be “quality” fish

Type of Fish	Median Length To Be Considered a Quality Fish (Inches)	Mean Length To Be Considered a Quality Fish (Inches)	Percent Who Consider 10 Inches To Be a Quality Fish	Percent Who Consider 12 Inches To Be a Quality Fish
Walleye	15	15.4	8	27
Catfish	14	14.3	21	44
Bass	12	12.3	27	65
Trout	12	11.6	43	75
Warmwater game fish	12	11.6	37	78
Crappie	8	8.7	82	97
Panfish	8	7.9	91	100

These estimates are a composite for game fish in the state, overall. No doubt anglers may have different opinions with regard to specific sites. For example, ODFW work at Brownlee Reservoir suggests anglers at that location consider a 15 inch catfish to be a quality fish. Quality crappie in Brownlee are closer to 10 inches long, but in the rest of the state an eight to nine inch crappie would probably be considered a quality fish. A bluegill (part of the “panfish” species group) eight inches long is very difficult to find, so it is not surprising this would be considered a quality fish.

Constraints to Participation and Sources of Dissatisfaction

We also wanted to investigate why 23 percent of those people who had purchased an annual angling license had not gone fishing in the last year. Those who had not fished were asked why they had not gone fishing. In the case where their response was that they did not have enough time, we asked the specific reason they did not have enough time to go fishing. The estimates from these two questions are summarized below in Figures IV-4a and IV-4b. The most common reason licensees did not fish was because they did not have enough time. Those who said they did not have time to fish most often attributed their situation to work and/or family obligations.

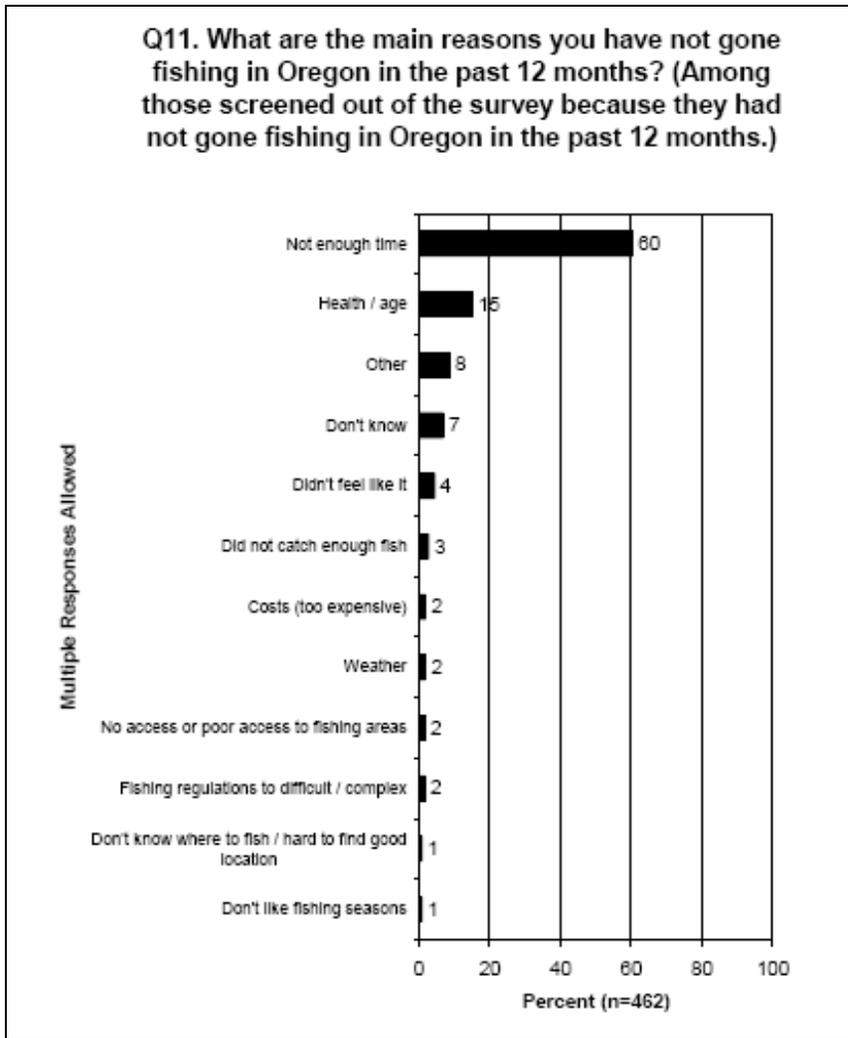


Figure IV-4a. Main reasons some licensees did not fish.

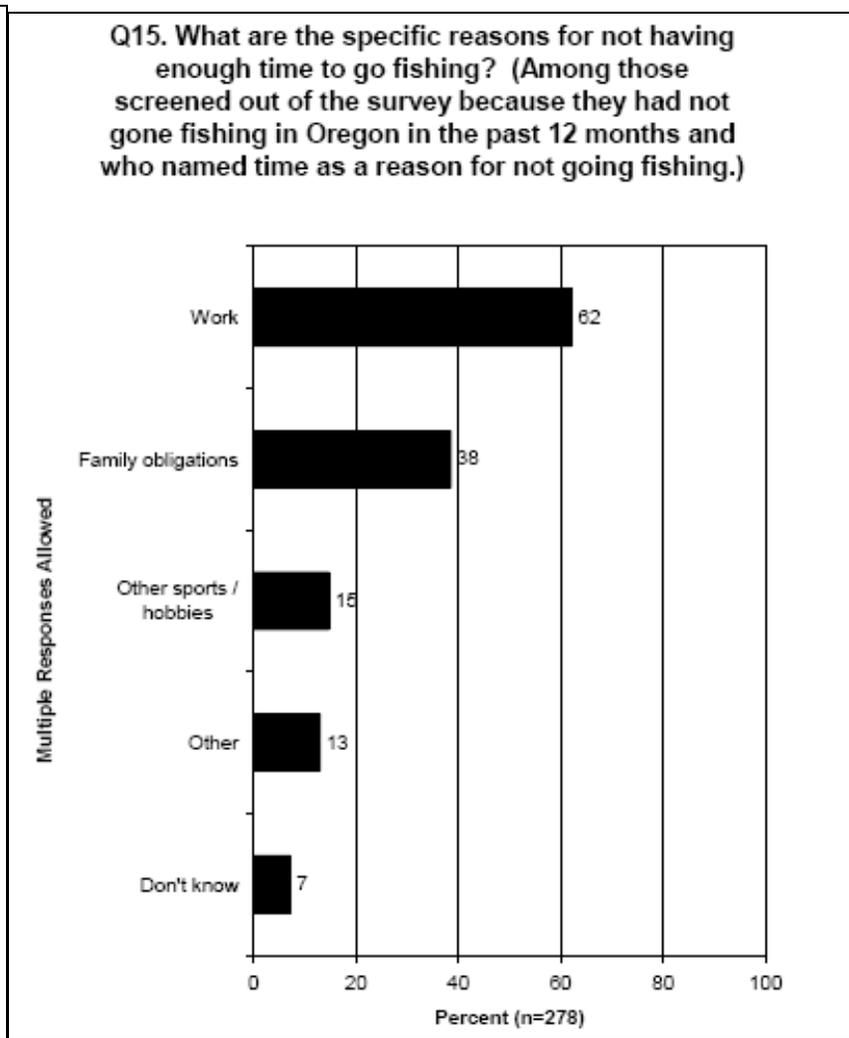


Figure IV-4b. Specific reasons licensed non-anglers did not have time

We also wanted to get an idea why active trout and warmwater anglers may not have fished as often as they wanted, and to identify those factors which these anglers feel take away from their satisfaction when fishing. In general the results were similar for the two fishery types. Figures IV- 5 and IV-6 show summaries of responses by trout anglers and warmwater game fish anglers, respectively.

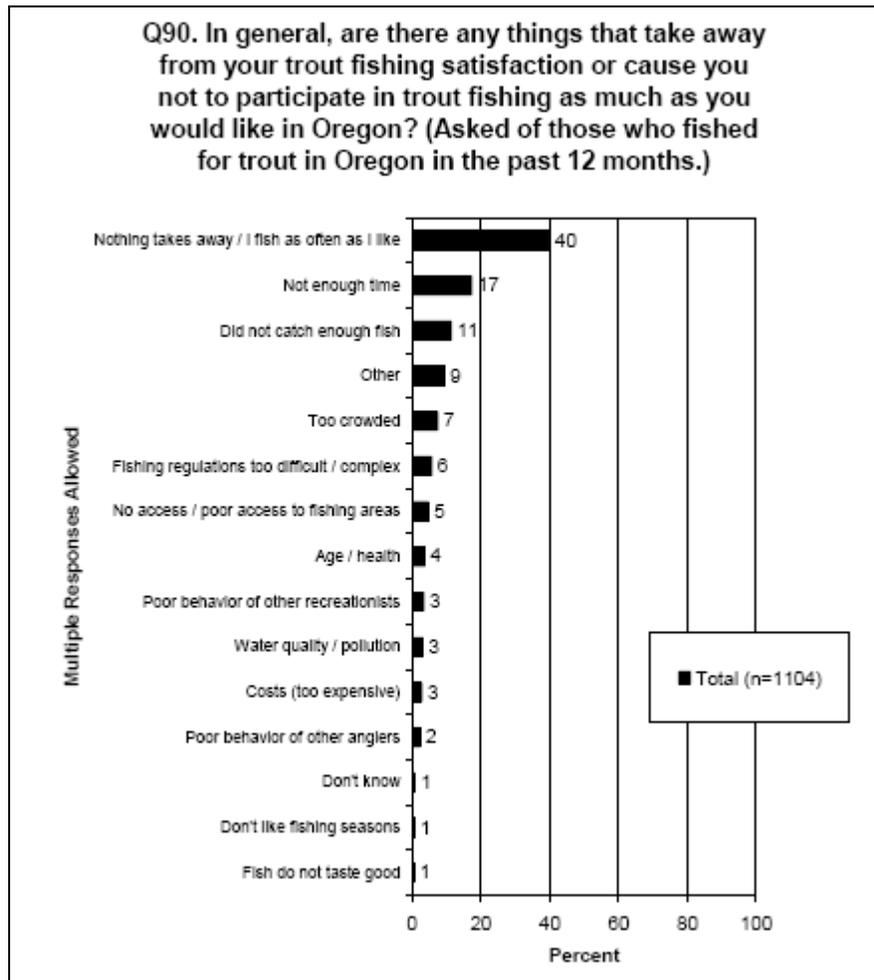


Figure IV-5. Constraints to trout fishing and sources of dissatisfaction

About 40 percent of trout anglers and 44 percent of warmwater anglers said they fished as much as they wanted. That means a majority of anglers in each fishery felt constrained. Not enough time was again a major factor preventing peoples' participation at their desired levels. Beyond that, some of the dissatisfiers are of a social nature, but others are things that the public sector might influence (e.g., water quality, pollution). There are specific things which ODFW might be able to affect. Specifically, 11 percent of trout anglers said they did not catch enough fish. ODFW would like to investigate in more detail the characteristics (e.g., age, preferred water type) of this group of anglers. In any case, such things as increasing stocking levels, or providing the public with more information on trout availability might be considered, within reasonable conservation sideboards for wild fish. Some six percent (6%) also indicated that fishing regulations were too difficult or complex. Seven percent (7%) said "too crowded" was a dissatisfier. Perhaps

increasing access would help reduce this constraint. Creating access to fishing opportunities in urban areas specifically might be a way to help reduce crowding and make angling less time-consuming for those anglers with more obligations and tight schedules.

