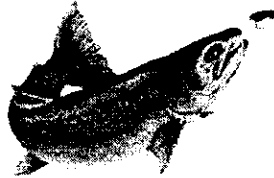


2000 Vermont Angler Survey



The Vermont Department of Fish and Wildlife



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2000 Vermont Angler Survey

Introduction

In January, 2000, the Vermont Department of Fish and Wildlife commissioned the School of Natural Resources at the University of Vermont to conduct a survey of the state's angling population. The study's goal was to gauge public opinion about current fishing regulations, water quality issues, and other current controversies surrounding fisheries management. The study also measured angler preferences and behaviors. Angler input from the survey will be used by the Department of Fish and Wildlife biologists to help guide fisheries management directions and initiatives in the coming years.

Questionnaires were mailed to a stratified random sample of 4,695 Vermont residents and to a simple random sample of 600 nonresidents (see description of research methods in Appendix 1). The questionnaire polled angler opinions about length of fish, creel limits, and special regulations in a variety of situations including Trout fishing on streams and rivers, Trout and Salmon fishing on ponds and lakes, warm water fishing for game fish and panfish, and Lake Champlain fishing. Respondents were also asked to evaluate the quality of fishing for a variety of species in each of these settings. The survey also asked respondents to report their fishing behaviors: types of fish they sought when angling, number of 1999 fishing days (ice, open water, and fishing days outside Vermont), number of days fished by species, bait use and disposal, and frequency of participation in fishing and fishing related activities. Finally, anglers were asked their opinions about various controversial issues in Vermont (Pike spearing/shooting, commercial sale of game species, fishing access, fish contamination, etc.), and their opinions about water quality issues (excessive aquatic plant growth, erosion and siltation, exotic species, dams, etc.).

The 2000 Vermont Angler Survey also replicated a previous statewide angler survey conducted in 1991 by the Vermont Department of Fish and Wildlife. This study used the same data collection methodology and many of the same questionnaire items. This provided the opportunity to make direct comparisons between 1991 opinions and behaviors and 2000 opinions and behaviors to assess how the Vermont angler has changed during the 1990s. This comparison also allows the Department of Fish and Wildlife to assess the acceptability of its regulatory standards and the performance of certain management initiatives during the 1990s.

This study reports the results from the 2000 Vermont Angler Survey. This report details the response distributions and summary statistics for each item included in the 2000 questionnaire. Comparative analyses are shown between residents and nonresidents, between ice anglers and anglers who fished only on open water, and between residents in different regions of the state. The report also compares the 1991 survey responses with the 2000 survey responses and shows how Vermont anglers have changed during the 1990s. Appendix 1 details the methodology used for the 2000 study, and Appendix 2 includes, verbatim, all written comments that respondents returned with their questionnaire.

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Part 1



Fishing in Vermont

Vermont anglers were first asked a series of fishing participation questions: the type of fishing they engage in, the total number of days they spent fishing in 1999 (open water and ice), the total number of days they spent fishing outside Vermont, what types of species they typically fished for, the number of days they spent fishing for each of these species, and their most preferred species. Respondents were also asked to evaluate the overall quality of fishing in Vermont. *The questions in this section of the survey were asked of all respondents.*

Total participation in open-water and ice fishing

Questionnaire Items:
 “Do you fish during the OPEN-WATER season in Vermont (spring, summer, fall)?”
 “Do you ICE-FISH in Vermont?”

Table 1-1. Number of people who fish open water and who ice-fish.

	VT Residents (Respondent %) n=1623	Total Resident Anglers ¹	Nonresident (Respondent %) n=217	Total Nonres. Anglers ¹
Open water only	51.6	39,253	84.8	34,500
Ice fishing only	0.3	280	2.7	1,125
Open water and ice	46.8	35,612	12.0	4,875
Did not fish	1.2	933	0.5	188
Total open water	98.4	74,865	96.8	39,386
Total ice fishing	47.1	35,892	14.7	5,981

¹ - These are estimates based on 76,079 residents who purchased one or more types of licenses in 1999, and 40,688 nonresidents who purchased one or more types of licenses in 1999.

Total 1999 Angler Days

Questionnaire Item:
 About how many days did you fish in Vermont in 1999? (Write the number of days in the appropriate box.)

Table 1-2. Total days spent fishing open water and ice fishing in 1999.

Days	Open Water				Ice			
	Resident		Nonresident		Resident		Nonresident ¹	
	n	.%	n	.%	n	.%	n	.%
0	42	2.6	2	1.0	93	12.1	4	13.3
1-5	251	15.8	100	48.8	274	35.8	15	50.0
6-10	268	16.9	55	26.8	167	21.8	6	20.0
11-20	352	22.2	28	13.6	136	17.7	1	3.3
21-30	301	19.0	11	5.4	54	7.0	2	6.6
31-40	122	7.7	4	1.9	19	2.5	0	0.0
41-50	82	5.2	1	0.5	8	1.0	0	0.0
50+	167	10.5	4	1.9	15	1.9	1	3.3
Total n	1,587		206		766		31	
Mean days	26.5		9.40		10.67		8.63	
Median days	20.0		6.0		5.0		3.0	
Sample days	42,111		1,940		8,148		269	
Total VT days ²	2,018,754		-- ³		809,258		-- ³	

1 - Small sample size. Percentages and statistics may not be reliable.

2 - These are estimates based on 76,079 residents who purchased one or more types of licenses in 1999.

3 - Sample size is too small to reliably estimate total fishing days among nonresidents.

Fishing participation by category: 1) Trout on streams and Rivers, 2) Trout on ponds and lakes, 3) Warm water game fish, 4) Lake Champlain, and 5) Fishing with bait.

Questionnaire Items:

Do you fish for brook, brown or rainbow trout in STREAMS or RIVERS in Vermont?
 Do you fish for trout or salmon in PONDS or LAKES in Vermont?
 Do you fish for walleye, bass, pike, yellow perch, sunfish, crappie, bullhead or smelt in Vermont?
 Do you fish on Lake Champlain during either the open water or ice fishing seasons?
 Do you fish with live bait in Vermont?

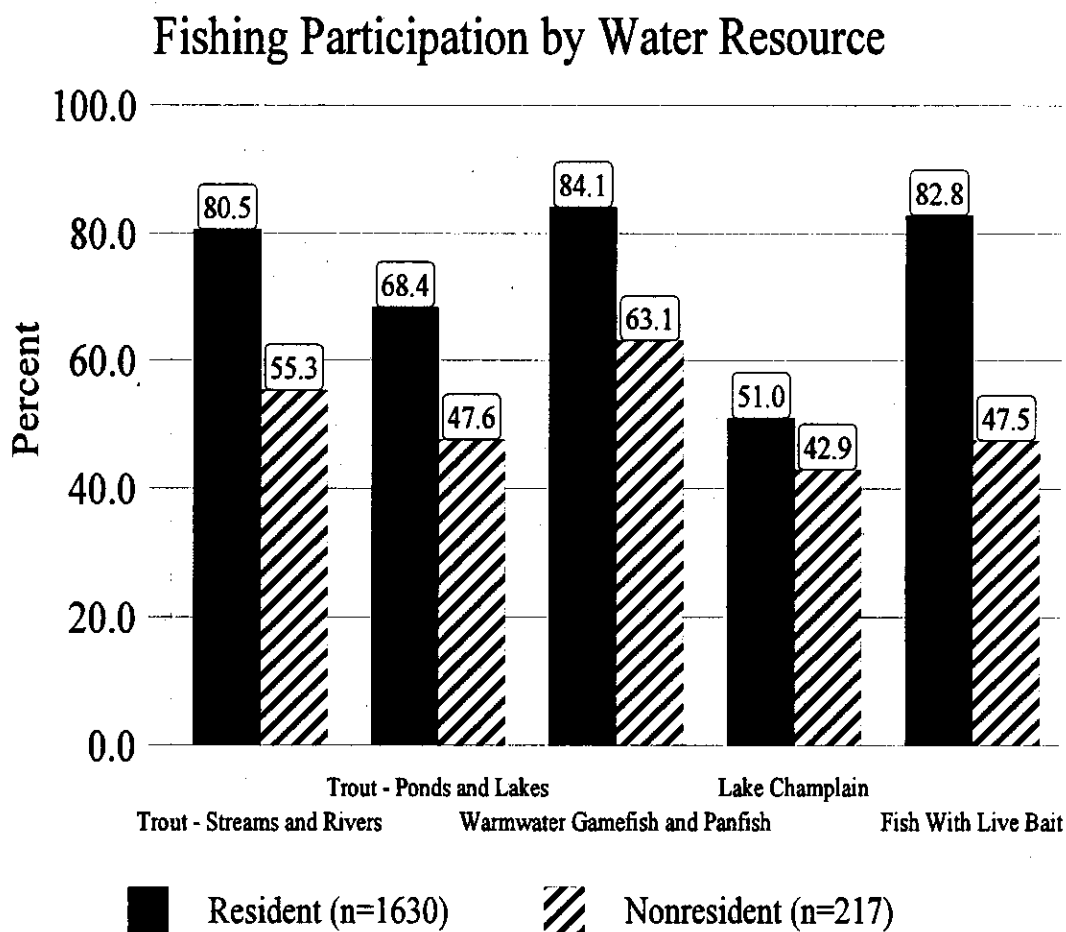


Figure 1-1. Percent of residents and nonresidents who participate in different types of fishing.

Which of the following do you fish for in Vermont?

Questionnaire Item:

Which of the following fish do you fish for in Vermont? (Circle the number(s) of ALL the kinds of fish that you fish for.)

Table 1-3. Percent and number of people who fish for Vermont game fish (rank-ordered).

Species	VT Residents (Respondent %)	Total Resident Anglers ¹	Nonresident (Respondent %)	Total Nonres. Anglers ¹
Brook Trout	78.1	59,418	58.9	23,965
Rainbow Trout	75.4	57,364	57.6	23,436
Brown Trout	70.2	53,407	56.8	23,111
Smallmouth Bass	67.2	51,125	59.4	24,169
Yellow Perch	65.4	49,756	29.0	11,800
Largemouth Bass	62.8	47,778	55.5	22,582
Northern Pike	46.7	35,529	36.1	14,688
Lake Trout	43.8	33,323	35.3	14,363
Walleye	36.9	28,073	22.1	8,992
Bullhead	34.0	25,867	10.0	4,069
Pickereel	28.1	21,378	16.8	6,836
Landlocked Salmon	26.0	19,721	24.0	9,765
Sunfish	23.4	17,802	17.1	6,958
Smelt	18.2	13,846	5.3	2,156
Rock Bass	17.7	13,466	13.2	5,731
White Perch	16.7	12,705	9.4	3,825
Crappie	16.5	12,553	17.4	7,080
Channel Catfish	11.4	8,673	8.4	3,418
Sucker	4.2	3,195	0.6	244
Drum	3.4	2,587	2.3	936
Muskellunge	3.2	2,435	7.4	3,011
Carp	3.1	2,358	0.0	0
Sauger	2.7	2,054	1.5	610
Gar	2.0	1,522	0.0	0
American Shad	1.9	1,446	0.7	285
Whitefish	1.6	1,217	0.9	366
Anything	14.7	11,184	8.5	3,458
Total n	1,588		216	

1 - These are estimates based on 76,079 residents who purchased one or more types of licenses in 1999, and 40,688 nonresidents who purchased one or more types of licenses in 1999.

What kinds of fish do you prefer to fish for? - Open Water and Ice Fishing

Questionnaire Item:

What kinds of fish (listed in question 1) do you prefer to fish for during the OPEN-WATER season in Vermont? (Please rank your top three choices by writing the species number in the appropriate box.)

Table 1-4. Most preferred game fish species among **open water** Vermont anglers.

	Most Preferred (%)		Scaled Preference ¹	
	Resident	Nonresident	Resident	Nonresident
Brook Trout	26.3	16.6	1664	137
Rainbow Trout	13.4	12.7	1313	139
Largemouth Bass	11.5	11.8	876	151
Brown Trout	5.3	7.1	861	109
Smallmouth Bass	8.5	15.4	854	145
Yellow Perch	3.7	1.7	439	17
Walleye	5.2	1.5	391	22
Landlocked Salmon	4.2	4.7	321	49
Lake Trout	2.5	5.4	319	49
Northern Pike	1.6	4.4	255	67
Bullhead	1.1	0.5	126	5
White Perch	0.7	0.0	57	0
Crappie	0.4	0.7	52	4
Channel Catfish	0.6	0.7	49	6
Pickereel	0.1	0.0	32	5
Sunfish	0.1	0.3	26	6
Rock Bass	0.1	0.0	14	0
Smelt	0.1	0.0	10	0
Sauger	0.1	0.0	10	0
American Shad	0.0	0.0	7	0
Carp	0.1	0.0	4	0
Muskellunge	0.0	0.0	4	2
Sucker	0.0	0.0	3	0
Drum	0.0	0.0	1	0
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0	0
No preference	14.5	16.6		
Total n (% missing)	1305 (5.4)	157 (10.4)		

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1.

Questionnaire Item:

What kinds of fish (listed in question 1) do you prefer to fish for during the Ice-FISHING season in Vermont? (Please rank your top three choices by writing the species number in the appropriate box.)

Table 1-5. Most preferred game fish species among ice anglers in Vermont.

	Most Preferred (%)		Scaled Preference ¹	
	Resident	Nonresident ²	Resident	Nonresident ²
Yellow Perch	44.5	15.5	1138	26
Northern Pike	13.0	23.5	521	29
Lake Trout	9.9	19.9	389	27
Smelt	6.7	6.7	319	12
Walleye	7.0	1.8	273	7
Rainbow Trout	4.5	6.3	205	8
Brown Trout	3.7	18.2	171	5
Landlocked Salmon	3.1	0.8	166	19
Largemouth Bass	2.2	1.4	109	6
Brook Trout	2.5	4.1	68	18
Pickereel	0.3	0.0	61	1
White Perch	1.0	0.0	59	0
Crappie	0.4	0.0	41	7
Smallmouth Bass	0.6	0.0	40	0
Sunfish	0.1	0.0	12	0
Sauger	0.0	0.0	7	0
Bullhead	0.0	0.0	4	0
Rock Bass	0.0	0.0	2	0
Muskellunge	0.0	0.0	2	1
Channel Catfish	0.0	0.0	0	0
American Shad	0.0	0.0	0	0
Carp	0.1	0.0	0	0
Sucker	0.0	0.0	0	0
Drum	0.0	0.0	0	0
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0	0
No preference	12.9	1.7		
Total n (% missing)	670 (5.5)	32 (0.4)		

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1.

2 - Small sample size. Percentages and scales may not be reliable.

*Fishing Outside of Vermont***Questionnaire Item:**

About how many days did you fish in the following types of water outside of Vermont in 1999. (Please write in the number of days fished in the appropriate box.)

Table 1-6. Days spent fishing outside of Vermont in 1999.

	N	% Sample	Mean Days	% of All Fishing Days	Total Sample Days
Residents					
Great Lakes	109	6.7	7.2	12.2	790
Other Freshwater	406	24.9	13.3	27.7	5,406
Saltwater	332	20.4	4.9	15.2	1,617
Total Days Fished Outside Vermont ¹					934,595
Percent of Total Days Fished					24.8
Nonresidents²					
Great Lakes	27	12.4	7.0	17.9	191
Other Freshwater	156	71.8	31.7	59.3	4941
Saltwater	89	41.1	12.7	30.6	1132

1 - This is an estimate based on 76,079 residents who purchased one or more types of licenses in 1999.

2 - Sample size is too small to reliably estimate total days fished outside of Vermont.

Days Spent Fishing for Specific Species of Fish

Questionnaire Item:

About how many days did you spend fishing in each of the following categories during the 1999 open-water and ice seasons? (Write in the number of days fished in the appropriate box. Total days fished does not have to equal total in question 4.)

Table 1-7. Mean number of days and the percentage of the total days spent fishing each category of game fish.

	Residents				Nonresident			
	Open		Ice		Open		Ice ¹	
	\bar{x}	%	\bar{x}	%	\bar{x}	%	\bar{x}	%
Brook, Brown, or Rainbow in small brooks/ponds	11.3	14.8	na	na	11.2	16.1	na	na
Brook, Brown, or Rainbow in large streams/rivers	12.4	15.4	na	na	6.7	10.8	na	na
Brook, Brown, or Rainbow in ponds/lakes	10.1	10.6	10.1	9.8	8.9	9.5	5.5	7.2
Lake Trout	8.8	5.0	8.6	9.2	7.6	6.4	4.8	8.4
Landlocked Salmon	10.0	3.7	10.3	7.0	6.2	4.2	5.8	7.6
Walleye	10.0	5.0	11.3	9.6	6.2	3.2	7.4	4.8
Smallmouth or Largemouth Bass	13.8	16.3	10.1	6.7	13.9	28.6	4.6	3.4
Northern Pike, Pickerel, or Muskellunge	11.8	8.0	9.3	13.3	8.1	9.1	7.6	10.6
American Shad	7.5	0.3	na	na	0.0	0.0	na	na
Yellow Perch	13.0	11.0	11.2	29.0	8.2	5.6	11.3	24.3
Smelt	8.5	0.7	8.8	10.0	13.8	1.3	15.5	18.3
Panfish	11.9	4.2	10.8	4.3	9.0	4.2	20.4	15.3
Bullhead	9.2	4.3	4.5	0.4	3.1	0.5	0.0	0.0
Other	13.8	0.7	9.0	0.6	3.7	0.3	0.0	0.0

1 - Small sample size. Percentages and statistics may not be reliable.

Overall Quality

Questionnaire Item:
Overall, how would you rate the present quality of fishing in Vermont?

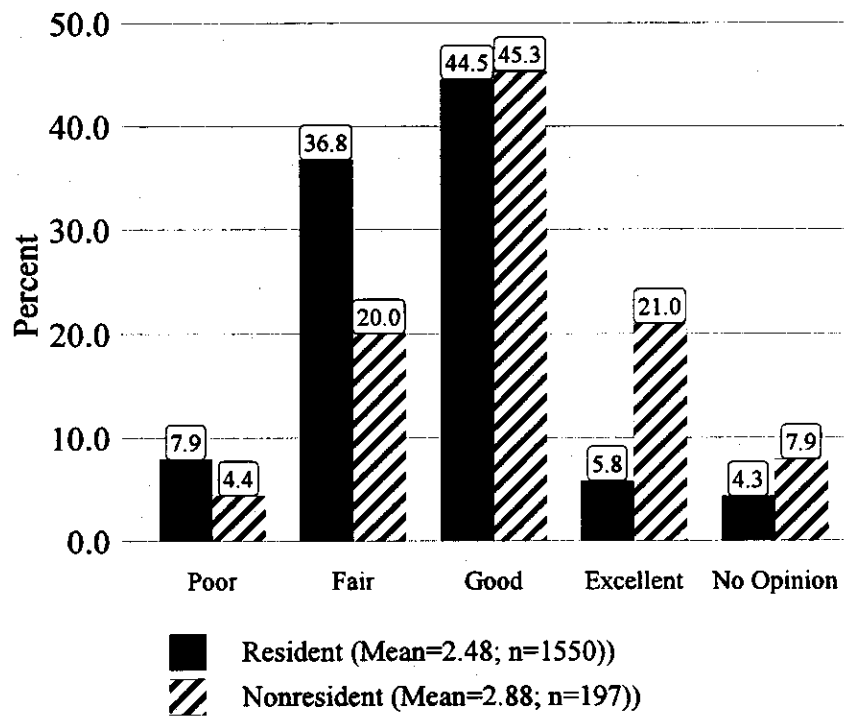


Figure 1-2. Perceived quality of Vermont's fishery. (Overall mean = 2.53. The "no opinion" responses were excluded from the mean calculation.)

Part 2



Angler Opinions About Fishing Regulations

Opinions About Fish Length

Respondents were offered four screener questions that asked if they fished 1) for brook, brown, or rainbow trout on streams and rivers, 2) for trout or salmon on ponds and lakes, 3) for warmwater gamefish and panfish, and 4) on Lake Champlain. If they answered "no" to the screener question, they were instructed to skip to the next section. If they answered "yes" to the screener question, they were then asked a series of questions about fish length, creel limits, and opinions about special regulations.

Questionnaire Items:

If there were no minimum length limits, what is the **smallest** length of each species that you would **keep** when fishing [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish]?

When fishing in [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish], what is the **smallest** length of each species that you would consider a **good or quality** size fish?

Trout in Streams and Rivers

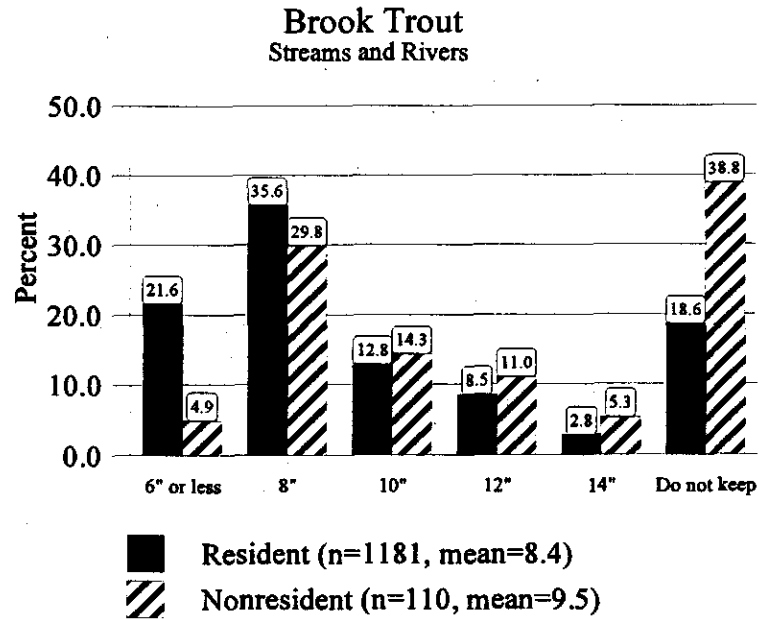


Figure 2-1. The smallest "keeper" size for brook trout on streams and rivers. (The "do not keep" responses were excluded from the mean calculation.)

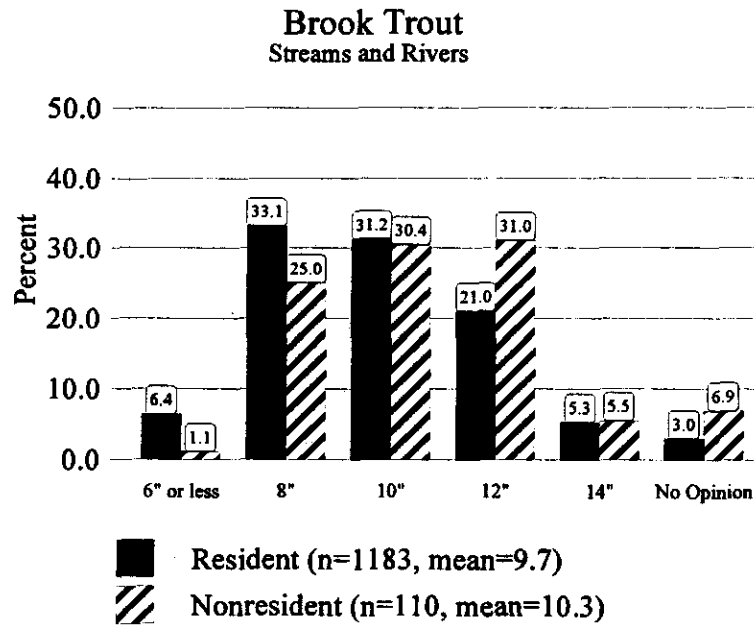


Figure 2-2. The smallest "quality" size for brook trout on streams and rivers. (The "no opinion" responses were excluded from the mean calculation.)

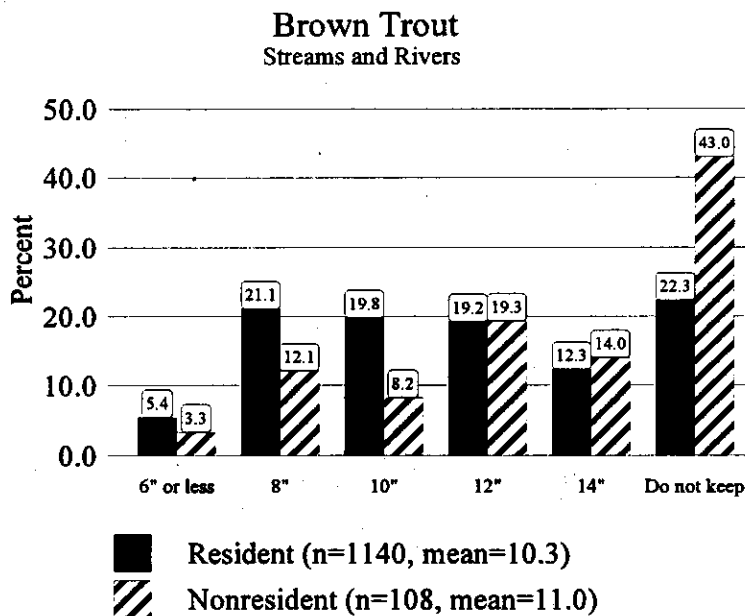


Figure 2-3. The smallest “keeper” size for brown trout on streams and rivers. (The “do not keep” responses were excluded from the mean calculation.)

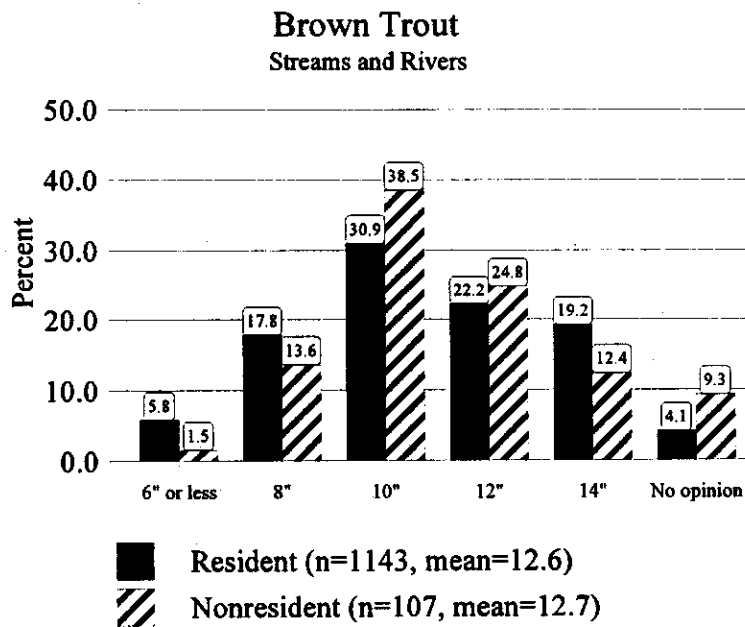


Figure 2-4. The smallest “quality” size for brown trout on streams and rivers. (The “no opinion” responses were excluded from the mean calculation.)

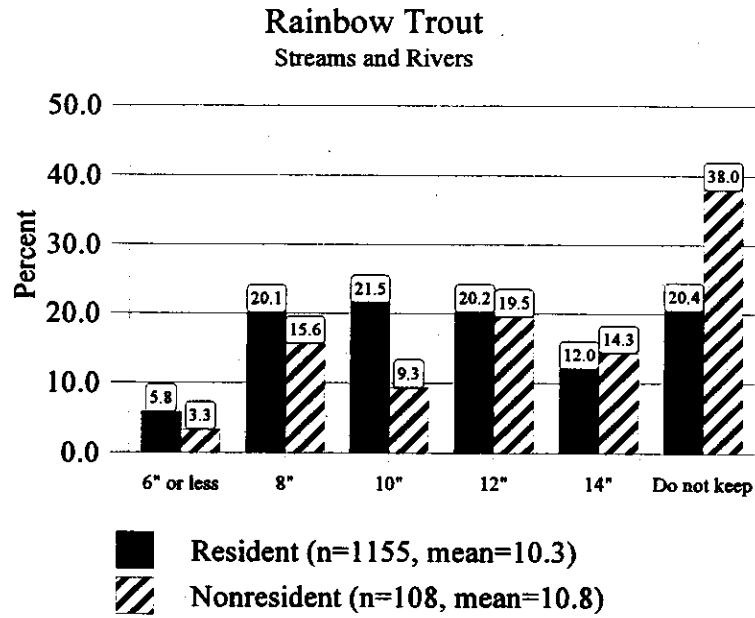


Figure 2-5. Smallest "keeper" size for rainbow trout on streams and rivers. (The "do not keep" responses were excluded from the mean calculation.)

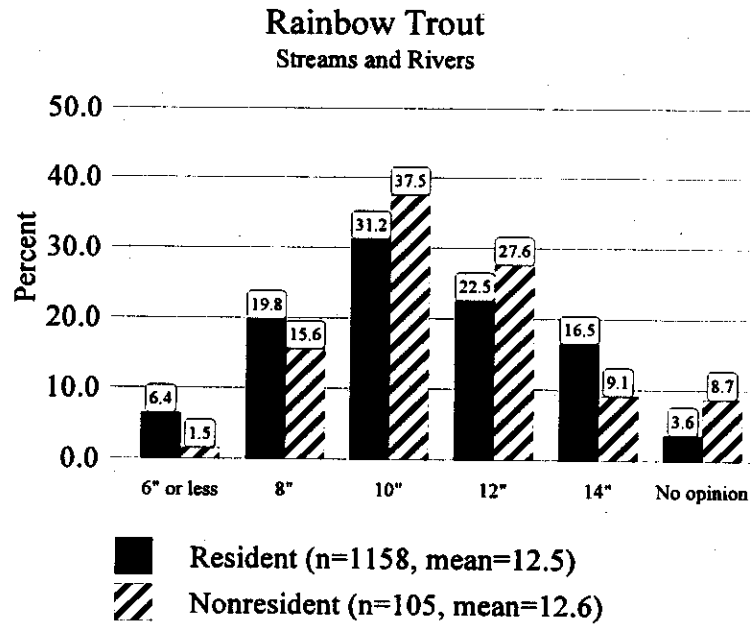


Figure 2-6. Smallest "quality" size for rainbow trout on streams and rivers. (The "no opinion" responses were excluded from the mean calculation.)

Trout or Salmon in Ponds and Lakes

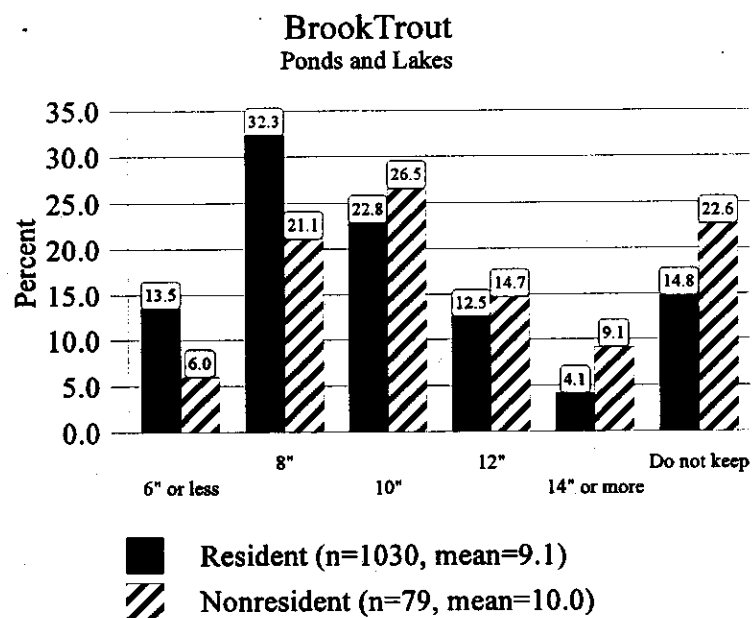


Figure 2-7. Smallest "keeper" size for brook trout on ponds and lakes. (The "do not keep" responses were excluded from the mean calculation.)

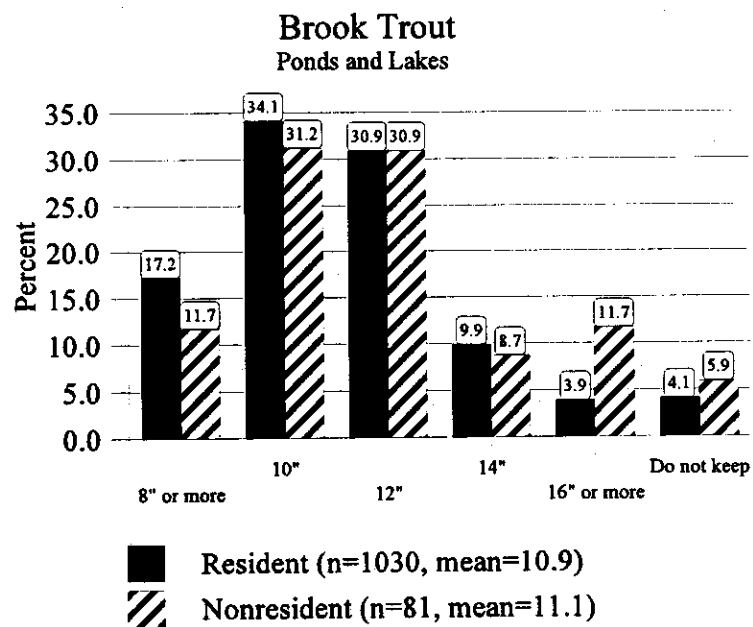


Figure 2-8. Smallest "quality" size for brook trout on ponds and lakes. (The "no opinion" responses were excluded from the mean calculation.)

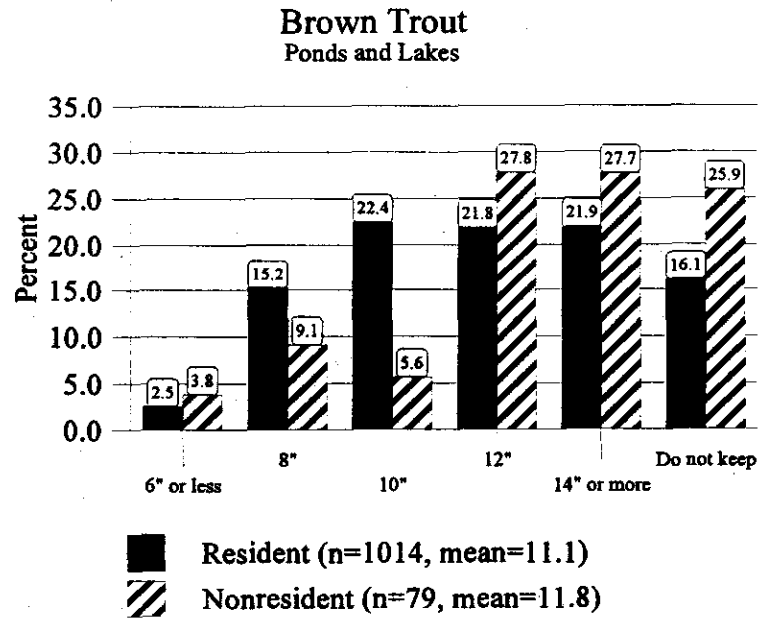


Figure 2-9. Smallest "keeper" size for brown trout in ponds and lakes. (The "do not keep" responses were excluded from the mean calculation.)

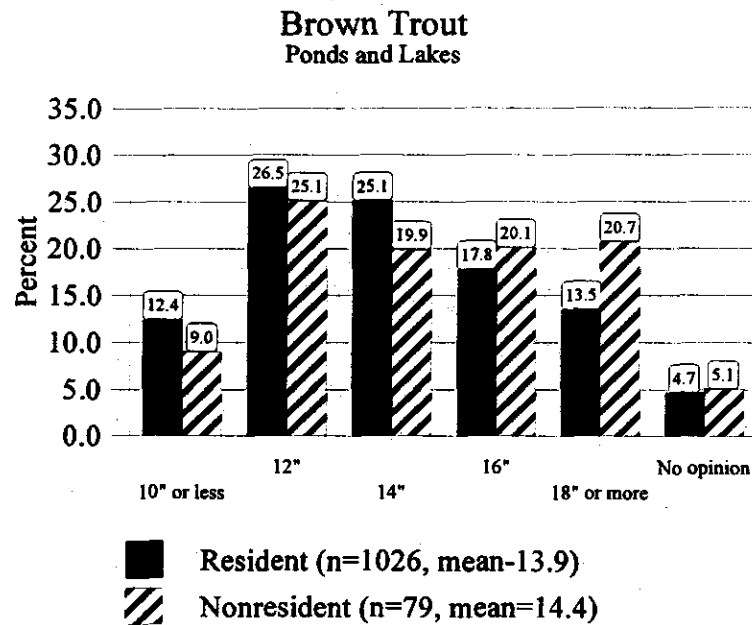


Figure 2-10. Smallest "quality" size for brown trout on ponds and lakes. (The "no opinion" responses were excluded from the mean calculation.)

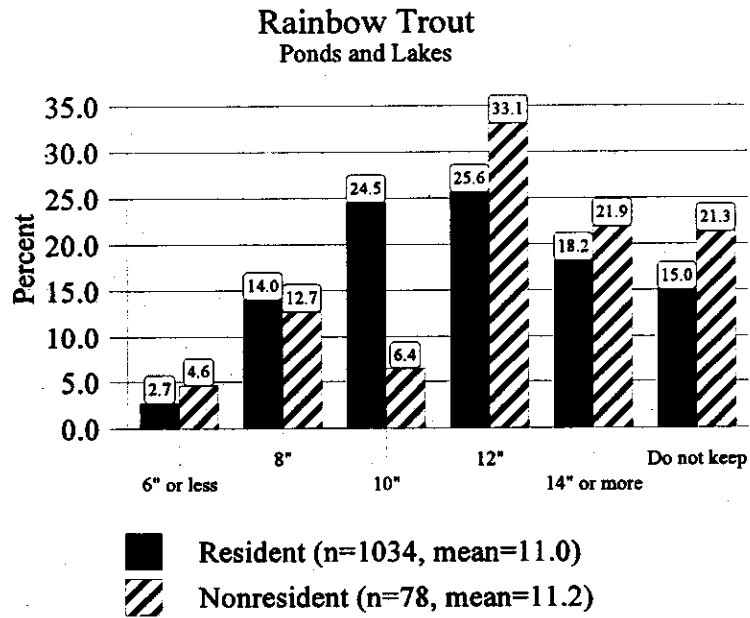


Figure 2-11. Smallest “keeper” size for rainbow trout on ponds and lakes. (The “do not keep” responses were excluded from the mean calculation.)

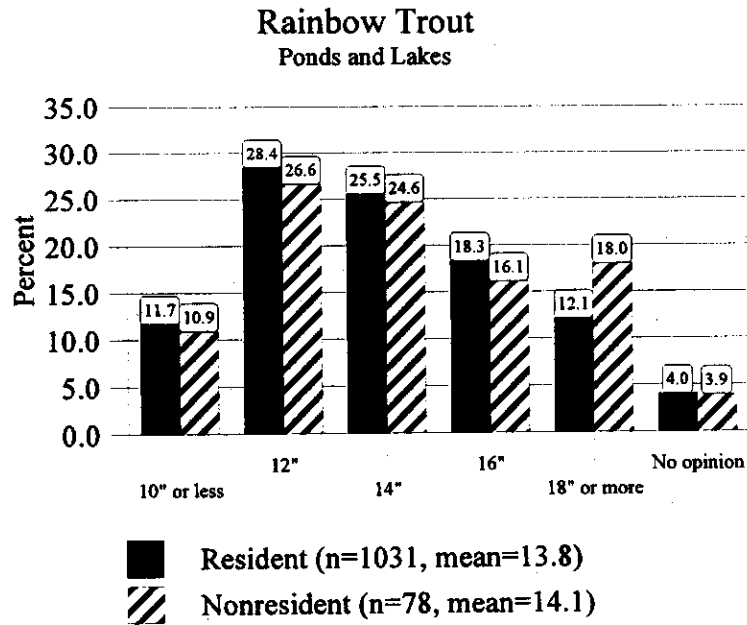


Figure 2-12. Smallest “quality” size for rainbow trout on ponds and lakes. (The “no opinion” responses were excluded from the mean calculation.)

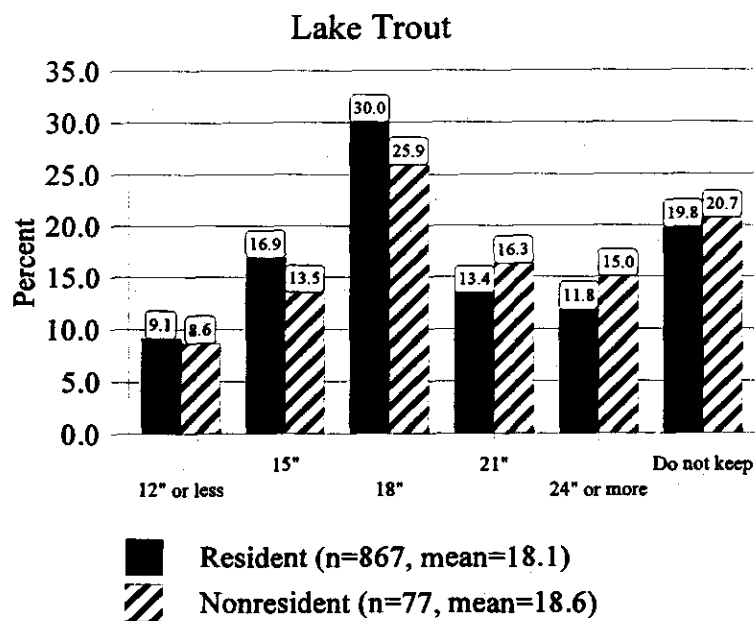


Figure 2-13. Smallest "keeper" size for lake trout. (The "do not keep" responses were excluded from the mean calculation.)

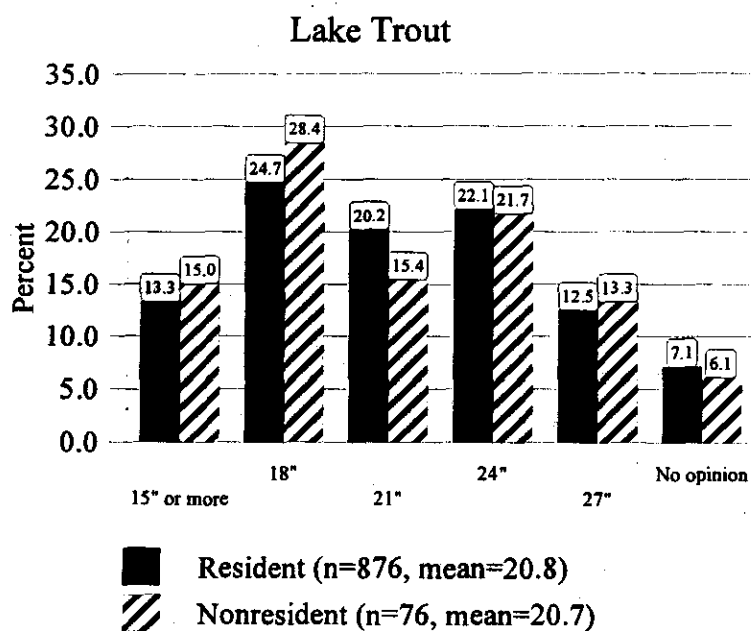


Figure 2-14. Smallest "quality" size for lake trout. (The "no opinion" responses were excluded from the mean calculation.)

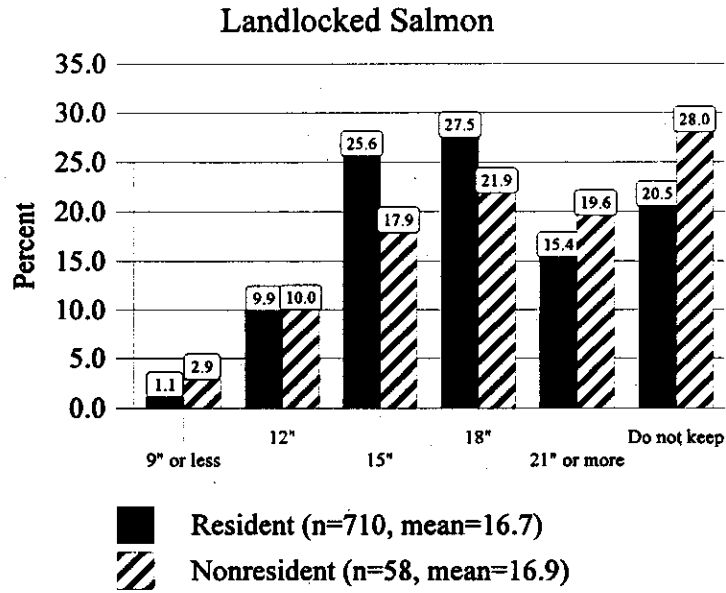


Figure 2-15. Smallest “keeper” size for landlocked salmon. (The “do not keep” responses were excluded from the mean calculation.)

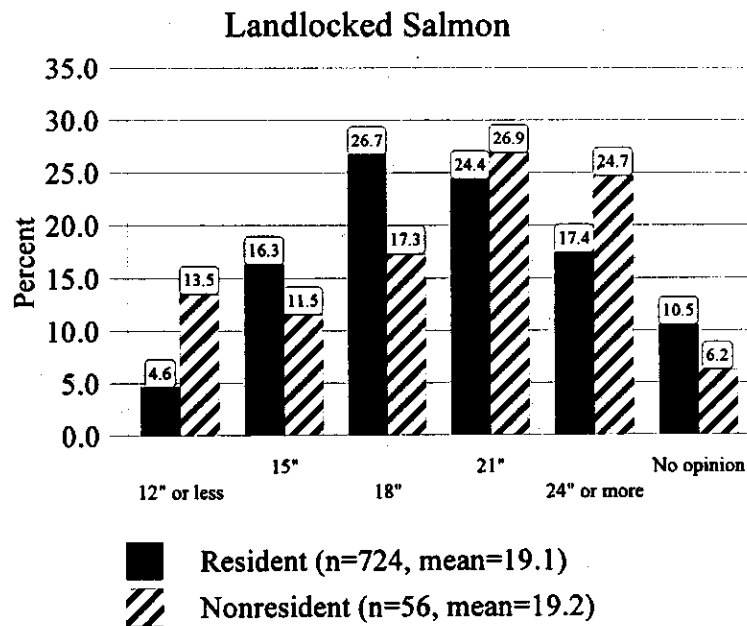


Figure 2-16. Smallest “quality” size for landlocked salmon. (The “no opinion” responses were excluded from the mean calculation.)

Warm Water Game Fish

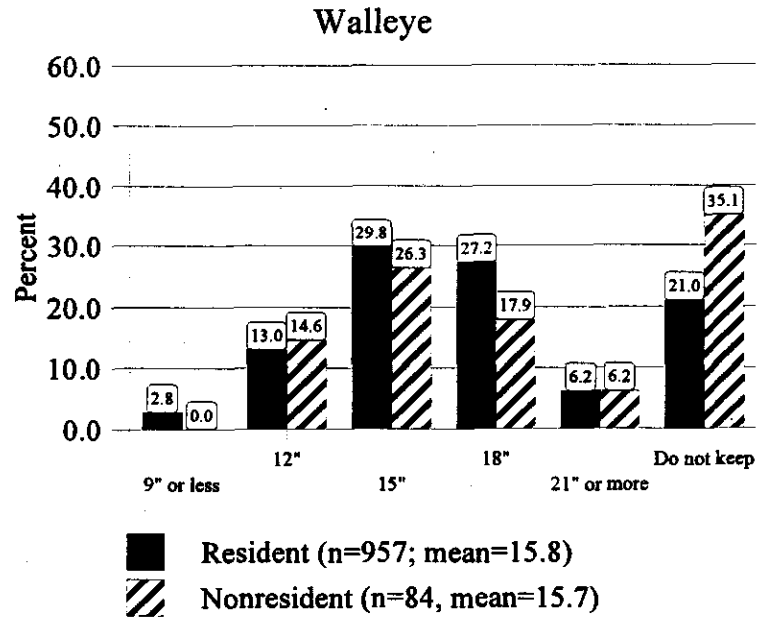


Figure 2-17. Smallest "keeper" size for walleye. (The "do not keep" responses were excluded from the mean calculation.)

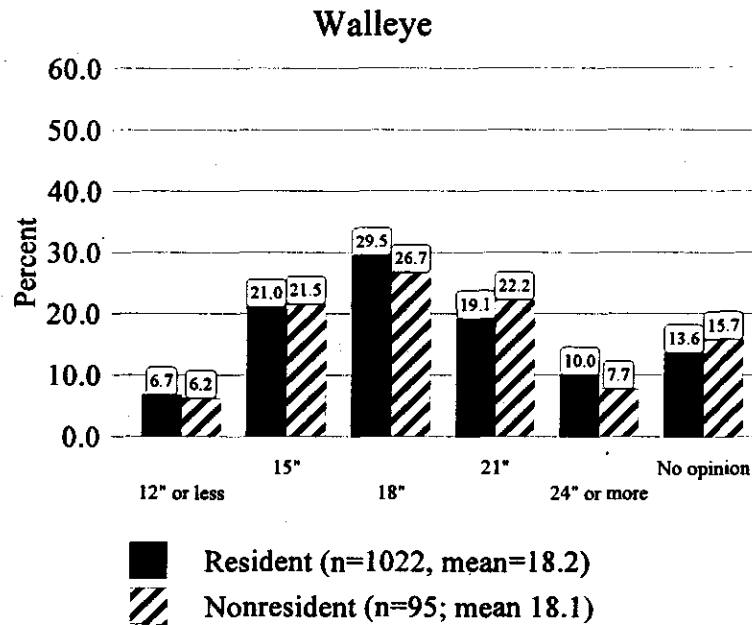


Figure 2-18. Smallest "quality" size for walleye. (The "no opinion" responses were excluded from the mean calculation.)

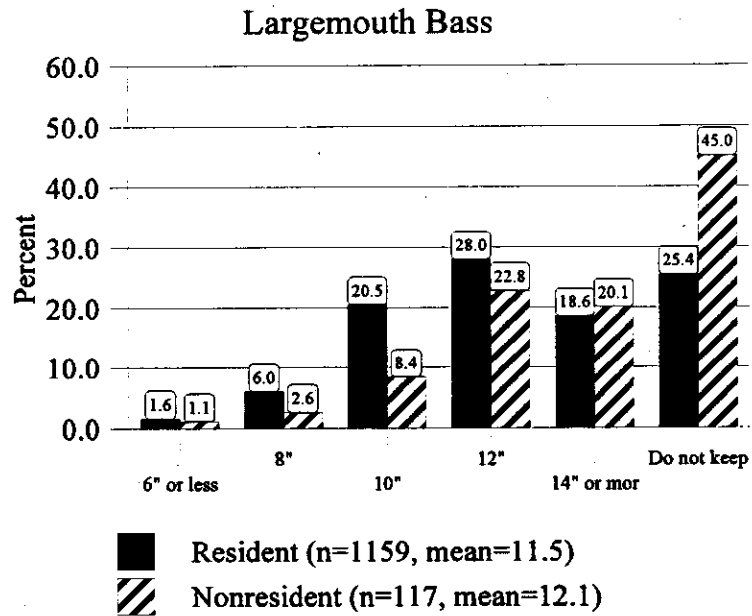


Figure 2-19. Smallest “keeper” size for largemouth bass. (The “do not keep” responses were excluded from the mean calculation.)

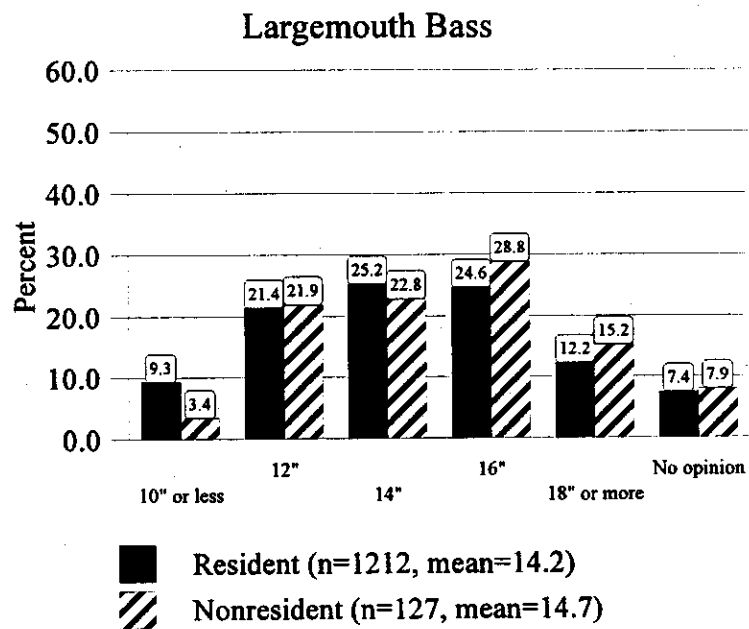


Figure 2-20. Smallest “quality” size for largemouth bass. (The “no opinion” responses were excluded from the mean calculation.)

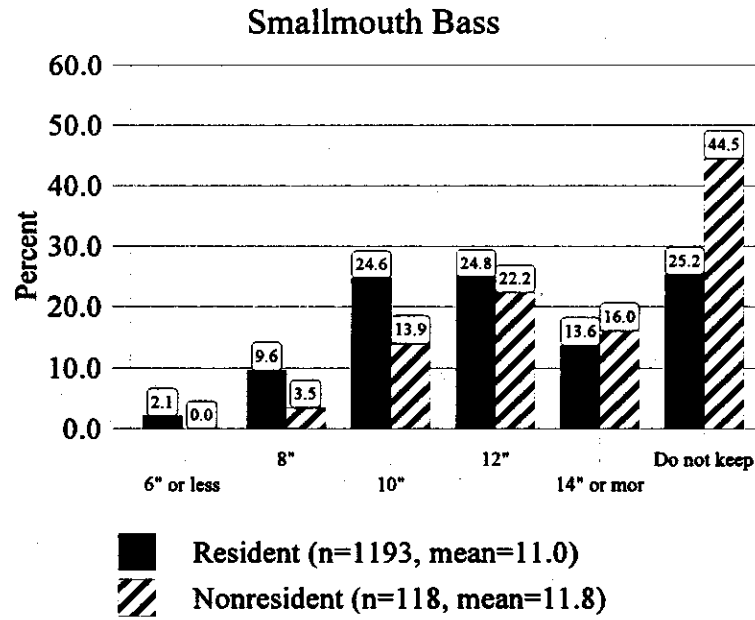


Figure 2-21. Smallest “keeper” size for smallmouth bass. (The “do not keep” responses were excluded from the mean calculation.)

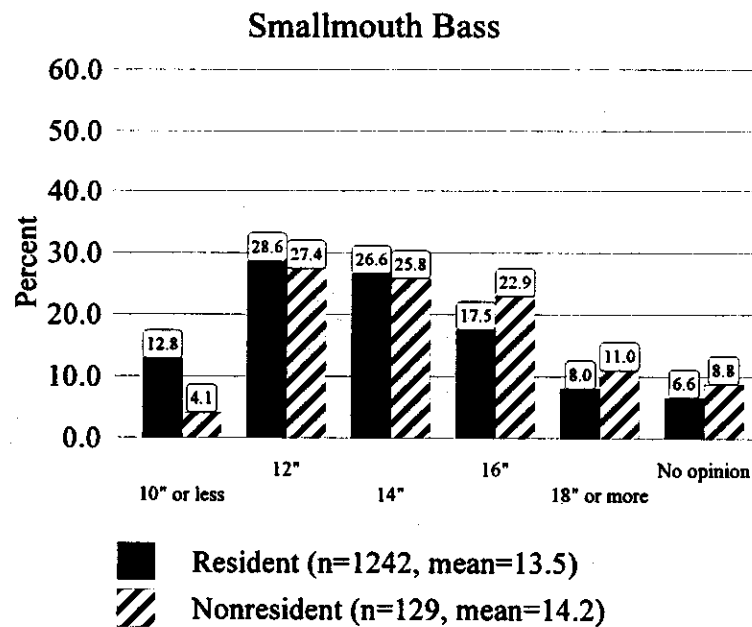


Figure 2-22. Smallest “quality” size smallmouth bass. (The “no opinion” responses were excluded from the mean calculation.)

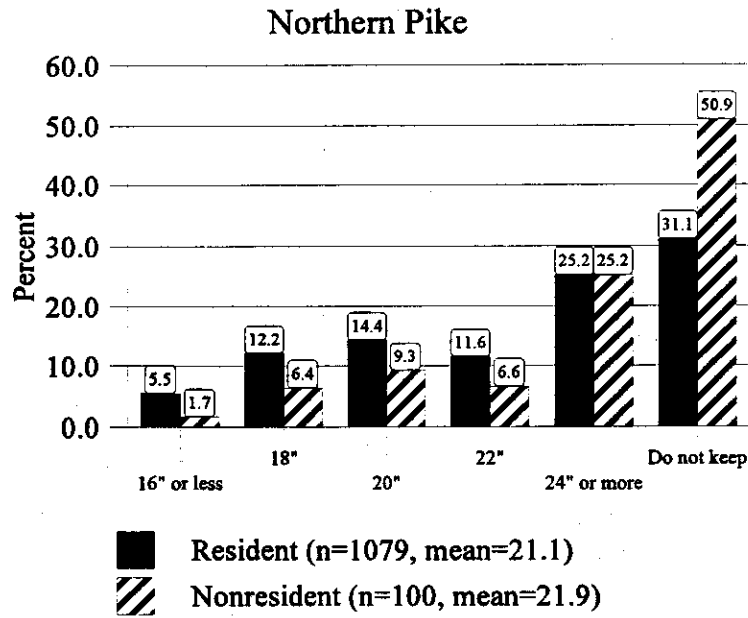


Figure 2-23. Smallest “keeper” size for northern pike. (The “do not keep” responses were excluded from the mean calculation.)

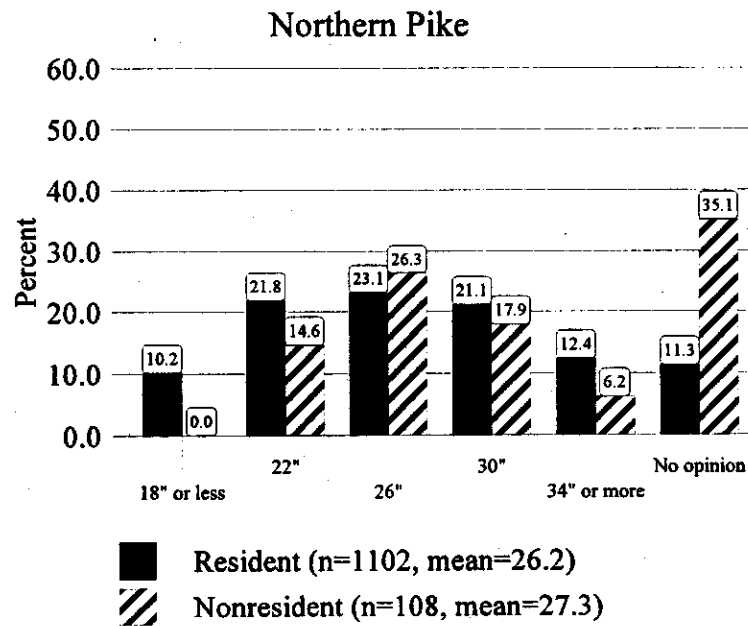


Figure 2-24. Smallest “quality” size for northern pike. (The “no opinion” responses were excluded from the mean calculation.)

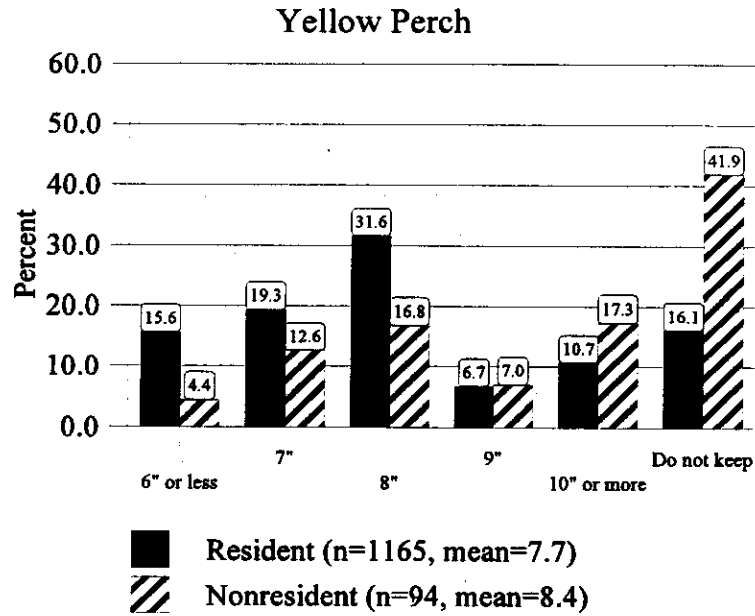


Figure 2-25. Smallest “keeper” size for yellow perch. (The “do not keep” responses were excluded from the mean calculation.)

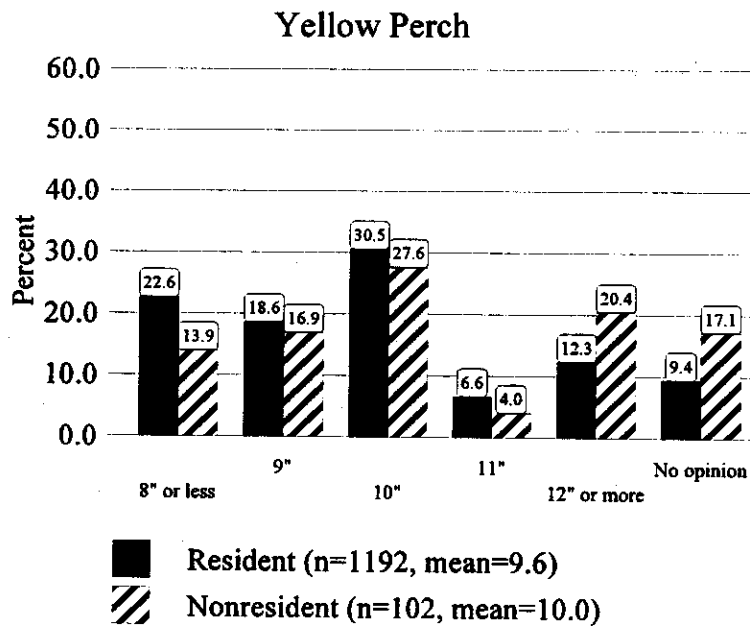


Figure 2-26. Smallest “quality” size for yellow perch. (The “no opinion” responses were excluded from the mean calculation.)

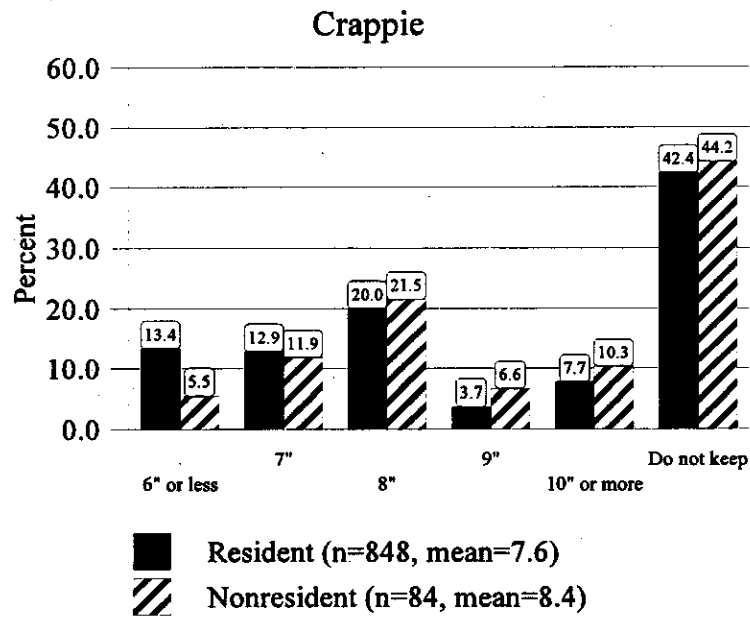


Figure 2-27. Smallest "keeper" size for crappie. (The "do not keep" responses were excluded from the mean calculation.)

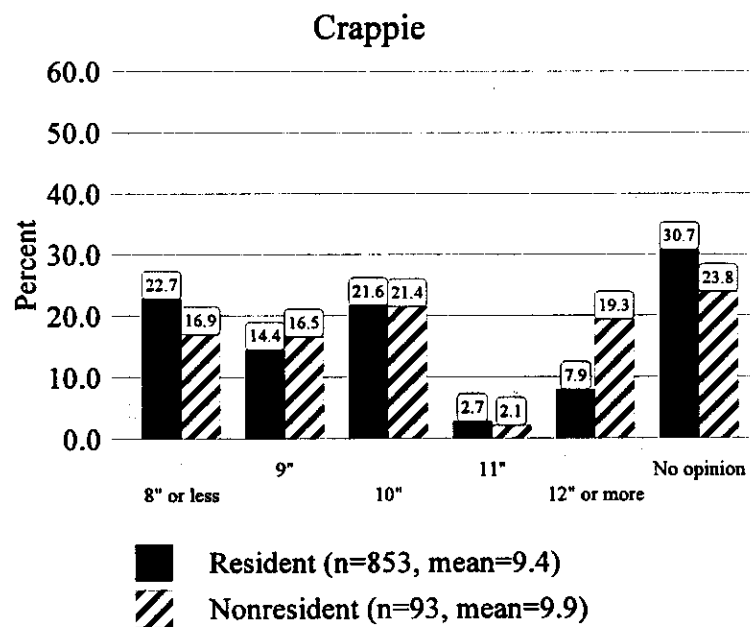


Figure 2-28. Smallest "quality" size for crappie. (The "no opinion" responses were excluded from the mean calculation.)

Creel Limits

Questionnaire Items:

The general daily creel limit for trout in [STREAMS or RIVERS, PONDS and LAKES] is listed below for each species and for a combined trout catch. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

For the majority of lakes in Vermont that offer lake trout fishing, the current daily limit for lake trout, landlocked salmon, brook trout, brown trout, lake trout, or rainbow trout is 2 fish of any one species or combination of species. Do you AGREE or DISAGREE with the current limits. (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

The current daily creel limit for several warmwater gamefish and panfish are listed below. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

Trout in Streams and Rivers

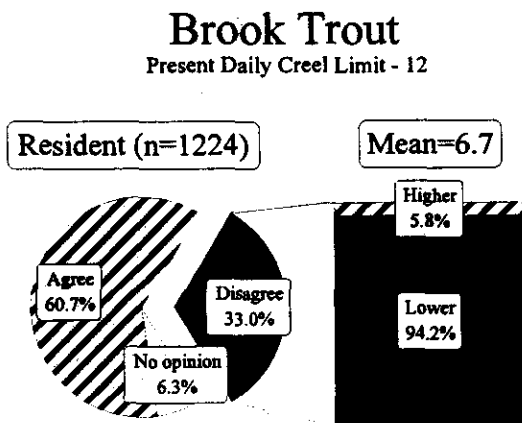


Figure 2-29. Resident opinions about creel limits for brook trout on streams and rivers.

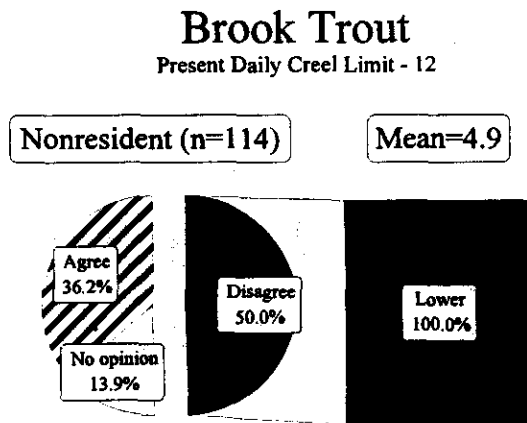


Figure 2-30. Nonresident opinions about creel limits for brook trout on streams and rivers.

Brown Trout

Present Daily Creel Limit - 6

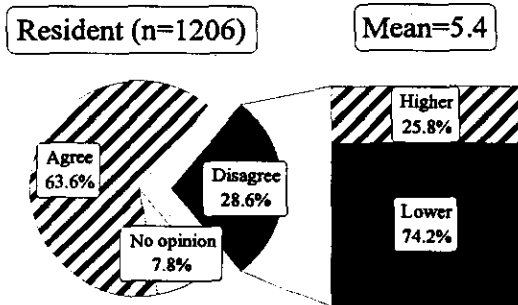


Figure 2-31. Resident agreement about creel limits and recommended limits for those who disagree - brown trout on streams and rivers.

Brown Trout

Present Daily Creel Limit - 6

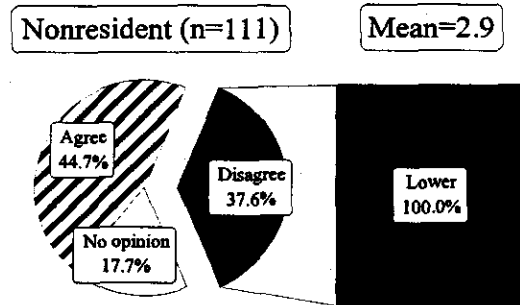


Figure 2-32. Nonresident agreement about creel limits and recommended limits for those who disagree - brown trout on streams and rivers.

Rainbow Trout

Present Daily Creel Limit - 6

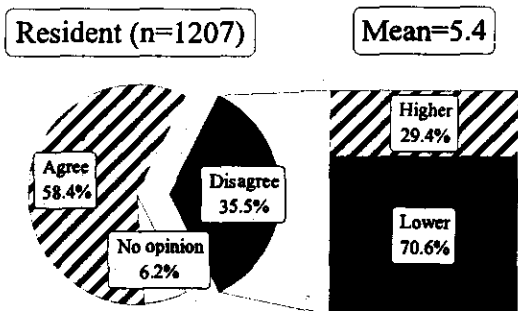


Figure 2-33. Resident agreement about creel limits and recommended limits for those who disagree - rainbow trout on streams and rivers.

Rainbow Trout

Present Daily Creel Limit - 6

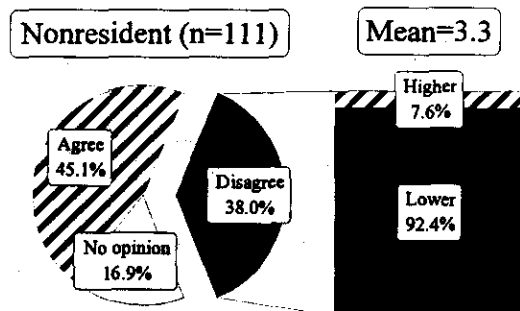


Figure 2-34. Nonresident agreement about creel limits and recommended limits for those who disagree - rainbow trout on streams and rivers.

Combined Limit

Present Daily Creel Limit - 12

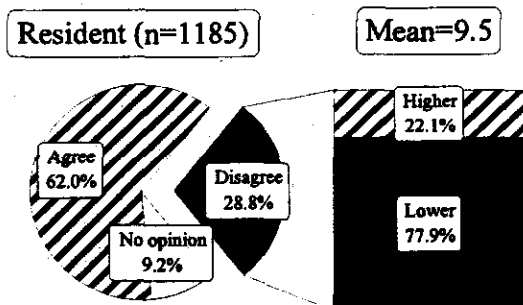


Figure 2-35. Resident agreement about creel limits and recommended limits for those who disagree - combined trout species on streams and rivers.

Combined Limit

Present Daily Creel Limit -12

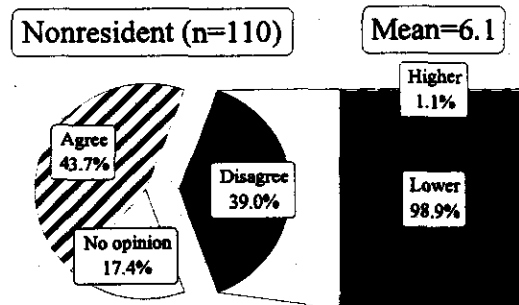


Figure 2-36. Nonresident agreement about creel limits and recommended limits for those who disagree - combined trout species on streams and rivers.

Trout on Ponds and Lakes

Brook Trout

Present Daily Creel Limit - 6

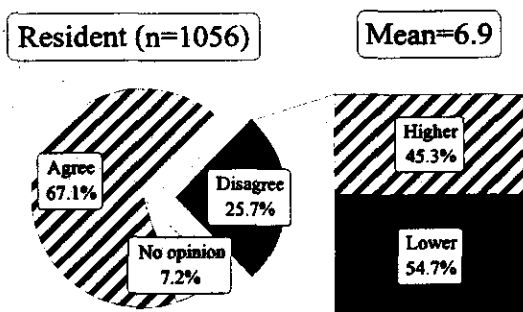


Figure 2-37. Resident agreement about creel limits and recommended limits for those who disagree - brook trout on ponds and lakes.

Brook Trout

Present Daily Creel Limit - 6

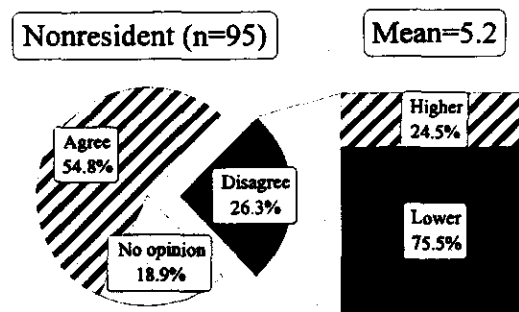


Figure 2-38. Nonresident agreement about creel limits and recommended limits for those who disagree - brook trout on ponds and lakes.

Brown Trout

Present Daily Creel Limit - 6

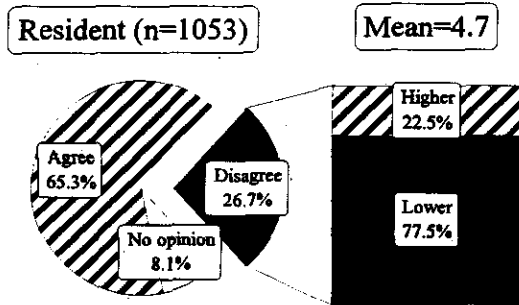


Figure 2-39. Resident agreement about creel limits and recommended limits for those who disagree - brown trout on ponds and lakes.

Brown Trout

Present Daily Creel Limit - 6

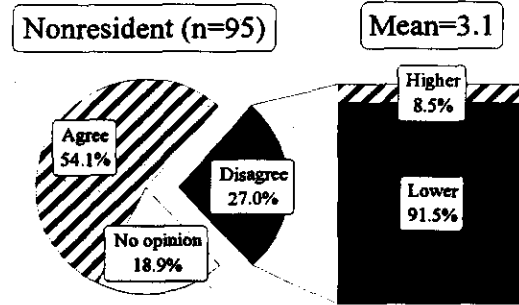


Figure 2-40. Nonresident agreement about creel limits and recommended limits for those who disagree - brown trout on ponds and lakes.

Rainbow Trout

Present Daily Creel Limit - 6

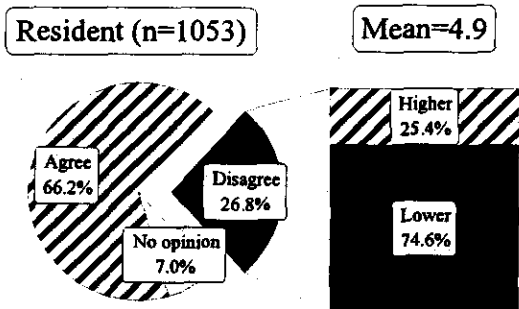


Figure 2-41. Resident agreement about creel limits and recommended limits for those who disagree - rainbow trout on ponds and lakes.

Rainbow Trout

Present Daily Creel Limit - 6

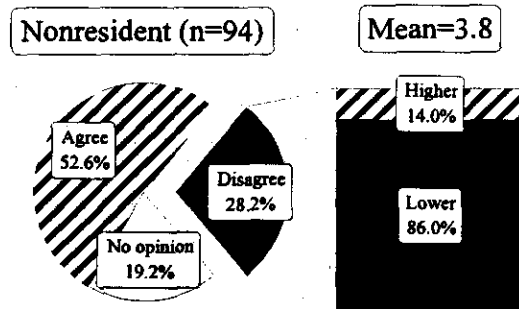


Figure 2-42. Nonresident agreement about creel limits and recommended limits for those who disagree - rainbow trout on ponds and lakes.

Combined Limit

Present Daily Creel Limit - 6

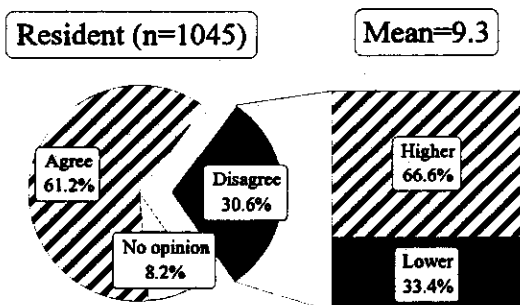


Figure 2-43. Resident agreement about creel limits and recommended limits for those who disagree - combined trout species on ponds and lakes.

Combined Limit

Present Daily Creel Limit - 6

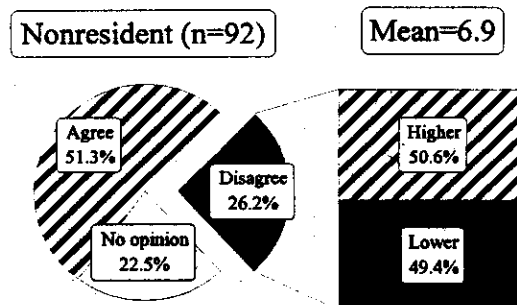


Figure 2-44. Nonresident agreement about creel limits and recommended limits for those who disagree - combined trout species on ponds and lakes.

Lakes with Lake Trout Fishing

Brook Trout

Present Daily Creel Limit - 2

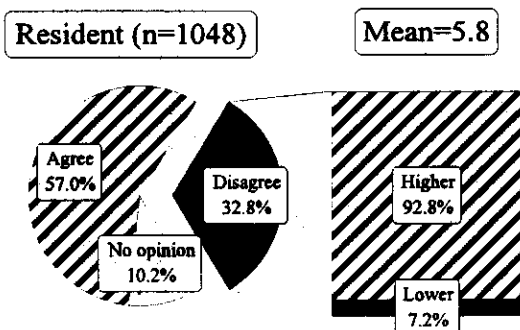


Figure 2-45. Resident agreement about creel limits and recommended limits for those who disagree - brook trout on lakes that offer lake trout fishing.

Brook Trout

Present Daily Creel Limit - 2

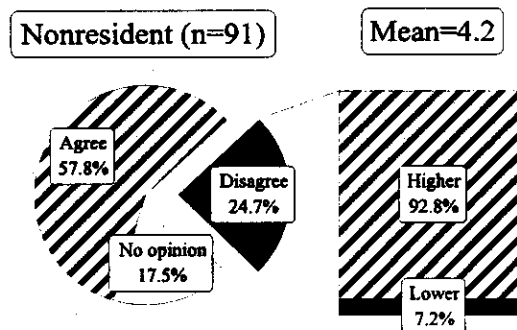


Figure 2-46. Nonresident agreement about creel limits and recommended limits for those who disagree - brook trout on lakes that offer lake trout fishing.

Brown Trout Present Daily Creel Limit - 2

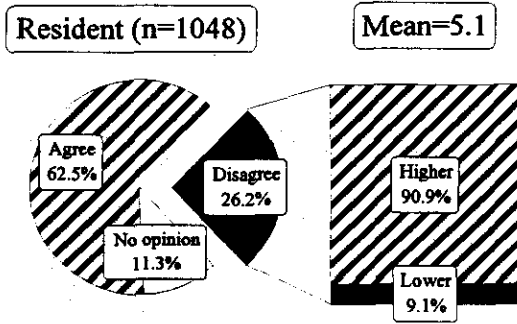


Figure 2-47. Resident agreement about creel limits and recommended limits for those who disagree - brown trout on lakes that offer lake trout fishing.

Brown Trout Present Daily Creel Limit - 2

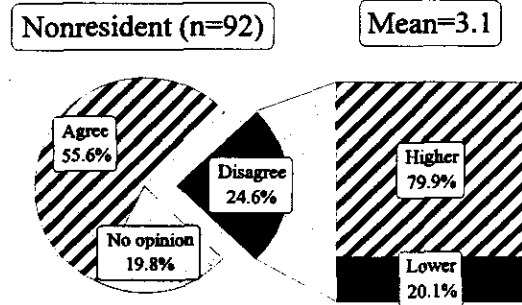


Figure 2-48. Nonresident agreement about creel limits and recommended limits for those who disagree - brown trout on lakes that offer lake trout fishing.

Rainbow Trout Present Daily Creel Limit - 2

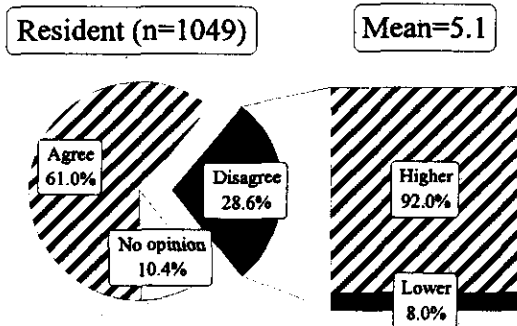


Figure 2-49. Resident agreement about creel limits and recommended limits for those who disagree - rainbow trout on lakes that offer lake trout fishing.

Rainbow Trout Present Daily Creel Limit - 2

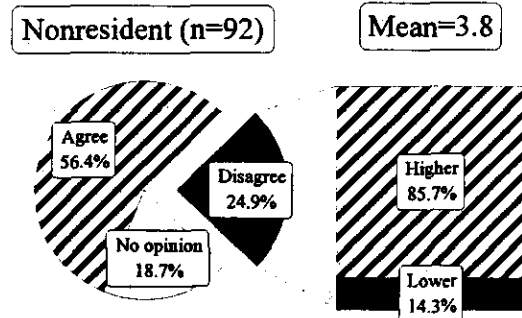


Figure 2-50. Nonresident agreement about creel limits and recommended limits for those who disagree - rainbow trout on lakes that offer lake trout fishing.