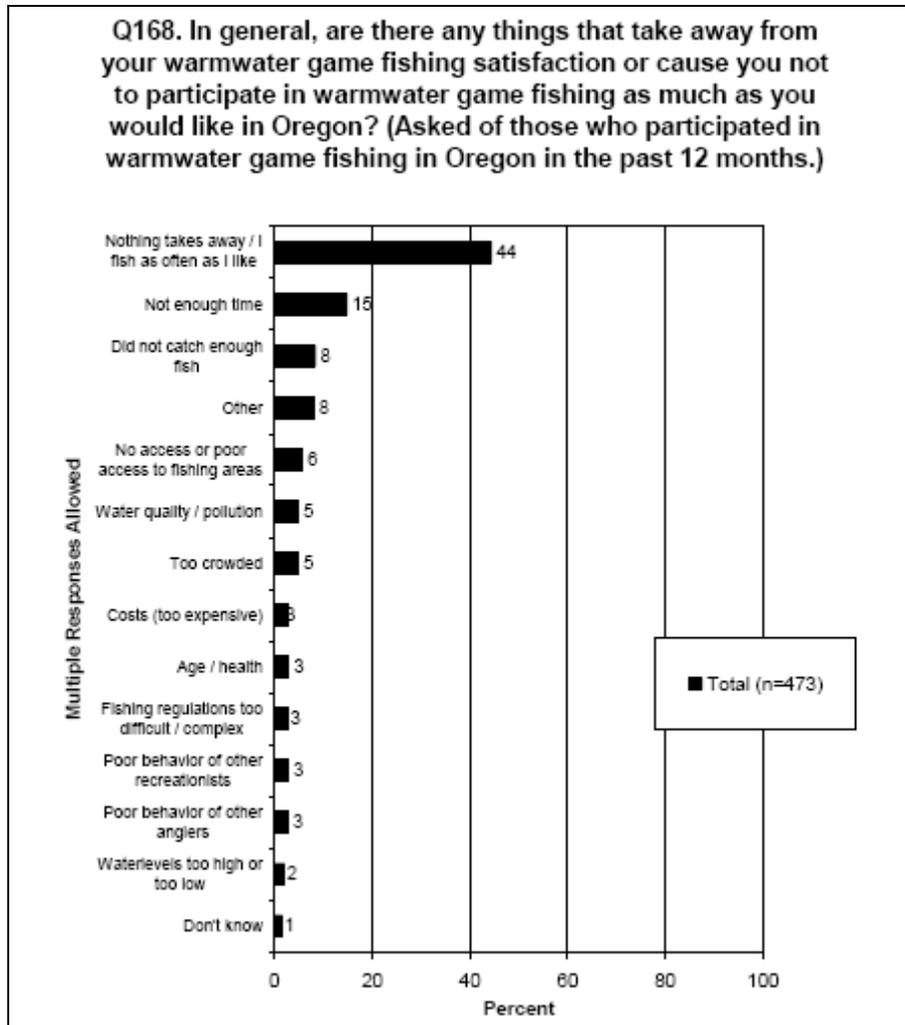


Figure IV-6. Constraints to warmwater game fish angling and sources of dissatisfaction

V. Comparison of Eastern Oregon Residents with Western Oregon Residents

The sample of anglers for this survey was stratified to include sufficient numbers of anglers with Western Oregon residences and Eastern Oregon residences. Of course, the overall results were weighted to match Oregon’s statewide population distribution. But, as a result of the sample stratification it was possible to check for differences in characteristics and preferences between resident annual anglers coming from the west side versus the east side of Oregon. The full survey report presents many details on angling activities and preferences separately for the residents of the state’s major geographical regions, as well as for the state as a whole. In this section we describe some general demographic characteristics, and some of the more interesting comparisons and contrasts between anglers from Eastern and Western Oregon. Note that the eastern and western designations refer to the area of angler residence, not to the area where fishing was done.

There were differences between respondents from the two sides of the state with regard to type of license purchased. Figure V-1 shows that east side residents were more likely to hunt as well as fish, based on the higher proportion of combination licenses for east side residents.

When asked to self-classify their place of residence, anglers across the whole sample responded as shown in Figure V-2a. The most common classification was “small town or city”. When the results were stratified geographically, the picture reflected the lower population density in Eastern Oregon, as shown in Figure V-2b.

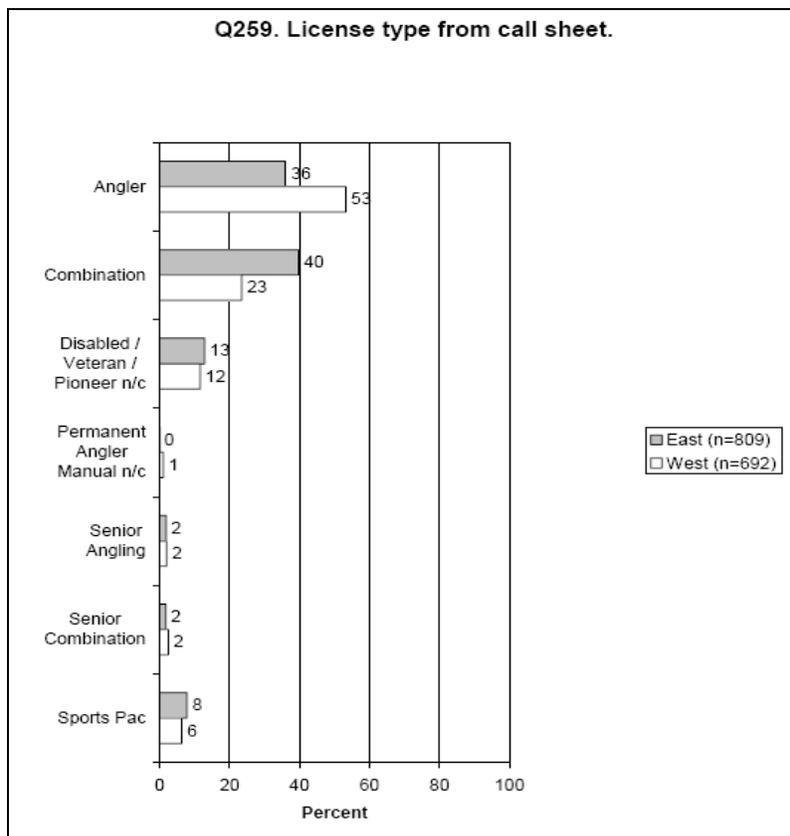


Figure V-1. Comparison of license types for Eastern vs. Western Oregon anglers

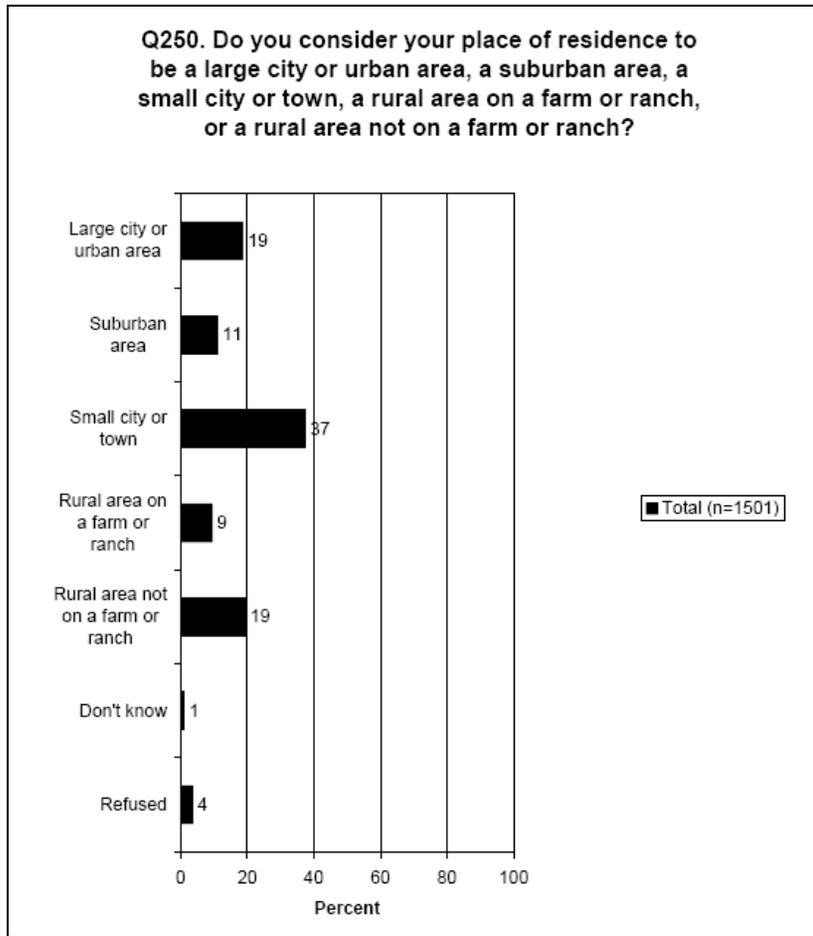


Figure V-2a. All respondents residence classifications

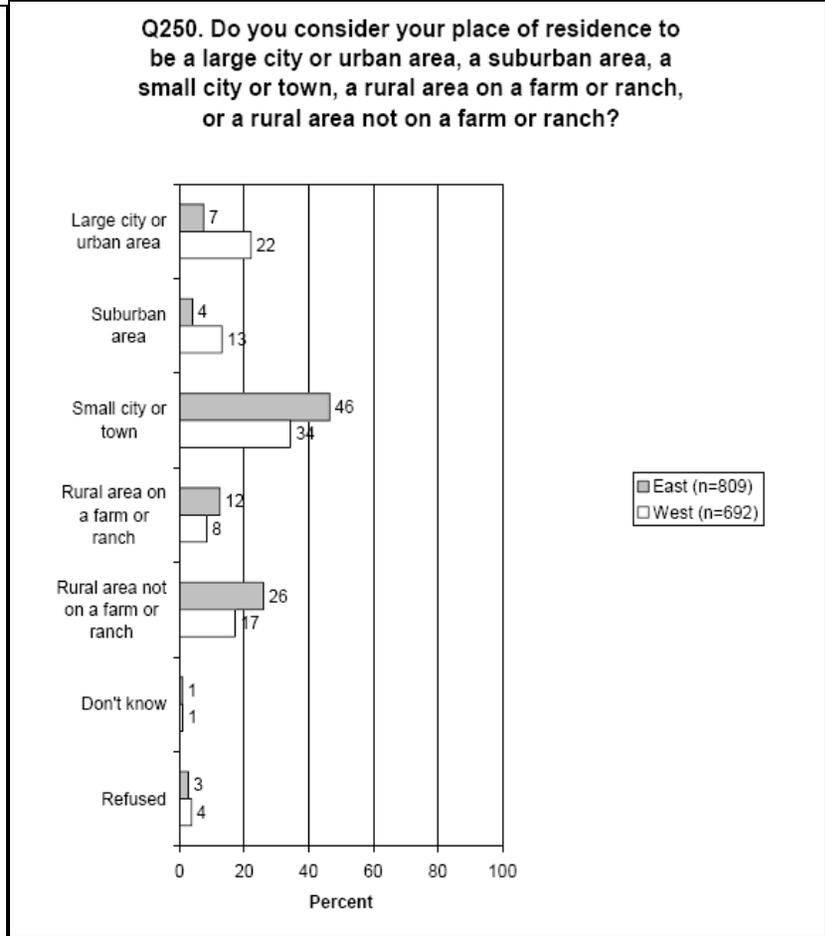


Figure V-2b. Eastern vs. Western Oregon residence classifications

Figure V-3 shows the distribution of anglers who considered themselves primarily coldwater or warmwater anglers. More anglers on both sides of the state consider themselves coldwater anglers. However, relatively more Western Oregon anglers say they are coldwater anglers, while relatively more Eastern Oregon anglers say they are warmwater anglers.

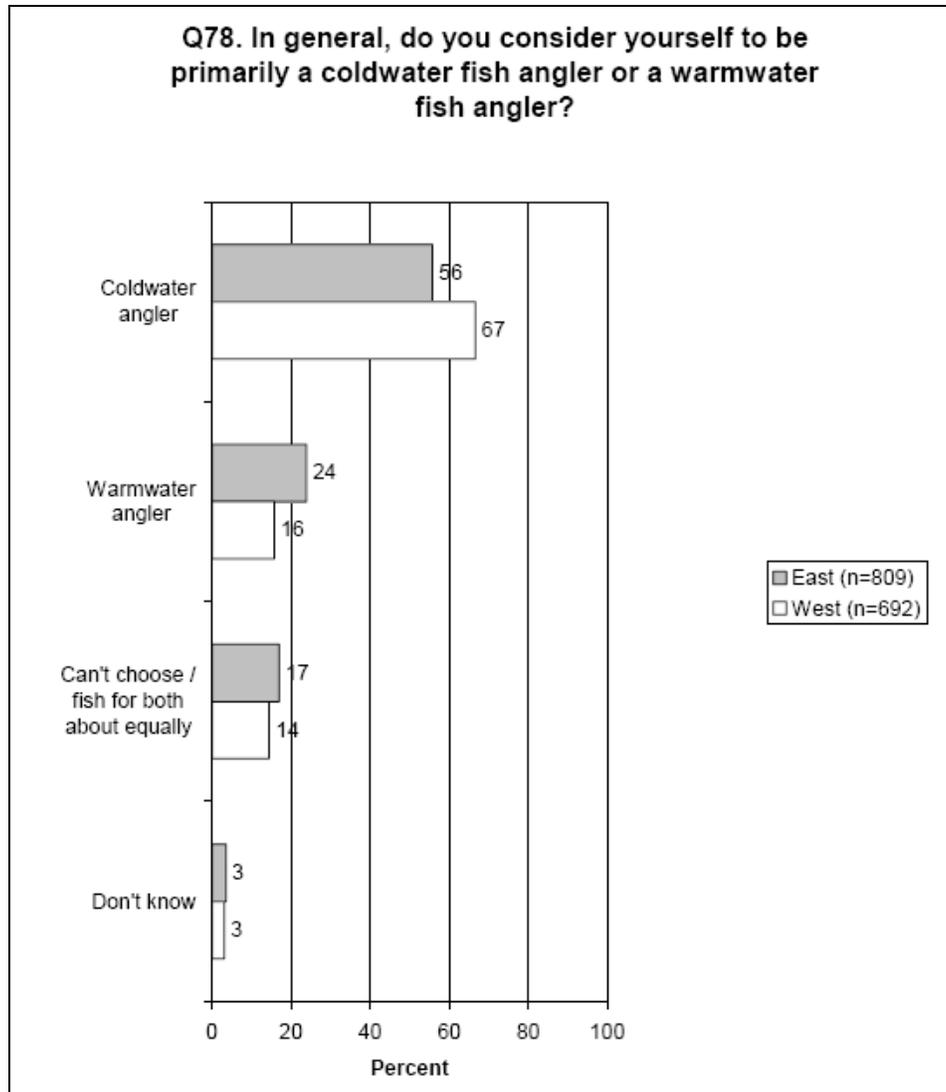


Figure V-3. Comparison of coldwater vs. warmwater angler geographical distribution

In light of this difference in how anglers view themselves, it is not surprising that relatively more west side anglers purchased a combined salmon/steelhead/sturgeon/halibut tag than did eastside anglers. Figure V-4 shows the estimated magnitude of the difference in tag-buying behavior. This could be a consequence of the shorter distance for western anglers to fishing sites for the species which require a tag. We can also hypothesize the differences are due to a tendency for people to angle for what they grew up angling for, and for what is most available, or alternatively, to try something different or perceived as a new kind of experience.

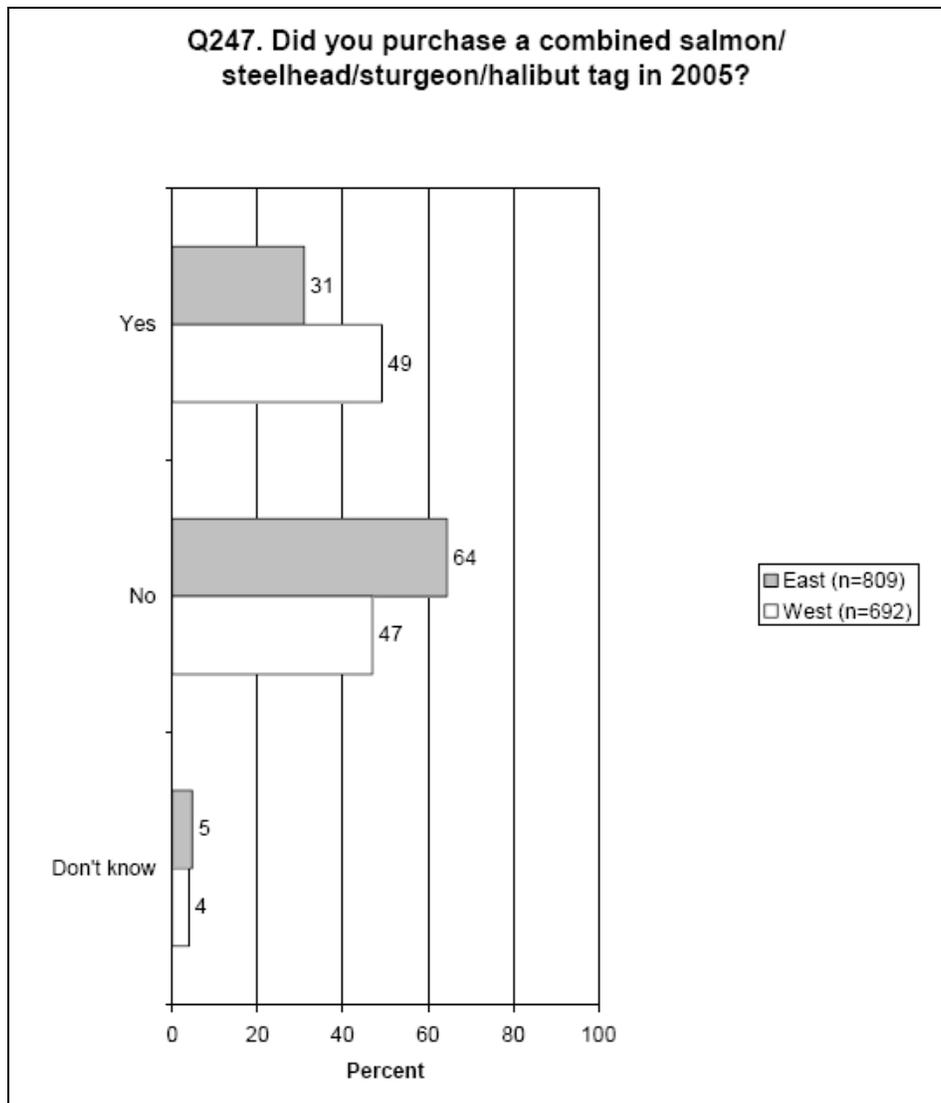


Figure V-4. Distribution by region of anglers who purchased a combined fish tag.

The next obvious question was how do the angling patterns of east vs. west side anglers differ among species categories? Figure V-5 shows this distribution. The main differences seem to depend on the location of fishing opportunities. Of the major fisheries, a higher percentage of east side anglers fished for warmwater game fish, while percentage participation in the trout fishery is roughly equivalent for both area residents. West side anglers have higher percentage participation in salmon and steelhead fishing in particular.

The relative percentages fishing for “striped bass” seems confusing at first glance. Traditionally, the largest striped bass fishery has been in the Coos Bay area in Western Oregon. However, there is now a popular hybrid striped bass fishery at Ana Reservoir in Eastern Oregon which respondents may consider to be a striped bass fishery. ODFW stocks fingerling hybrid striped bass there every other year. These fish have done very well and reach very large size. Another

possible reason may be that some anglers in Northeast Oregon may be referring to other species such as yellow perch as striped bass.

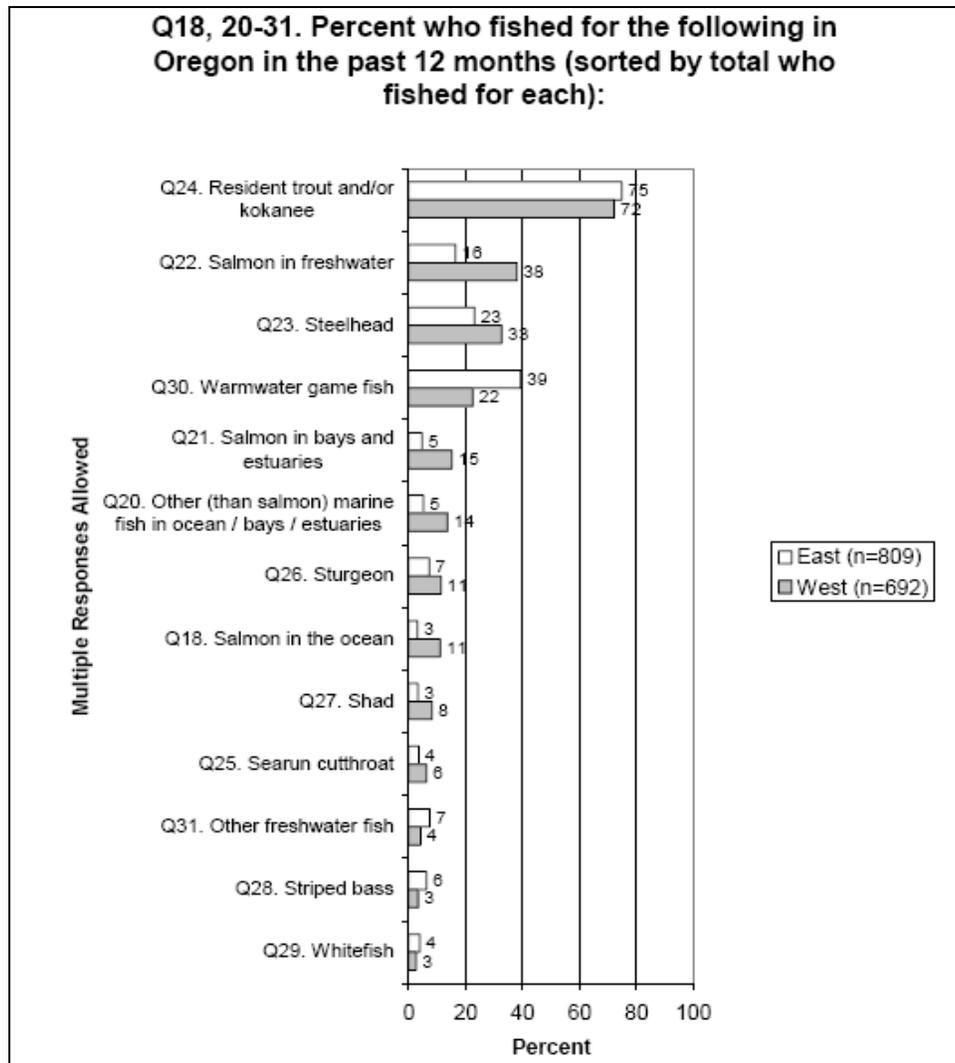


Figure V-5. Distribution of east side and west side anglers by fishery

Focusing on the particular species of trout, the percentage distribution is quite similar for eastern residents and western residents. Figure V-6 shows the comparisons by trout species. Opinions are also similar between the two regions for trout fishing preferences between wild and hatchery trout, with eastside residents showing a slightly higher preference for wild trout than west side residents (Figure V-7). A majority of anglers from both areas indicated they did not care whether the trout they fished for were of wild or hatchery origin.