Combined Limit Present Daily Creel Limit - 2

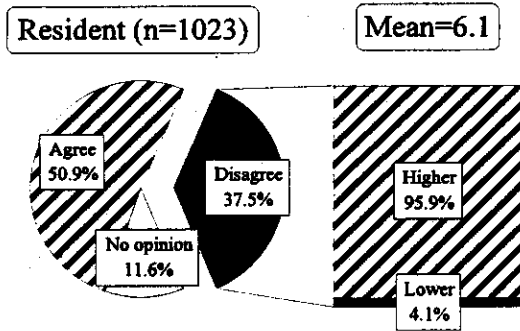


Figure 2-51. Resident agreement about creel limits and recommended limits for those who disagree - combined trout species on lakes that offer lake trout fishing.

Combined Limit Present Daily Creel Limit - 2

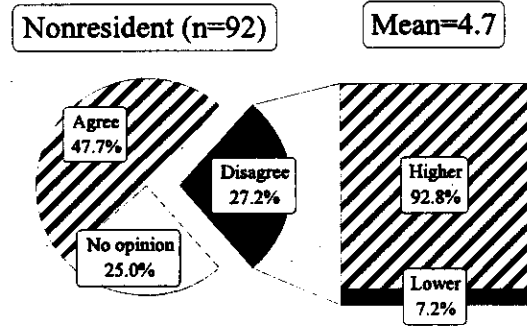


Figure 2-52. Nonresident agreement about creel limits and recommended limits for those who disagree - combined trout species on lakes that offer lake trout fishing.

Lake Trout Present Daily Creel Limit - 2

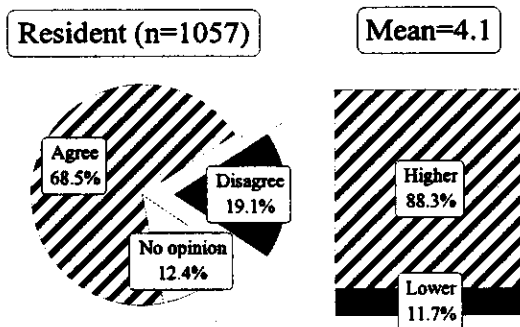


Figure 2-53. Resident agreement about creel limits and recommended limits for those who disagree - lake trout on lakes that offer lake trout fishing.

Lake Trout Present Daily Creel Limit - 2

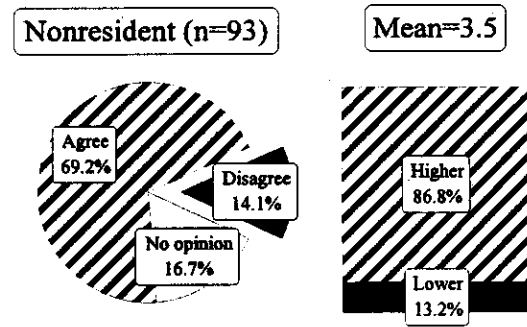


Figure 2-54. Nonresident agreement about creel limits and recommended limits for those who disagree - lake trout on lakes that offer lake trout fishing.

Landlocked Salmon

Present Daily Creel Limit - 2

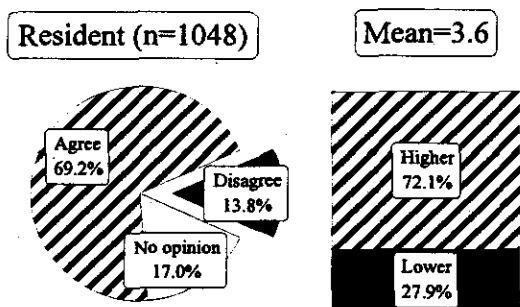


Figure 2-55. Resident agreement about creel limits and recommended limits for those who disagree - landlocked salmon on lakes that offer lake trout fishing.

Landlocked Salmon

Present Daily Creel Limit - 2

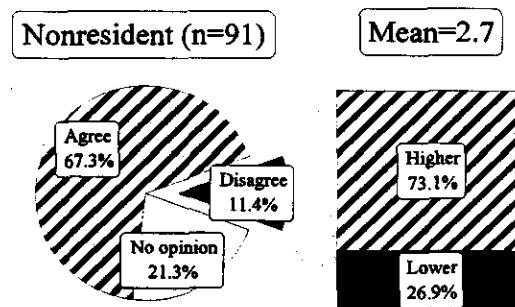


Figure 2-56. Nonresident agreement about creel limits and recommended limits for those who disagree - landlocked salmon on lakes that offer lake trout fishing.

Warm Water Game Fish

Walleye

Present Daily Creel Limit - 5

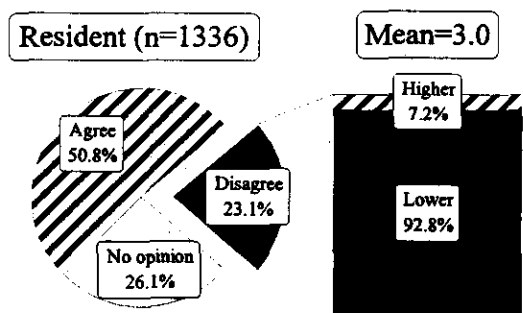


Figure 2-57. Resident agreement about creel limits and recommended limits for those who disagree - walleye.

Walleye

Present Daily Creel Limit - 5

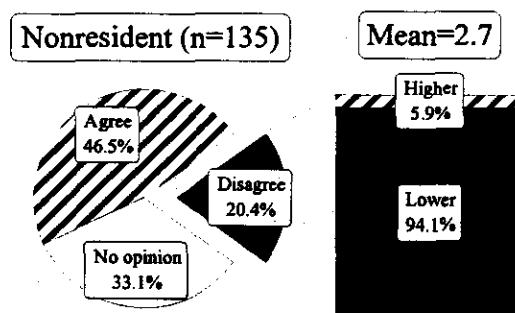


Figure 2-58. Nonresident agreement about creel limits and recommended limits for those who disagree - walleye.

Largemouth/Smallmouth Bass

Present Daily Creel Limit - 5

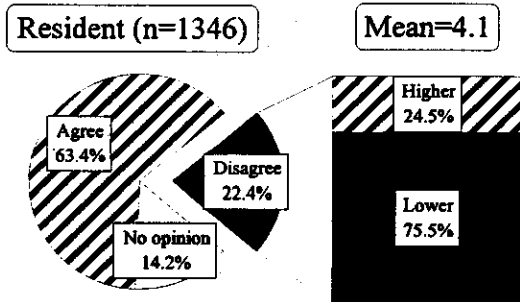


Figure 2-59. Resident agreement about creel limits and recommended limits for those who disagree - largemouth and smallmouth bass.

Largemouth/Smallmouth Bass

Present Daily Creel Limit - 5

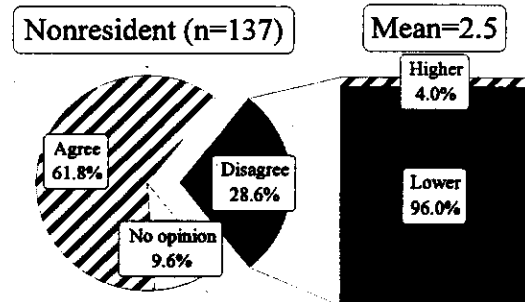


Figure 2-60. Nonresident agreement about creel limits and recommended limits for those who disagree - largemouth and smallmouth bass.

Northern Pike

Present Daily Creel Limit - 5

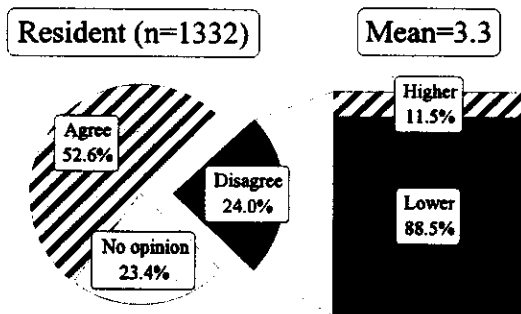


Figure 2-61. Resident agreement about creel limits and recommended limits for those who disagree - northern pike.

Northern Pike

Present Daily Creel Limit - 5

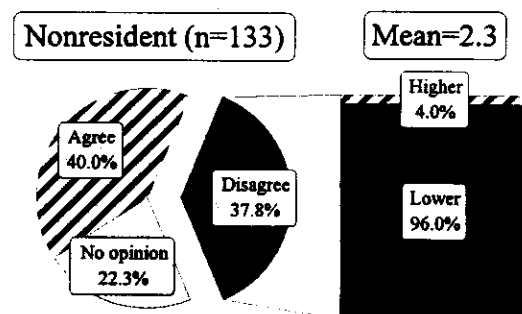


Figure 2-62. Nonresident agreement about creel limits and recommended limits for those who disagree - northern pike.

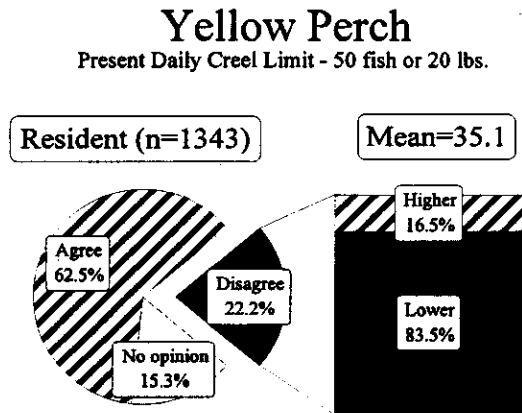


Figure 2-63. Resident agreement about creel limits and recommended limits for those who disagree - yellow perch.

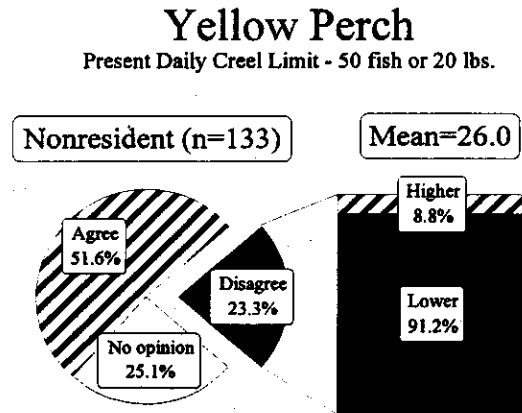


Figure 2-64. Nonresident agreement about creel limits and recommended limits for those who disagree - yellow perch.

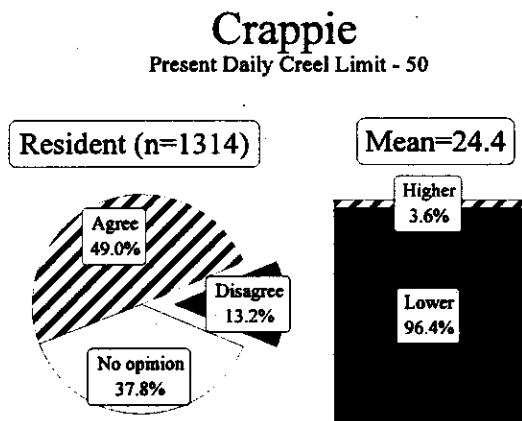


Figure 2-65. Resident agreement about creel limits and recommended limits for those who disagree - crappie.

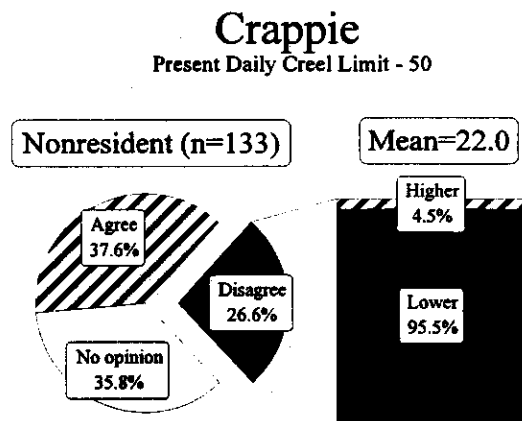


Figure 2-66. Nonresident agreement about creel limits and recommended limits for those who disagree - crappie.

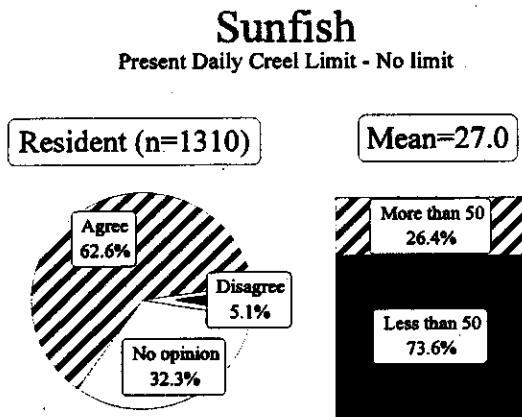


Figure 2-67. Resident agreement about creel limits and recommended limits for those who disagree - sunfish.

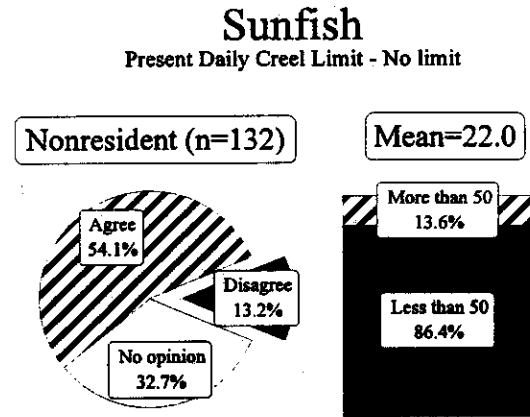


Figure 2-68. Nonresident agreement about creel limits and recommended limits for those who disagree - sunfish.

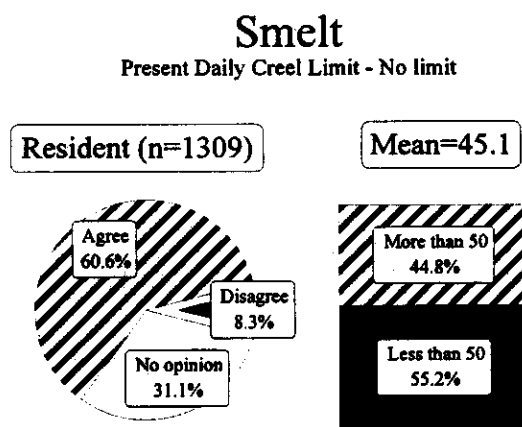


Figure 2-69. Resident agreement about creel limits and recommended limits for those who disagree - smelt.

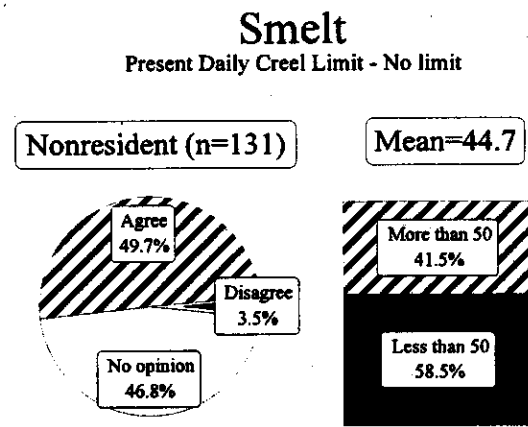


Figure 2-70. Nonresident agreement about creel limits and recommended limits for those who disagree - smelt.

Bullhead

Present Daily Creel Limit - No limit

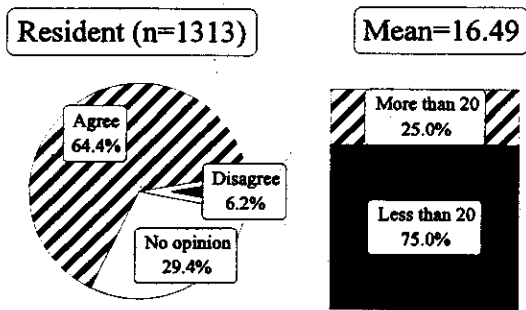


Figure 2-71. Resident agreement about creel limits and recommended limits for those who disagree - bullhead.

Bullhead

Present Daily Creel Limit - No limit

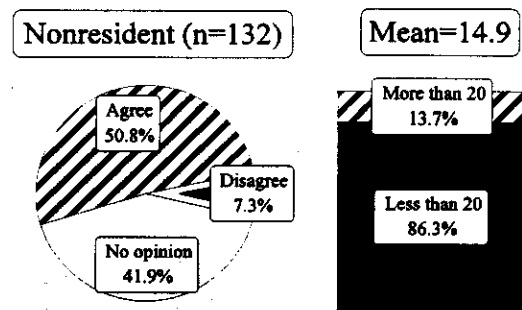


Figure 2-72. Nonresident agreement about creel limits and recommended limits for those who disagree - bullhead.

White Perch

Present Daily Creel Limit - No limit

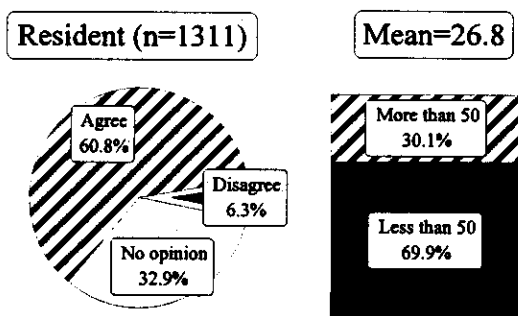


Figure 2-73. Resident agreement about creel limits and recommended limits for those who disagree - white perch.

White Perch

Present Daily Creel Limit - No limit

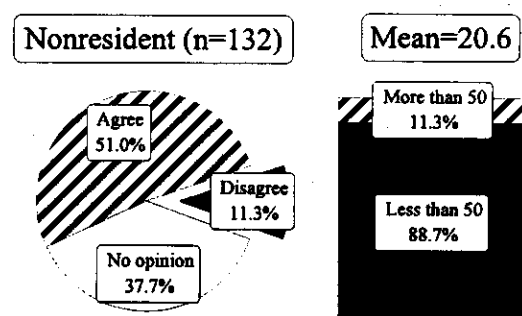


Figure 2-74. Nonresident agreement about creel limits and recommended limits for those who disagree - white perch.

Special Fishing Regulations

Questionnaire Item:

Special regulations can be used in certain waters to increase the number and/or size of fish available. (Please fill in ALL the special regulations that you might support [for trout fishing in some STREAMS and RIVERS; in some PONDS and LAKES for the types of fishing listed below; on some waters for the types of fishing listed below]).

Brook, Brown and Rainbow Trout Streams and Rivers

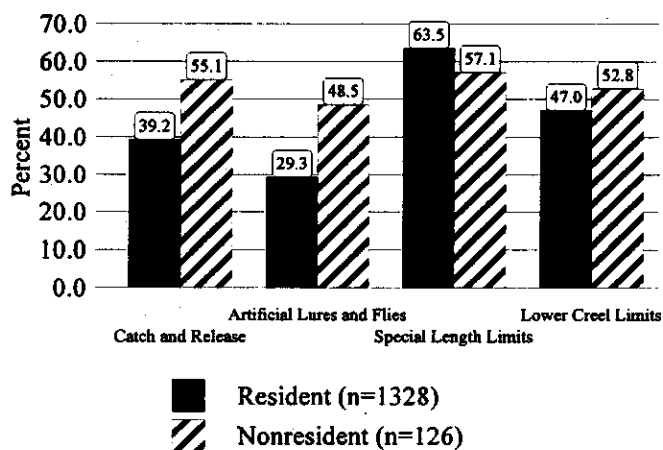


Figure 2-75. Support for special trout regulations on some streams and rivers.

Brook, Brown and Rainbow Trout Streams and Rivers

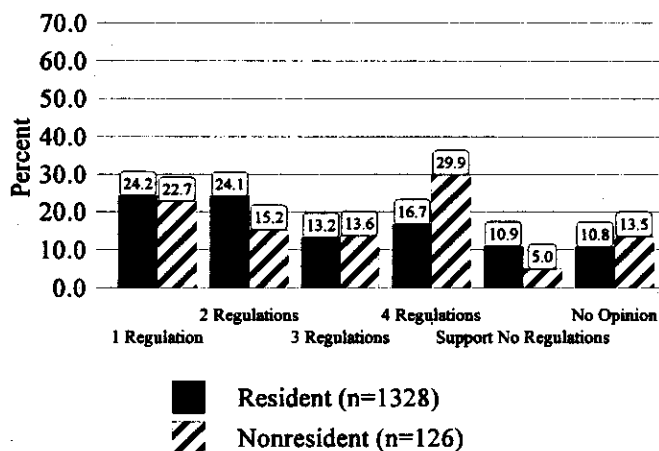


Figure 2-76. Degree of support for special trout regulations on streams and rivers. (Summed total of regulations supported by each respondent.)

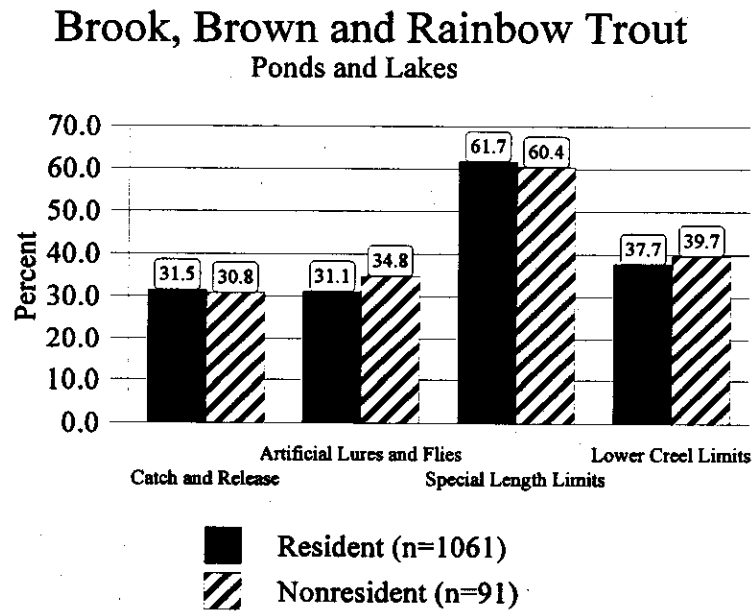


Figure 2-77. Support for special trout regulations on some ponds and lakes.

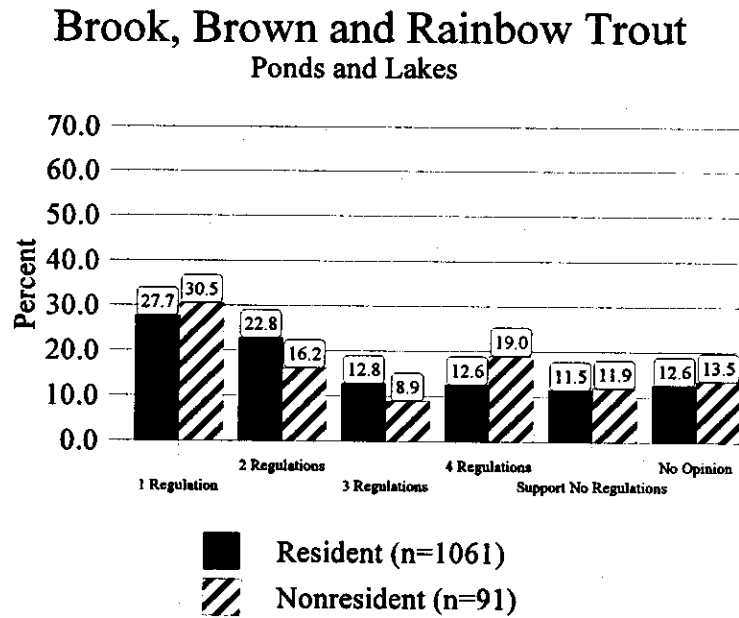


Figure 2-78. Degree of support for special trout regulations on ponds and lakes. (Summed total of regulations supported by each respondent.)

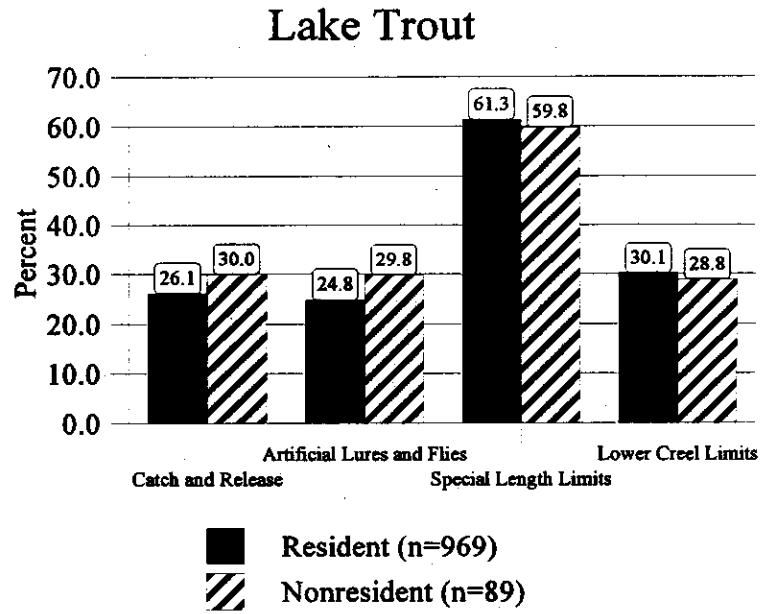


Figure 2-79. Support for special lake trout regulations.

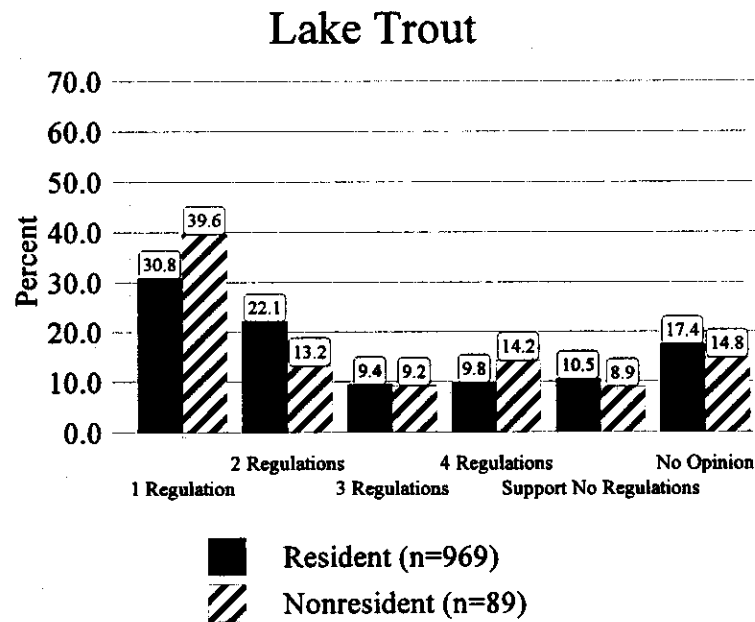


Figure 2-80. Degree of support for special lake trout regulations. (Summed total of regulations supported by each respondent.)

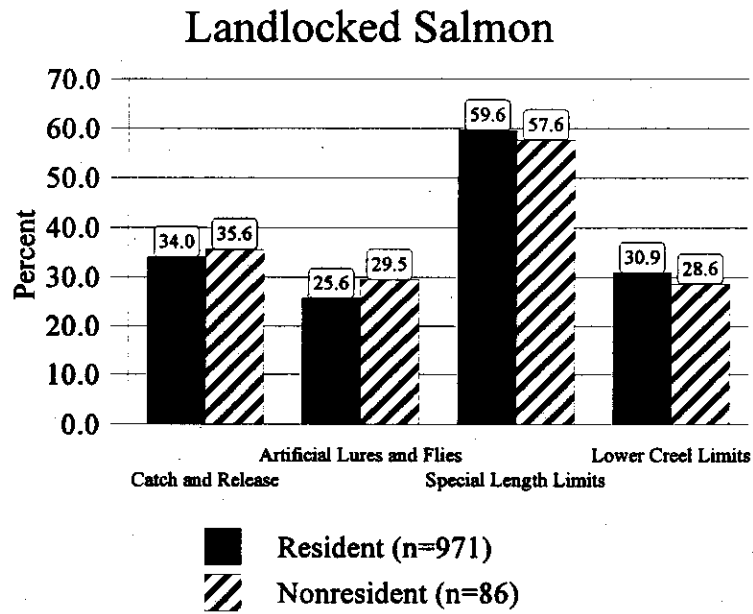


Figure 2-81. Support for special landlocked salmon regulations.

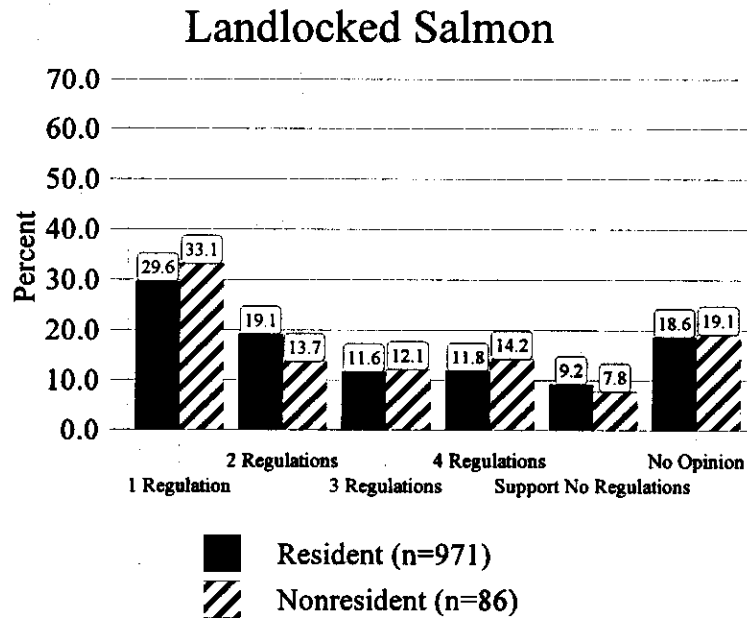


Figure 2-82. Degree of support for special landlocked salmon regulations. (Summed total of regulations supported by each respondent.)

Warm Water Game Fish

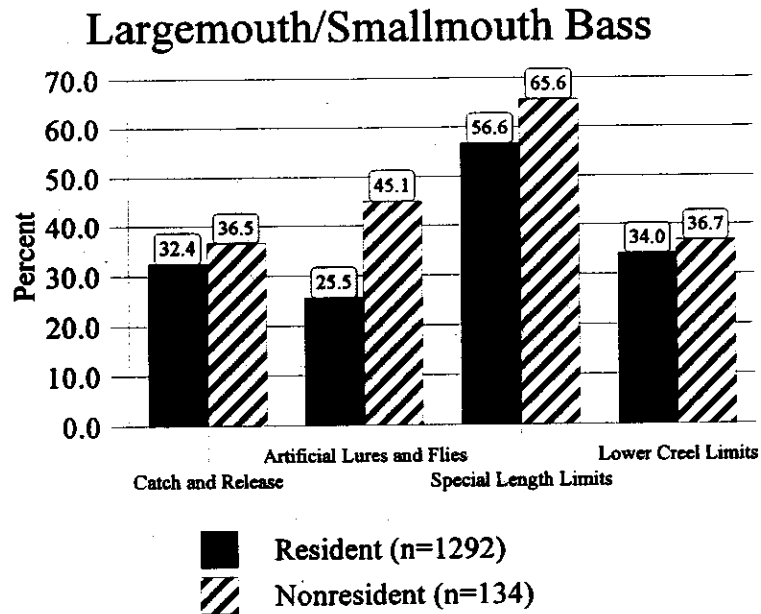


Figure 2-83. Support for special largemouth or smallmouth bass regulations.

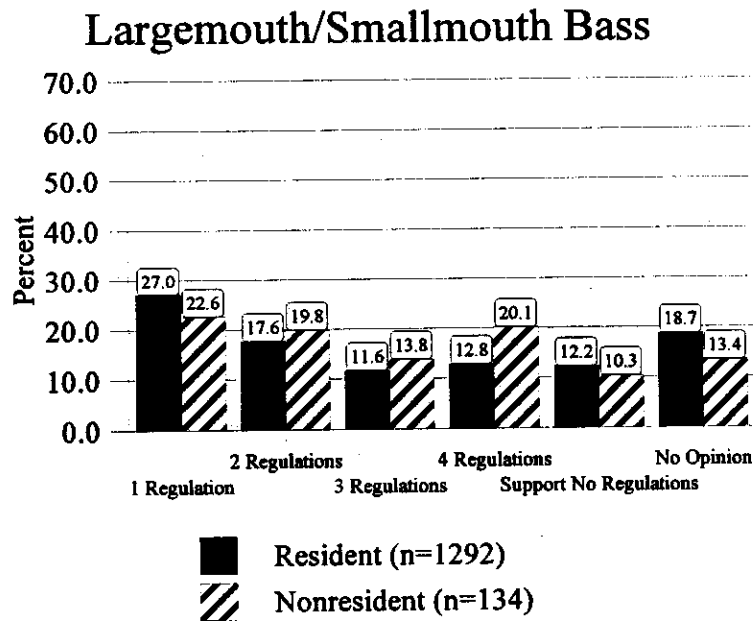


Figure 2-84. Degree of support for special largemouth or smallmouth bass regulations. (Summed total of regulations supported by each respondent.)

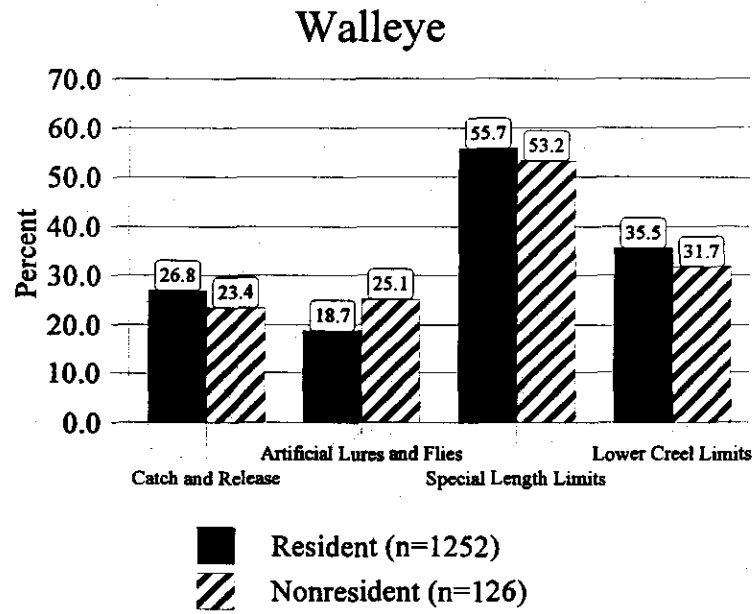


Figure 2-85. Support for special walleye regulations.

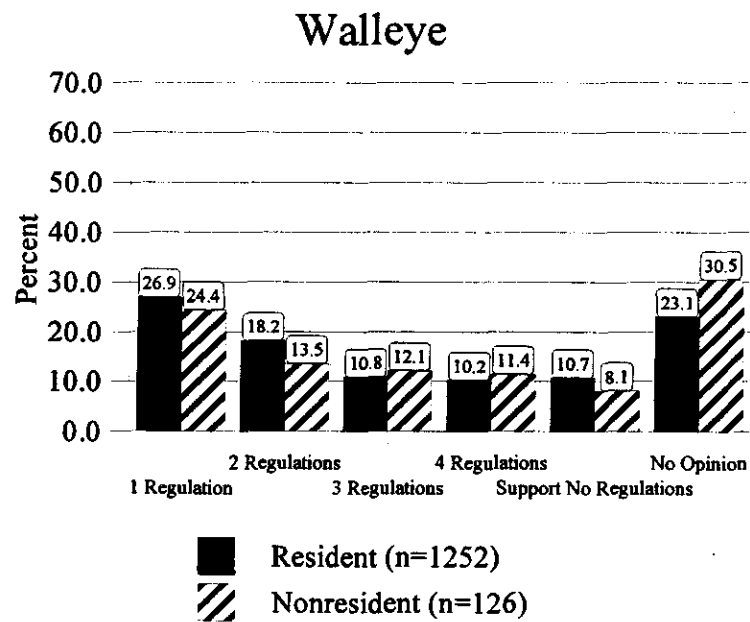


Figure 2-86. Degree of support for special walleye regulations. (Summed total of regulations supported by each respondent.)

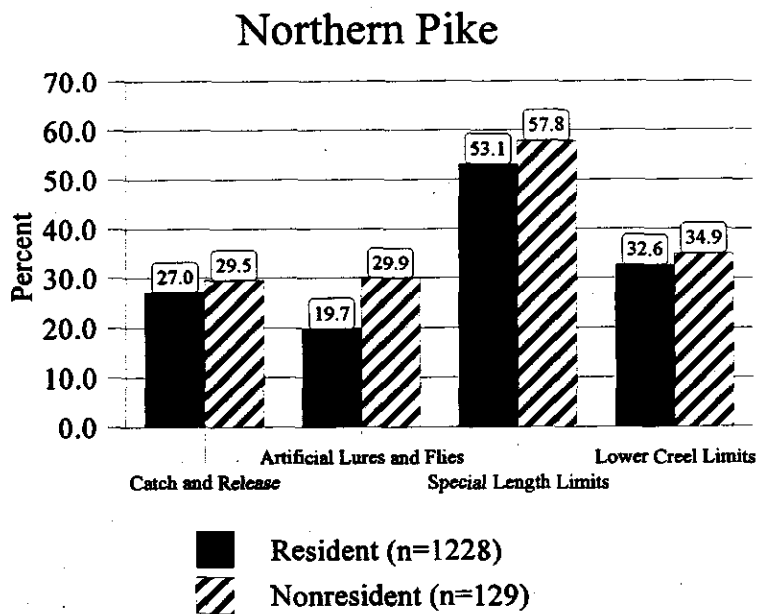


Figure 2-87. Support for special northern pike regulations.

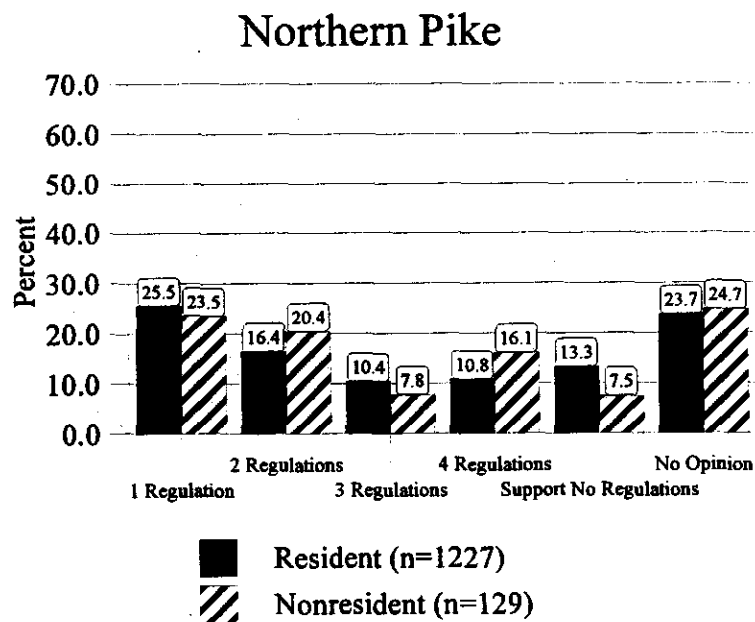


Figure 2-88. Degree of support for special northern pike regulations. (Summed total of regulations supported by each respondent.)

Hatchery Trout

Questionnaire Item:
 We would like to find out your opinion on the use of HATCHERY TROUT in managing Vermont's fisheries.

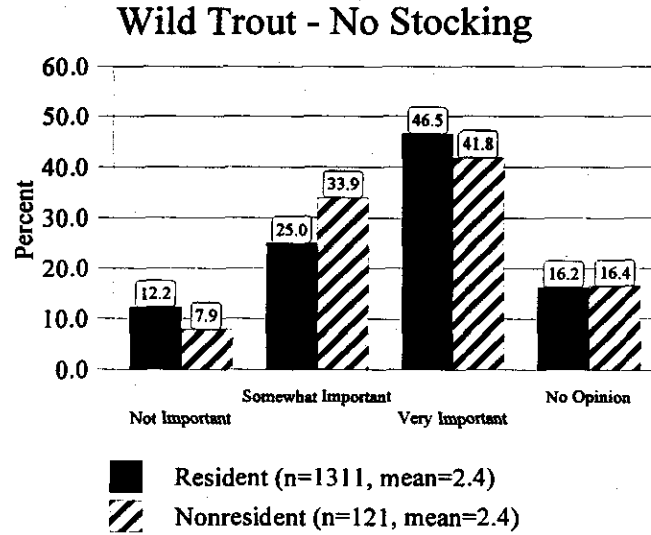


Figure 2-89. Opinions about the importance of managing for wild trout on some streams and rivers. (1=not important, 2=somewhat important, 3=very important. The "no opinion" responses were excluded from the mean calculation.)