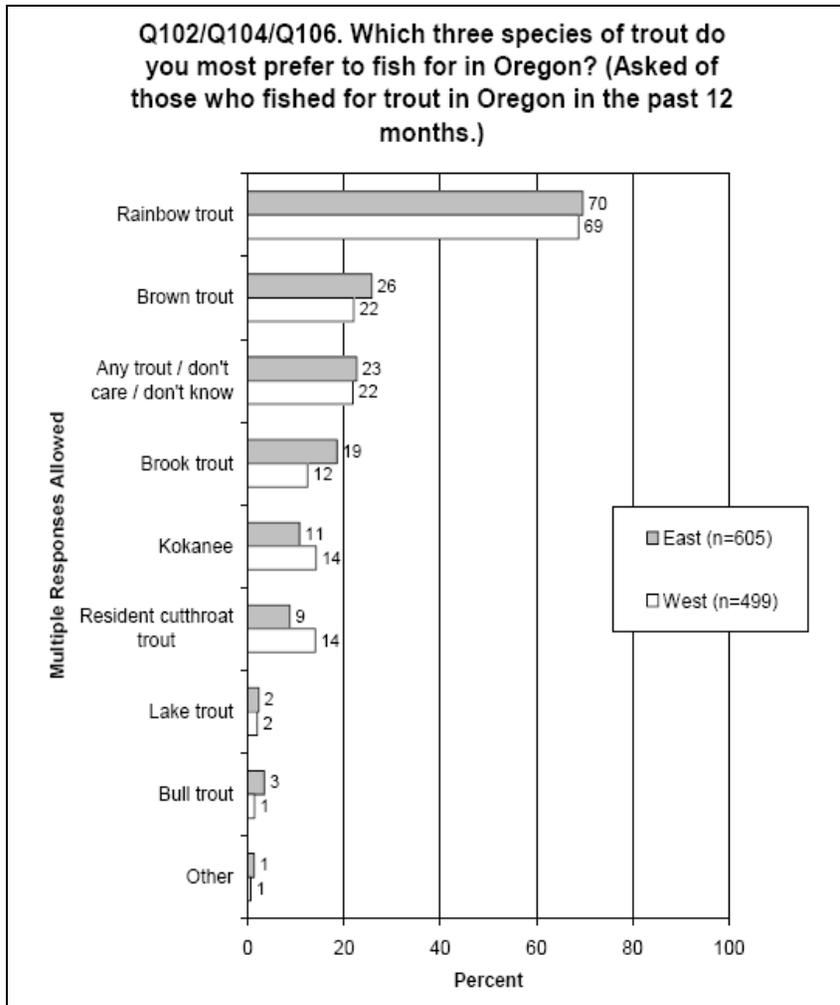


Figure V-6. Distribution of trout anglers by trout species

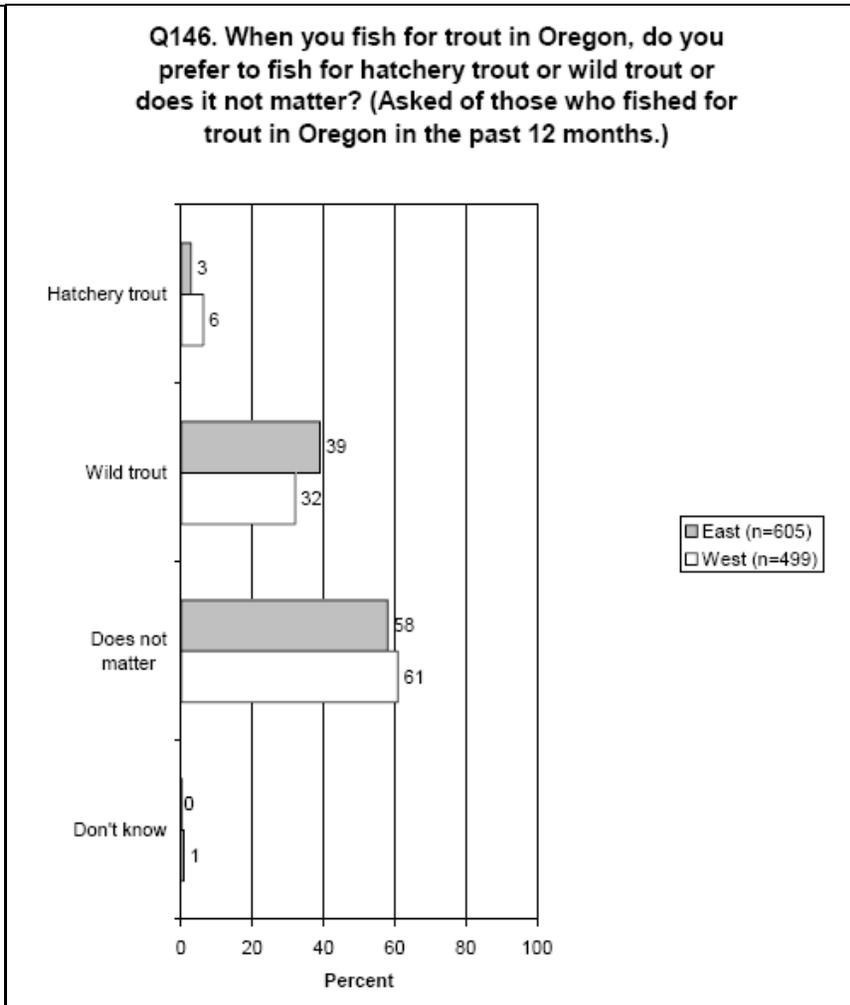


Figure V-7. Distribution of preferences for wild vs. hatchery trout

Warmwater game fish anglers from the two sides of Oregon have some differences in species preferences. These preferences are influenced by the availability of the different types of warmwater game fish in the east and west. Figure V-8 shows the preferences by region of angler residence. Although bass (largemouth or smallmouth) are the most preferred species for anglers from both sides of the state, Eastern Oregon anglers prefer crappie, catfish and walleye relative to Western Oregon anglers. Westside anglers show a relative preference for bass and panfish.

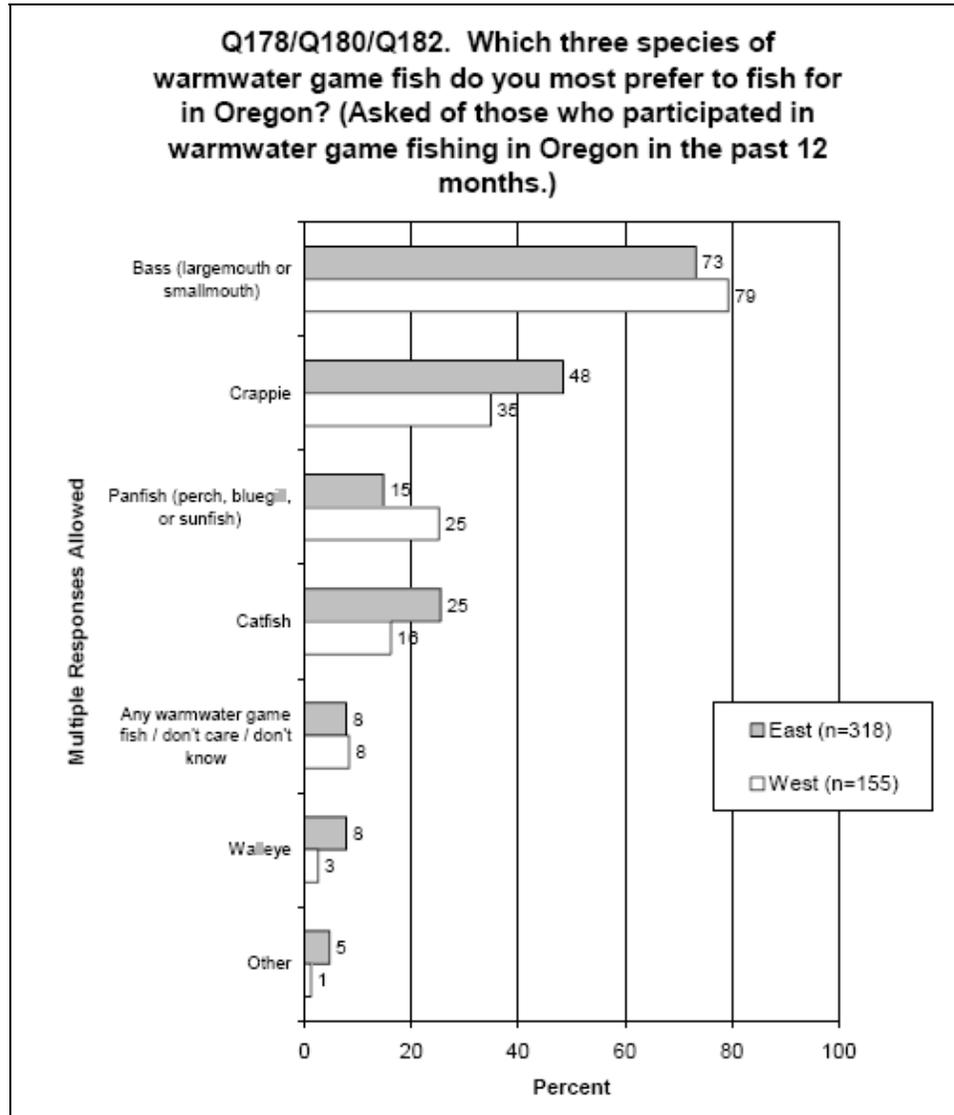


Figure V-8. Relative preference for warmwater game fish species types

Preferred water body types vary somewhat by residence region for both trout and warmwater game fish anglers. Figure V-9 and V-10 compare these sets of preferences. The most common answer for both fisheries was “anywhere”. For the next most common water types, Eastside trout anglers seem to have a relatively higher preference for river fishing. Westside trout anglers seem to have a relatively stronger preference for high mountain lakes.

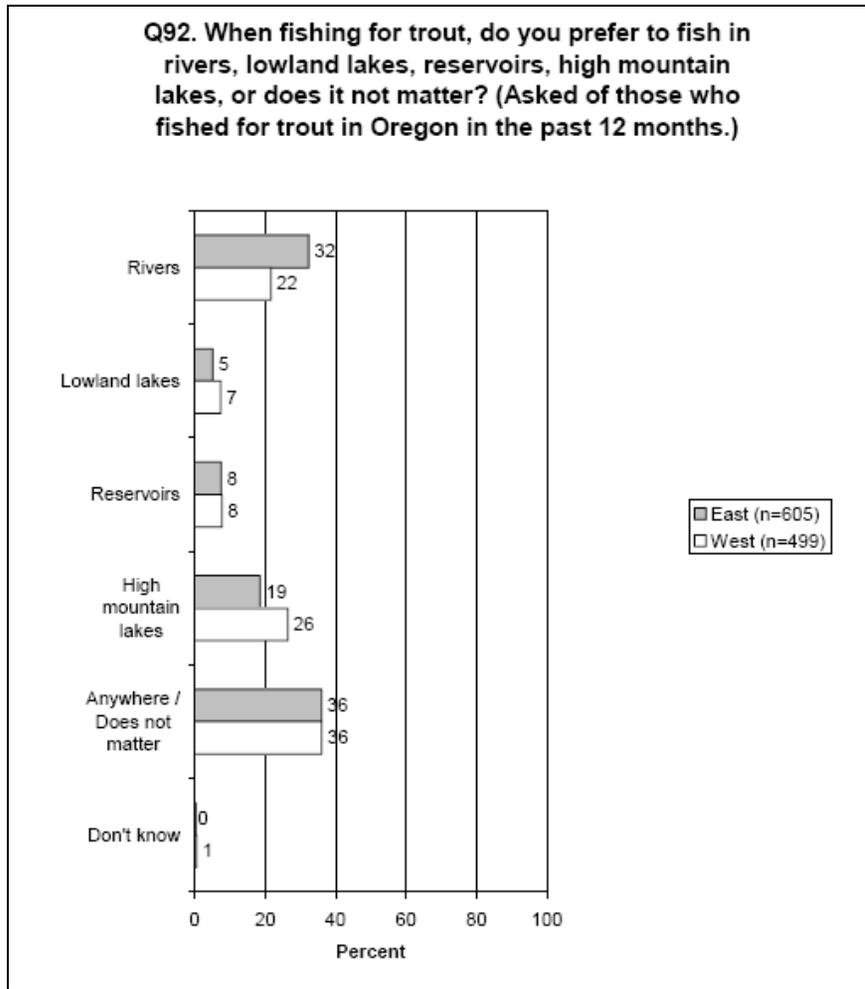


Figure V-9. Relative preference among water types for trout anglers.

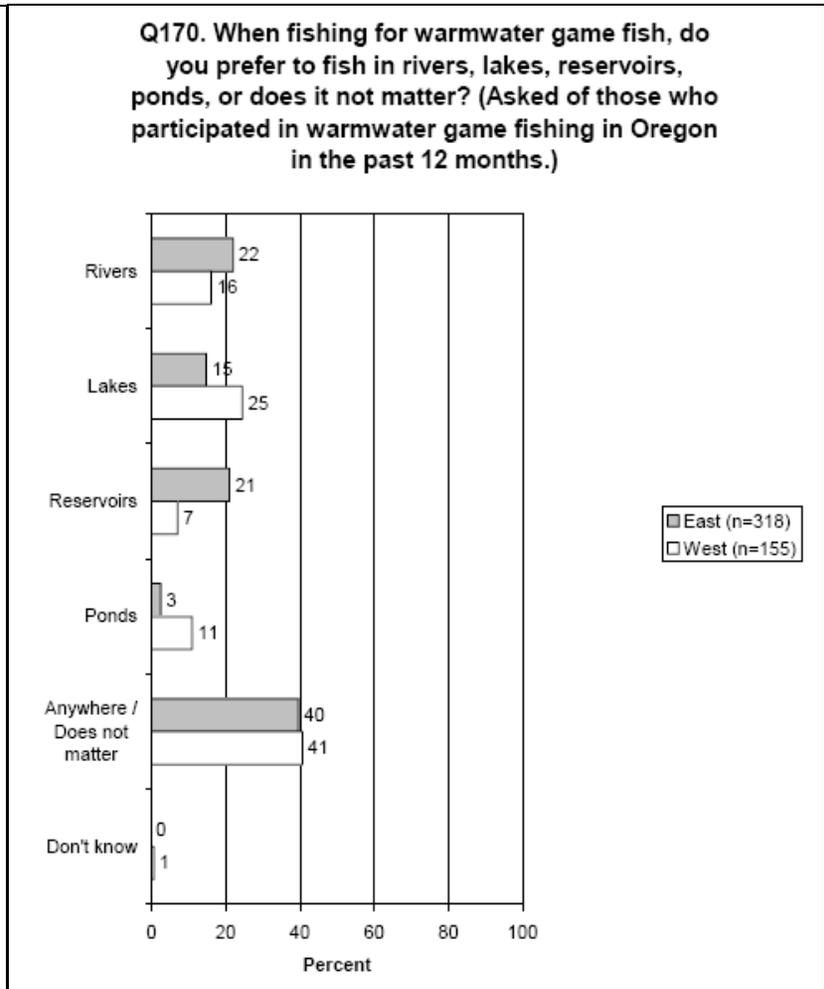


Figure V-10. Relative preference among water types for warmwater anglers.