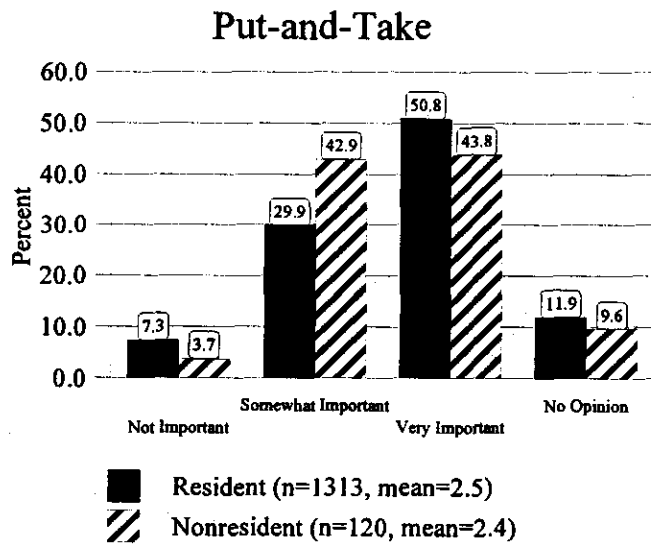


Figure 2-90. Opinions about the importance of managing put-and-take streams and rivers. (1=not important, 2=somewhat important, 3=very important. The "no opinion" responses were excluded from the mean calculation.)

Allowable Number of Fishing Lines

Questionnaire Item:
 General regulations allow the use of 2 lines when fishing during the OPEN-WATER season and 8 lines during the ICE-FISHING season. Do you agree with the number of lines allowed in each season? (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommended number of lines.)

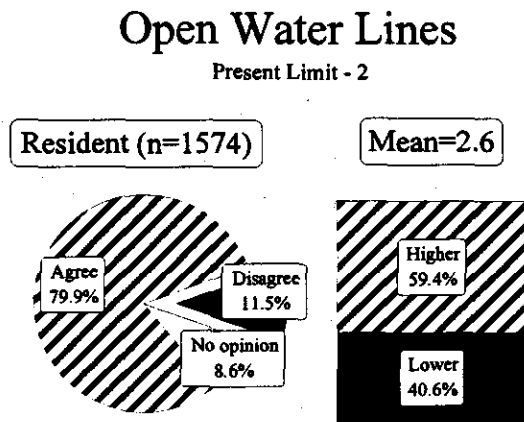


Figure 2-91. Resident agreement about the number of lines allowed and recommended limits for those who disagree - open water fishing.

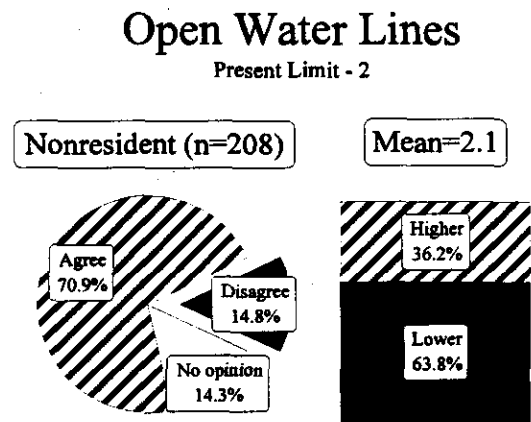


Figure 2-92. Nonresident agreement about the number of lines allowed and recommended limits for those who disagree - open water fishing.

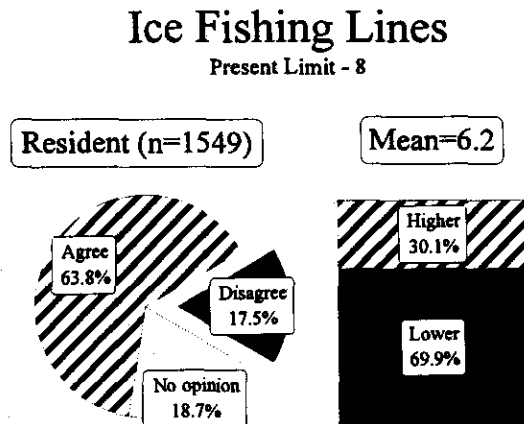


Figure 2-93. Resident agreement about the number of lines allowed and recommended limits for those who disagree - ice fishing.

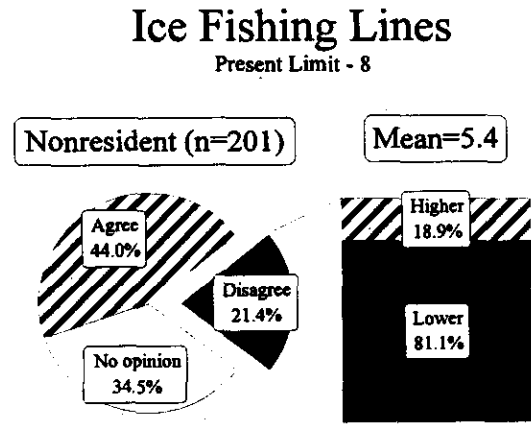


Figure 2-94. Nonresident agreement about the number of lines allowed and recommended limits for those who disagree - ice fishing.

Part 3



Bait and Tackle Use

Most Frequently Used Fishing Tackle

Questionnaire Items:

What tackle do you most often use to fish for:

- brook, brown, and rainbow trout in STREAMS and RIVERS
- trout or salmon during the OPEN-WATER season in PONDS and LAKES
- the following fish species (Walleye, Bass, Northern Pike)

in Vermont?

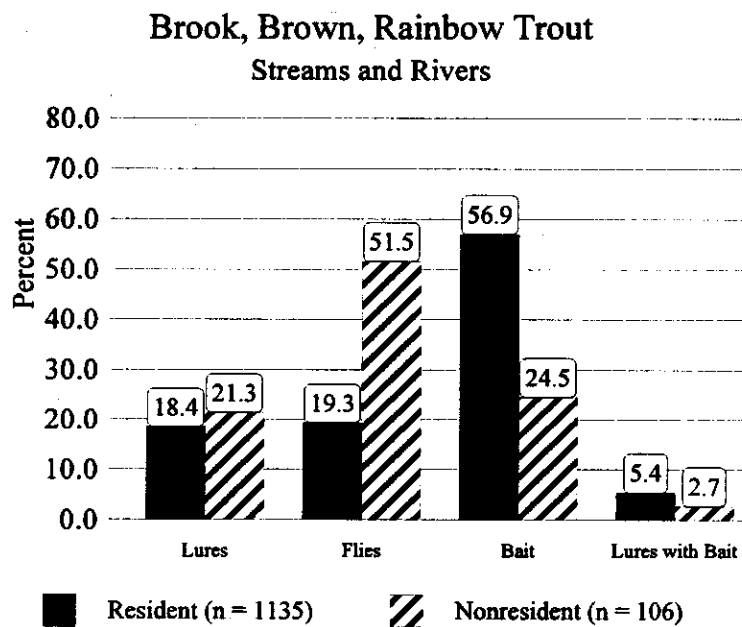


Figure 3-1. Tackle most often used for trout on streams or rivers.

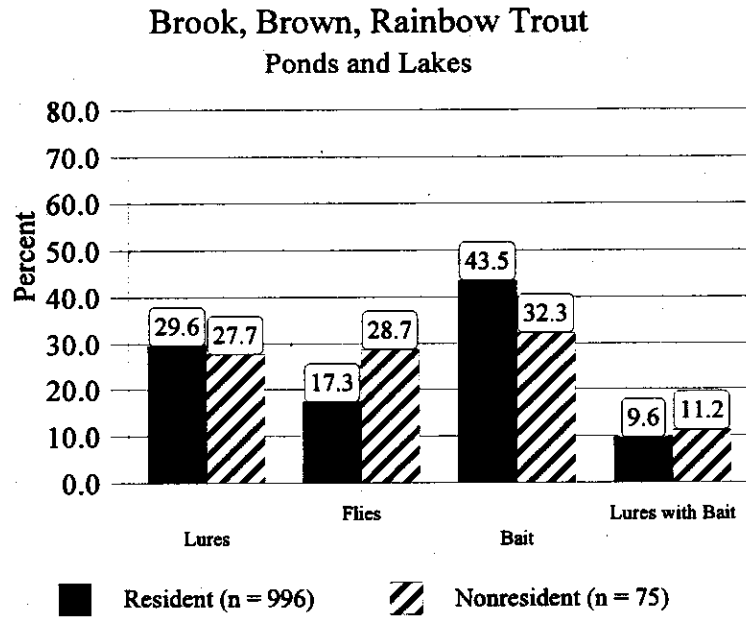


Figure 3-2. Tackle used most often for brook, brown, or rainbow trout in open water on ponds and lakes.

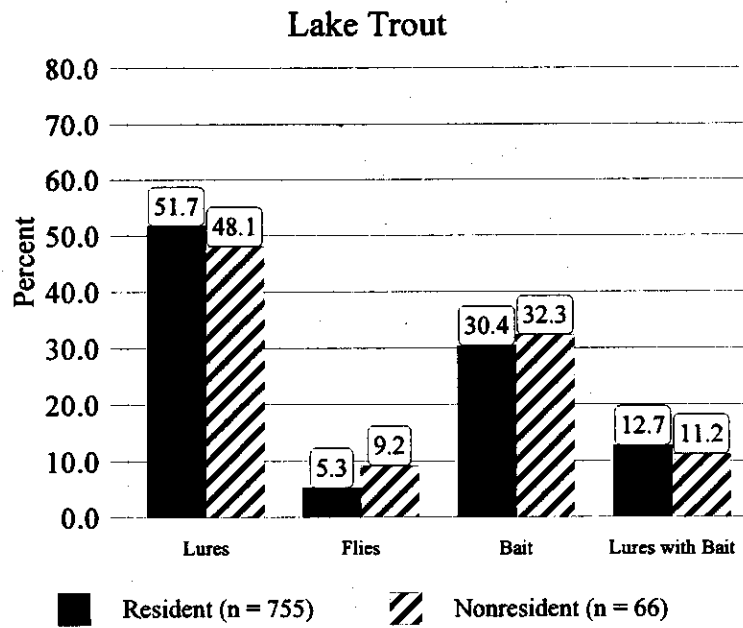


Figure 3-3. Tackle most often used when fishing on open water for lake trout.

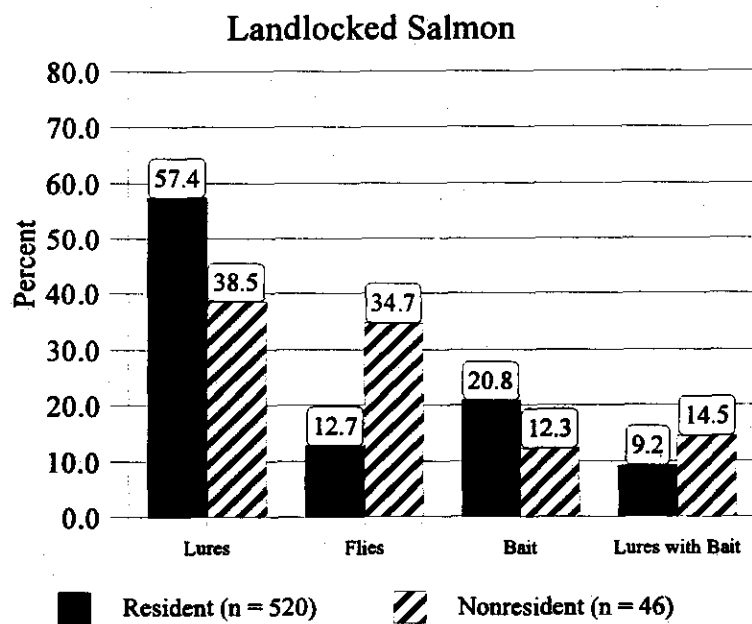


Figure 3-4. Tackle most often used when fishing on open water for landlocked salmon.

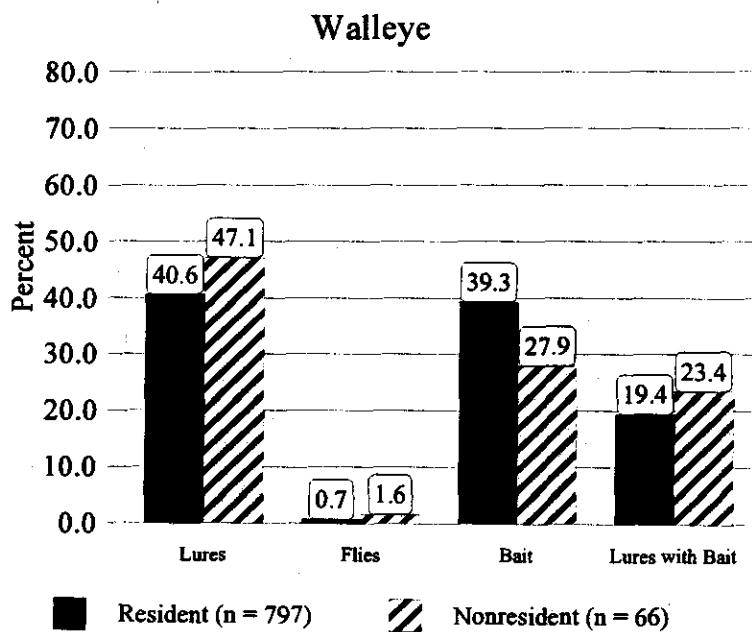


Figure 3-5. Tackle most often used when fishing for walleye.

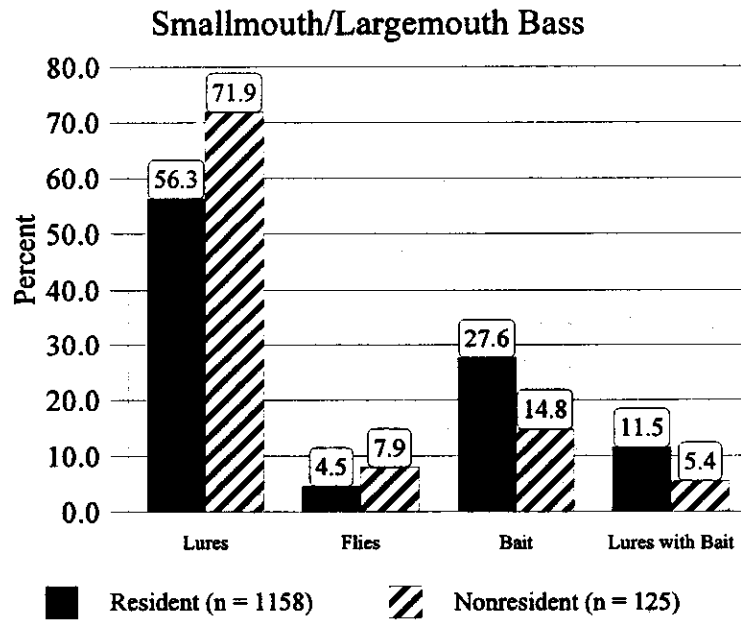


Figure 3-6. Tackle most often used when fishing for largemouth or smallmouth bass.

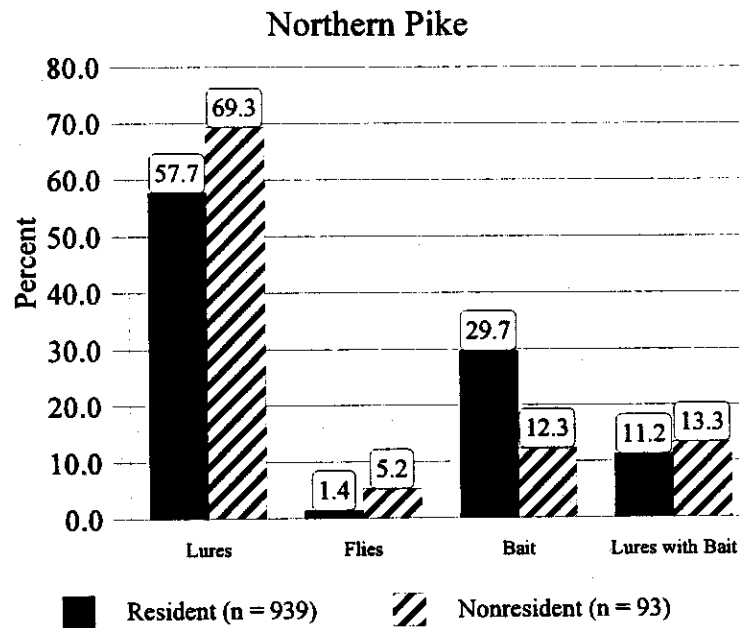


Figure 3-7. Tackle most often used when fishing for northern pike.

Live Bait Used on Open Water

Questionnaire Item:
Do you fish with the following types of live bait in OPEN-WATER?

Table 3-1. Frequency of live bait use on open water by resident and nonresident respondents.

	Resident (n=1,321)				Nonresident (n=112)			
	Never	Sometimes	Often	Always	Never	Sometimes	Often	Always
Fish	30.4	45.5	20.0	4.1	35.8	39.9	18.7	5.6
Crayfish	68.4	27.4	3.7	0.5	76.9	18.4	4.2	0.5
Frogs/ Salamanders	82.6	16.0	1.2	0.2	92.8	7.2	0.0	0.0
Leeches	95.0	4.2	0.6	0.0	91.4	7.3	0.0	1.3
Worms	2.6	18.1	46.1	33.2	15.1	24.0	38.6	22.4
Insects	67.1	25.7	5.6	1.6	81.9	14.9	2.0	1.3

Live Bait Used for Ice Fishing

Questionnaire Item:
Do you fish with the following types of live bait in ICE FISHING?

Table 3-2. Frequency of live bait use for ice fishing by resident and nonresident respondents.

	Resident (n=863)				Nonresident (n=46)			
	Never	Sometimes	Often	Always	Never	Sometimes	Often	Always
Fish	15.9	13.9	25.0	45.2	20.5	7.5	25.0	55.9
Crayfish	95.8	3.3	0.0	0.0	94.9	5.1	0.0	0.0
Frogs/ Salamanders	98.3	1.0	0.6	0.1	100.0	0.0	0.0	0.0
Leeches	97.7	1.5	0.7	0.1	96.3	3.7	0.0	0.0
Worms	69.3	19.1	7.5	4.2	66.2	21.2	10.7	1.9
Insects	81.5	11.4	5.0	2.1	71.5	14.1	7.2	7.2

Table 3-3. Other live bait that people used for both open water fishing and ice fishing.

<u>Most frequently mentioned:</u>	<u>Others mentioned:</u>	
Perch Eyes	Cheese	Meal Worms
Maggots	Corn	Wheatie Balls
Helgramites	Shrimp	Sunfish Bellies
	Clams	Frozen Peas
	Suckers	Spawn Sacks
	Liver	Power Bait

Sources of Live Bait

Questionnaire Items:
Where do you usually get the following types of bait?

Table 3-4. Proportion of Vermont anglers who use live bait, where they get their bait, and the Vermont bait shop market.

	Resident (n=1,586)				Nonresident (n=213)			
	% ¹ Use	% Catch ¹ them	% Buy ¹ them	Total ² bait shop customers	% ¹ Use	Catch ¹ them	Buy ¹ them	Total ² bait shop customers
Fish	59.4	12.3	47.1	35,833	35.1	5.8	29.3	11,922
Crayfish	23.6	17.4	6.2	4,717	12.5	5.0	7.5	3,052
Frogs/ Salamanders	14.1	12.7	1.4	1,065	3.4	2.4	1.0	407
Leeches	4.6	1.8	2.8	2,130	3.5	0.8	2.7	1,099
Worms	71.8	33.3	38.5	29,290	39.8	11.9	28.0	11,393
Insects	25.4	17.4	8.0	6,086	12.4	2.2	10.1	4,109

1 - Percent of all anglers.

2 - These are estimates based on 76,079 residents who purchased one or more types of licenses in 1999, and 40,688 nonresidents who purchased one or more types of licenses in 1999.

Methods of Bait Disposal

Questionnaire Items:
How often do you do the following with your live bait?

Table 3-5. Methods of bait disposal among Vermont anglers.

	Resident (n=1,265)				Nonresident (n=100)			
	Never	Sometimes	Often	Always	Never	Sometimes	Often	Always
Reuse minnows in different water	68.2	24.1	4.8	3.0	66.6	23.4	7.6	2.4
Take bait home to use again	24.3	39.8	22.1	13.8	35.1	34.9	18.5	11.5
Give bait away	25.7	60.7	12.1	1.6	18.6	66.1	15.2	0.0
Release bait into lake or stream	81.5	11.4	5.0	2.1	53.1	35.5	9.5	1.8
Discard bait on land or trash	52.3	31.7	8.9	7.0	54.8	28.7	7.6	8.8

Table 3-6. Estimates of total bait disposal among Vermont anglers.

	Resident (n=1,265)				Nonresident (n=100)			
	% sometimes or more	Total ¹	% often or always	Total ¹	% sometimes or more	Total ¹	% often or always	Total ¹
Reuse minnows in different water	31.8	20,031	7.8	4,913	33.4	6,455	10.0	1,932
Take bait home to use again	75.7	47,685	35.9	22,614	64.9	12,543	30.0	5,798
Give bait away	74.3	46,803	13.7	8,630	81.4	15,732	15.2	2,937
Release bait into lake or stream	18.5	11,653	7.1	4,472	44.9	8,677	11.3	2,184
Discard bait on land or trash	47.7	30,047	15.9	10,015	45.2	8,735	16.4	3,169

¹ - These are estimates based on 62,993 residents who purchased one or more types of licenses in 1999 and used live bait (82.8% of total resident license holders), and 19,327 nonresidents who purchased one or more types of licenses in 1999 and used live bait (47.5% of total nonresident license holders).

Use of Lead Free Sinkers and Jigs

Questionnaire Items:
 How frequently do you use lead-free sinkers and jigs when you fish?
 If you **never** use lead-free sinkers and jigs, why not?

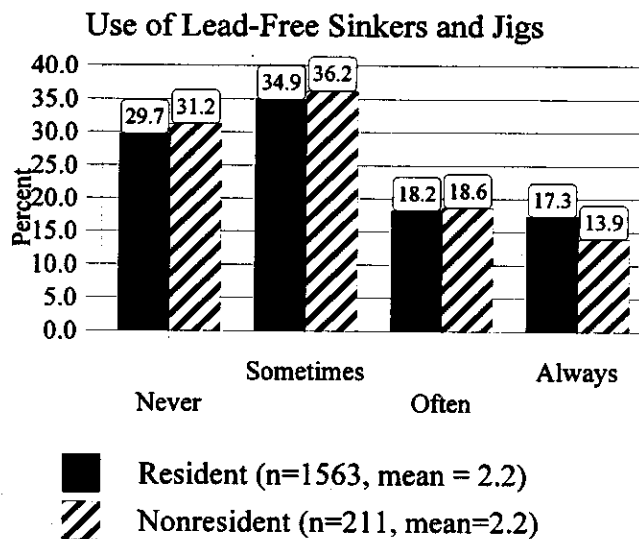


Figure 3-8. How frequently do you use lead-free sinkers and jigs when you fish?

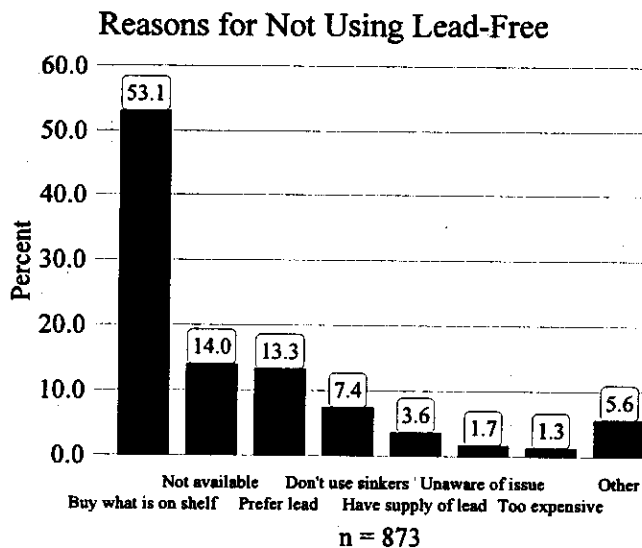


Figure 3-9. If you don't use lead free sinkers or jigs, why not?

Part 4



Lake Champlain Fishing

Lake Champlain Length Limits

Questionnaire Item:

The current minimum length limits for several fish species in Lake Champlain are listed below. (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommendation.)

Brown, Rainbow Trout

Present Minimum Length - 12"

Resident (n=811)

Mean=14.5

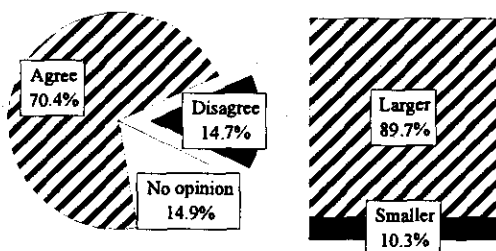


Figure 4-1. Resident agreement about length limits and recommended limits for those who disagree - brown or rainbow trout in Lake Champlain.

Brown, Rainbow Trout

Present Minimum Length - 12"

Nonresident (n=89)

Mean=15.5

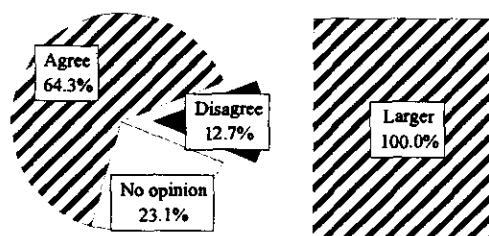


Figure 4-2. Nonresident agreement about length limits and recommended limits for those who disagree - brown or rainbow trout in Lake Champlain.

Lake Trout

Present Minimum Length - 15"

Resident (n=805)

Mean=18.2

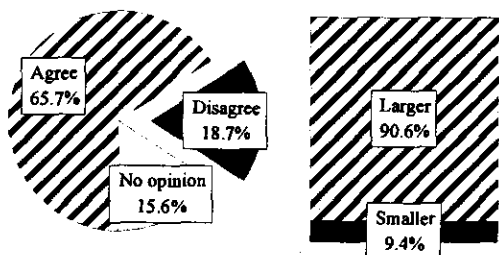


Figure 4-3. Resident agreement about length limits and recommended limits for those who disagree - lake trout fishing in Lake Champlain.

Lake Trout

Present Minimum Length - 15"

Nonresident (n=88)

Mean=19.7

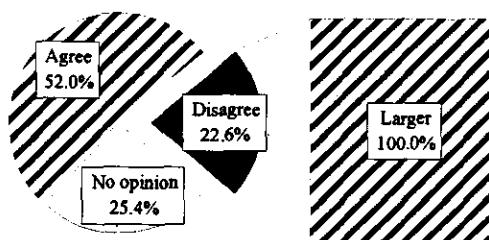


Figure 4-4. Nonresident agreement about length limits and recommended limits for those who disagree - lake trout fishing in Lake Champlain.

Landlocked Salmon Present Minimum Length - 15"

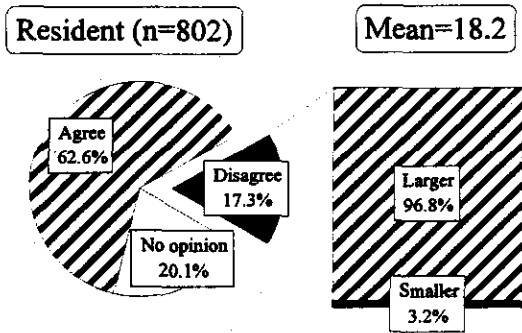


Figure 4-5. Resident agreement about length limits and recommended limits for those who disagree - landlocked salmon fishing in Lake Champlain.

Landlocked Salmon Present Minimum Length - 15"

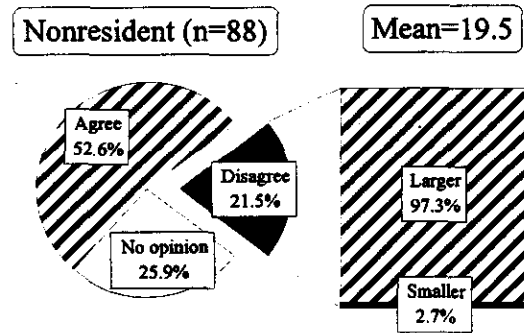


Figure 4-6. Nonresident agreement about length limits and recommended limits for those who disagree - landlocked salmon fishing in Lake Champlain.

Walleye

Present Minimum Length - 18"

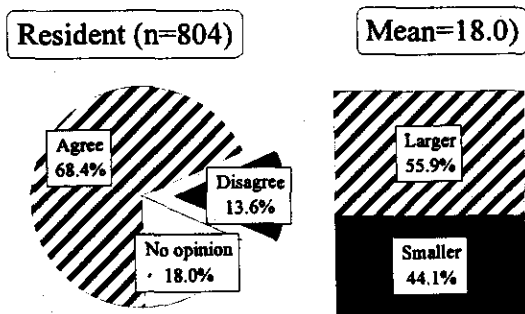


Figure 4-7. Resident agreement about length limits and recommended limits for those who disagree - walleye fishing in Lake Champlain.

Walleye

Present Minimum Length - 18"

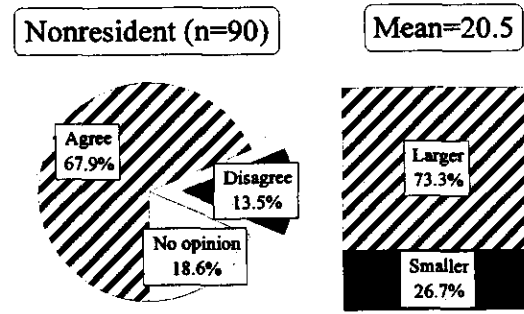


Figure 4-8. Nonresident agreement about length limits and recommended limits for those who disagree - walleye fishing in Lake Champlain.

Largemouth Bass Present Minimum Length - 10"

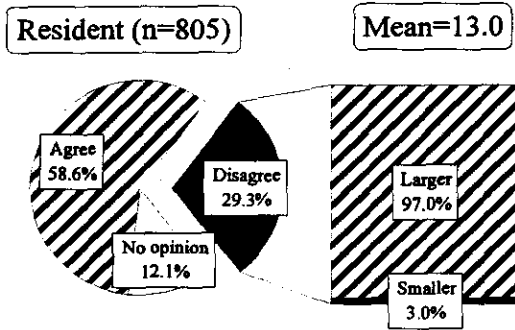


Figure 4-9. Resident agreement about length limits and recommended limits for those who disagree - largemouth bass fishing in Lake Champlain.

Largemouth Bass Present Minimum Length - 10"

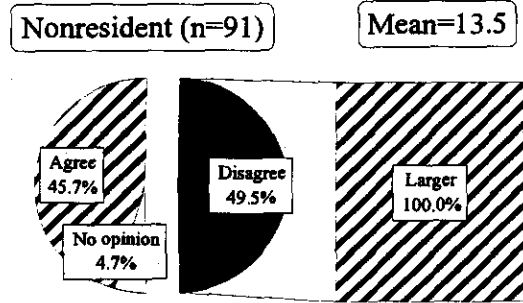


Figure 4-10. Nonresident agreement about length limits and recommended limits for those who disagree - largemouth bass fishing in Lake Champlain.

Smallmouth Bass Present Minimum Length - 10"

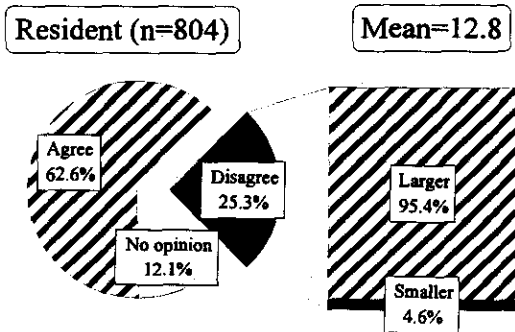


Figure 4-11. Resident agreement about length limits and recommended limits for those who disagree - smallmouth bass fishing in Lake Champlain.

Smallmouth Bass Present Minimum Length - 10"

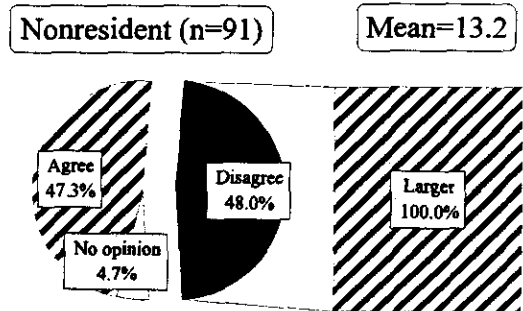


Figure 4-12. Nonresident agreement about length limits and recommended limits for those who disagree - smallmouth bass fishing in Lake Champlain.

Northern Pike Present Minimum Length - 20"

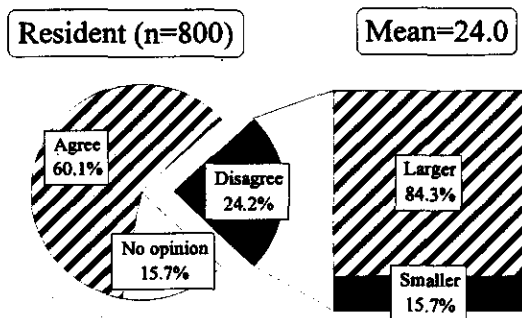


Figure 4-13. Resident agreement about length limits and recommended limits for those who disagree - northern pike fishing in Lake Champlain.

Northern Pike Present Minimum Length = 20"

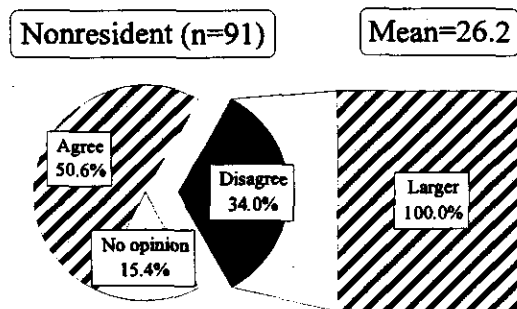


Figure 4-14. Nonresident agreement about length limits and recommended limits for those who disagree - northern pike fishing in Lake Champlain.

Crappie Present Minimum Length - 8"

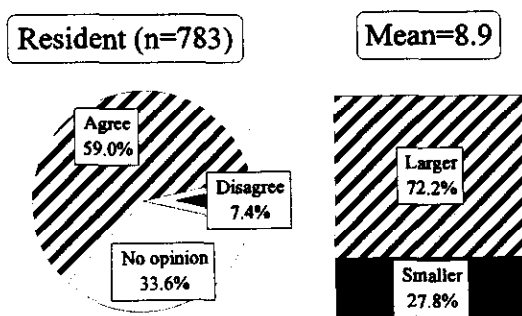


Figure 4-15. Resident agreement about length limits and recommended limits for those who disagree - crappie fishing in Lake Champlain.

Crappie Present Minimum Length - 8"

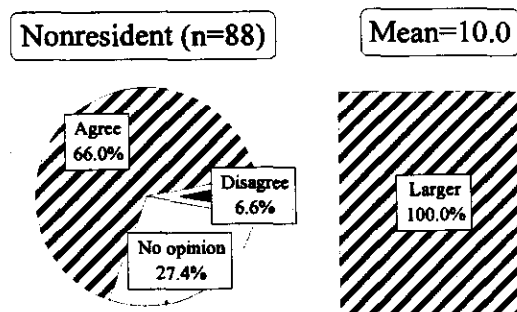


Figure 4-16. Nonresident agreement about length limits and recommended limits for those who disagree - Crappie fishing in Lake Champlain.

Opinions about the Walleye Season on Lake Champlain

Questionnaire Item:
 The fishing season for WALLEYE in Lake Champlain is from the 1st Saturday in May to the following March 15th. What is your opinion about the length of the season? (Fill in all that apply.)

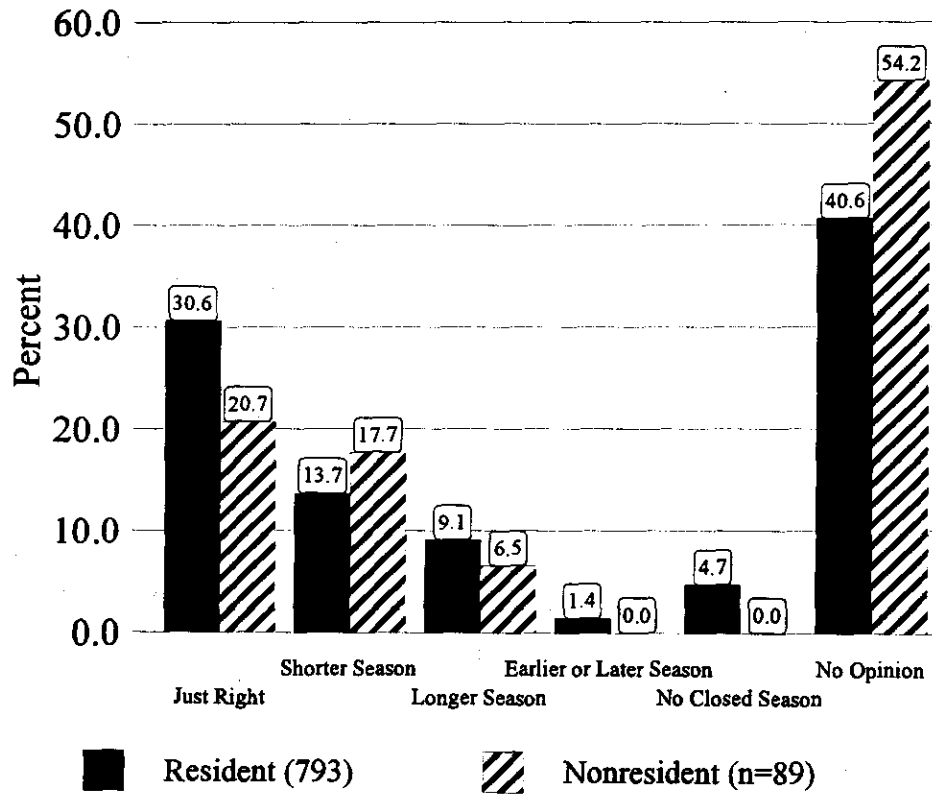


Figure 4-17. Opinions about the fishing season for walleye on Lake Champlain.

Tip-up or Hand Held Lines on Lake Champlain

Questionnaire Item:

Current regulations for ice-fishing on Lake Champlain allow the use of 15 lines (tip-ups or handlines). Do you agree with the current number of lines allowed? (Please circle whether you agree or disagree with the current number. If you disagree, please write in your recommendation.)

Number of Lines

Present Limit - 15

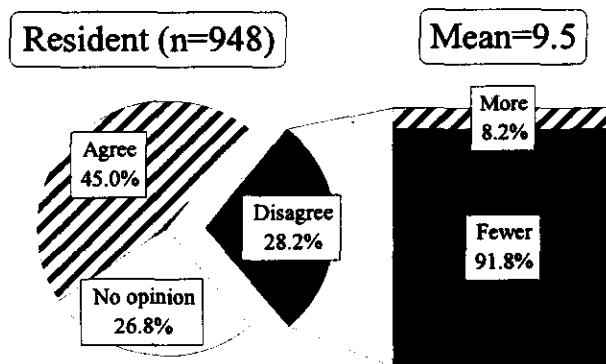


Figure 4-18. Resident agreement about the number of tip-up lines or hand lines allowed and recommended limits for those who disagree - Lake Champlain ice fishing.

Number of Lines

Present Limit - 15

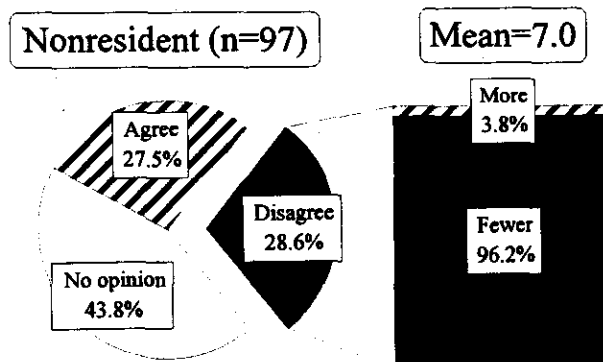


Figure 4-19. Nonresident agreement about the number of tip-up lines or hand lines allowed and recommended limits for those who disagree - Lake Champlain ice fishing.

1999 Fishing Days on Lake Champlain

Questionnaire Item:

About how many days did you spend fishing on Lake Champlain for each of the following species during the 1999 open-water and ice-fishing seasons?

Table 4-1. Mean number of days and the percentage of the total days spent fishing each category of game fish in Lake Champlain.

	Residents				Nonresident			
	Open		Ice		Open		Ice ¹	
	\bar{x}	%	\bar{x}	%	\bar{x}	%	\bar{x}	%
Brown Trout/ Landlocked Salmon	4.3	8.7	1.1	8.4	1.9	4.7	0.7	8.8
Steelhead/ Rainbow Trout	3.4	6.7	0.7	5.5	1.7	4.2	0.3	3.1
Lake Trout	3.5	6.9	1.0	7.6	2.2	5.4	0.7	8.1
Largemouth Bass	6.8	13.7	na	na	7.0	17.6	na	na
Smallmouth Bass	7.2	14.4	na	na	7.0	17.5	na	na
Walleye	4.4	8.7	1.1	9.0	3.2	8.0	0.7	8.1
Northern Pike	5.0	10.0	1.7	13.7	4.9	12.4	0.8	9.9
Yellow Perch	6.5	13.0	3.8	30.3	3.7	9.2	1.3	15.5
Crappie	2.2	4.4	0.6	5.1	3.2	8.0	0.9	11.5
Sunfish	1.6	3.1	0.3	2.2	2.8	7.0	1.0	12.1
Smelt	0.7	1.4	1.3	10.3	0.7	1.8	0.7	7.8
Bullhead	2.5	4.9	0.2	1.4	0.8	2.1	0.6	7.5
White Perch	2.0	3.9	0.8	6.4	0.9	2.3	0.6	7.5

¹ - Small sample size. Percentages and statistics may not be reliable.

Overall Quality of Lake Champlain Fishing

Questionnaire Item:

Overall, how would you rate the present quality of fishing for the following species that you fish for in Lake Champlain?

Table 4-2. Resident evaluations of fishing quality for a variety of Lake Champlain fish.

(Rank Ordered)	Poor	Fair	Good	Very Good	Excellent	Mean
Sunfish (n=465)	4.5	19.6	42.2	21.1	12.6	3.2
Smallmouth Bass (n=648)	3.4	23.4	45.4	19.1	8.8	3.1
Largemouth Bass (n=649)	3.4	26.2	46.8	16.8	6.8	3.0
Bullhead (n=478)	5.7	24.0	44.5	19.1	6.7	3.0
White Perch (n=452)	5.7	24.0	44.5	19.1	6.7	3.0
Northern Pike (n=614)	5.7	27.3	45.7	16.6	4.8	2.9
Yellow Perch (n=645)	9.0	25.0	40.3	18.5	7.3	2.9
Lake Trout (n=552)	7.3	32.6	45.1	12.0	3.0	2.7
Crappie (n=467)	8.1	35.0	42.7	9.9	4.4	2.7
Landlocked Salmon (n=537)	17.3	36.7	37.8	6.8	1.4	2.4
Brown Trout (n=545)	22.6	43.0	31.4	2.3	0.6	2.2
Steelhead/Rainbow Trout (n=538)	22.3	43.7	30.5	2.8	0.6	2.2
Walleye (n=582)	24.9	41.8	28.7	2.8	1.9	2.2

Table 4-3. Nonresident evaluations of fishing quality for a variety of Lake Champlain fish.

(Rank Ordered)	Poor	Fair	Good	Very Good	Excellent	Mean
Smallmouth Bass (n=72)	3.9	8.8	31.6	27.8	28.0	3.7
Largemouth Bass (n=71)	5.4	14.6	26.3	35.5	18.1	3.5
Northern Pike (n=56)	4.9	18.8	35.3	25.6	15.3	3.3
Yellow Perch (n=54)	7.8	12.9	40.2	21.6	17.4	3.3
Sunfish (n=38)	4.4	19.8	36.3	30.5	8.9	3.2
White Perch (n=34)	8.3	23.0	45.1	9.8	13.8	3.0
Crappie (n=41)	7.8	31.7	41.7	8.7	10.1	2.8
Bullhead (n=37)	12.0	28.5	37.0	19.4	3.0	2.7
Lake Trout (n=41)	9.7	31.1	46.0	13.2	0.0	2.6
Landlocked Salmon (n=40)	16.3	37.0	35.2	9.3	2.3	2.4
Brown Trout (n=39)	15.3	41.4	38.5	0.0	4.8	2.4
Steelhead/Rainbow Trout (n=37)	20.4	33.9	40.7	0.0	5.0	2.4
Walleye (n=94)	17.3	38.5	30.5	6.7	7.0	2.4

Lake Champlain Creel Limits

Questionnaire Item:

The current daily creel limit for several fish species in Lake Champlain are listed below. Do you agree with the present daily creel limits? (Circle one response for each species. If you disagree, please write in your recommended daily limit.)

Brown/Rainbow Trout

Present Daily Creel Limit - 3

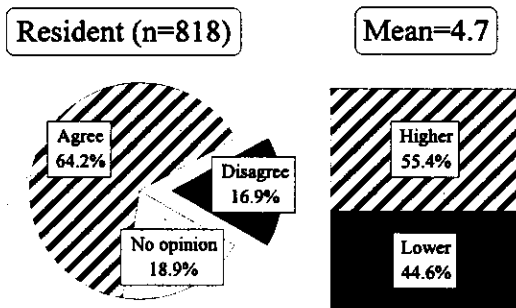


Figure 4-20. Resident agreement about creel limits and recommended limits for those who disagree - brown trout and rainbow trout on Lake Champlain.

Brown/Rainbow Trout

Present Daily Creel Limit - 3

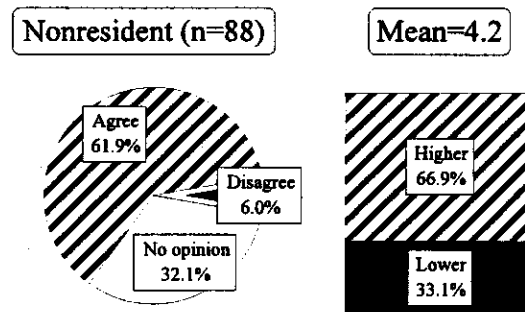


Figure 4-21. Nonresident agreement about creel limits and recommended limits for those who disagree - brown trout and rainbow trout on Lake Champlain.

Lake Trout

Present Daily Creel Limit - 3

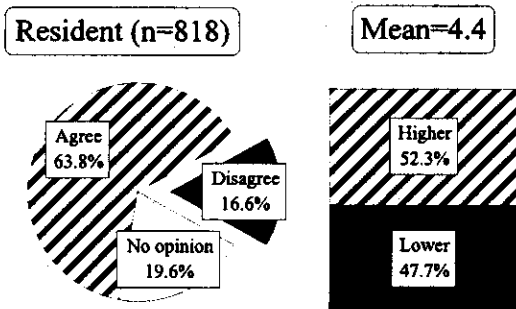


Figure 4-22. Resident agreement about creel limits and recommended limits for those who disagree - lake trout on Lake Champlain.

Lake Trout

Present Daily Creel Limit - 3

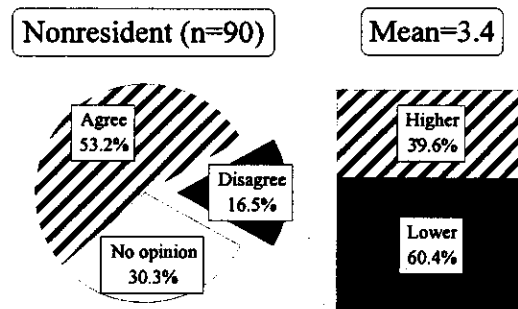


Figure 4-23. Nonresident agreement about creel limits and recommended limits for those who disagree - lake trout on Lake Champlain.

Landlocked Salmon Present Daily Creel Limit - 2

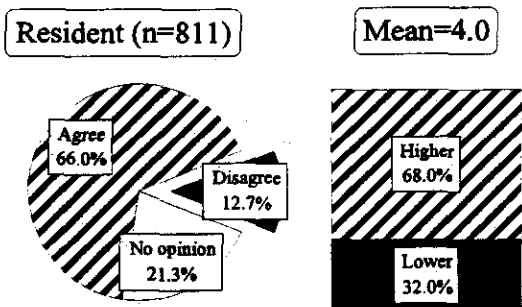


Figure 4-24. Resident agreement about creel limits and recommended limits for those who disagree - landlocked salmon on Lake Champlain.

Landlocked Salmon Present Daily Creel Limit - 2

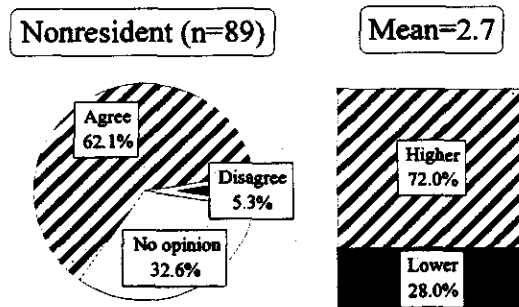


Figure 4-25. Nonresident agreement about creel limits and recommended limits for those who disagree - landlocked salmon on Lake Champlain.

Walleye Present Daily Creel Limit - 5

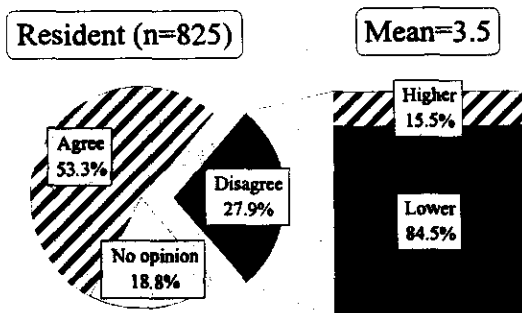


Figure 4-26. Resident agreement about creel limits and recommended limits for those who disagree - walleye on Lake Champlain.

Walleye Present Daily Creel Limit - 5

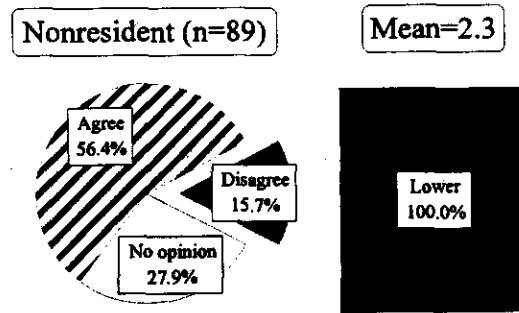


Figure 4-27. Nonresident agreement about creel limits and recommended limits for those who disagree - walleye on Lake Champlain.

Largemouth Bass Present Daily Creel Limit - 5

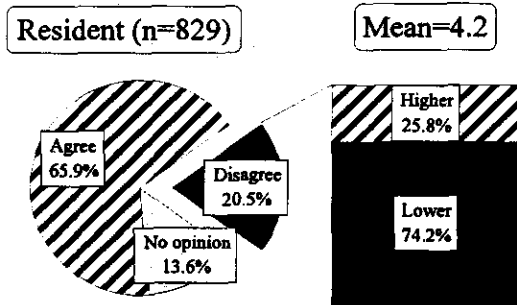


Figure 4-28. Resident agreement about creel limits and recommended limits for those who disagree - largemouth bass on Lake Champlain.

Largemouth Bass Present Daily Creel Limit - 5

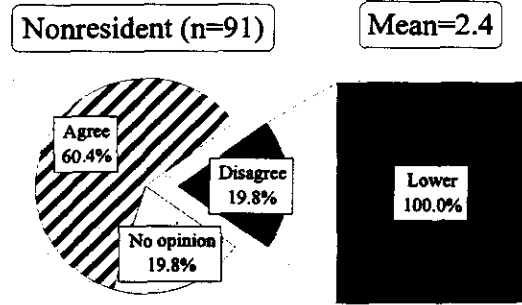


Figure 4-29. Nonresident agreement about creel limits and recommended limits for those who disagree - largemouth bass on Lake Champlain.

Smallmouth Bass Present Daily Creel Limit - 5

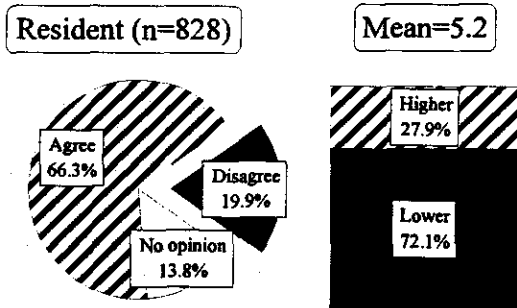


Figure 4-30. Resident agreement about creel limits and recommended limits for those who disagree - smallmouth bass on Lake Champlain.

Smallmouth Bass Present Daily Creel Limit - 5

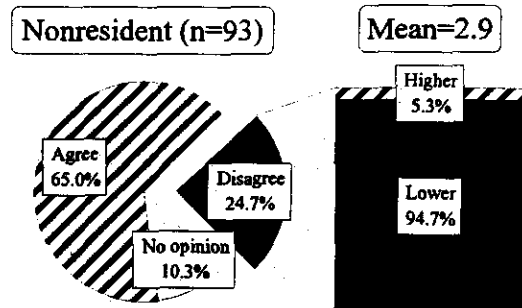


Figure 4-31. Nonresident agreement about creel limits and recommended limits for those who disagree - smallmouth bass on Lake Champlain.

Northern Pike

Present Daily Creel Limit - 5

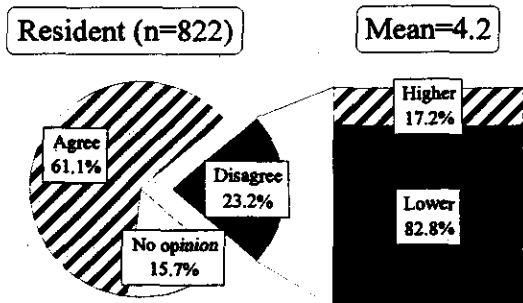


Figure 4-32. Resident agreement about creel limits and recommended limits for those who disagree - northern pike on Lake Champlain.

Northern Pike

Present Daily Creel Limit - 5

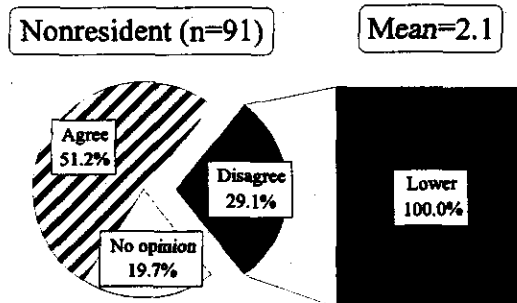


Figure 4-33. Nonresident agreement about creel limits and recommended limits for those who disagree - northern pike on Lake Champlain.

Yellow Perch

Present Daily Creel Limit - 75 fish or 30 lbs.

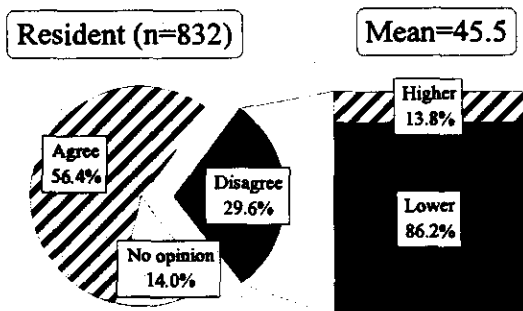


Figure 4-34. Resident agreement about creel limits and recommended limits for those who disagree - yellow perch on Lake Champlain.

Yellow Perch

Present Daily Creel Limit - 75 fish or 30 lbs.

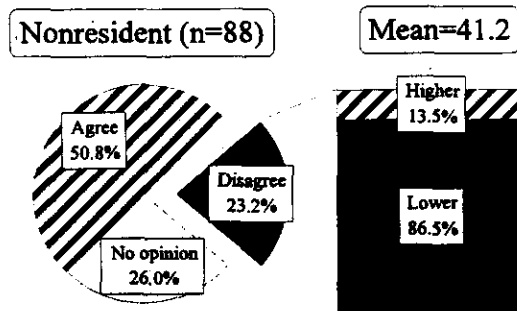


Figure 4-35. Nonresident agreement about creel limits and recommended limits for those who disagree - yellow perch on Lake Champlain.

Crappie Present Daily Creel Limit - 25

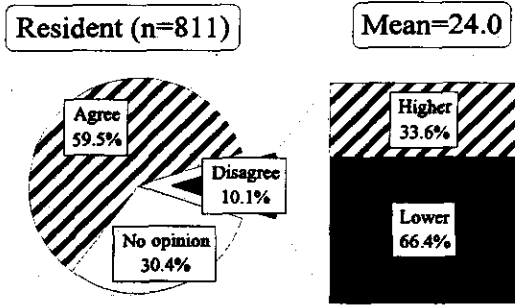


Figure 4-36. Resident agreement about creel limits and recommended limits for those who disagree - crappie on Lake Champlain.

Crappie Present Daily Creel Limit - 25

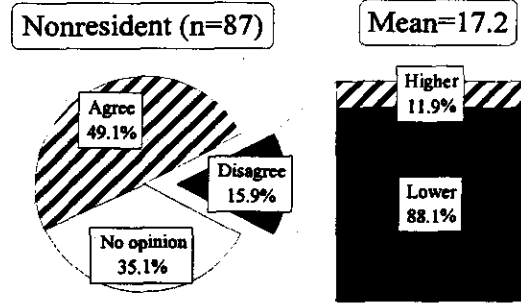


Figure 4-37. Nonresident agreement about creel limits and recommended limits for those who disagree - crappie on Lake Champlain.

Sunfish Present Daily Creel Limit - no limit

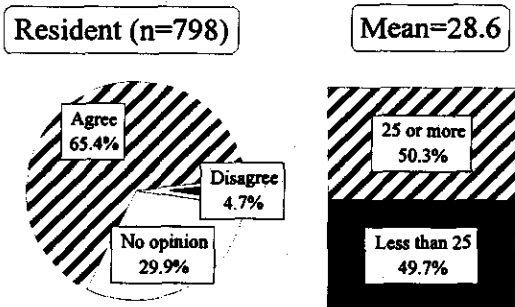


Figure 4-38. Resident agreement about creel limits and recommended limits for those who disagree - sunfish on Lake Champlain.

Sunfish Present Daily Creel Limit - no limit

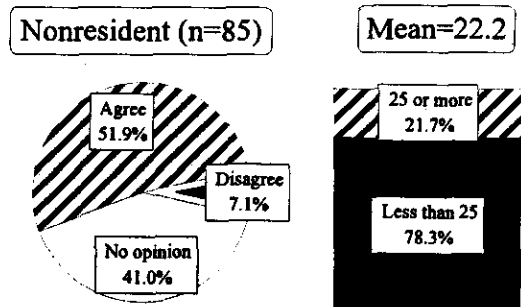


Figure 4-39. Nonresident agreement about creel limits and recommended limits for those who disagree - sunfish on Lake Champlain.

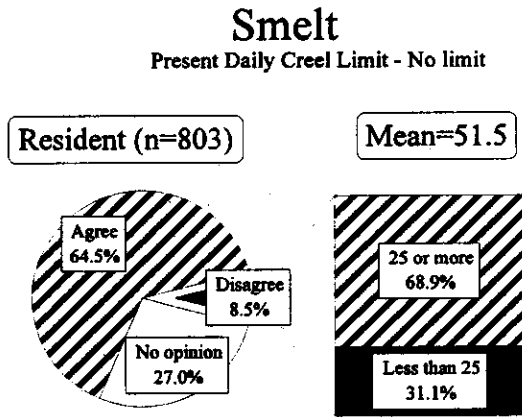


Figure 4-40. Resident agreement about creel limits and recommended limits for those who disagree - smelt on Lake Champlain.

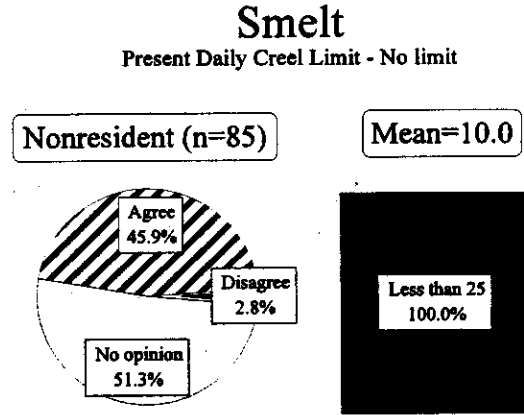


Figure 4-41. Nonresident agreement about creel limits and recommended limits for those who disagree - smelt on Lake Champlain.

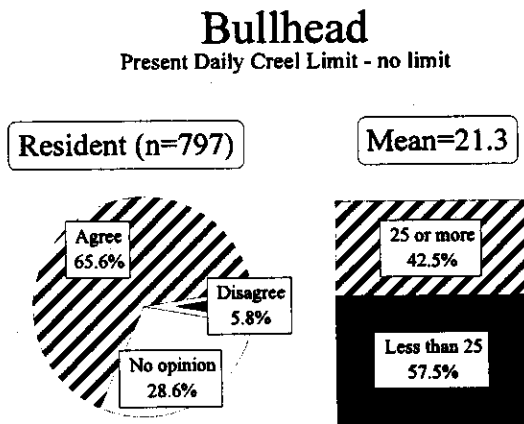


Figure 4-42. Resident agreement about creel limits and recommended limits for those who disagree - bullhead on Lake Champlain.

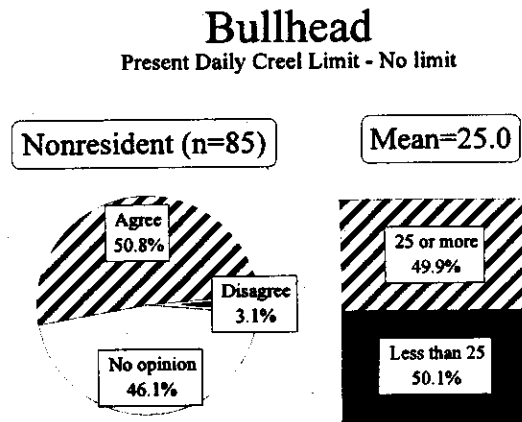


Figure 4-43. Nonresident agreement about creel limits and recommended limits for those who disagree - bullhead on Lake Champlain.

White Perch
Present Daily Creel Limit - No limit

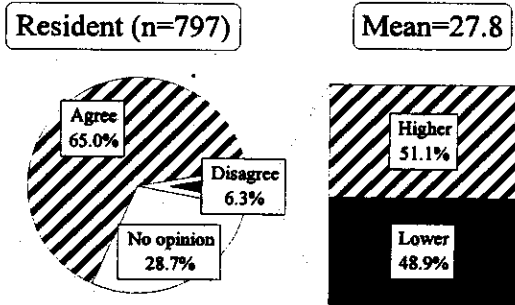


Figure 4-44. Resident agreement about creel limits and recommended limits for those who disagree - white perch on Lake Champlain.

White Perch
Present Daily Creel Limit - No limit

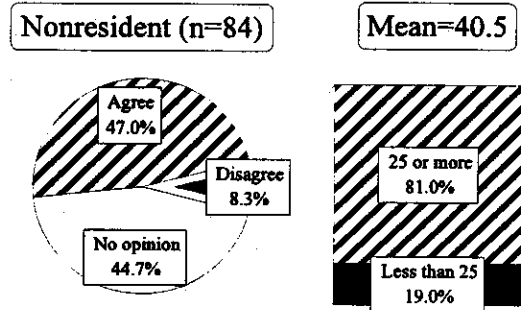


Figure 4-45. Nonresident agreement about creel limits and recommended limits for those who disagree - white perch on Lake Champlain.

Part 5



Angler Opinions About Fish Species Quality, Fishery Quality, and Fishing Policy

Overall Species Quality

Questionnaire Items:

Overall, how would you rate the present quality of fishing for:
 - TROUT in STREAMS AND RIVERS
 - trout and salmon in PONDS AND LAKES
 - warmwater GAMEFISH and PANFISH
 in Vermont?

Table 5-1. Resident evaluations of fishing quality for a variety of Vermont fish.

(Rank Ordered)	Poor	Fair	Good	Very Good	Excellent	Mean
Yellow Perch (n=1253)	6.9	24.2	43.0	18.7	7.1	3.0
Smallmouth Bass (n=1258)	3.4	25.4	50.0	16.6	4.5	2.9
Largemouth Bass (n=1239)	4.5	30.4	47.7	13.6	3.8	2.8
Northern Pike (n=1142)	6.7	32.6	46.3	11.4	3.1	2.7
Crappie (n=972)	9.5	35.5	41.0	10.1	3.8	2.6
Brook, Brown, Rainbow Trout (Streams and Rivers) (n=1220)	10.4	41.4	38.5	7.8	1.9	2.5
Brook, Brown, Rainbow Trout (Ponds and Lakes) (n=1031)	9.4	41.0	40.3	8.4	0.9	2.5
Lake Trout (n=930)	10.3	40.8	34.8	8.7	1.8	2.5
Landlocked Salmon (n=860)	21.3	43.0	29.8	5.0	0.9	2.2
Walleye (n=1090)	20.4	45.5	30.7	1.9	1.6	2.2

Table 5-2. Nonresident evaluations of fishing quality for a variety of Vermont fish.

(Rank Ordered)	Poor	Fair	Good	Very Good	Excellent	Mean
Smallmouth Bass (n=1258)	2.6	18.5	38.8	25.2	15.0	3.3
Yellow Perch (n=1253)	4.2	18.7	39.8	24.1	13.2	3.2
Largemouth Bass (n=1239)	4.1	22.7	39.8	21.9	11.4	3.1
Northern Pike (n=1142)	6.9	28.0	38.2	18.4	8.5	2.9
Crappie (n=972)	6.8	33.3	41.9	13.7	4.2	2.8
Brook, Brown, Rainbow Trout (Streams and Rivers) (n=1220)	10.7	23.0	48.0	12.4	6.0	2.8
Brook, Brown, Rainbow Trout (Ponds and Lakes) (n=1031)	7.8	33.6	39.1	19.5	0.0	2.7
Lake Trout (n=930)	12.2	28.3	41.0	16.8	1.6	2.7
Landlocked Salmon (n=860)	18.4	34.5	37.4	9.6	0.0	2.5
Walleye (n=1090)	20.0	34.1	38.2	5.7	2.0	2.4

Opinions about Fishing Issues in Vermont

Questionnaire Item:
What is your opinion of the following issues in Vermont?

Table 5-3. Resident concern about fishing issues in Vermont. (n=1,502)

	No Problem	Minor Problem	Moderate Problem	Serious Problem	Mean
Contaminant levels in fish	17.4	27.3	29.4	25.9	2.6
Conflict between fishing and other recreational uses (skiing, boating)	24.4	34.9	29.1	11.6	2.3
Fishing with lead sinkers	30.3	25.5	23.8	20.4	2.3
Crowding at fishing areas	30.5	37.5	24.1	7.9	2.1
Commercial sale of angler caught perch	47.4	17.9	18.7	16.1	2.0
Shooting/spearing northern pike in Lake Champlain	56.3	16.3	12.4	15.0	1.9
Commercial sale of angler caught crappie	55.8	17.6	14.7	11.8	1.8
Commercial sale of angler caught sunfish	61.8	15.7	12.9	9.6	1.7
Your ability to access fishing areas	57.7	24.9	12.9	4.5	1.6
Your ability to under- stand VT fishing regulations	65.2	22.8	8.2	3.8	1.5
Fishing derbies/ tournaments (not "kids" derbies)	72.9	15.5	8.2	3.4	1.4
Conflict between open water and ice fishing	79.3	13.1	4.8	2.8	1.3

Table 5-4. Nonresident concern about fishing issues in Vermont. (n=184)

	No Problem	Minor Problem	Moderate Problem	Serious Problem	Mean
Contaminant levels in fish	31.6	18.9	29.5	20.0	2.4
Fishing with lead sinkers	33.7	23.0	21.4	21.9	2.3
Conflict between fishing and other recreational uses (skiing, boating)	23.1	33.8	37.1	5.9	2.3
Shooting/spearing Northern Pike in Lake Champlain	47.3	13.1	15.0	24.6	2.2
Commercial sale of angler caught perch	52.6	19.9	16.3	11.2	1.9
Commercial sale of angler caught crappie	52.4	19.1	16.4	12.2	1.9
Crowding at fishing areas	41.5	32.2	22.8	3.5	1.9
Commercial sale of angler caught sunfish	62.8	17.1	12.1	7.9	1.7
Your ability to access fishing areas	57.7	24.9	12.9	4.5	1.5
Fishing derbies/ tournaments (not "kids" derbies)	73.1	14.1	10.8	2.0	1.4
Your ability to under- stand VT fishing regulations	73.8	19.1	5.7	1.4	1.4
Conflict between open water and ice fishing	81.5	13.4	4.2	0.8	1.2

Environmental Factors Affecting Fish Health and Fishing Quality

Questionnaire Item:

Many factors may influence the health of fish populations and the quality of fishing. Please tell us whether or not you believe the following factors are affecting fishing in Vermont.

Table 5-5. Resident opinions about factors affecting fish health and fishing quality. (n=1,559)

	Strongly Disagree	Moderately Disagree	Neither Agree or Disagree	Moderately Agree	Strongly Agree	Mean
Excessive aquatic plant growth	3.6	6.0	19.6	37.9	32.9	3.9
Poor water quality	5.2	9.3	18.2	37.2	30.1	3.8
Barriers to fish mi- gration (culverts, dams)	3.8	6.5	33.7	30.5	25.5	3.7
Overfishing	6.0	9.2	30.6	32.7	21.6	3.6
Erosion and siltation	4.1	7.0	33.0	34.5	21.4	3.6
Inadequate stream flow below hydro projects	4.1	7.1	45.9	25.0	17.8	3.5
Exotic species	4.9	7.1	45.3	23.4	19.3	3.5
Poor habitat or cover	6.6	11.3	40.3	27.1	14.8	3.3
Inadequate streamside or lakeside vegetation	5.1	11.7	45.8	26.1	11.3	3.3
Stream channel instability	3.5	8.0	53.0	23.8	11.7	3.3
Lake water level fluctuation	5.7	11.9	52.8	20.9	8.7	3.2

Table 5-6. Nonresident opinions about factors affecting fish health and fishing quality. (n=193)

	Strongly Disagree	Moderately Disagree	Neither Agree or Disagree	Moderately Agree	Strongly Agree	Mean
Barriers to fish mi- gration (culverts, dams)	1.9	6.6	43.1	26.2	22.2	3.6
Excessive aquatic plant growth	5.7	10.6	37.5	30.0	16.2	3.4
Exotic species	3.3	6.5	49.6	25.1	15.4	3.4
Overfishing	7.3	7.6	33.3	36.9	14.9	3.4
Erosion and siltation	5.3	8.1	39.7	33.8	13.1	3.4
Poor water quality	10.4	11.3	33.0	27.8	17.5	3.3
Inadequate stream flow below hydro projects	3.6	3.9	60.5	21.1	10.9	3.3
Lake water level fluctuation	3.7	7.5	56.6	23.3	8.9	3.3
Inadequate streamside or lakeside vegetation	5.1	8.1	55.9	18.7	12.3	3.3
Poor habitat or cover	8.6	11.3	47.3	20.8	12.0	3.2
Stream channel instability	3.6	6.9	61.5	21.2	6.8	3.2

Part 6



Angler Profile

Fishing Experience

Questionnaire Item:
At approximately what age did you first begin fishing?

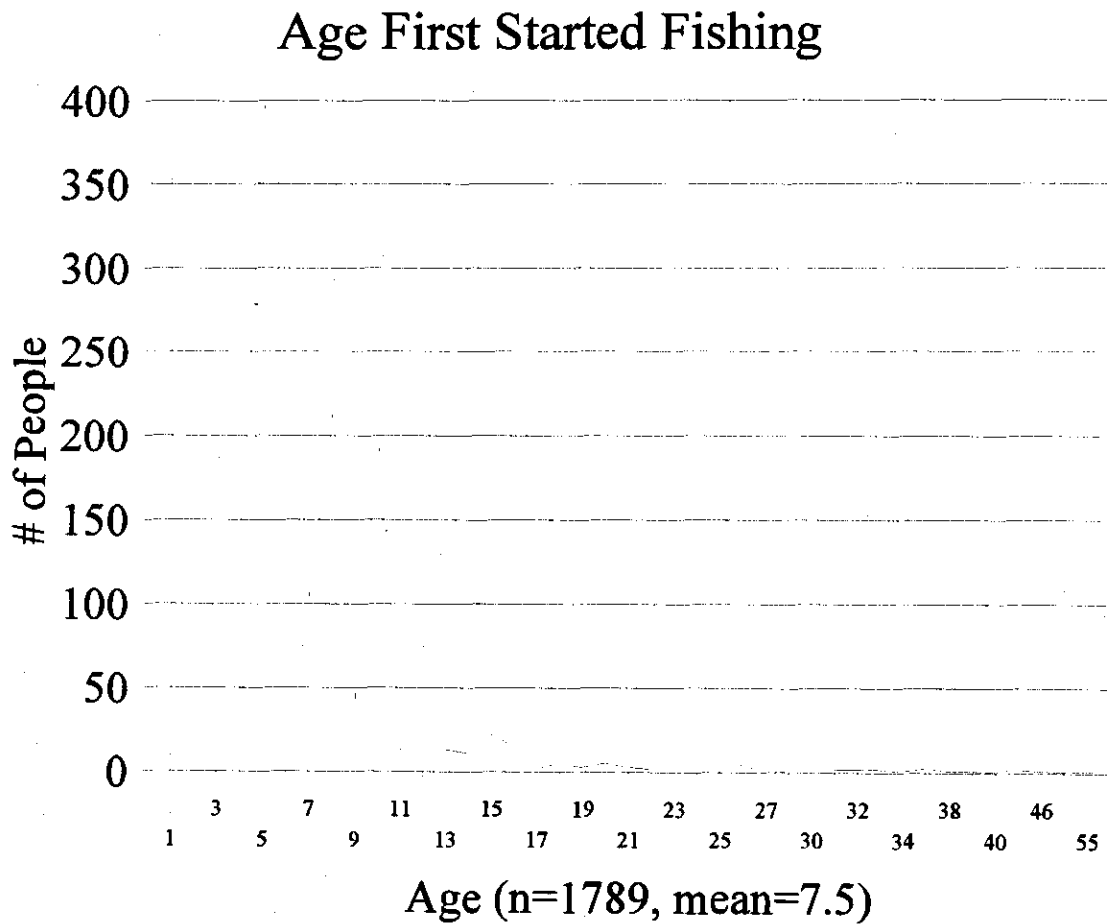


Figure 6-1. At approximately what age did you first begin fishing?

Fishing Specialization

Questionnaire Item:
How would you rate your fishing skills?

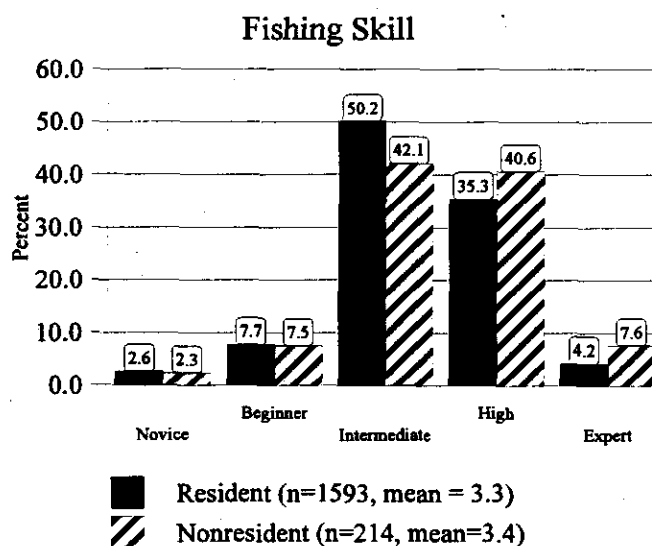


Figure 6-2. How would you rate your fishing skills?
(1=novice and 5=expert).

Questionnaire Item:
Are you a member of a fishing organization, fish and game club, or watershed group?

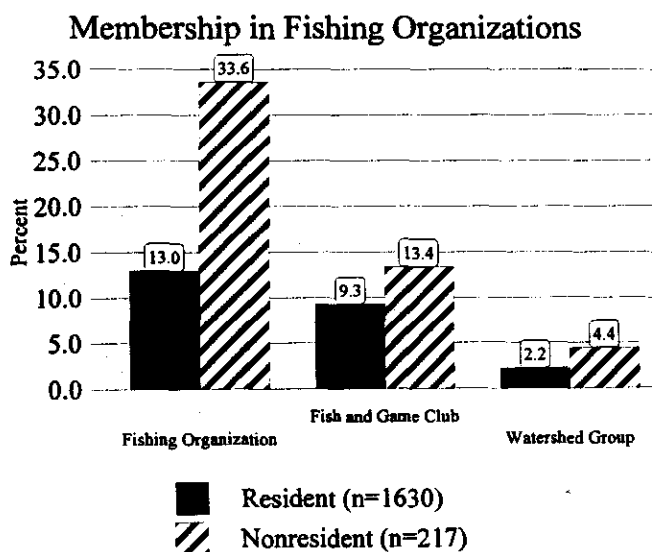


Figure 6-3. Are you a member of a fishing organization, fish and game club, or watershed group?

Questionnaire Item:
 For some people, fishing may be one of the most important things in their lives. To others, it may be just one of a number of interests they have, something that they enjoy but aren't strongly committed to. How would you personally rate your own level of commitment to fishing?

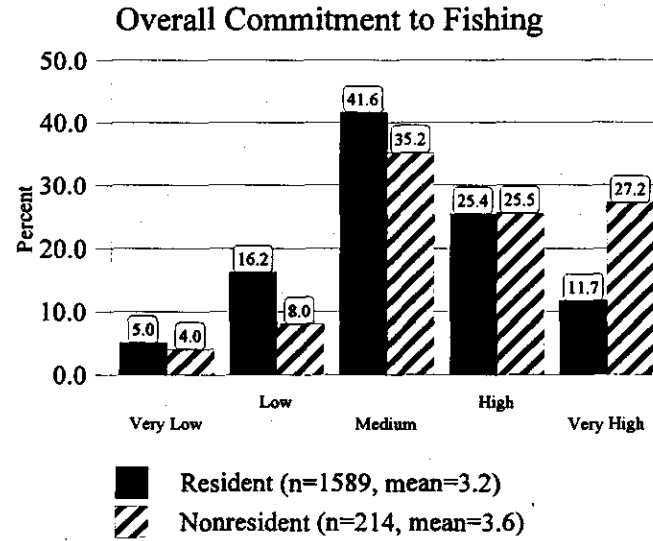


Figure 6-4. How would you rate your level of commitment to fishing? (1=very low and 5=very high).

Questionnaire Item:
 Since you first began fishing, how regularly have you been going over the years?

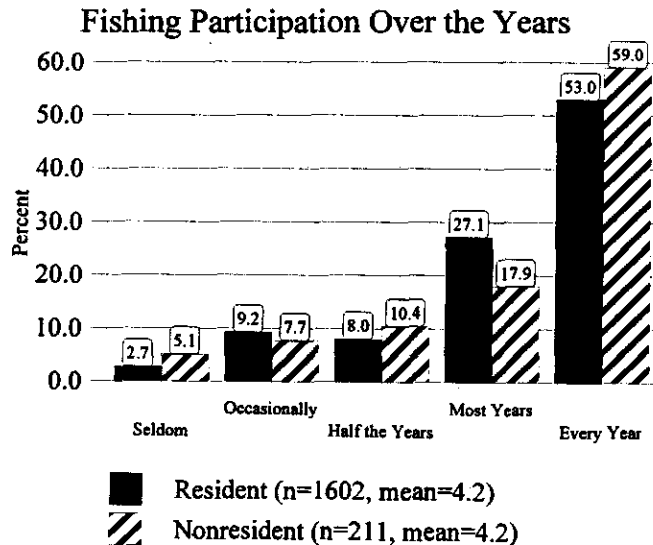


Figure 6-5. Frequency of fishing participation over the years. (1=seldom and 5=every year).

Socioeconomic Profile of Vermont Anglers

Questionnaire Item:

Are you male or female?

Table 6-1. Ratio of men to women anglers among 1999 license holders.¹

	1999 VT Census ²	1999 Resident License Holder	2000 Resident Respondent	1999 Nonres. License Holder	2000 Nonres. Respondent
Male	49.2	80.0	82.2	86.7	88.5
Female	50.8	20.0	17.8	13.3	11.5
Total N	593,740	83,499	1,630	50,900	217

1 - Gender ratios did not differ significantly between anglers in different zones of the state. Gender ratios also did not differ significantly between 1999 license holders and survey respondents.

2 - Based on 1999 population estimates for Vermont from the Population Estimates Program, United States Census Bureau.

Questionnaire Item:

In what year were you born?

Table 6-2. Age distribution of Vermont residents, 1999 Vermont license holders, and 2000 survey respondents (percent).¹

AGE	1999 VT Census ²	1999 Resident License Holder	2000 Resident Respondent	1999 Nonres. License Holder	2000 Nonres. Respondent
15-17	5.5	2.7	0.6	1.8	0.0
18-24	11.0	11.9	6.0	6.5	2.3
25-34	17.3	21.2	15.8	18.5	13.8
35-44	21.8	27.6	27.6	27.8	23.5
45-54	18.5	22.1	28.6	23.4	27.2
55-64	10.7	12.2	17.4	13.7	20.3
65+	15.2	2.3	4.0	8.4	12.9
Total N	480,939	83,007	1,627	50,478	217
Mean	4.29	4.00	4.46	4.39	4.88

1 - Age distributions did not differ significantly between anglers in different zones of the state.