For warmwater game fishing, “anywhere” is also the most preferred type of water. Among other water types used for warmwater game fishing, Eastern Oregonians seem to prefer rivers and reservoirs relative to Western Oregonians. Westside anglers for warmwater game fish expressed a relative preference for lakes and ponds.

In terms of a specific fishing mode or type of location, residents of both sides of the state seem to fish for trout from the bank slightly more than from boats. Relatively, east side trout anglers fish more often from the bank than do west side trout anglers. Conversely, west side trout anglers fish relatively more often from boats than do east side trout anglers. Figure V-11 shows the details for trout angling from specific locations.

There is not much relative difference between Eastern Oregon and Western Oregon residents for the type of location from which they most often fish for warmwater game fish. For both regions boat fishing is slightly more common than bank fishing.

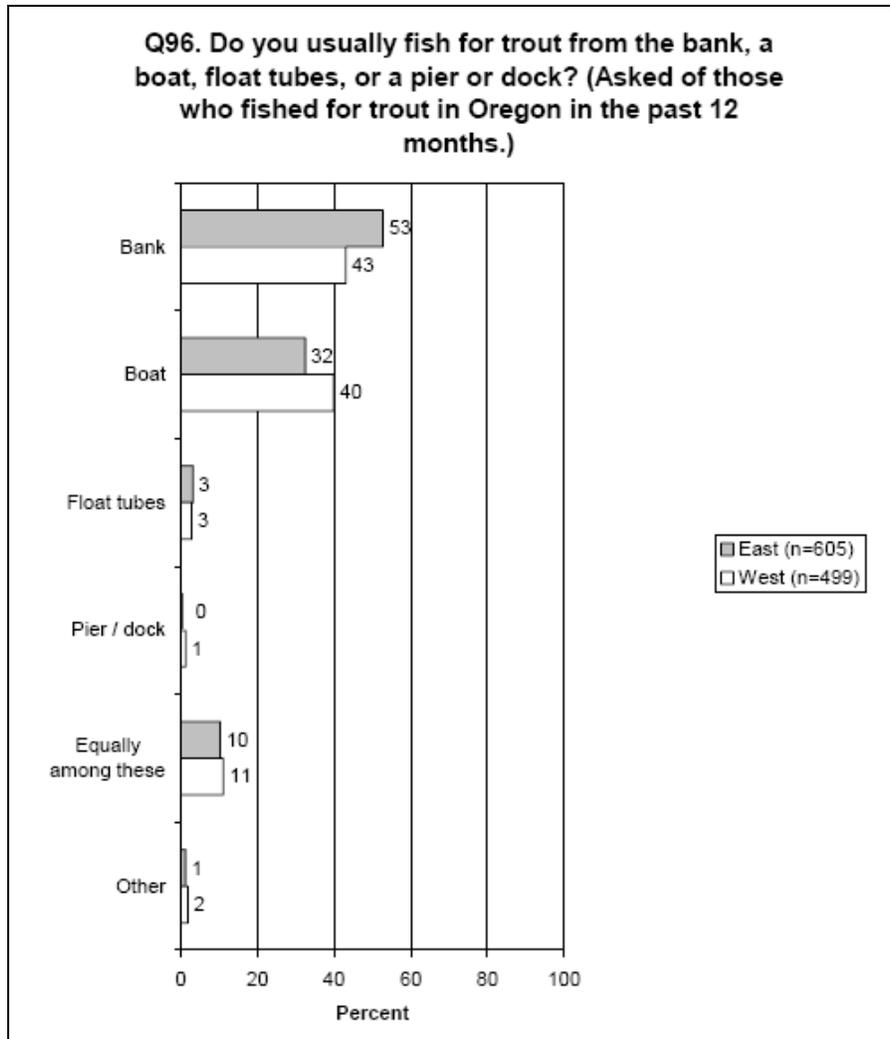


Figure V-11. Comparison of trout angler activities by mode of fishing East vs. West.

Differences between Eastern and Western Oregon residents were not dramatic for many of the attributes of their fishing mentioned earlier for all residents. Specifically, Figure V-12 shows a slightly higher level of satisfaction with warmwater fishing among eastside residents. Over the longer period of the last five years, there was no difference in satisfaction levels between anglers from the two areas.

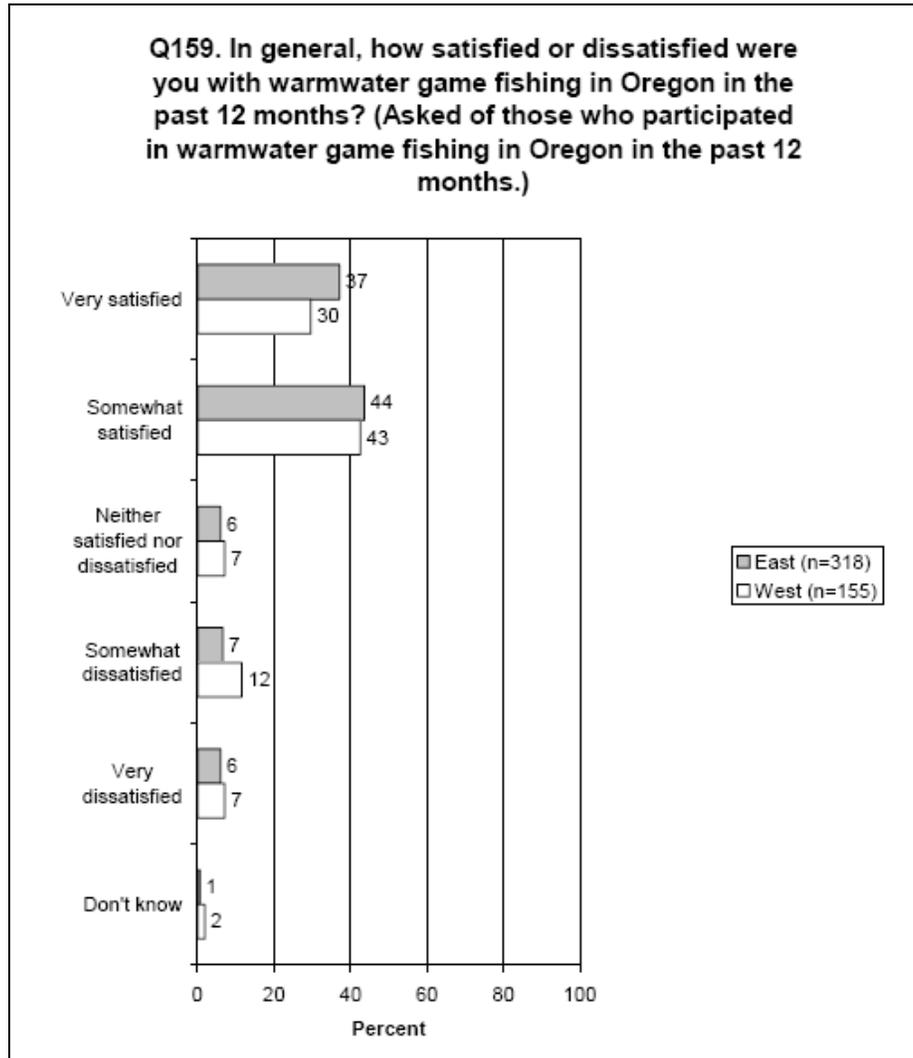


Figure V-12. Satisfaction with warmwater game fishing in previous 12 months.

This seemingly higher level of satisfaction among Eastern Oregon residents in the last 12 months may not be significant, as survey results suggest that east side angler’s level of warmwater fishing activity declined slightly in the last five years while west sider’s activity levels may have increased somewhat. Figure V-13 shows the estimated changes in activity for residents of the two sides of the state.

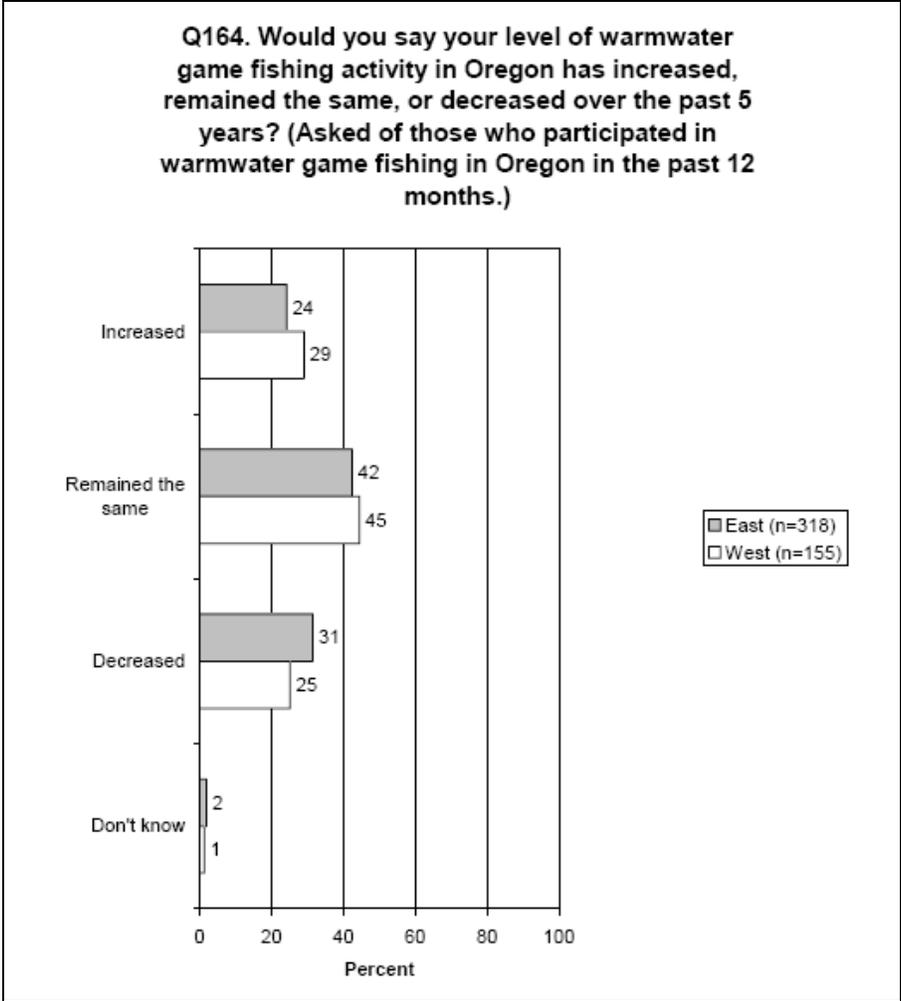


Figure V-13. Changes in level of warmwater fishing compared by region

During the survey, anglers provided the usual kinds of general demographic information on such things as gender, age and income. Tables V-14 through V-16 show the distribution of these characteristics for the state-level sample and for Eastern Oregon versus western Oregon residents. The regional differences for these latter kinds of more general characteristics do not seem particularly significant; however, there were a few interesting age-related characteristics discussed following the figures which show the total and regional distribution of the major characteristics.