2 - Based on 1999 population estimates for Vermont from the Population Estimates Program, United States Census Bureau.

Questionnaire Item:
 How many years of school have you completed? (Fill in the highest level completed.)

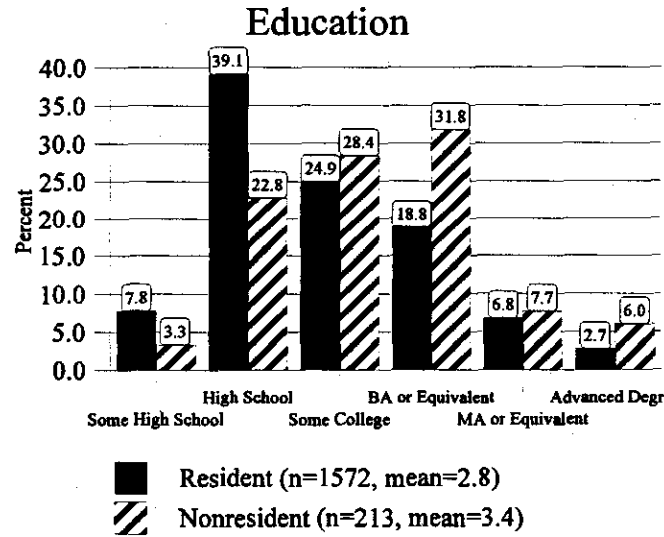


Figure 6-6. Education level of Vermont anglers. (1=Some High School and 6=Advanced Degree).

Questionnaire Item:
 Please check the space that comes closest to your total family income before taxes.

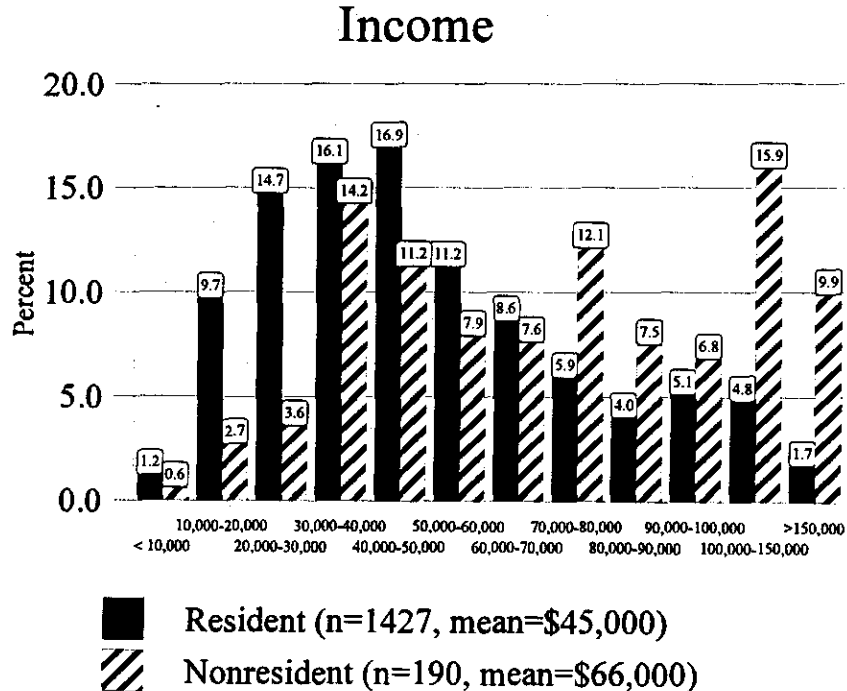
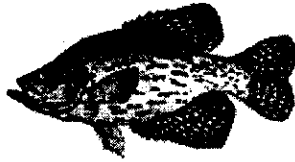


Figure 6-7. Income level of Vermont anglers.

Part 7



Comparisons by Region of Residence

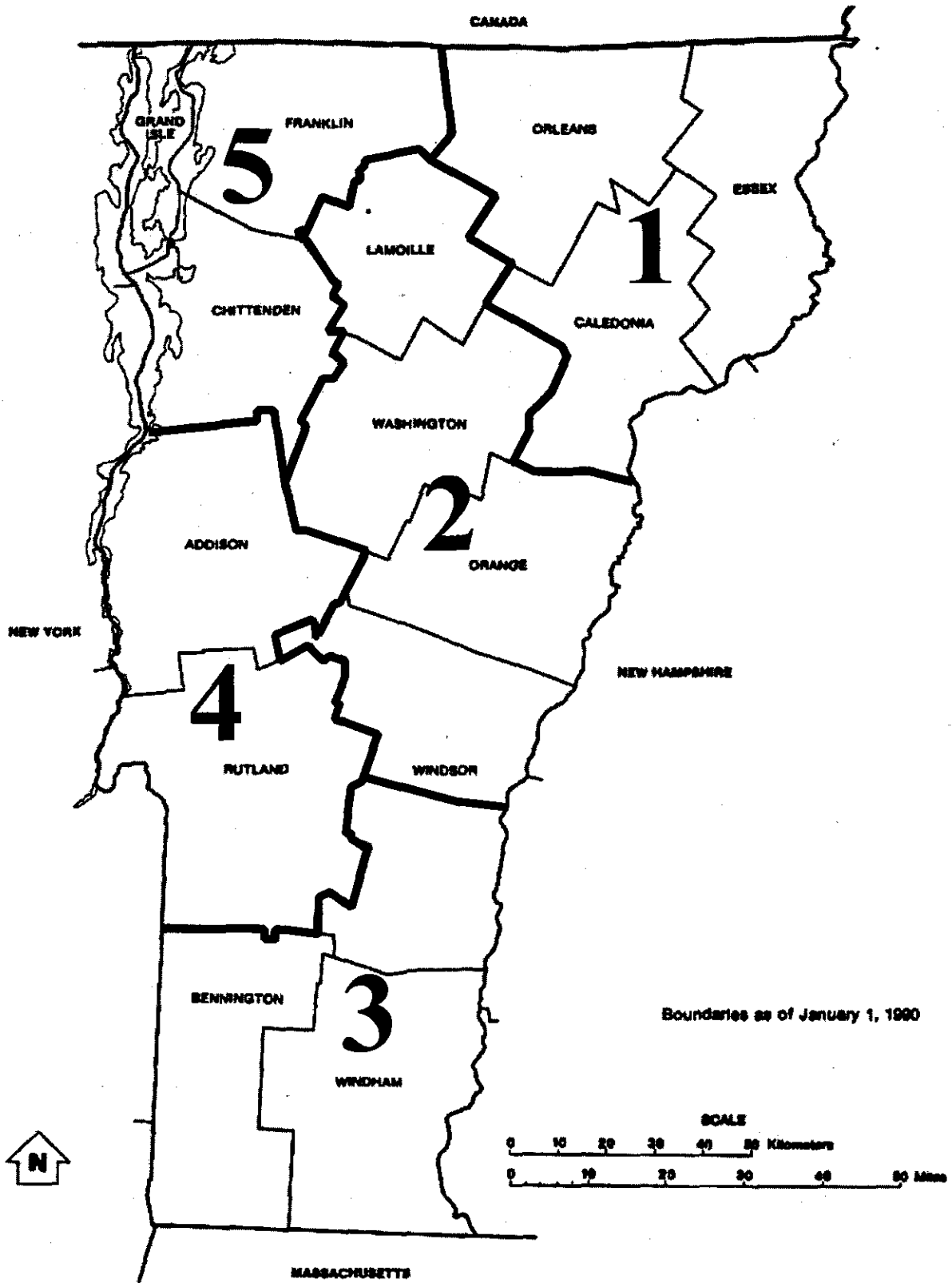


Figure 7-1. Zones of the state used in sampling and statistical comparison.

Fishing in Vermont

Questionnaire Items:
 "Do you fish during the OPEN-WATER season in Vermont (spring, summer, fall)?"
 "Do you ICE-FISH in Vermont?"

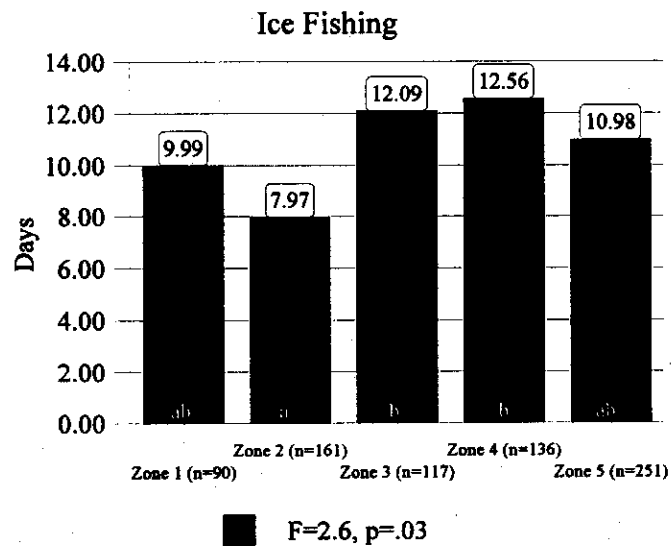


Figure 7-2. Mean number of days spent ice fishing by region of residence. (Letters in bars show statistically significant differences between regions.)

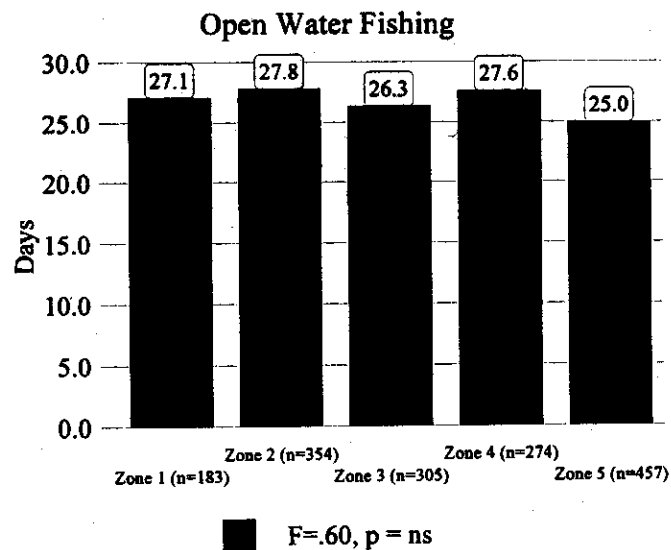


Figure 7-3. Mean number of days spent fishing on open water by region of residence.

Fishing Participation by Region of Residence

Questionnaire Items:

Do you fish for brook, brown or rainbow trout in STREAMS or RIVERS in Vermont?
 Do you fish for trout or salmon in PONDS or LAKES in Vermont?
 Do you fish for walleye, bass, pike, yellow perch, sunfish, crappie, bullhead or smelt in Vermont?
 Do you fish on Lake Champlain during either the open water or ice fishing seasons?
 Do you fish with live bait in Vermont?

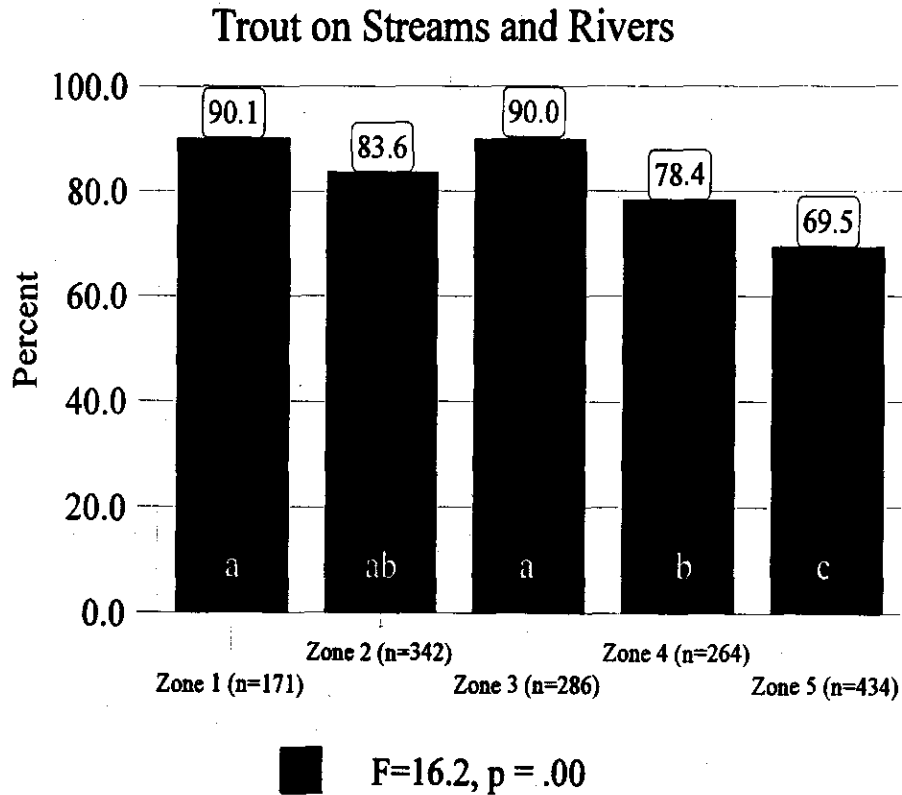


Figure 7-4. Percent who fished for trout on streams and rivers by region of residence. (Letters in bars show statistically significant differences between regions.)

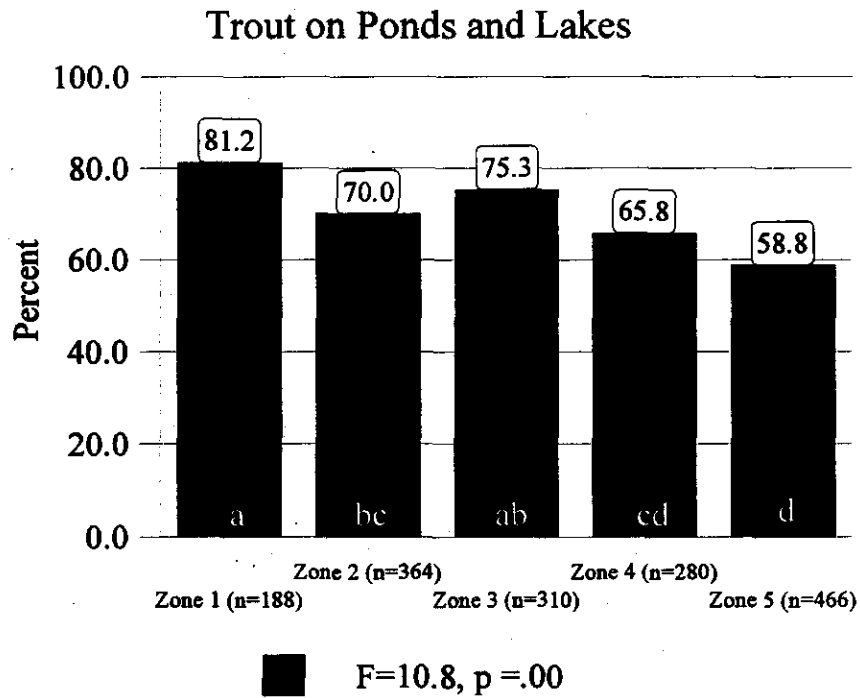


Figure 7-5. Percent who fished trout on ponds and lakes by region of residence. (Letters in bars show statistically significant differences between regions.)

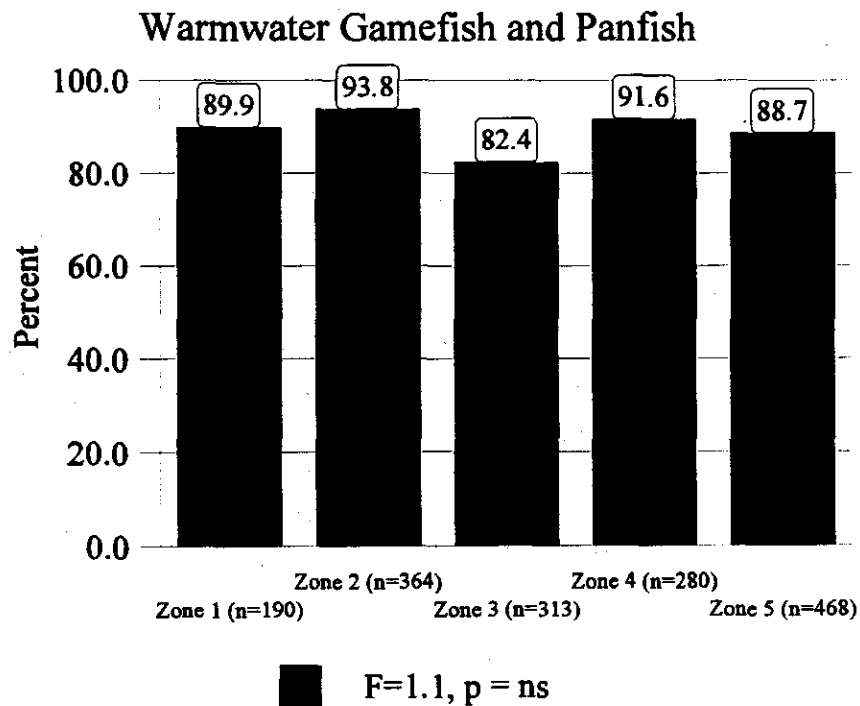


Figure 7-6. Percent who fished for warm water game fish and panfish by region of residence.

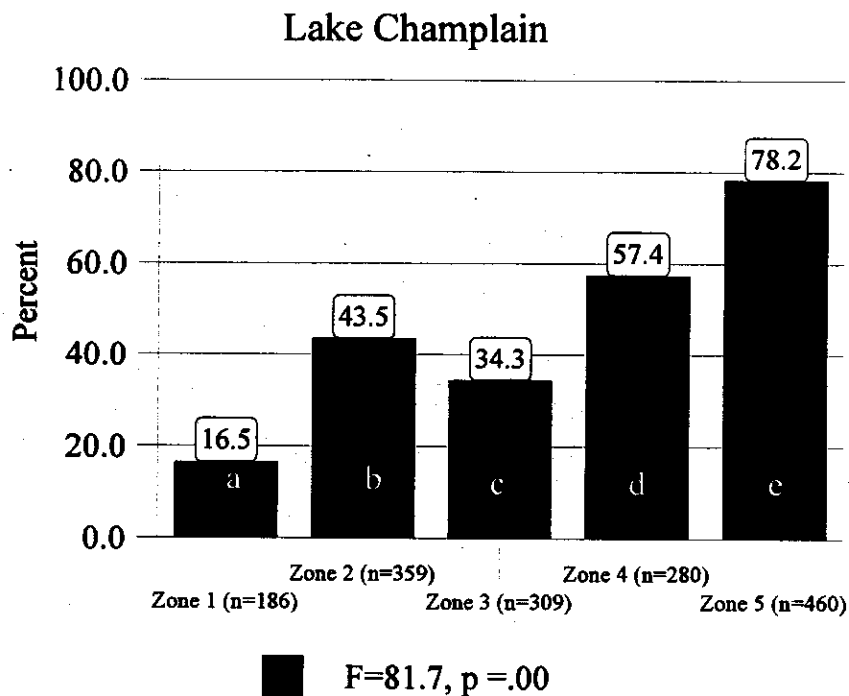


Figure 7-7. Percent who fished on Lake Champlain by region of residence. (Letters in bars show statistically significant differences between regions.)

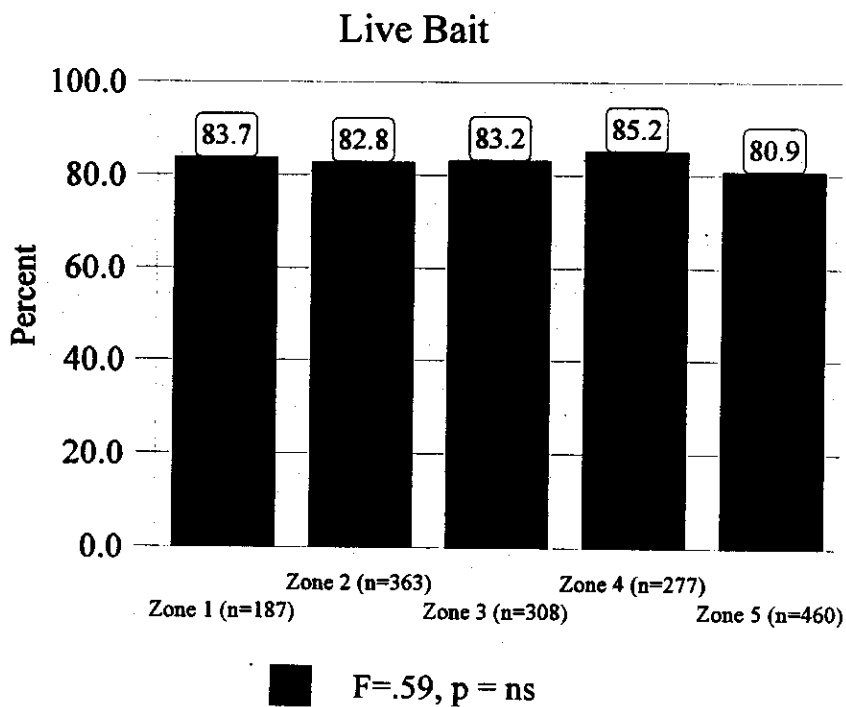


Figure 7-8. Percent who fished with live bait.

Fishing Participation Outside of Vermont

Questionnaire Item:

About how many days did you fish in the following types of water outside of Vermont in 1999. (Please write in the number of days fished in the appropriate box.)

Table 7-1. Fishing participation outside of Vermont by region of residence.

	% Participation					F (p)
	Zone 1 n=190	Zone 2 n=367	Zone 3 n=313	Zone 4 n=280	Zone 5 n=468	
Great Lakes	6.0	4.9	7.7	5.3	8.5	1.46 (ns)
Other fresh water	25.6 _a	21.0 _a	34.1 _b	24.2 _a	21.8 _a	4.98 (.00)
Salt water	18.8 _a	17.6 _a	26.9 _b	22.5 _{ab}	17.3 _a	3.45 (.00)
	Average # of days					F (p)
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	
Great Lakes	4.6	10.1	7.1	7.8	6.6	.49 (ns)
Other fresh water	15.3	12.5	16.1	13.1	10.2	1.54 (ns)
Salt water	3.3	5.2	6.2	4.3	4.3	2.18 (ns)

Note. Subscripts show statistically significant differences between regions.

Game Species by Region of Residence

Questionnaire Item:

Which of the following fish do you fish for in Vermont? (Circle the number(s) of ALL the kinds of fish that you fish for.)

Table 7-2. Percent of people who fish for game fish species by zone of residence.

	Total	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Nonres.
	% (rank)	% (rank)	% (rank)	% (rank)	% (rank)	% (rank)	% (rank)
Brook Trout	76 (1)	86 (1)	80 (1)	88 (2)	73 (1)	70 (3)	59 (2)
Rainbow Trout	73 (2)	86 (2)	80 (2)	89 (1)	72 (2)	60 (5)	57 (3)
Brown Trout	68 (3)	70 (3)	73 (3)	82 (3)	72 (3)	59 (6)	57 (4)
Smallmouth Bass	66 (4)	52 (6)	71 (4)	65 (5)	65 (6)	73 (1)	60 (1)
Yellow Perch	61 (5)	66 (4)	64 (5)	55 (6)	70 (5)	71 (2)	29 (8)
Largemouth Bass	62 (6)	41(7)	62 (6)	66 (4)	71 (4)	65 (4)	56 (5)
Northern Pike	46 (7)	30 (11)	45 (7)	44 (8)	51 (7)	54 (7)	36 (6)
Lake Trout	43 (8)	58 (5)	45 (8)	46 (7)	42 (9)	38 (9)	35 (7)
Walleye	35 (9)	24 (12)	32 (10)	36 (10)	32 (11)	49 (8)	22 (10)
Bullhead	31 (10)	33 (9)	28 (11)	37 (9)	43 (8)	31 (11)	10 (15)
Pickereel	27 (11)	31 (10)	33 (9)	33 (11)	22 (15)	24 (13)	17 (11)
Salmon	26 (12)	36 (8)	19 (12)	25 (12)	19 (18)	32 (10)	24 (9)
Sunfish	23 (13)	20 (14)	16 (13)	21 (13)	36 (10)	25 (12)	17 (12)
Smelt	17 (14)	22 (13)	13 (15)	13 (17)	28 (13)	18 (16)	5 (22)
Rock Bass	17 (15)	16 (15)	15 (14)	17 (15)	24 (14)	17 (17)	13 (14)
White Perch	16 (16)	14 (16)	10 (16)	19 (14)	21 (17)	19 (15)	9 (16)
Crappie	17 (17)	6 (17)	7 (18)	15 (16)	32 (12)	20 (14)	17 (13)
Channel Catfish	11 (18)	2 (23)	10 (17)	14 (18)	22 (16)	8 (18)	8 (18)
Sucker	4 (19)	5 (18)	4 (20)	4 (21)	4 (23)	4 (21)	6 (21)
Drum	3 (20)	4 (21)	2 (22)	3 (22)	6 (20)	4 (22)	2 (23)
Muskellunge	4 (21)	1 (24)	2 (23)	3 (23)	3 (24)	5 (20)	7 (19)
Carp	3 (22)	5 (19)	3 (21)	2 (24)	6 (21)	4 (23)	0 (25)
Sauger	3 (23)	1(25)	7 (19)	2 (25)	8 (19)	2 (25)	2 (24)
Gar	2 (24)	5 (20)	1 (25)	2 (26)	3 (25)	3 (24)	0 (26)
American Shad	2 (25)	0 (26)	2 (24)	6 (20)	6 (22)	6 (19)	7 (20)
Whitefish	2 (26)	3 (22)	1 (26)	8 (19)	2 (26)	2 (26)	9 (17)
Total Responses	1787	184	355	305	275	454	215

Questionnaire Item:

What kinds of fish (listed in question 1) do you prefer to fish for during the OPEN-WATER season in Vermont? (Please rank your top three choices by writing the species number in the appropriate box.)

Table 7-3. Most preferred game species by zone of residence - open water.

	Total	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Nonres.
	%	%	%	%	%	%	%
Brook Trout	25	43	23	29	28	20	16
Rainbow Trout	13	14	16	18	11	9	13
Largemouth Bass	12	2	13	9	16	13	12
Smallmouth Bass	9	10	10	6	5	11	15
Brown Trout	6	5	6	10	4	3	7
Walleye	5	2	5	6	4	8	2
Yellow Perch	4	3	5	0	4	5	2
Salmon	4	5	2	2	3	8	5
Lake Trout	3	6	3	4	1	1	6
Total Responses	1713	175	345	290	265	437	187

Questionnaire Item:

What kinds of fish (listed in question 1) do you prefer to fish for during the Ice-FISHING season in Vermont? (Please rank your top three choices by writing the species number in the appropriate box.)

Table 7-4. Most preferred game species by zone of residence - ice fishing.

	Total	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Nonres.
	%	%	%	%	%	%	% ¹
Yellow Perch	36	34	37	16	32	50	16
Northern Pike	13	4	11	23	9	16	24
Lake Trout	9	31	9	7	6	2	20
Smelt	6	2	4	4	15	5	7
Walleye	6	1	7	9	6	5	2
Rainbow Trout	4	10	5	4	5	1	6
Brown Trout	4	5	3	3	7	1	18
Salmon	3	3	1	1	2	6	1
White Perch	1	2	2	0	1	1	0
Total Responses	780	86	157	114	265	248	32

1 - Small sample size. Percentages and scales may not be reliable.

Overall Quality

Questionnaire Item:
Overall, how would you rate the present quality of fishing in Vermont?

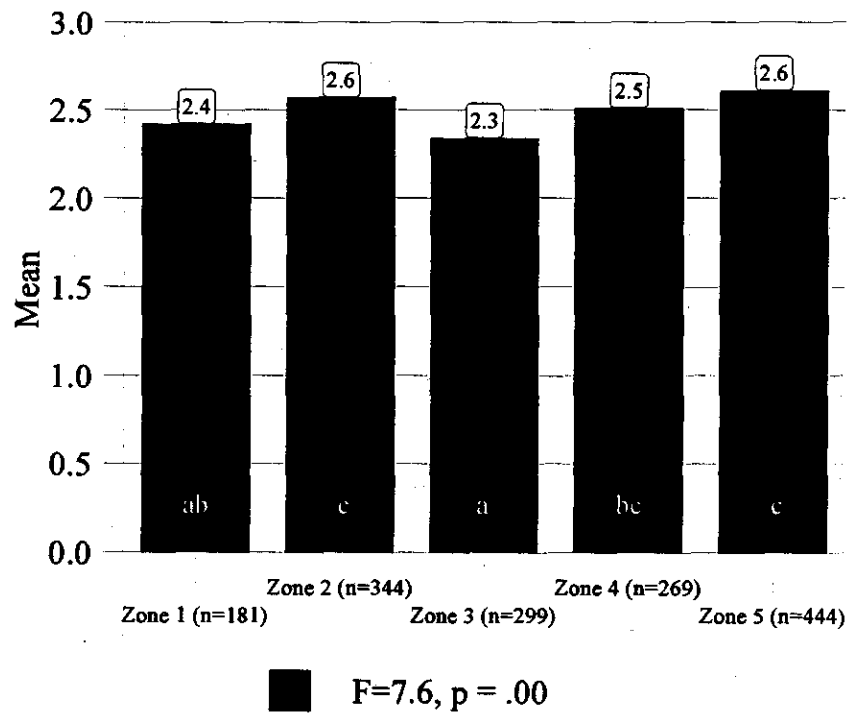


Figure 7-9. Perceived quality of Vermont's fishery. (Letters in bars show statistically significant differences between regions.) (1=poor, 2=fair, 3=good, 4=excellent)

Angler Opinions about Fishing Regulations

Fish Length for Trout on Streams and Rivers

Questionnaire Items:

If there were no minimum length limits, what is the **smallest** length of each species that you would **keep** when fishing [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish]?

When fishing in [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish], what is the **smallest** length of each species that you would consider a **good** or **quality** size fish?

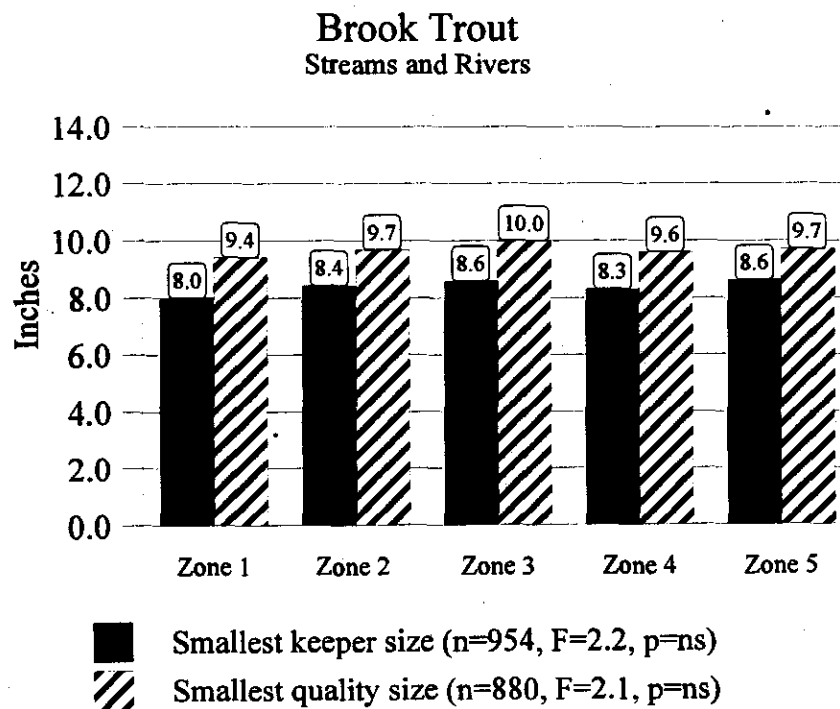


Figure 7-10. Average smallest "keeper" and "quality" size brook trout on streams and rivers by region of the state.

Brown Trout Streams and Rivers

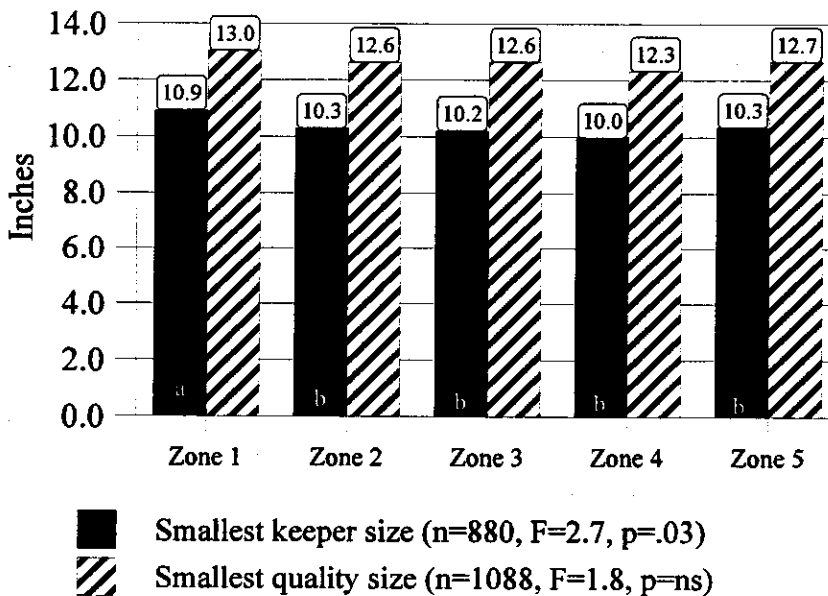


Figure 7-11. Average smallest “keeper” and “quality” size of brown trout on streams and rivers by region of the state. (Letters in bars show statistically significant differences between regions.)

Rainbow Trout Streams and Rivers

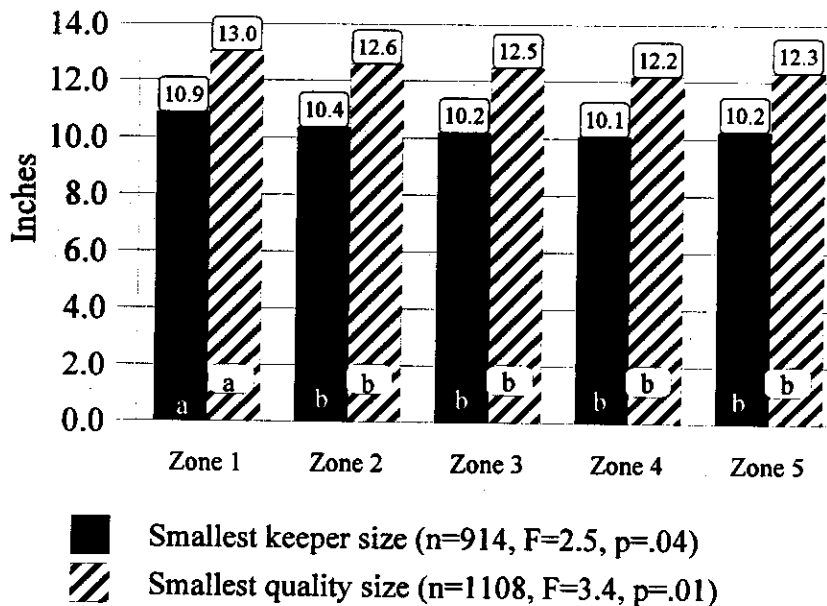


Figure 7-12. Average smallest “keeper” and “quality” size of rainbow trout on streams and rivers by region of the state. (Letters in bars show statistically significant differences between regions.)

Fish Length for Trout on Ponds and Lakes

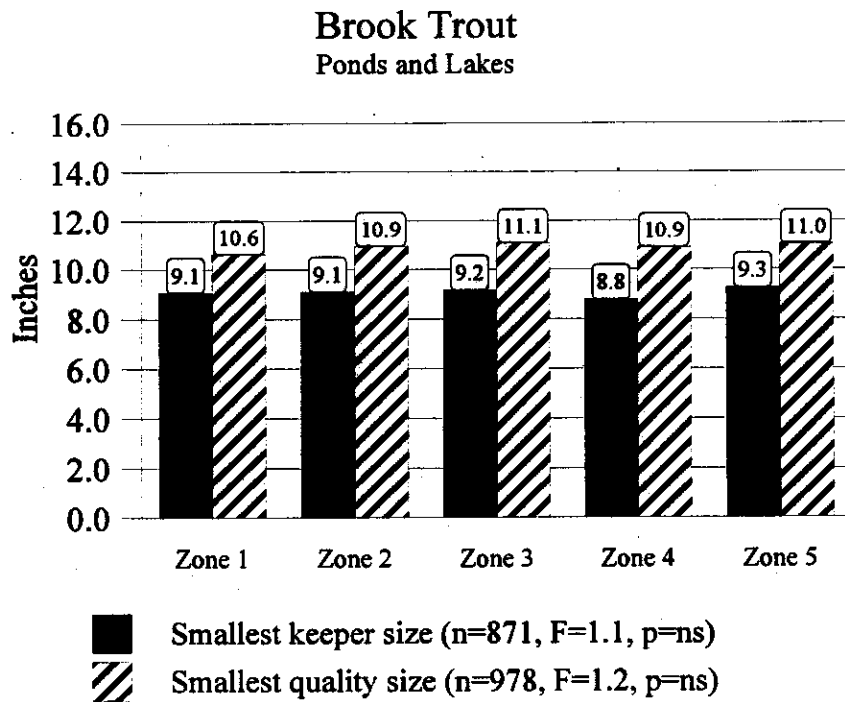


Figure 7-13. Average smallest “keeper” and “quality” sized brook trout on ponds and lakes by region of residence.

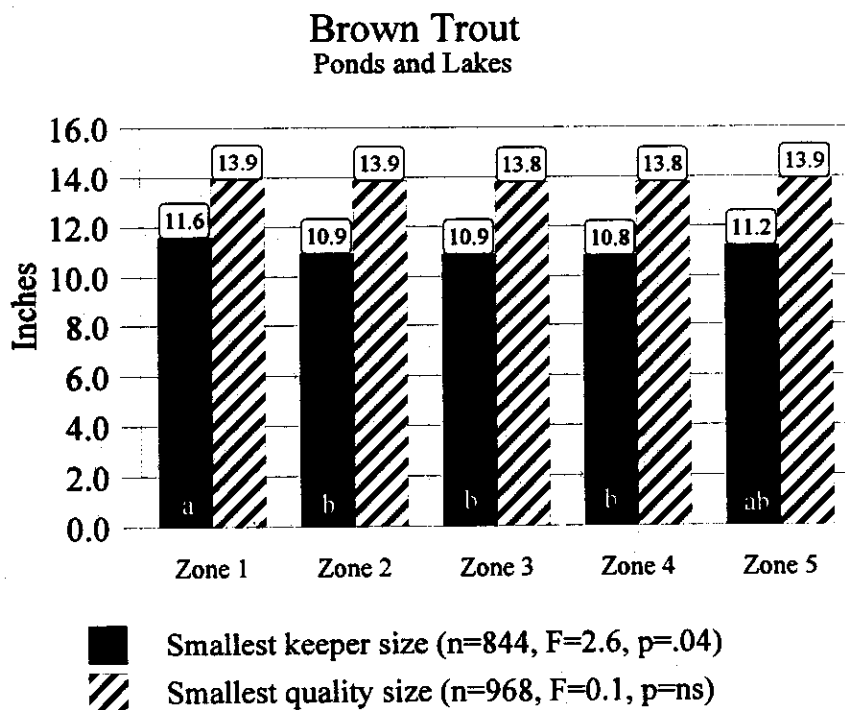


Figure 7-14. Average smallest “keeper” and “quality” size brown trout on ponds and lakes by region of residence. (Letters in bars show statistically significant differences between regions.)

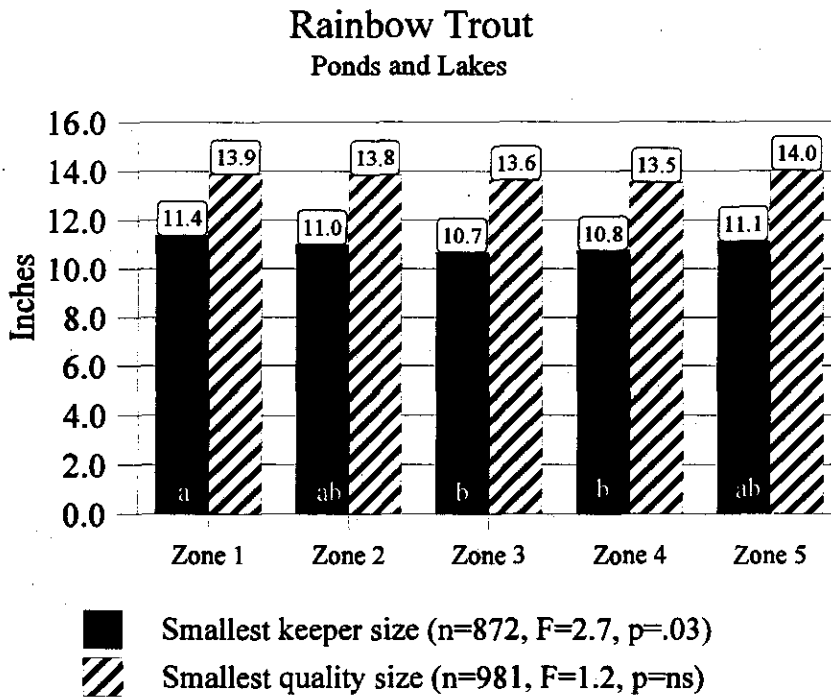


Figure 7-15. Average smallest “keeper” and “quality” size rainbow trout on ponds and lakes by region of residence. (Letters in bars shows statistically significant differences between regions.)

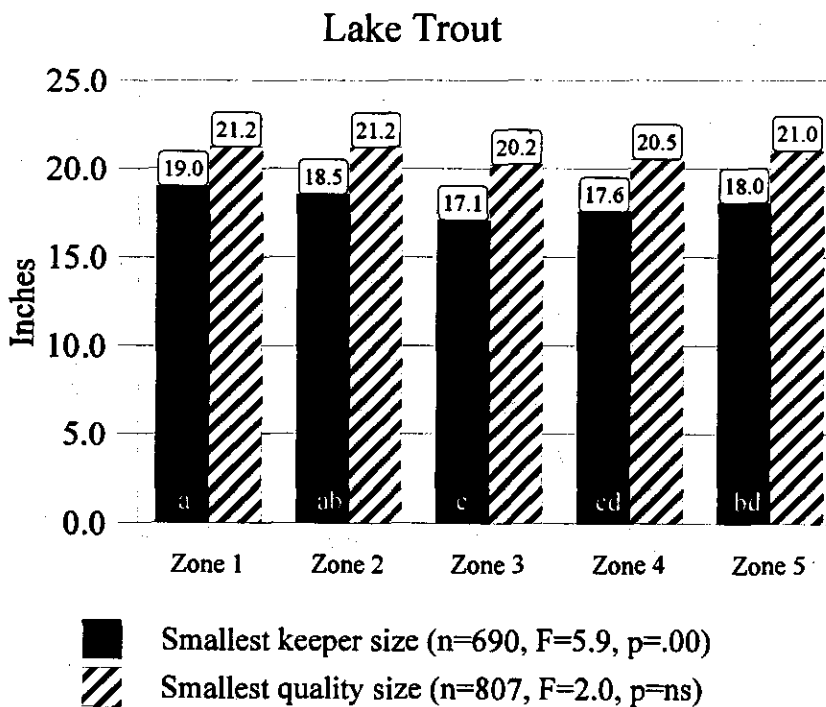


Figure 7-16. Average smallest “keeper” and “quality” size lake trout on ponds and lakes by region of residence. (Letters in bars show statistically significant differences between regions.)

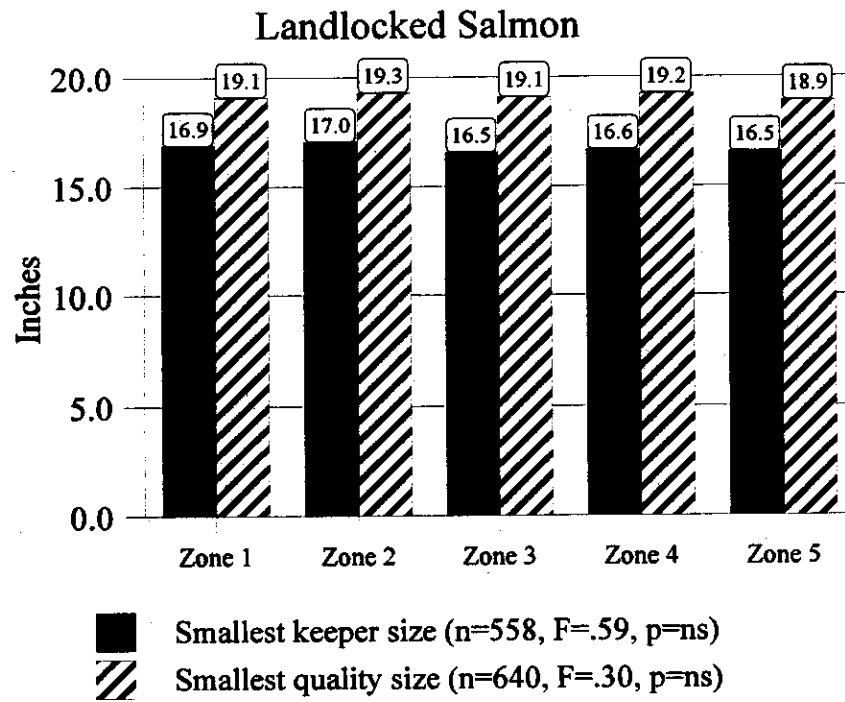


Figure 7-17. Average smallest “keeper” and “quality” size landlocked salmon on ponds and lakes by region of residence.

Fish Length for Warm Water Game Fish

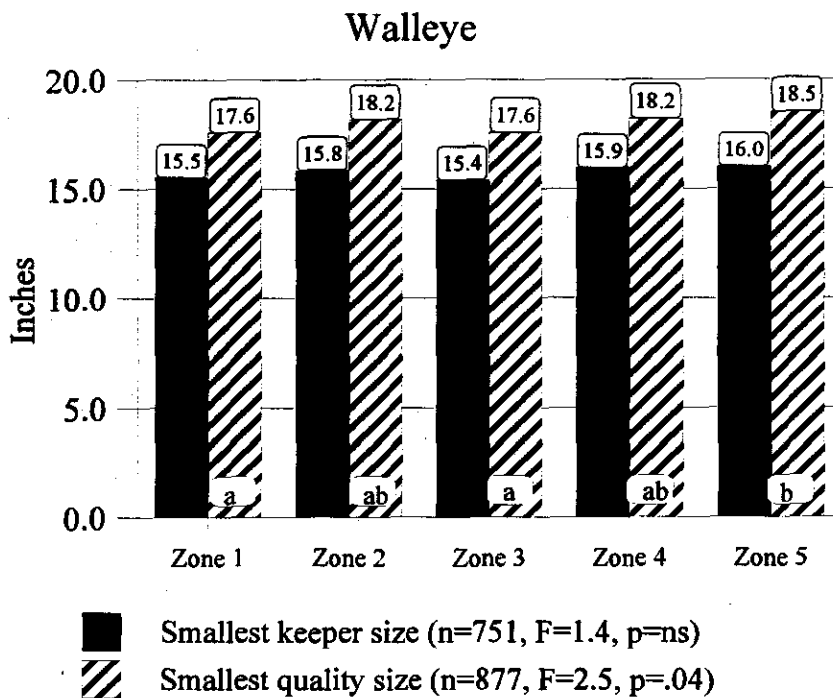


Figure 7-18. Average smallest “keeper” and “quality” size walleye by region of residence. (Letters in bars show statistically significant differences between regions.)

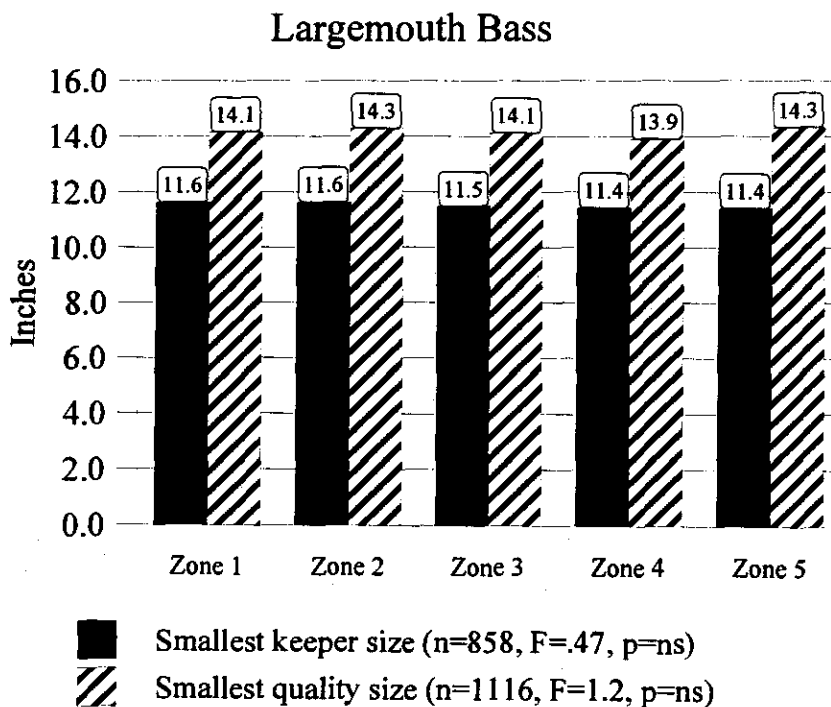


Figure 7-19. Average smallest “keeper” and “quality” size largemouth bass by region of residence.

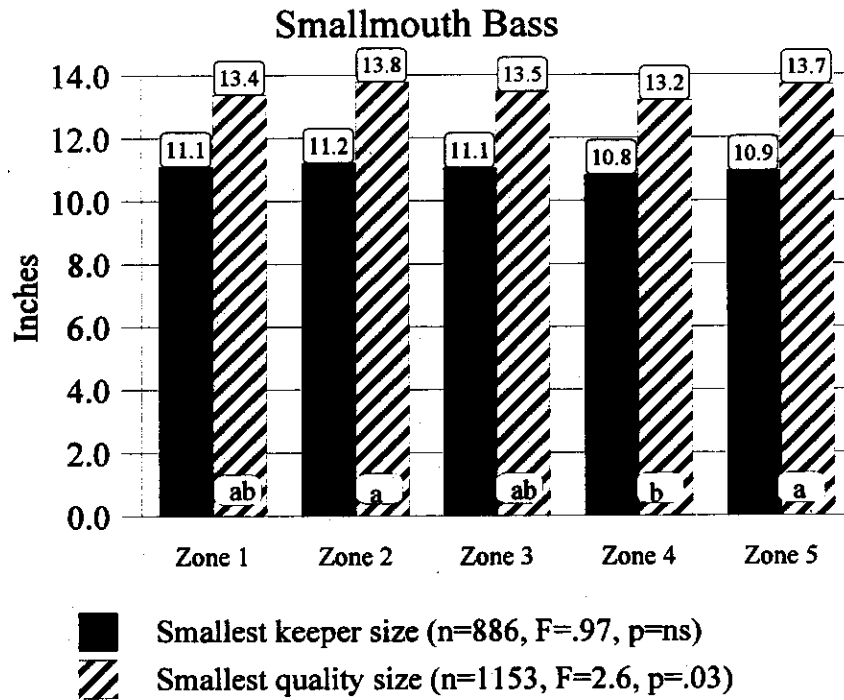


Figure 7-20. Average smallest “keeper” and “quality” size smallmouth bass by region of residence. (Letters in boxes show statistically significant differences between regions.)

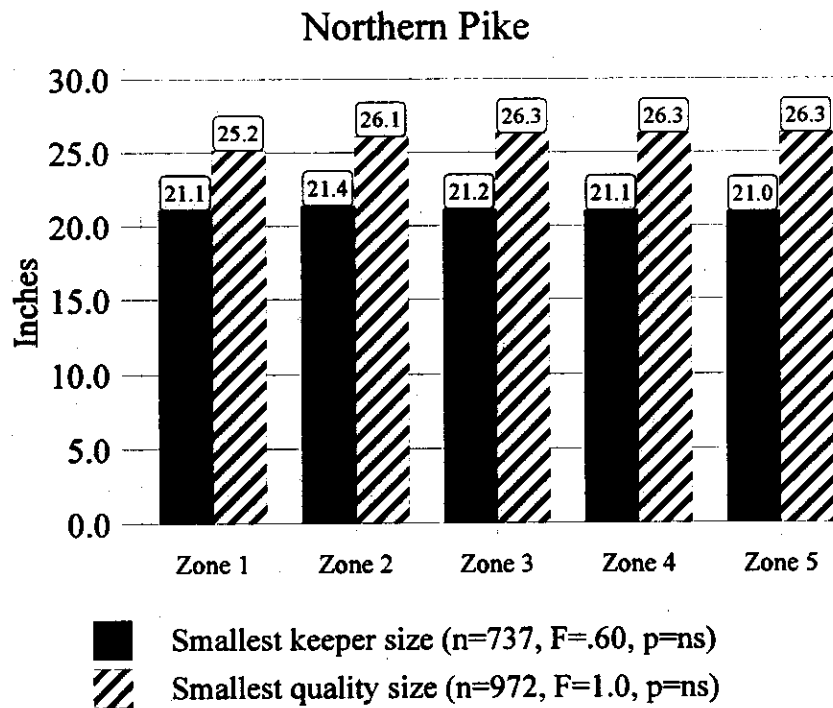


Figure 7-21. Average smallest “keeper” and “quality” size northern pike by region of residence.

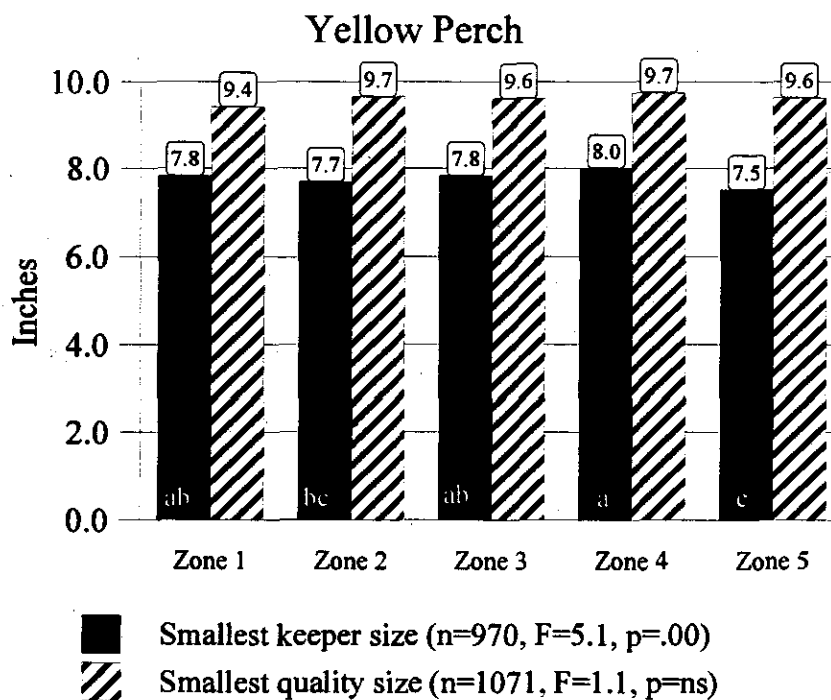


Figure 7-22. Average smallest “keeper” and “quality” size yellow perch by region of residence. (Letters in bars shows statistically significant differences between regions.)

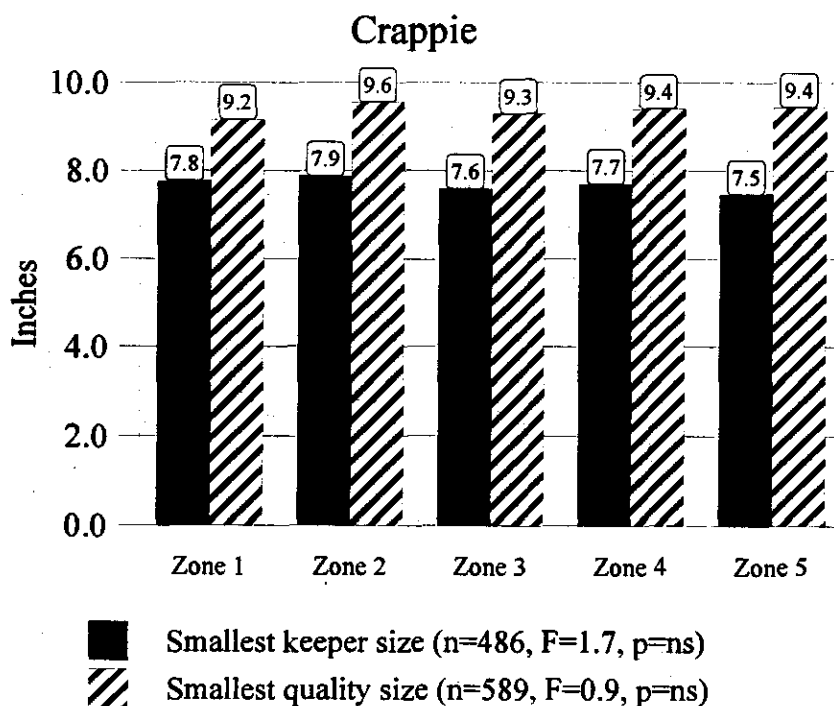


Figure 7-23. Average smallest “keeper” and “quality” size crappie by region of residence.

Creel Limits for Trout on Streams and Rivers

Questionnaire Items:

The general daily creel limit for trout in [STREAMS or RIVERS, PONDS and LAKES] is listed below for each species and for a combined trout catch. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

For the majority of lakes in Vermont that offer lake trout fishing, the current daily limit for lake trout, landlocked salmon, brook trout, brown trout, lake trout, or rainbow trout is 2 fish of any one species or combination of species. Do you AGREE or DISAGREE with the current limits. (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

The current daily creel limit for several warmwater gamefish and panfish are listed below. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

Table 7-5. Percent who agree with current daily creel limits for trout on streams and rivers by region of residence.

Species (limit)	n	Zone 1 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	F (p)
Brook Trout (12)	1139	67.3 _{ab}	66.3 _{ab}	60.6 _a	73.2 _b	59.8 _a	2.95 (.02)
Brown Trout (6)	1105	72.5	70.0	65.9	71.4	67.5	.69 (ns)
Rainbow Trout (6)	1118	72.1	68.6	67.1	70.1	67.7	.33 (ns)
Combined (12)	1068	74.6	67.0	66.2	70.8	66.4	1.02 (ns)

Note. Subscripts show statistically significant differences between regions.

Table 7-6. Percent who agree with current daily creel limits for trout on ponds and lakes by region of residence.

Species (limit)	n	Zone 1 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	F (p)
Brook Trout (6)	974	74.5	72.0	71.7	71.4	73.9	.17 (ns)
Brown Trout (6)	962	69.6	70.6	70.7	76.6	71.1	.61 (ns)
Rainbow Trout (6)	972	67.1	70.0	69.0	77.7	72.9	1.38 (ns)
Combined (6)	953	71.3	68.9	61.4	62.9	70.5	1.71 (ns)

Table 7-7. Percent who agree with current daily creel limits for trout and salmon on lakes that offer lake trout fishing by region of residence.

Species (limit)	n	Zone 1 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	F (p)
Lake Trout (2)	919	90.7 _a	79.7 _b	74.9 _{bc}	69.5 _c	78.8 _b	5.28 (.00)
Landlocked Salmon (2)	863	88.0 _a	88.1 _a	77.7 _b	77.5 _b	85.1 _{ab}	3.33 (.01)
Brook Trout (2)	934	66.2 _{ab}	63.0 _{ab}	58.0 _a	57.1 _a	72.2 _b	3.27 (.01)
Brown Trout (2)	923	79.9 _a	68.9 _b	65.0 _b	59.7 _b	78.7 _a	6.17 (.00)
Rainbow Trout (2)	933	79.0 _a	67.7 _{bc}	59.4 _b	60.7 _b	75.9 _{ac}	6.24 (.00)
Combined (2)	899	63.7 _a	57.3 _{ab}	51.8 _b	50.0 _b	65.2 _a	3.28 (.01)

Note. Subscripts show statistically significant differences between regions.

Table 7-8. Percent who agree with current daily creel limits for warm water game fish by region of residence.

Species (limit)	n	Zone 1 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	F (p)
Walleye (5)	981	71.5 _{ab}	71.4 _{ab}	73.8 _a	71.2 _{ab}	62.6 _b	2.34 (.05)
Bass (5)	1148	79.5	73.2	73.5	73.1	73.7	.52 (ns)
Northern Pike (5)	1014	68.5	70.0	71.9	73.5	63.5	1.82 (ns)
Yellow Perch (50)	1128	72.8	74.2	77.9	72.8	72.5	.55 (ns)
Crappie (50)	814	85.3	81.3	82.5	75.8	75.1	1.69 (ns)
Sunfish (no limit)	882	96.2	92.7	94.9	90.5	91.5	1.13 (ns)
Crappie (no limit)	897	86.7 _{ab}	90.6 _a	90.4 _a	81.7 _b	89.3 _a	2.33 (.05)
Bullhead (no limit)	922	90.7	91.9	92.7	92.6	89.0	.69 (ns)
White Perch (no limit)	877	95.0	91.5	90.4	93.1	87.6	1.57 (ns)

Note. Subscripts show statistically significant differences between regions.

Support for Special Regulations

Questionnaire Item:

Special regulations can be used in certain waters to increase the number and/or size of fish available. (Please fill in ALL the special regulations that you might support [for trout fishing in some STREAMS and RIVERS; in some PONDS and LAKES for the types of fishing listed below; on some waters for the types of fishing listed below]).

Table 7-9. Average number of special regulations (out of 5) supported by region of residence.

Species	n	Zone 1 mean	Zone 2 mean	Zone 3 mean	Zone 4 mean	Zone 5 mean	F (p)
Streams and Rivers							
Brook, Brown, and Rainbow Trout	1175	1.91	2.04	1.97	1.95	2.08	.67 (ns)
Ponds and Lakes							
Brook, Brown, and Rainbow Trout	919	1.57 _a	1.93 _b	1.83 _{ab}	1.79 _{ab}	1.97 _b	2.37 (.05)
Lake Trout	793	1.35 _a	1.80 _b	1.72 _b	1.63 _b	1.91 _b	4.31 (.00)
Landlocked Salmon	783	1.49 _a	2.06 _b	1.82 _b	1.81 _b	1.88 _b	3.59 (.00)
Warm Water Game Fish							
Largemouth, Smallmouth Bass	1046	1.83 _{ab}	2.05 _a	1.65 _b	1.72 _b	1.83 _{ab}	2.83 (.02)
Walleye	955	1.73	1.96	1.67	1.67	1.80	1.77 (ns)
Northern Pike	930	1.67	1.93	1.66	1.61	1.74	1.69 (ns)

Note. Subscripts show statistically significant differences between regions.

Questionnaire Item:
 We would like to find out your opinion on the use of HATCHERY TROUT in managing Vermont's fisheries.

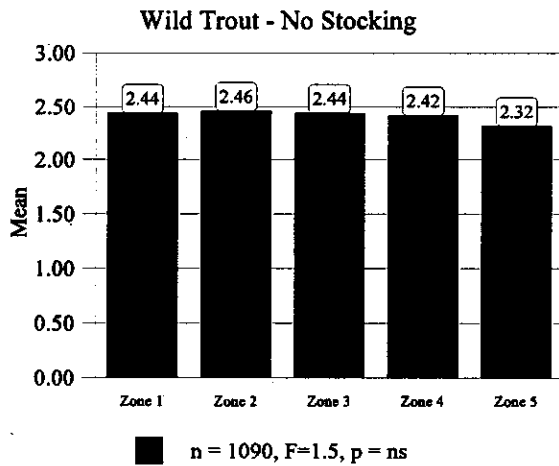


Figure 7-24. Opinions about managing strictly for wild trout in some streams and rivers by region of residence. (1=not important, 2=somewhat important, 3=very important)

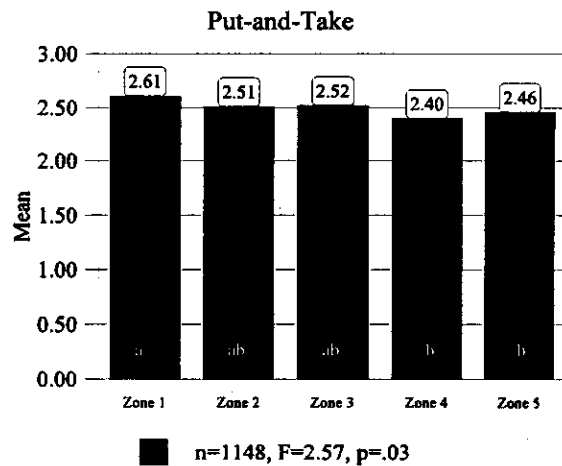


Figure 7-25. Opinions about put-and-take management by region of residence. (Letters in bars show statistically significant differences between regions.) (1=not important, 2=somewhat important, 3=very important)

Allowable Number of Fishing Lines

Questionnaire Item:
 General regulations allow the use of 2 lines when fishing during the OPEN-WATER season and 8 lines during the ICE-FISHING season. Do you agree with the number of lines allowed in each season? (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommended number of lines.)

Table 7-10. Percent agreement with the allowable number of fishing lines in open water and ice fishing by region of residence.

Water (# of lines)	n	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	F (p)
		%	%	%	%	%	
Open Water (2)	1427	87.6	89.4	88.0	86.5	86.5	.43 (ns)
Ice Fishing (8)	1249	83.0	77.7	80.3	78.9	75.1	1.20 (ns)

Bait and Tackle Use

Tackle Use by Region of Residence

Questionnaire Items:

What tackle do you most often use to fish for:

- brook, brown, and rainbow trout in STREAMS and RIVERS
- trout or salmon during the OPEN-WATER season in PONDS and LAKES
- the following fish species (Walleye, Bass, Northern Pike)

in Vermont?

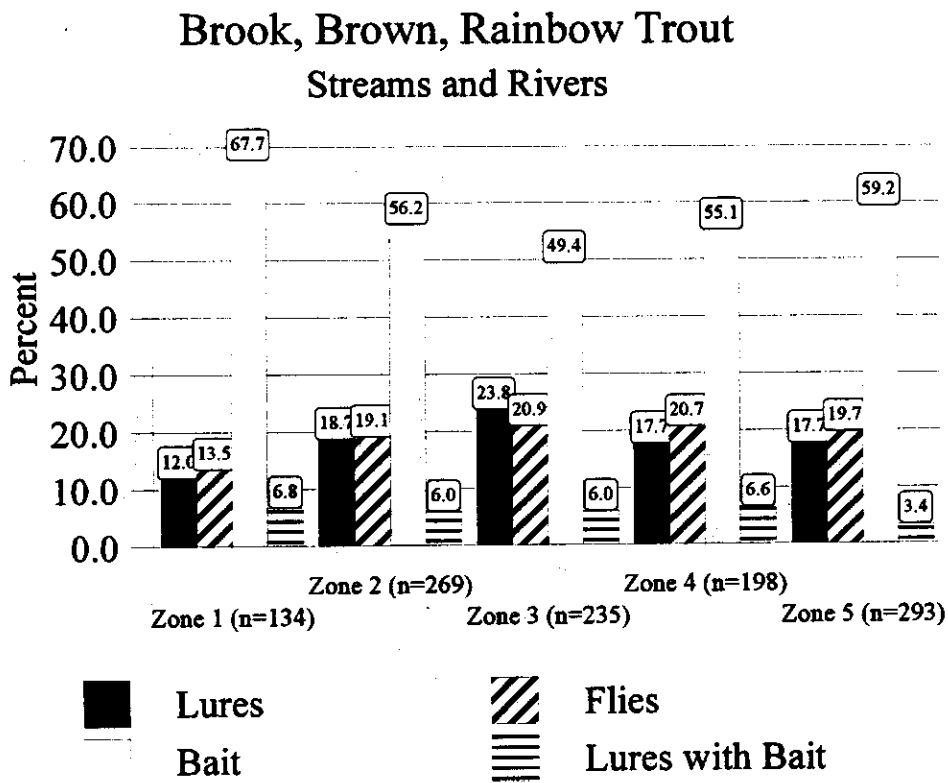


Figure 7-26. Tackle most often used for trout on streams or rivers by region of residence. ($X^2 = 18.44$, $df = 12$, $p = ns$)

Brook, Brown, Rainbow Trout Ponds and Lakes

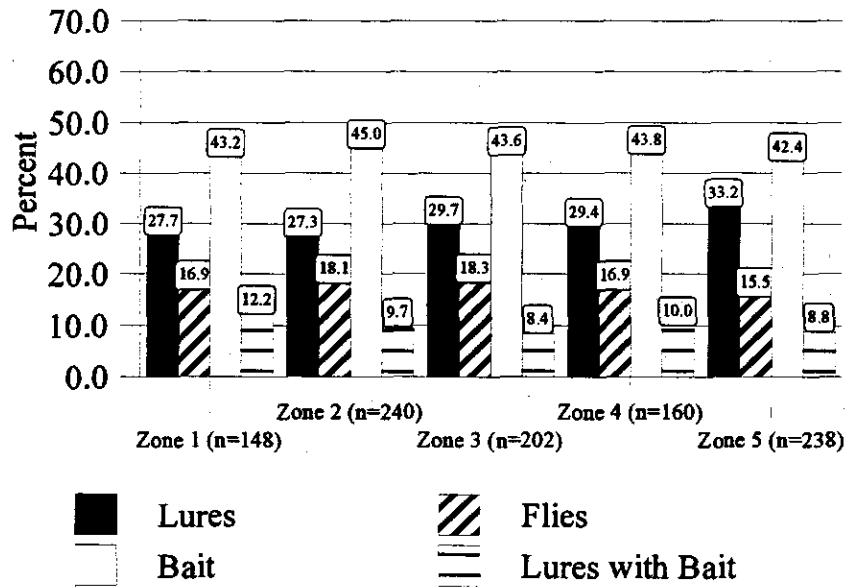


Figure 7-27. Tackle most often used for brook, brown, or rainbow trout on ponds and lakes by region of residence. ($X^2 = 3.97$, $df = 12$, $p = ns$)

Lake Trout

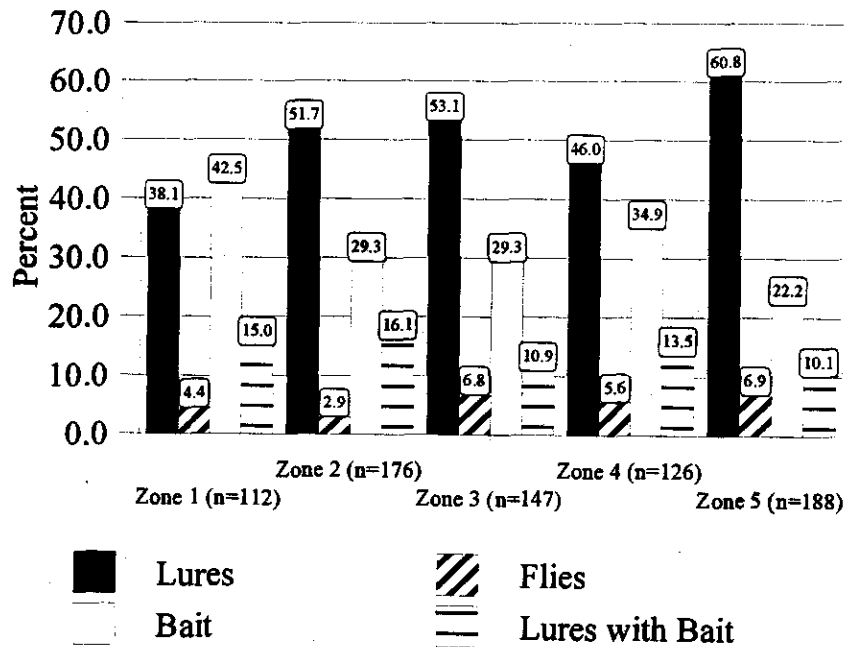


Figure 7-28. Tackle most often used when fishing on open water for lake trout by region of residence. ($X^2 = 25.4$, $df = 12$, $p = .01$)

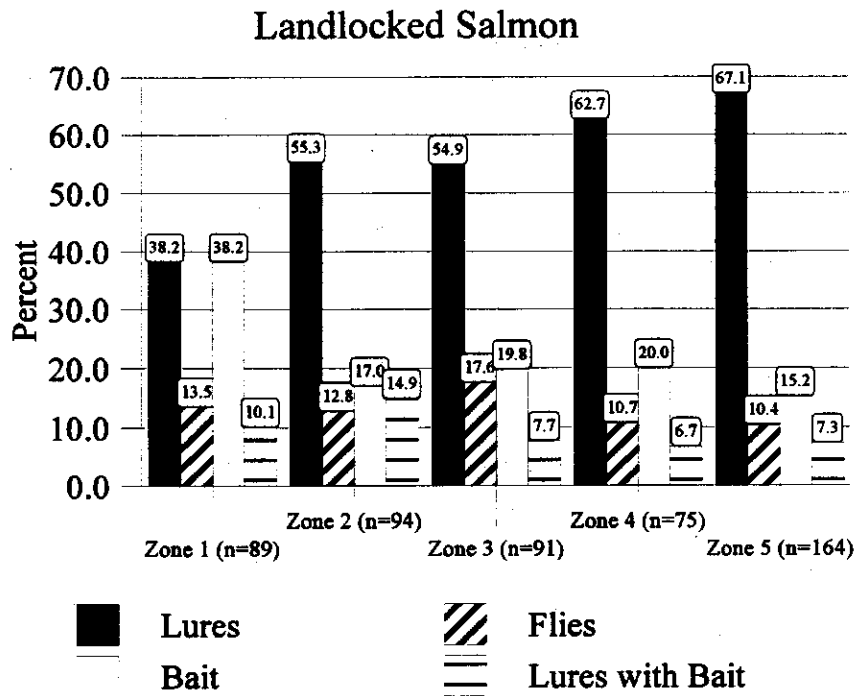


Figure 7-29. Tackle most often used when fishing for landlocked salmon by region of residence. ($X^2 = 32.4$, $df = 12$, $.01$)

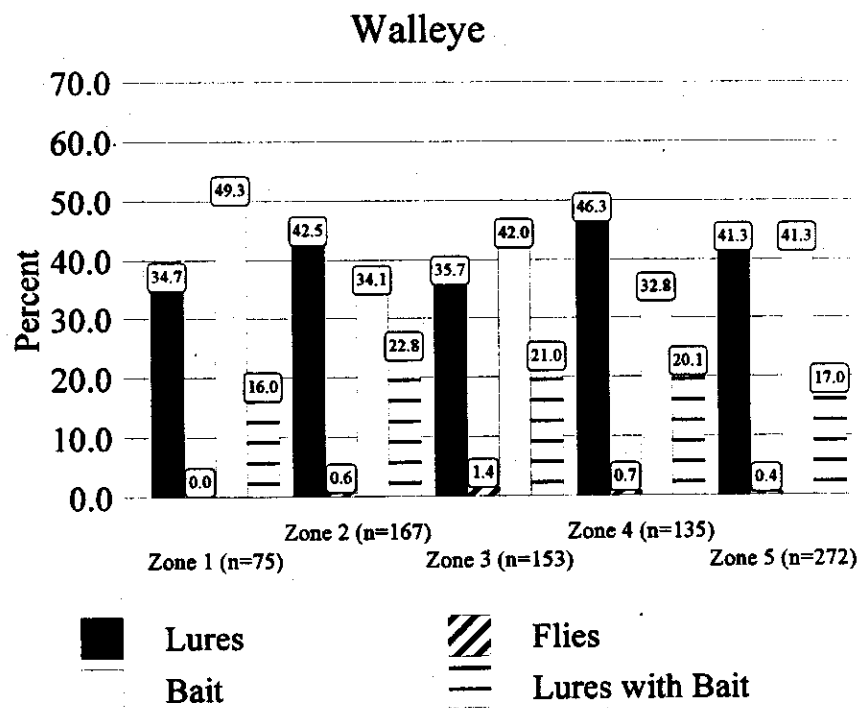


Figure 7-30. Tackle most often used when fishing on open water for walleye by region of residence. ($X^2 = 12.4$, $df = 12$, $p = ns$)

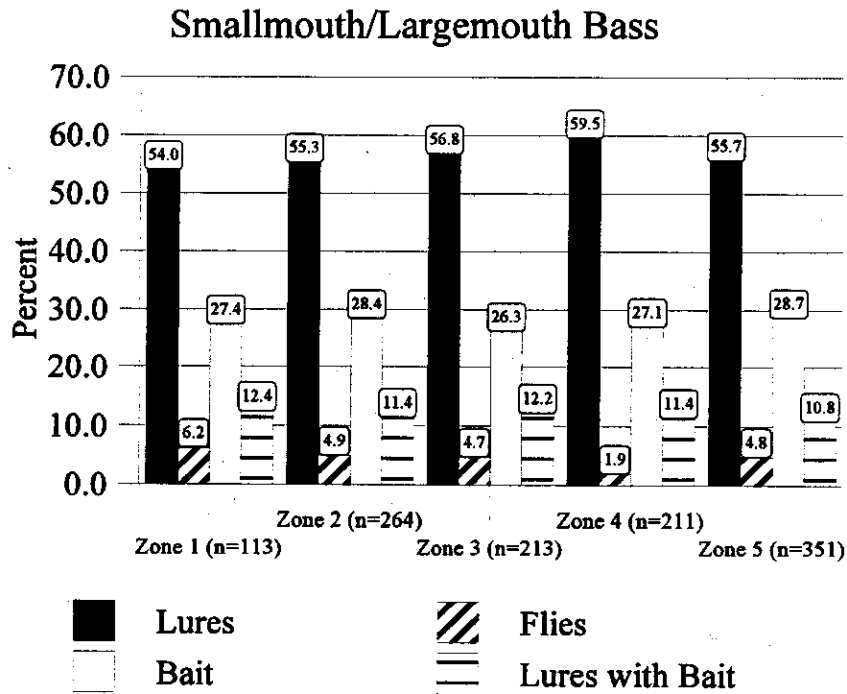


Figure 7-31. Tackle most often used when fishing for largemouth or smallmouth bass by region of residence. ($X^2 = 5.3$, $df = 12$, $p = ns$)

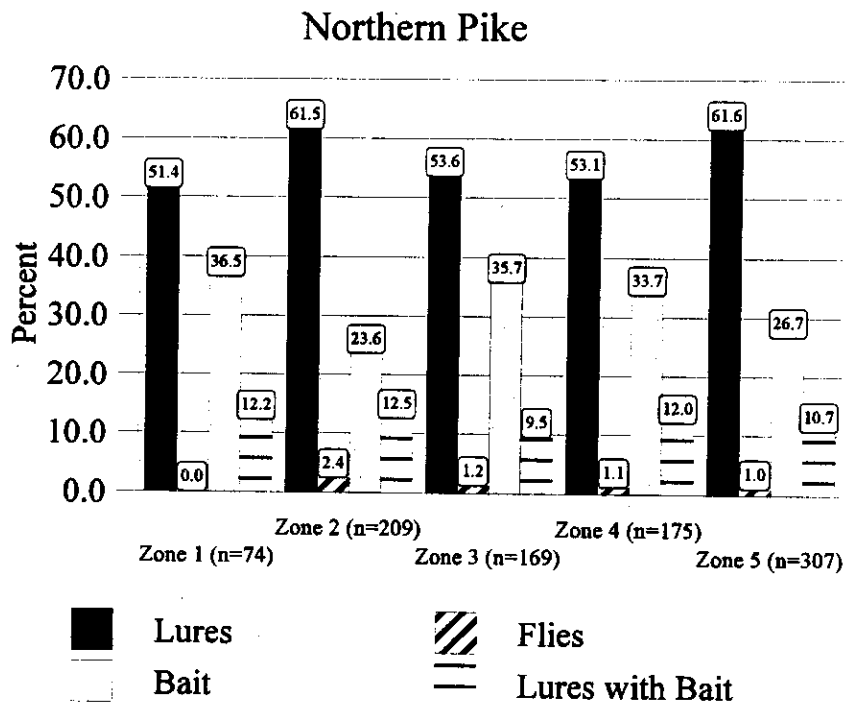


Figure 7-32. Tackle most often used when fishing for Northern Pike by region of residence. ($X^2 = 14.9$, $df = 12$, $p = ns$)

Live Bait Used for Open Water Fishing

Questionnaire Item:
Do you fish with the following types of live bait in OPEN-WATER?

Table 7-11. Mean response to frequency of bait use for **open water** fishing by region of residence (1=never, 2=sometimes, 3=often, 4=always).

	Zone 1 n=156	Zone 2 n=299	Zone 3 n=254	Zone 4 n=235	Zone 5 n=368	F (p)
Fish (minnows, smelt)	2.03 _a	1.86 _b	1.91 _{ab}	2.03 _a	2.07 _a	3.66 (.00)
Crayfish	1.29 _{ab}	1.43 _c	1.38 _{ab}	1.27 _a	1.39 _{bc}	3.41 (.00)
Frogs/Salamanders	1.08 _a	1.20 _{bc}	1.18 _{bc}	1.16 _b	1.26 _c	5.14 (.00)
Leeches	1.03	1.07	1.06	1.06	1.07	.51 (ns)
Worms/Nightcrawler	3.24	3.08	3.07	3.12	3.07	1.47 (ns)
Insects	1.33 _a	1.43 _{ab}	1.50 _b	1.46 _{ab}	1.35 _a	2.93 (.02)

Note. Subscripts show statistically significant differences between regions.