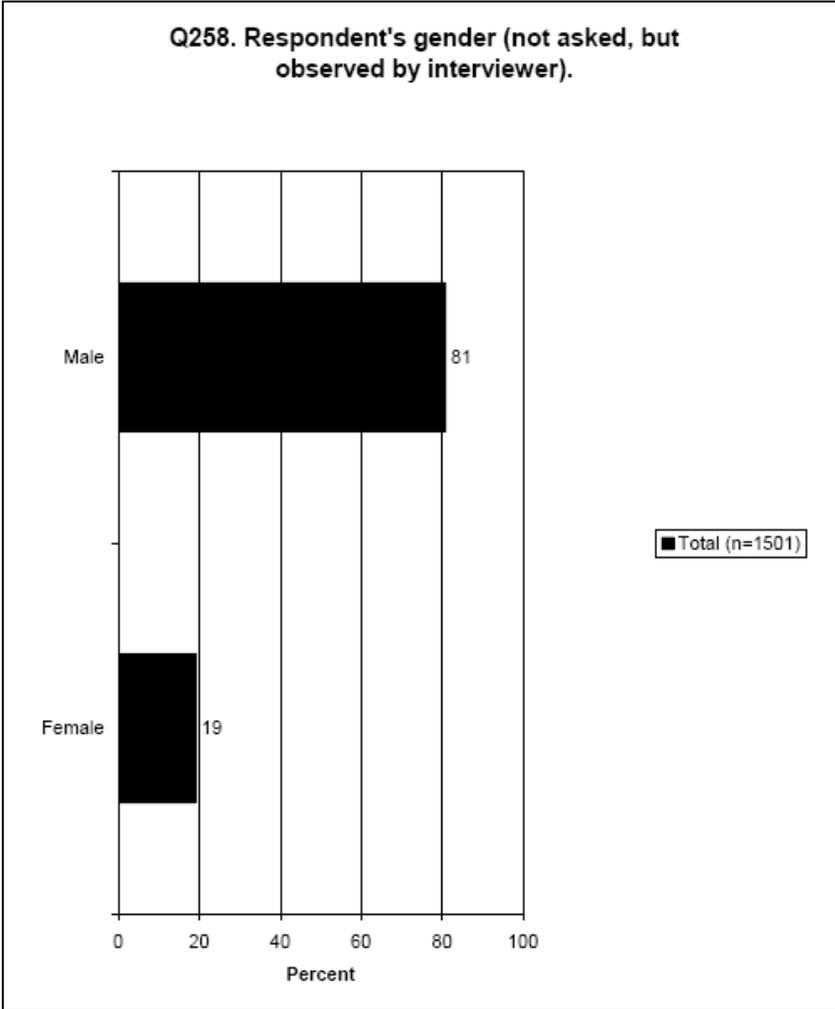


Table V-14a. Distribution by gender for the entire state sample

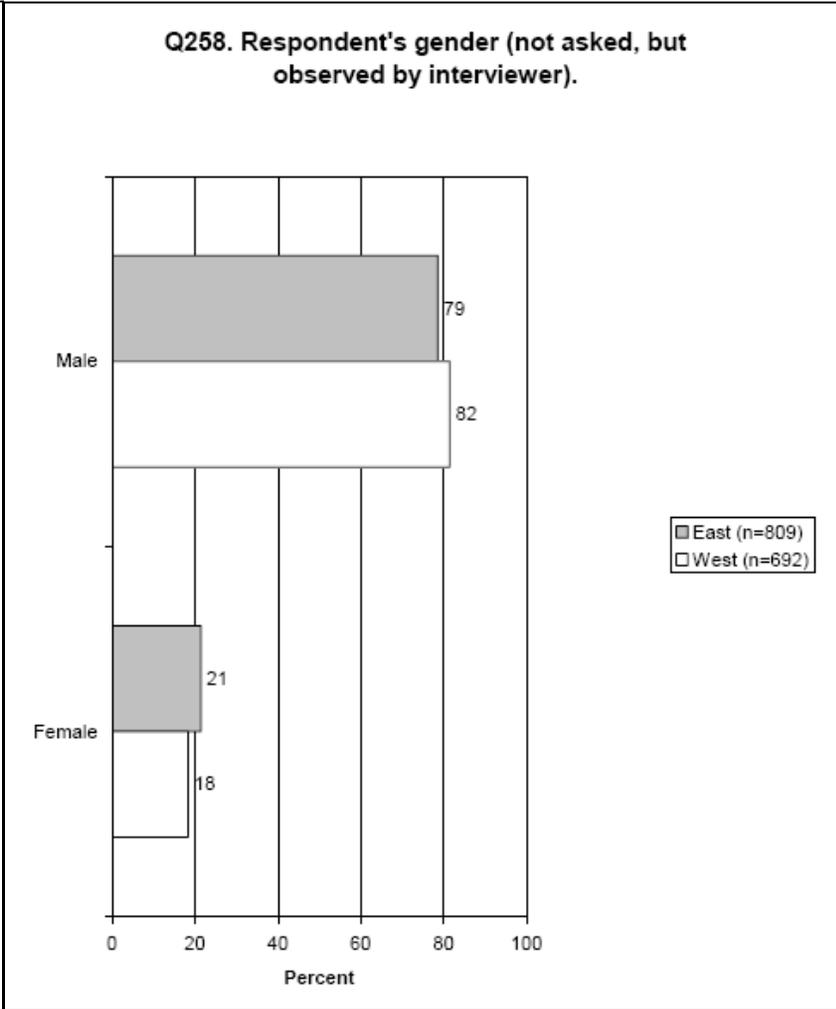


Table V-14b. Distribution by gender for Eastern vs. Western anglers

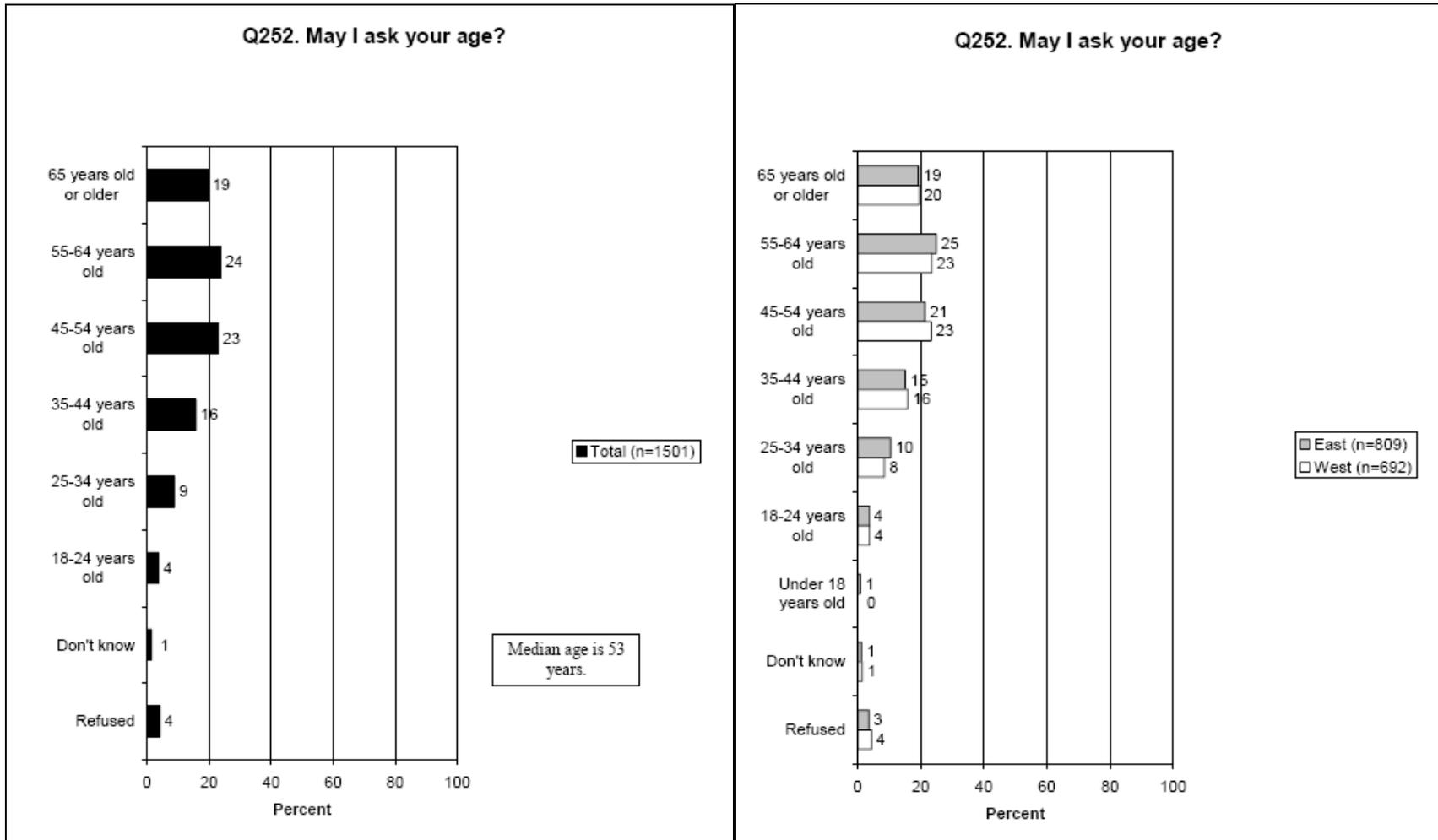


Figure V-15a. Distribution by age for the entire state sample

Figure V-15b. Distribution by age for Eastern vs. Western anglers

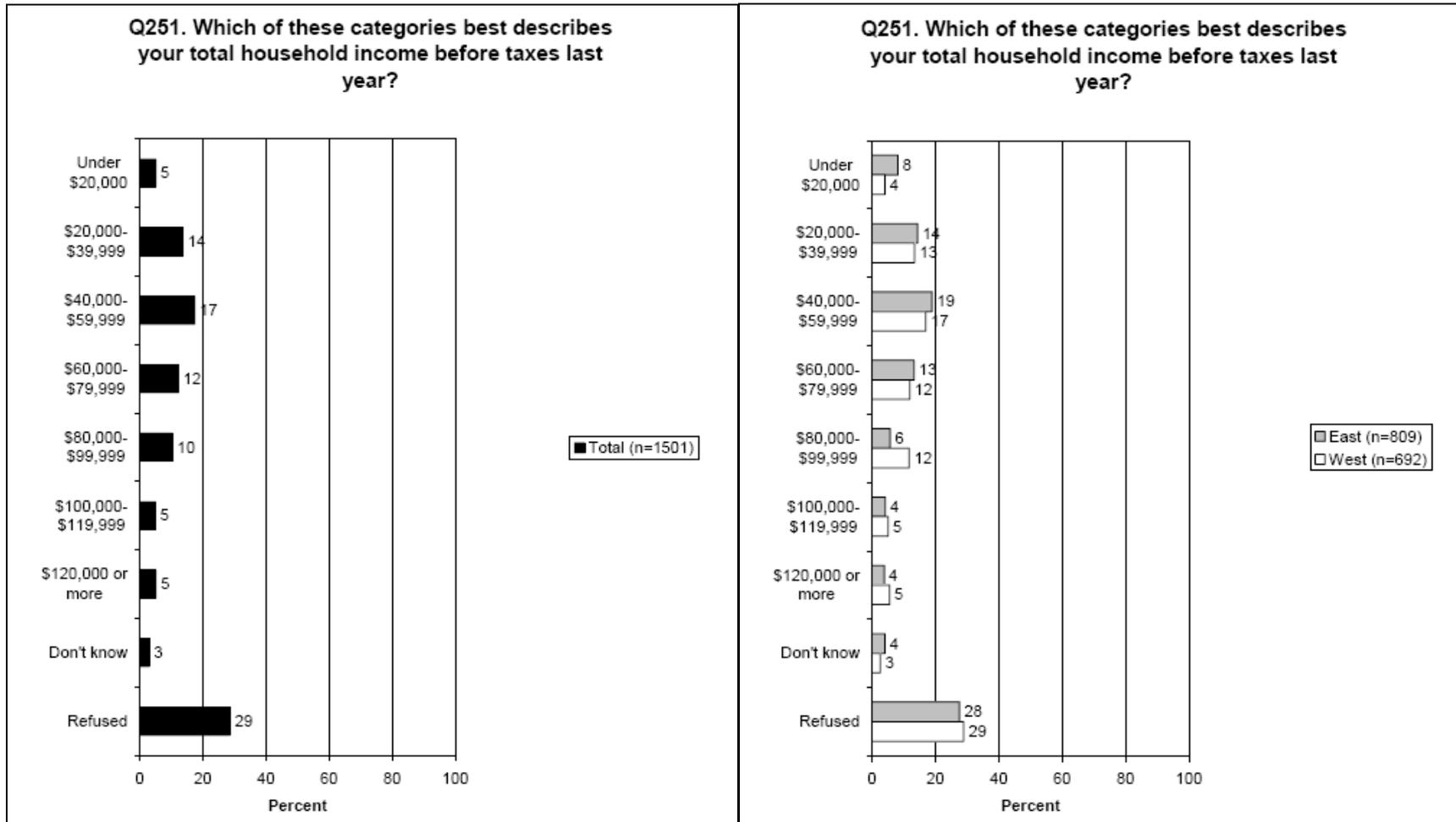


Figure V-16a. Income distribution for the entire state sample

Figure V-16b. Income distribution for Eastern vs. Western anglers

There were a few characteristics which showed some interesting differences among certain age classes. Respondents were classified into four distinct age categories – 16 to 30 years old, 31 to 44 years old, 45 to 60 years old, and over 60 years old. One interesting characteristic was the participation rates in the steelhead fishery. Figure V-17 shows the estimates.

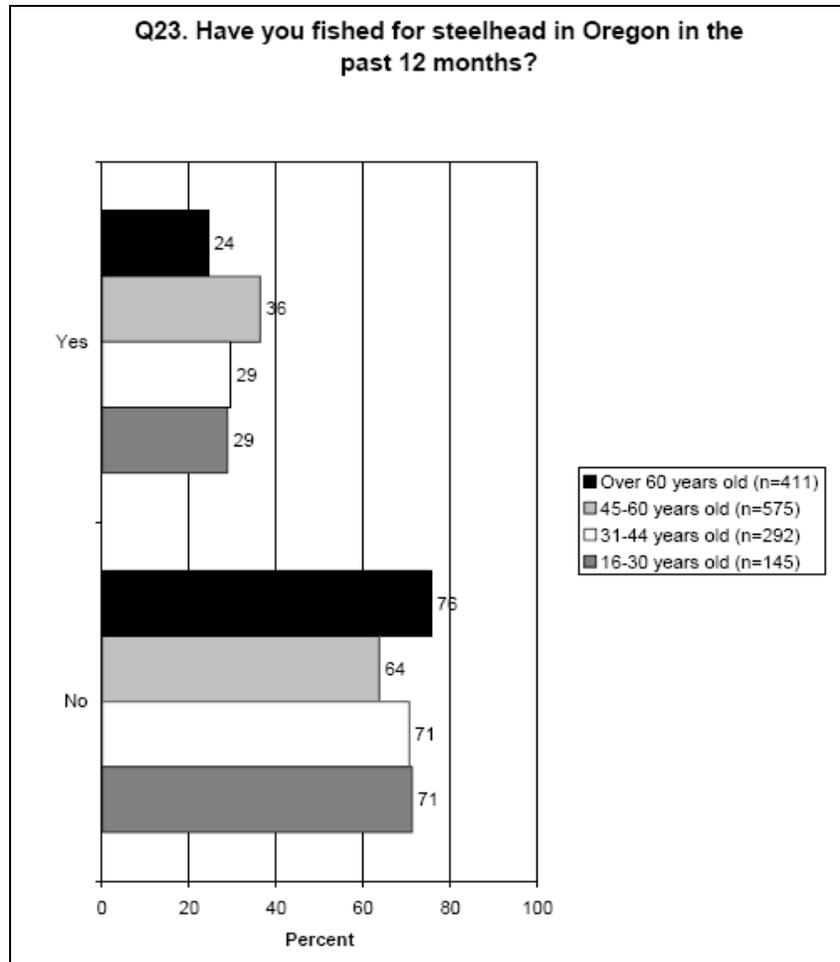


Figure V-17. Age class distribution of Oregon steelhead anglers in 2006

It seems that a lower percentage of anglers from the oldest age class participate in the steelhead fishery. Second, the highest percentage of anglers with steelhead fishing activity come from the second oldest age class. The observation that age may have an effect on participation in steelhead fishing suggests several hypotheses. First, it may be that older anglers tend to have more health or mobility issues that reduce the ability to fish for steelhead. Second, more steelhead angling takes place in winter when it is cold, wet and slick, all of which make angling less fun and more risky, particularly for those with health or mobility issues. Access to good steelhead fishing sites may be more difficult for the same reasons. However, it is interesting that the second oldest age class seems to participate at the highest rate of all age classes. So it is likely the explanation of these age-related observations will require additional analysis of the survey data.

Another interesting set of estimates was the description of species preference in the trout fishery by age group class. Figure V-18 indicates some differences in species preference. What might be the cause of these differences? It may be that older anglers are simply less concerned about the species they seek to catch. It may also be that older anglers do a better job of identifying the species they prefer due to better ability to identify the different trout species.

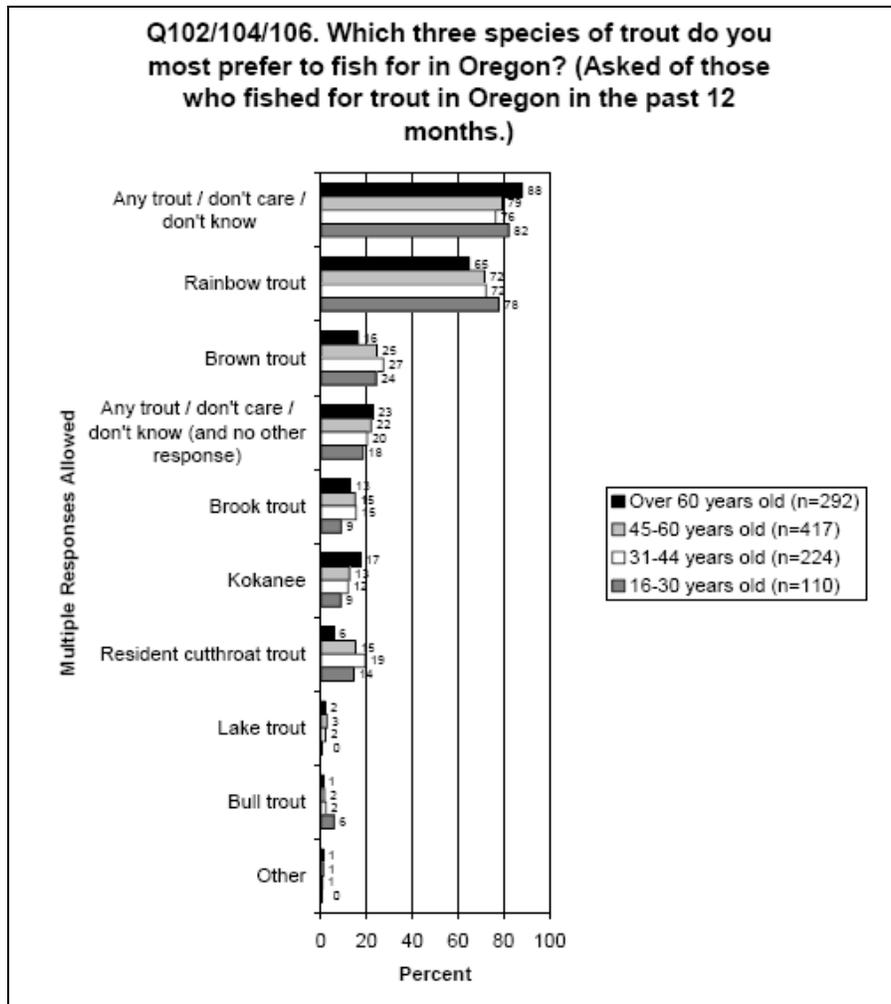


Figure V-18. Preferred species of trout for specific angler age classes

In contrast, the age class differences for particular species of warmwater game fish don't seem to be quite as distinct as suggested in Figure V-19. One might suspect older anglers either don't care as much about target species as their counterparts, and may favor crappie fishing a little more than members of the other angler age classes. We could hypothesize that crappie fishing is warmer, less competitive, has a higher catch rate or is more relaxing.

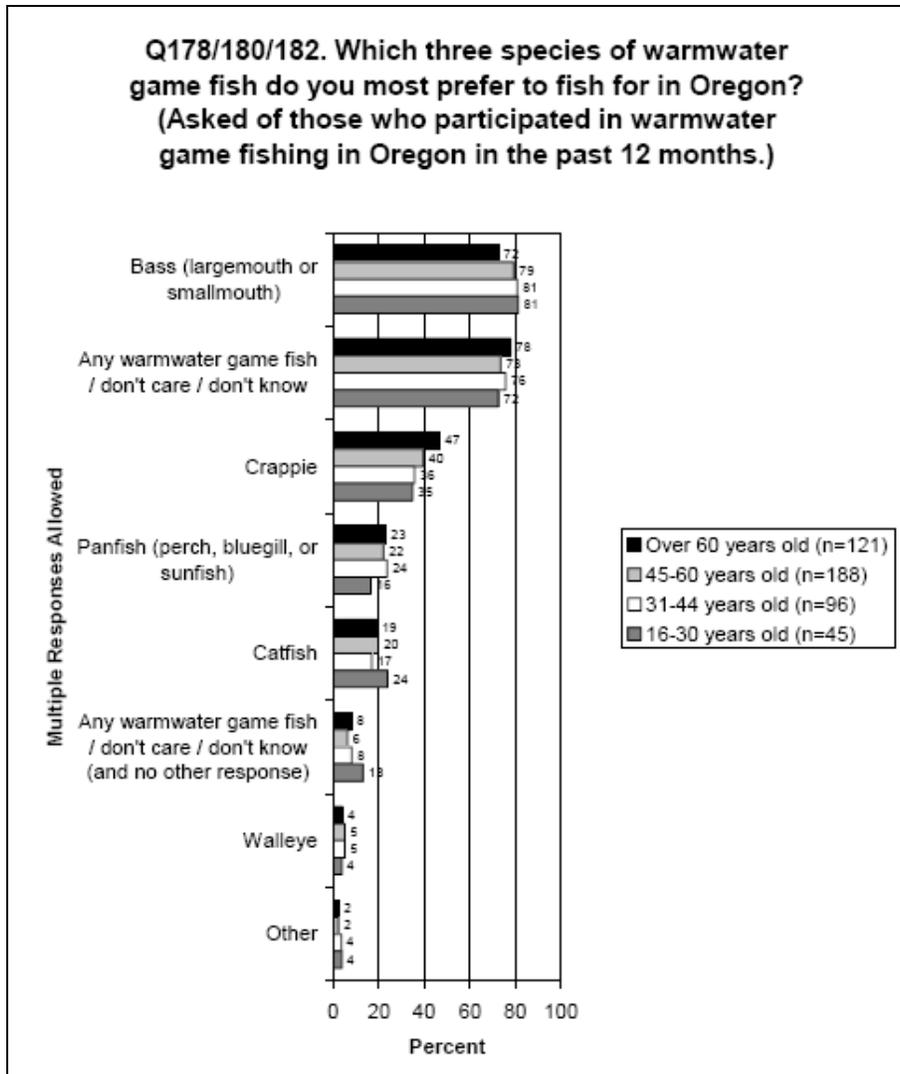


Figure V-19. Preferred species of warmwater game fish for specific angler age classes

Age class differences on whether Oregon’s fishing regulations are clear and easy to understand are somewhat more interesting and seem to make some sense. Figure V-20 shows the response of members of the different age classes to the question on regulation clarity. It seems that there is a definite tendency of the two classes of older anglers to disagree with the statement that the regulations are clear and easy to understand. One can hypothesize several reasons for this. It may be that older anglers remember when the regulations were relatively simpler and easier to understand, or because bag limits were more liberal, or because there were fewer perceived issues with the status of wild or native fish.

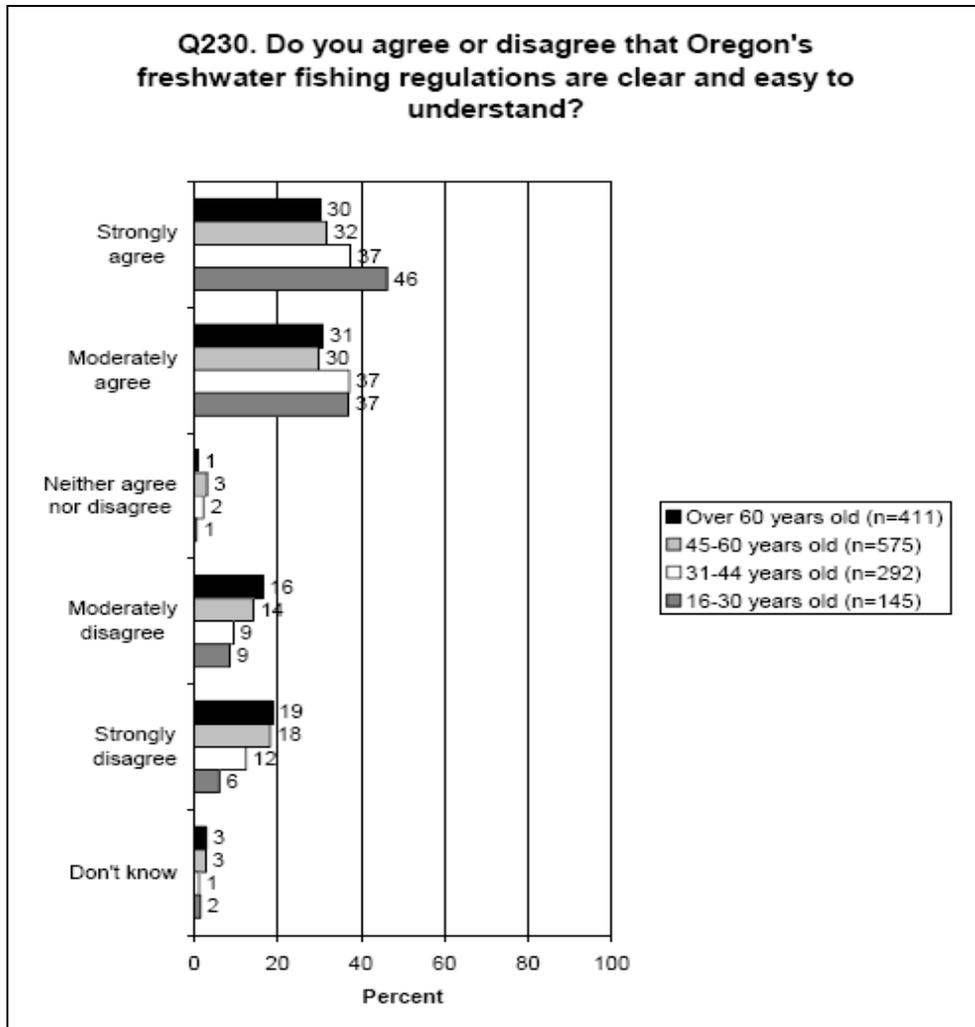


Figure V-20. Angler age class differences on whether regulations are clear and easy to understand

Additional analysis may be needed to see if the perceived differences are significant, and to form more specific testable hypotheses about the causes of the differences.

VI. Discussion of Survey Approach

This section briefly recapitulates the main reasons why ODFW decided to conduct this angler preference survey, and provides some general conclusions about the approach. The information and results presented in the previous sections of this report were produced by a scientifically designed and statistically valid survey process. Thanks to the cooperative approach taken by ODFW staff and our survey contractor, Responsive Management, we believe the results will prove to be informative and useful as a tool for improving the management of some of the most important areas of sport fishing in Oregon.

Purposes

The main purposes of this survey and study were to determine licensed anglers' participation in fishing in Oregon, their motivations for fishing and constraints to fishing participation, and their opinions on various fishing regulations and fisheries management strategies. Once overall patterns of participation were identified, the survey focused in even more detail on the freshwater sport fisheries for trout and warmwater game fish species.

Survey Approach

Because it is infeasible to contact and gather the opinions of every Oregon angler individually, ODFW chose to conduct a statistically valid survey of Oregon's core anglers, the annually licensed residents who had fished in this state most recently. The survey approach provided ODFW with the ability to gain a better understanding of general public angling preferences, rather than the preferences and opinions of select interest groups or individuals. While the latter is important, ODFW's mission mandates a focus on the needs and preferences of a more general cross section of Oregon's anglers. The scientifically designed sample gives us reasonable confidence in the validity of the survey-generated estimates of angler characteristics and preferences.

Results and General Application

We think this statistically sound survey has helped us better understand the preferences of Oregon's anglers, and will help guide policy and planning for our trout and warmwater game fish fisheries in particular. The survey also provided ODFW guidance on areas where we need to improve communications with our constituents. This guidance is expected to help ODFW do a better job designing, communicating and evaluating sport fish management.

Future Additional Analyses

In the near future, ODFW staff will be providing additional analyses using the database of survey results. We hope to explore some of the results on a geographical basis based on location of residence to help District Managers understand public preferences on a local level. Secondly, ODFW hopes it will be able to use surveys like this one as tools in the near future to expand our knowledge of public opinions about and preferences for other important Oregon fisheries. We also intend to complement such statewide surveys with on-the-ground surveys of particular water bodies and fisheries in order to gain important information on changes to specific fishery regulations and management efforts. During on-the-ground surveys, it would be possible to "field-truth" some of the findings from this survey or to clarify issues. For example it would be

possible to determine whether attitudes toward catch and release fishing change depending on whether or not catch and release is mandatory or optional.

One area of interest that was not designed into this survey was an investigation of the preferences, participation patterns and factors affecting participation of anglers under the age of 18. This survey's respondents included only individuals who had obtained annual adult (18 years of age and older) angling licenses in the previous year. Another highly important question for ODFW is how to encourage the participation of individuals under the age of 18. Therefore, additional information on the fishing activities, preferences and behavior of our population of younger people would be most useful. Fortunately, our survey contractor, Responsive Management recently published a series of reports on factors related to hunting and fishing participation among the nation's youth.

What follows are a few of the major findings taken from this youth hunting and fishing study (Responsive Management, 2003).

- How a child responds to information on wildlife and the natural environment varies with age and developmental abilities
- Youth's motivations for, satisfaction with and reasons for hunting and fishing appear to change as they progress through stages of development.
- Younger youth appear to enjoy fishing more when physical, concrete rewards are associated with the experience --- such as being able to keep the fish they catch or catch large trophy fish.
- Fishing to escape from stress and to relax was more important for older youth than for younger youth.
- Being with friends is a much more important reason for older youth to go fishing than younger youth.

During the youth hunting and fishing study, Responsive Management specifically asked a youth survey question on what would make a youth go fishing or fish more. Figure VI-1 on the next page shows the survey results for this question. Figure VI-2 shows reasons why active youth fishermen said they went fishing.

Finally, several other interesting findings from Responsive Management's youth study are:

- The type of family where a youth is raised (single-parent vs. dual parent household) does not negatively affect the likelihood that a youth will go fishing.
- Time is the primary constraint to fishing participation.
- Other constraints of less importance are that the youth feels fishing is boring, or that the youth does not want to kill fish.

While the latter two findings are not unexpected, the first finding was both statistically significant, and possibly an unexpected result. It suggests that a youth's participation in fishing depends more on his/her parents' upbringing than on the parents marital status. Other influences might include the income or wealth of youth and parent. Needless to say, ODFW staff believes there is good reason to investigate more thoroughly the available information on youth fishing

(such as the Responsive Management study). There is also a need for additional work in applying the information to the situation in Oregon.

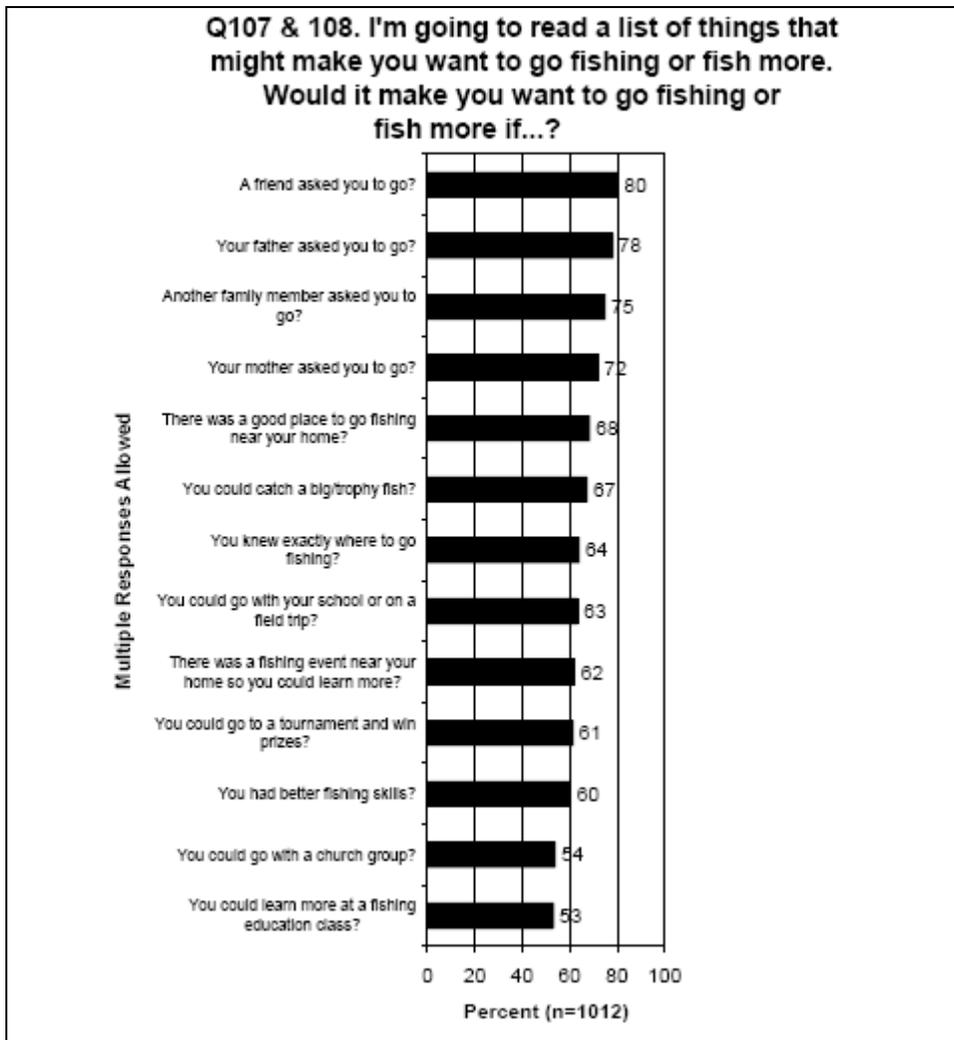


Figure VI-1. Things That Make Youth Go Fishing or Fish More.

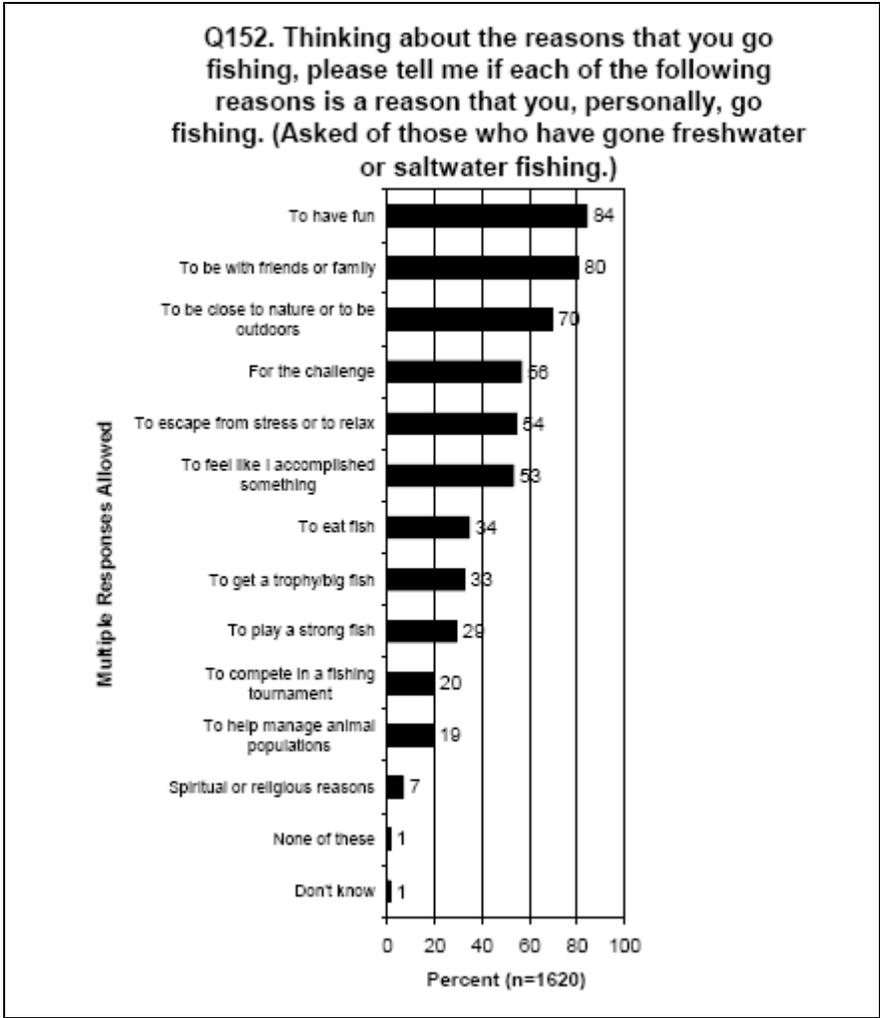


Figure VI-2. Reasons Why Youth Say They Go Fishing.

A Note Of Thanks

Last, but not least, ODFW thanks members of the public who participated in this survey for sharing information on their experiences, opinions and preferences. It is essential for the department to better understand public preferences and opinions so that Oregon's fish and fisheries may be managed for the greatest public good.

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