Live Bait Used for Ice Fishing

Questionnaire Item:
Do you fish with the following types of live bait in ICE FISHING?

Table 7-12. Mean response to frequency of bait use for **ice fishing** by region of residence (1=never, 2=sometimes, 3=often, 4=always).

	Zone 1 n=100	Zone 2 n=199	Zone 3 n=141	Zone 4 n=153	Zone 5 n=263	F (p)
Fish (minnows, smelt)	2.98 _{abc}	2.86 _a	3.14 _{bc}	3.23 _c	2.89 _{ab}	3.69 (.00)
Crayfish	1.04 _a	1.04 _a	1.13 _b	1.03 _a	1.04 _a	3.47 (.00)
Frogs/Salamanders	1.00	1.02	1.05	1.01	1.03	1.01 (ns)
Leeches	1.03	1.05	1.04	1.02	1.03	.50 (ns)
Worms/Nightcrawler	1.47	1.51	1.52	1.52	1.36	1.52 (ns)
Insects	1.29 _a	1.30 _a	1.32 _a	1.42 _a	1.14 _b	4.93 (.00)

Note. Subscripts show statistically significant differences between regions.

Sources of Live Bait

Questionnaire Items:
Where do you usually get the following types of bait?

Table 7-13. Percent of respondents who used live bait and purchased their bait from a bait shop, by region of residence.

	n	Zone 1 %	Zone 2 %	Zone 3 %	Zone 4 %	Zone 5 %	F (p)
Fish (minnows, smelt)	964	80.7 _{ab}	72.3 _a	76.3 _{ab}	83.0 _b	83.0 _b	2.75 (.02)
Crayfish	384	9.8	19.6	29.3	28.6	31.2	2.18 (ns)
Frogs/Salamanders	230	0.0	9.2	12.7	2.5	14.4	1.41 (ns)
Leeches	75	59.0	49.6	74.8	47.5	71.1	.96 (ns)
Worms/Nightcrawler	1165	43.2 _a	52.3 _a	51.1 _a	45.5 _a	66.9 _b	8.38 (.00)
Insects	413	41.8	32.3	23.8	35.3	30.8	1.36 (ns)

Note. Subscripts show statistically significant differences between regions.

Methods of Bait Disposal

Questionnaire Items:
How often do you do the following with your live bait?

Table 7-14. Mean response to frequency of various methods of bait disposal by region of residence (1=never, 2=sometimes, 3=often, 4=always).

	Zone 1 n=149	Zone 2 n=286	Zone 3 n=236	Zone 4 n=228	Zone 5 n=357	F (p)
Reuse minnows on different lake/river	1.55 _a	1.45 _a	1.47 _a	1.47 _a	1.29 _b	4.84 (.00)
Take bait home to reuse in future	2.41 _a	2.30 _a	2.34 _a	2.25 _{ab}	2.08 _b	4.54 (.00)
Give bait to another angler	1.91	1.90	1.89	1.95	1.87	.56 (ns)
Release bait into lake or river	1.46 _a	1.58 _{ab}	1.59 _{ab}	1.61 _{ab}	1.74 _b	2.77 (.02)
Discard bait on land or in trash	1.92 _a	1.73 _b	1.67 _b	1.59 _b	1.68 _b	3.26 (.01)

Note. Subscripts show statistically significant differences between regions.

Lead Free Sinkers and Jigs

Questionnaire Item:
 How frequently do you use **lead-free** sinkers and jigs when you fish?
 If you **never** use **lead-free** sinkers and jigs, why not?

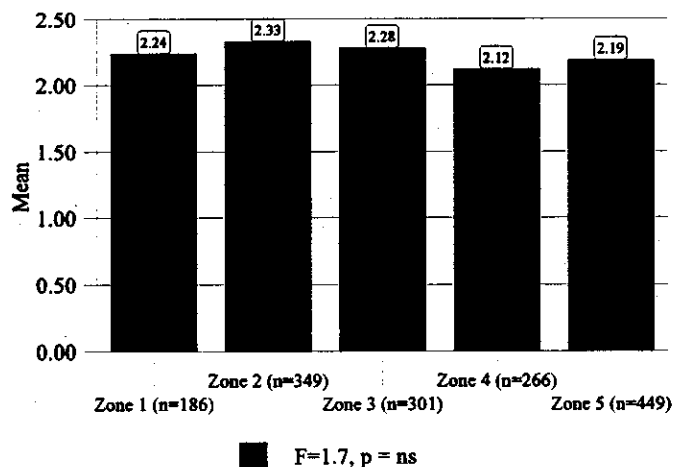


Figure 7-33. Mean frequency of lead-free sinkers and jig use by region of residence. (1=never, 2=sometimes, 3=often, 4=always)

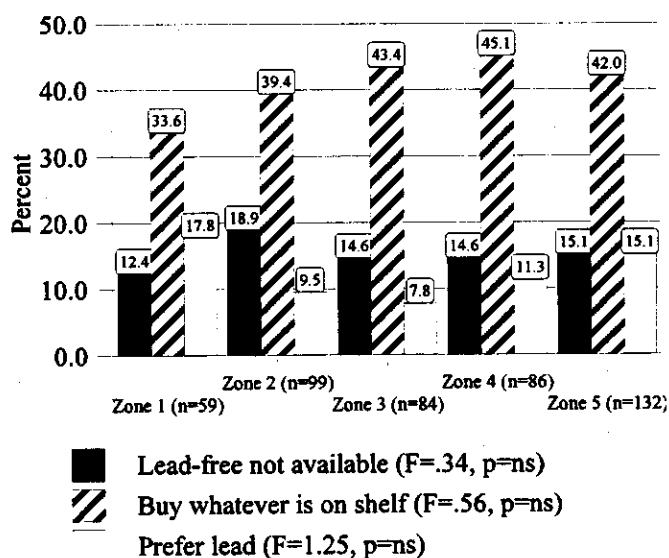


Figure 7-34. Reasons for not using lead-free sinkers and jigs by region of residence.

Fishing on Lake Champlain

Length Limits

Questionnaire Item:

The current minimum length limits for several fish species in Lake Champlain are listed below. (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommendation.)

Table 7-15. Percent who agree with current length limits for Lake Champlain game fish by region of residence.

Species (limit)	Zone 1 n=27	Zone 2 n=141	Zone 3 n=91	Zone 4 n=139	Zone 5 n=315	F (p)
Brown/Rainbow Trout (12")	82.1	80.2	81.0	86.9	82.8	.61 (ns)
Lake Trout (15")	67.2	72.6	75.8	83.0	80.7	1.89 (ns)
Landlocked Salmon (15")	64.9	77.2	75.9	80.3	80.4	1.01 (ns)
Walleye (18")	88.1	88.3	79.8	83.4	82.1	.91 (ns)
Largemouth Bass (10") ¹	61.6	72.4	67.9	74.3	61.2	2.59 (.03)
Smallmouth Bass (10") ¹	72.2	72.9	74.0	79.4	65.8	2.39 (.05)
Northern Pike (20")	64.6	77.7	76.5	69.3	68.9	1.36 (ns)
Crappie (8")	100.0	92.5	92.3	86.0	87.2	1.50 (ns)

¹ - The Duncan range test showed no significant differences between groups even though the F score was significant.

Walleye Season on Lake Champlain

Questionnaire Item:

The fishing season for WALLEYE in Lake Champlain is from the 1st Saturday in May to the following March 15th. What is your opinion about the length of the season? (Fill in all that apply.)

Table 7-16. Percent who agree with the current walleye season on Lake Champlain by region of residence.

	Zone 1 n=27	Zone 2 n=151	Zone 3 n=103	Zone 4 n=152	Zone 5 n=355	F (p)
Just right	15.7	28.6	28.5	35.6	31.5	1.29 (ns)
Open earlier	15.4	10.2	4.6	7.7	8.4	1.09 (ns)
Open later	0.0	5.3	6.5	5.5	7.7	.81 (ns)
Close earlier	5.7	7.7	12.1	11.6	15.2	1.75 (ns)
Close later	0.0	5.6	2.8	2.5	1.8	1.64 (ns)
No closed season	11.3 _a	2.7 _b	10.1 _a	4.6 _{ab}	3.2 _b	3.20 (.01)

Note. Subscripts show statistically significant differences between regions.

Tip-up or Hand Held Lines for Lake Champlain Ice Fishing

Questionnaire Item:

Current regulations for ice-fishing on Lake Champlain allow the use of 15 lines (tip-ups or hand lines). Do you agree with the current number of lines allowed? (Please circle whether you agree or disagree with the current number. If you disagree, please write in your recommendation.)

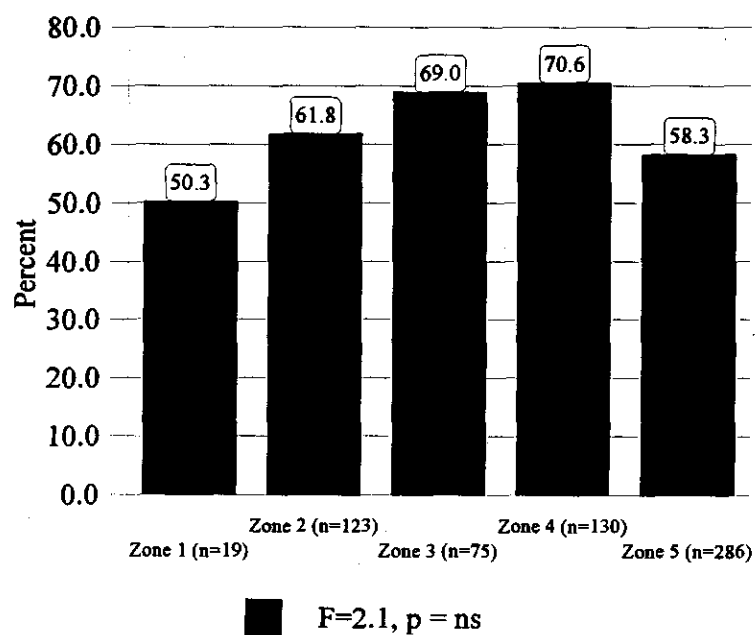


Figure 7-35. Percent who agree with current line limits for ice fishing on Lake Champlain.

Lake Champlain Creel Limits

Questionnaire Item:

The current daily creel limit for several fish species in Lake Champlain are listed below. Do you agree with the present daily creel limits? (Circle one response for each species. If you disagree, please write in your recommended daily limit.)

Table 7-17. Percent who agree with current creel limits for Lake Champlain game fish by region of residence.

Species (limit)	Zone 1 n=29	Zone 2 n=145	Zone 3 n=97	Zone 4 n=148	Zone 5 n=306	F (p)
Brown/Rainbow Trout (3)	69.8 _{ab}	81.3 _{bc}	67.1 _a	84.2 _c	81.1 _{bc}	3.15 (.01)
Lake Trout (3)	72.3	81.8	73.1	82.2	79.7	1.04 (ns)
Landlocked Salmon (2)	82.3	89.1	76.6	82.7	84.5	1.59 (ns)
Walleye (5)	71.8 _{ab}	66.3 _{ab}	69.4 _{ab}	76.7 _a	58.6 _b	3.71 (.00)
Largemouth Bass (5)	81.3	77.8	74.7	79.0	74.2	.49 (ns)
Smallmouth Bass (5)	83.9	78.1	72.1	81.3	74.6	1.10 (ns)
Northern Pike (5)	69.8	81.3	67.1	84.2	81.1	2.14 (ns)
Yellow Perch (75)	72.3	81.8	73.1	82.2	79.7	2.21 (ns)
Crappie (25)	82.3	89.1	76.6	82.7	84.5	2.10 (ns)
Sunfish (no limit)	100.0	92.2	95.2	93.3	92.4	.66 (ns)
Smelt (no limit)	94.1	88.4	89.8	87.4	87.9	.26 (ns)
Bullhead (no limit)	71.8	66.3	69.4	76.7	58.6	.41 (ns)
White Perch (no limit)	81.3	77.8	74.7	79.0	74.2	.82 (ns)

Note. Subscripts show statistically significant differences between regions.

Overall Quality of Lake Champlain Fishing

Questionnaire Item:

Overall, how would you rate the present quality of fishing for the following species that you fish for in Lake Champlain?

Table 7-18. Mean quality evaluations for Lake Champlain fish species by region of residence.

Species	Zone 1 n=20	Zone 2 n=123	Zone 3 n=86	Zone 4 n=128	Zone 5 n=308	F (p)
Brown Trout	2.20	2.19	2.14	2.09	2.18	.29 (ns)
Steelhead/Rainbow Trout	2.31	2.24	2.03	2.09	2.19	1.06 (ns)
Lake Trout	3.08 _a	2.72 _b	2.54 _b	2.59 _b	2.77 _{ab}	2.35 (.05)
Landlocked Salmon	2.40	2.40	2.20	2.45	2.41	.93 (ns)
Walleye	2.09	2.23	2.07	2.12	2.17	.38 (ns)
Largemouth Bass	2.65 _a	3.04 _b	2.82 _{ab}	2.84 _{ab}	3.06 _b	2.79 (.02)
Smallmouth Bass ¹	2.84	3.05	2.90	2.85	3.22	4.43 (.00)
Northern Pike	2.72	2.89	2.88	2.84	2.90	.22 (ns)
Yellow Perch	2.78	2.93	3.11	2.81	2.90	.96 (ns)
Crappie	2.33 _a	2.73 _{ab}	2.79 _{ab}	2.84 _b	2.55 _{ab}	2.47 (.04)
Sunfish	2.88	3.11	3.05	3.27	3.21	.73 (ns)
Bullhead	2.56	2.91	2.96	3.06	2.97	.70 (ns)
White Perch	2.54 _a	2.87 _a	3.04 _{ab}	3.47 _b	2.70 _a	10.75 (.00)

1 - The Duncan range test showed no significant differences between groups even though F score was significant.

Note. Subscripts show statistically significant differences between regions.

Angler Opinions about Fish Species Quality, Fisheries Quality, and Fishing Policy

Overall Species Quality

Questionnaire Items:

Overall, how would you rate the present quality of fishing for:

- TROUT in STREAMS AND RIVERS
- trout and salmon in PONDS AND LAKES
- warmwater GAMEFISH and PANFISH

in Vermont?

Table 7-19. Mean quality evaluations for Vermont fish species by region of residence. (1=poor, 2=fair, 3=good, 4=very good, 5=excellent)

Species	Zone 1 n=152	Zone 2 n=285	Zone 3 n=259	Zone 4 n=224	Zone 5 n=386	F (p)
Trout (streams and rivers)	2.40 _{ab}	2.58 _a	2.34 _b	2.53 _{ab}	2.58 _{ab}	4.23 (.00)
Brook, brown, rainbow trout (ponds and lakes)	2.45	2.62	2.41	2.49	2.54	2.12 (ns)
Lake Trout	2.44 _a	2.55 _a	2.25 _b	2.52 _a	2.74 _c	8.91 (.00)
Landlocked Salmon	2.11 _{ab}	2.26 _{bc}	2.04 _a	2.23 _{ab}	2.38 _c	4.54 (.00)
Walleye	2.18	2.20	2.17	2.13	2.25	.73 (ns)
Largemouth Bass	2.51 _a	2.74 _b	2.73 _b	2.92 _c	2.98 _c	9.65 (.00)
Smallmouth Bass	2.74 _a	2.88 _a	2.85 _a	2.85 _a	3.14 _b	8.80 (.00)
Northern Pike	2.35 _a	2.72 _{bc}	2.59 _b	2.82 _c	2.86 _c	9.87 (.00)
Yellow Perch	2.89	2.99	3.00	2.95	2.93	.40 (ns)
Crappie	2.50 _a	2.64 _{ab}	2.72 _{ab}	2.76 _b	2.55 _a	2.52 (.03)

Note. Subscripts show statistically significant differences between regions.

Opinions About Fishing Issues in Vermont

Questionnaire Item:
What is your opinion of the following issues in Vermont?

Table 7-20. Concern about fishing issues in Vermont by region of residence. (1=no problem, 2=minor problem, 3=moderate problem, 4=serious problem)

	Zone 1 n=180	Zone 2 n=335	Zone 3 n=282	Zone 4 n=259	Zone 5 n=435	F (p)
Conflict between open water and ice fishing	1.46 _a	1.32 _b	1.34 _b	1.25 _b	1.25 _b	3.28 (.01)
Conflict between fishing and other recreational uses (skiing, boating)	2.25 _{ab}	2.37 _a	2.40 _a	2.30 _{ab}	2.13 _b	4.40 (.00)
Shooting/spearing northern pike in Lake Champlain	1.73 _a	1.78 _a	1.85 _{ab}	1.82 _{ab}	2.00 _b	2.61 (.03)
Commercial sale of angler caught perch	2.15 _a	1.89 _b	1.87 _b	2.04 _{ab}	2.19 _a	5.10 (.00)
Commercial sale of angler caught crappie	1.76 _{ab}	1.69 _a	1.79 _{ab}	1.97 _c	1.89 _{bc}	2.97 (.01)
Commercial sale of angler caught sunfish	1.60 _{ab}	1.59 _a	1.68 _{ab}	1.79 _b	1.79 _b	2.56 (.03)
Fishing derbies/tournaments (not "kids" derbies)	1.39	1.43	1.37	1.43	1.46	.62 (ns)
Your ability to understand VT fishing regulations	1.64	1.48	1.50	1.47	1.49	1.46 (ns)
Your ability to access fishing areas	1.49 _a	1.58 _{ab}	1.72 _b	1.69 _b	1.66 _b	2.65 (.03)
Contaminant levels in fish	2.40 _a	2.65 _{bc}	2.55 _{ab}	2.70 _{bc}	2.74 _c	3.98 (.00)
Crowding at fishing areas	1.96	2.06	2.08	2.11	2.18	1.91 (ns)
Fishing with lead sinkers	2.30	2.42	2.41	2.27	2.31	1.07 (ns)

Note. Subscripts show statistically significant differences between regions.

Environmental Factors Affecting Fish Health and Fishing Quality

Questionnaire Item:

Many factors may influence the health of fish populations and the quality of fishing. Please tell us whether or not you believe the following factors are affecting fishing in Vermont.

Table 7-21. Opinions about factors affecting fish health and fishing quality by region of residence. (1= strongly disagree, 2=moderately disagree, 3=neither agree or disagree, 4=moderately agree, 5=strongly agree)

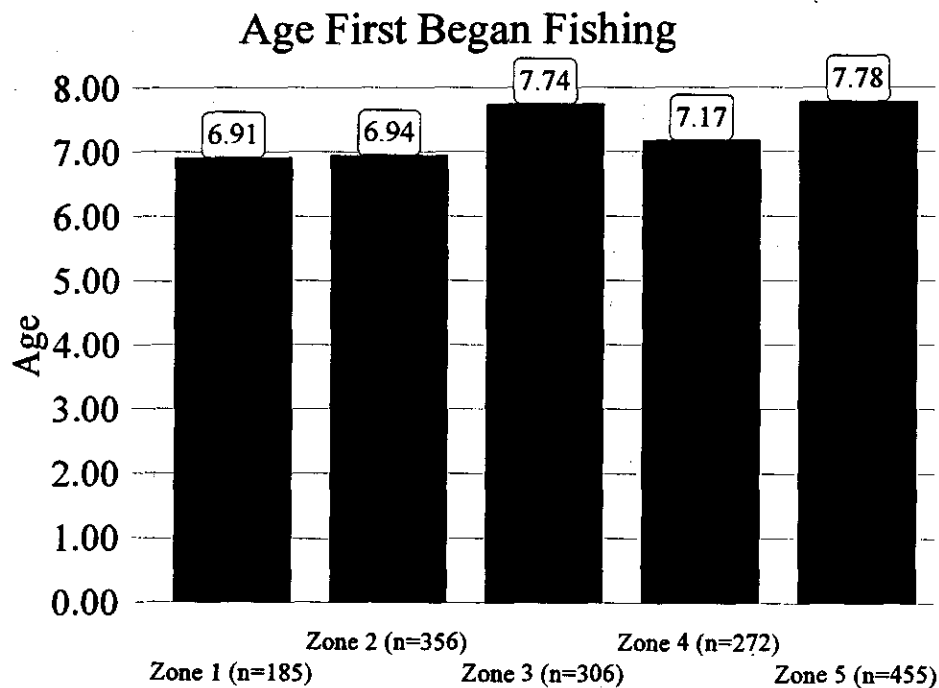
	Zone 1 n=181	Zone 2 n=349	Zone 3 n=291	Zone 4 n=271	Zone 5 n=449	F (p)
Poor water quality	3.71 _a	3.69 _a	3.60 _a	3.79 _a	3.99 _b	6.61 (.00)
Excessive plant growth	3.73 _a	3.80 _a	3.84 _{ab}	3.99 _{bc}	4.05 _c	5.13 (.00)
Overfishing	3.55	3.54	3.49	3.48	3.63	1.06 (ns)
Lake water level fluctuation	3.26 _{ab}	3.11 _{bc}	3.36 _a	3.04 _c	3.06 _c	6.33 (.00)
Inadequate stream flow below hydro projects	3.41 _{ab}	3.39 _{ab}	3.47 _{bc}	3.27 _a	3.61 _c	5.23 (.00)
Poor habitat or cover	3.25	3.39	3.36	3.31	3.30	.75 (ns)
Erosion and siltation	3.57 _{ab}	3.68 _{ab}	3.50 _a	3.50 _a	3.74 _b	3.90 (.00)
Exotic species	3.35 _a	3.40 _a	3.28 _b	3.58 _b	3.57 _a	4.98 (.00)
Barriers to fish mi- gration (culverts, dams)	3.76 _{ab}	3.75 _{ab}	3.53 _{ab}	3.55 _a	3.76 _b	3.81 (.00)
Inadequate streamside or lakeside vegetation	3.21	3.30	3.23	3.17	3.34	1.71 (ns)
Stream channel instability	3.27	3.36	3.30	3.22	3.39	1.75 (ns)

Note. Subscripts show statistically significant differences between regions.

Angler Profile

Fishing Experience

Questionnaire Item:
At approximately what age did you first begin fishing?

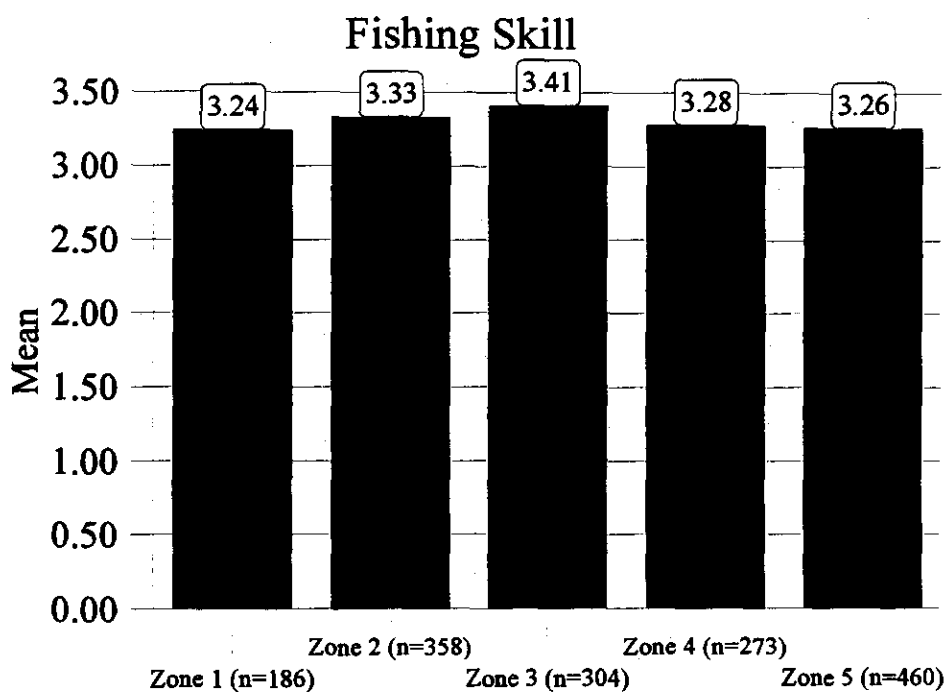


■ $F=2.35, p = .05$

Figure 7-37. Perceived fishing skill by region of residence. (1=novice, 2=beginner, 3=intermediate, 4=high, 5 = expert)

Fishing Skill

Questionnaire Item:
How would you rate your fishing skills?



■ $F=2.1, p = ns$

Figure 7-37. Perceived fishing skill by region of residence. (1=novice, 2=beginner, 3=intermediate, 4=high, 5 = expert)

Fishing Organization Membership

Questionnaire Item:
 Are you a member of a fishing organization , fish and game club, or watershed group?

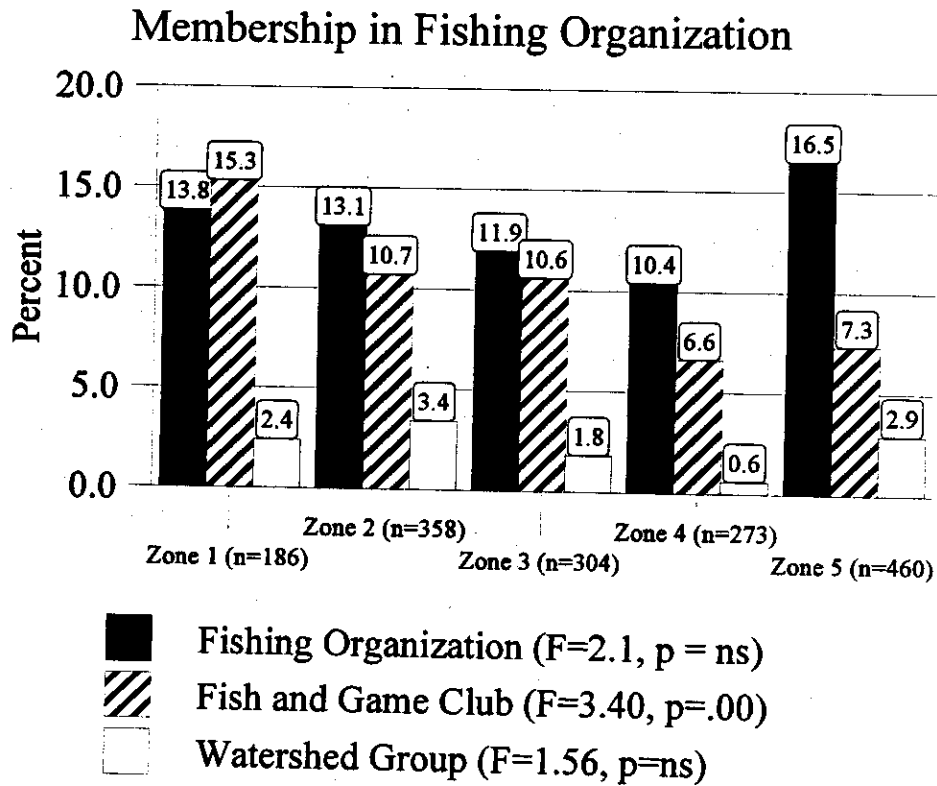


Figure 7-38. Membership in fishing organization by region of residence.

Fishing Commitment

Questionnaire Item:

For some people, fishing may be one of the most important things in their lives. To others, it may be just one of a number of interests they have, something that they enjoy but aren't strongly committed to. How would you personally rate your own level of commitment to fishing?

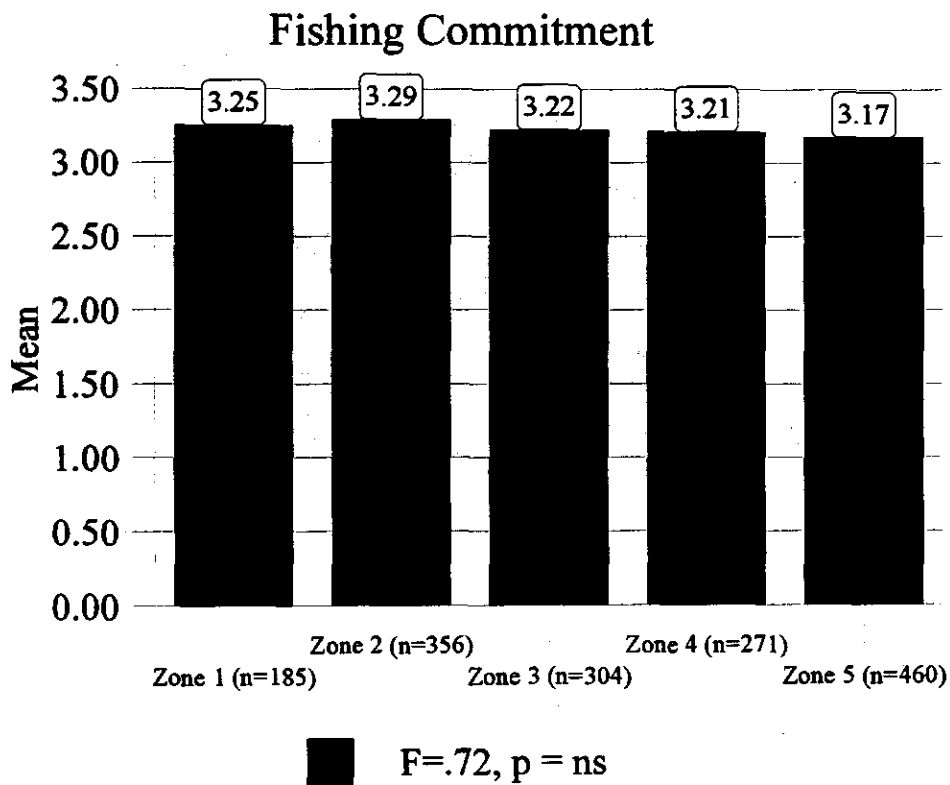


Figure 7-39. Fishing commitment by region of residence. (1=very low, 2=low, 3=medium, 4=high, 5=very high)

Regularity of Fishing Participation

Questionnaire Item:
 Since you first began fishing, how regularly have you been going over the years?

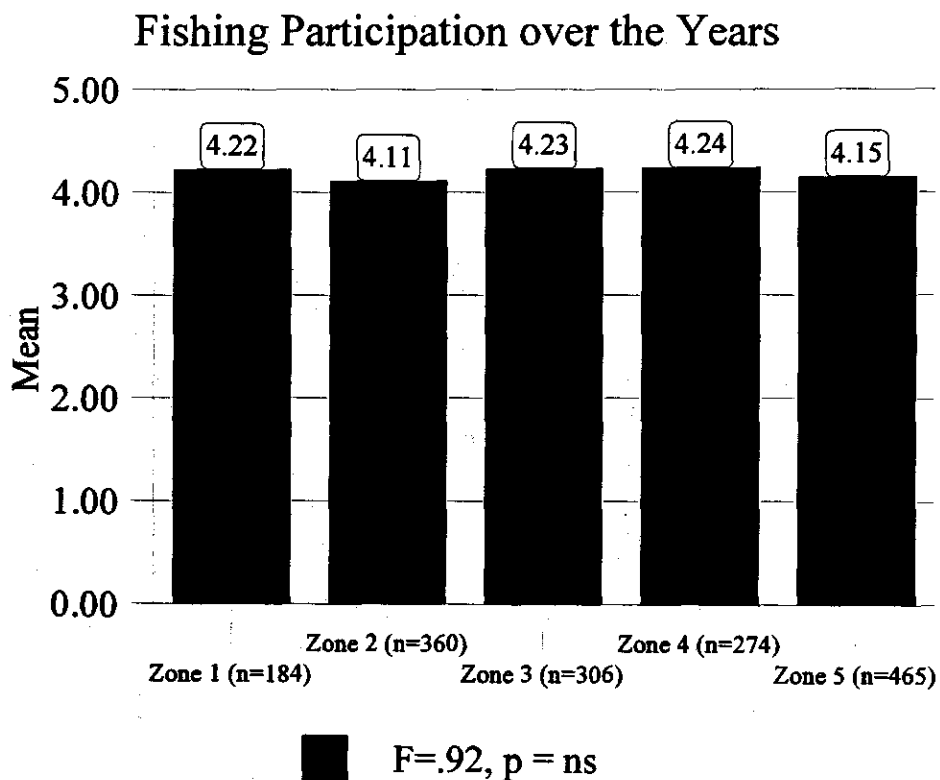


Figure 7-40. Regularity of fishing participation over the years by region of residence. (1=seldom, 2=occasionally, 3=about half the years, 4=most years, 5=every year)

Questionnaire Items:

Are you male or female?

In what year were you born?

How many years of school have you completed? (Fill in the highest level completed)

Please check the space that comes closest to your total family income before taxes.

Table 7-22. Comparison of socioeconomic profile by region of residence.

	Zone 1 n=190	Zone 2 n=367	Zone 3 n=313	Zone 4 n=280	Zone 5 n=468	F (p)
Sex (% male)	78.2	80.0	79.2	80.5	79.5	.10 (ns)
Age (mean years)	41.4 _a	39.8 _{ab}	41.6 _a	40.0 _{ab}	38.7 _b	3.06 (.01)
Age (%)						
15-24	13.7	14.8	13.1	10.8	17.2	
25-34	17.9	22.1	18.5	22.7	22.8	
35-44	25.3	25.1	26.2	33.8	27.9	
45-54	26.3	25.1	23.6	20.5	18.6	
55-64	13.7	11.2	14.7	10.8	11.5	
65 or more	3.2	1.9	3.8	1.4	1.9	
Education (mean)	2.67 _a	2.90 _{bc}	2.74 _{ab}	2.79 _{ab}	3.02 _c	4.37 (.00)
Education (%)						
Some High School	8.7	6.5	8.5	6.6	8.7	
High School	47.0	38.5	42.8	39.9	33.4	
Some College	23.0	25.5	24.2	28.2	22.9	
BA or Equivalent	13.7	19.8	16.3	19.8	20.9	
MA or Equivalent	4.9	6.8	6.2	4.0	10.0	
Advanced Degree (PhD)	2.7	2.8	2.0	1.5	4.0	
Income (mean \$)	37,900 _a	44,700 _{bc}	45,500 _{bc}	45,200 _{ab}	49,400 _c	6.78 (.00)
Income (%)						
< \$20,000	15.7	8.4	11.0	14.9	8.6	
\$20,000-\$29,999	19.8	18.8	10.7	12.9	13.6	
\$30,000-\$39,999	15.1	15.4	20.7	16.9	13.6	
\$40,000-\$49,999	17.4	15.4	18.5	23.3	12.6	
\$50,000-\$59,999	12.8	11.0	9.6	7.2	13.6	
\$60,000-\$69,999	6.4	9.4	8.1	6.0	10.9	
\$70,000-\$79,999	3.5	7.2	5.5	3.2	8.1	
\$80,000-\$89,999	1.7	4.4	2.6	4.4	5.4	
\$90,000-\$99,999	4.7	4.4	5.5	6.4	4.9	
>\$100,000	2.9	5.6	7.8	4.8	8.6	

Note. Subscripts show statistically significant differences between regions.

Part 8



Comparing Open Water Only Anglers With Ice Anglers

Fishing Participation in Vermont

Fishing participation by category: 1) Trout on ponds and lakes, 2) Warm water game fish, and 3) Lake Champlain.

Questionnaire Items:

Do you fish for trout or salmon in PONDS or LAKES in Vermont?
 Do you fish for walleye, bass, pike, yellow perch, sunfish, crappie, bullhead or smelt in Vermont?
 Do you fish on Lake Champlain during either the open water or ice fishing seasons?
 Do you fish with live bait in Vermont?

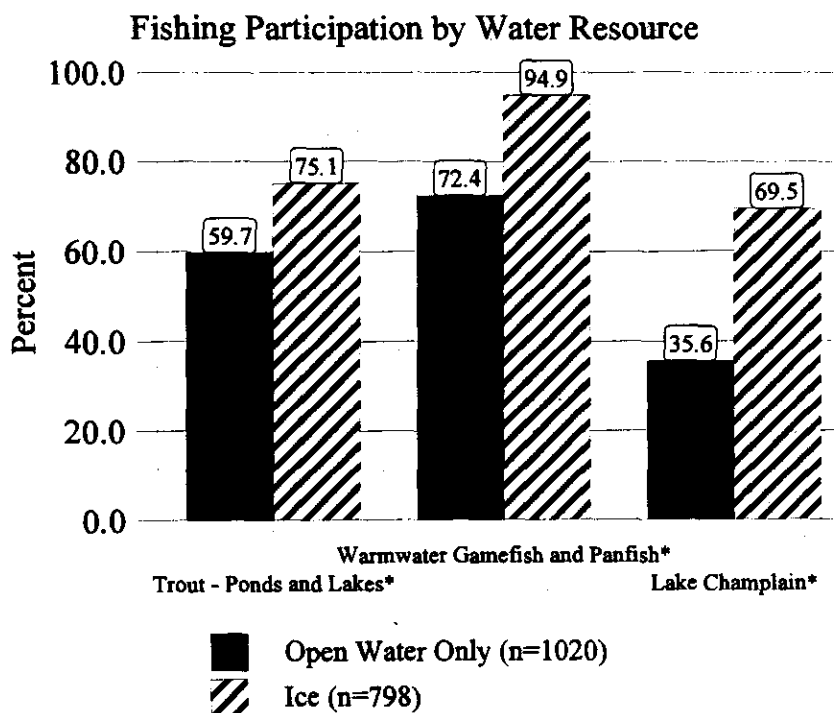


Figure 8-1. Percent of open water anglers and ice anglers who participate in different types of fishing. (* - significantly different at less than the .05 level).

Overall Satisfaction With Vermont's Fishery

Questionnaire Item:
Overall, how would you rate the present quality of fishing in Vermont?

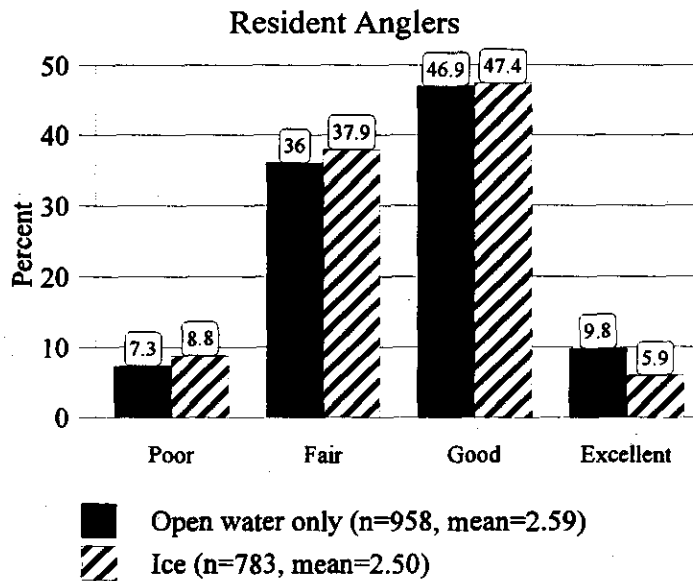


Figure 8-2. Overall satisfaction with Vermont's fishery. ($X^2 = 9.93$, $df = 3$, $p = .01$). (1=poor, 2=fair, 3=good, 4=excellent).

Fishing Outside of Vermont

Questionnaire Item:
About how many days did you fish in the following types of water outside of Vermont in 1999. (Please write in the number of days fished in the appropriate box.)

Table 8-1. Comparison of the mean number of days spent fishing outside of Vermont between open water only anglers and ice anglers.

	Open Water Only		Ice	
	n	Anglers (n)	n	Anglers (n)
Great Lakes	29	5.4	80	7.9
Other Freshwater	210	12.4	197	14.2
Saltwater	165	5.9	169	3.9 ¹

¹ - Significantly different at less than the .05 level.

Fish Species by Open Water Only Anglers and Ice Anglers

Questionnaire Item:

Which of the following fish do you fish for in Vermont? (Circle the number(s) of ALL the kinds of fish that your fish for.)

Table 8-2. Percent of open water anglers and ice anglers who fish for different species of fish.

	Open Water Only	Ice
Brook Trout	71.4	81.7 ¹
Brown Trout	65.2	73.3 ¹
Rainbow Trout	70.7	76.8 ¹
Lake Trout	33.1	55.4 ¹
Landlocked Salmon	16.3	38.2 ¹
Smelt	1.0	36.9 ¹
Walleye	21.7	52.7 ¹
Sauger	0.5	5.2 ¹
Largemouth Bass	56.6	69.2 ¹
Smallmouth Bass	60.3	74.3 ¹
Pickereel	21.0	33.3 ¹
Northern Pike	33.0	61.9 ¹
Muskellunge	2.9	4.7 ¹
American Shad	1.2	2.4
Channel Catfish	6.4	17.0 ¹
Bullhead	21.7	43.4 ¹
Yellow Perch	42.5	85.1 ¹
Crappie	10.9	24.0 ¹
Sunfish	20.5	25.5 ¹
Rock Bass	16.7	17.8
White Perch	11.9	21.0 ¹
Drum	1.8	5.1 ¹
Carp	1.0	5.0 ¹
Gar	1.1	2.6 ¹
Whitefish	0.7	2.6 ¹
Sucker	2.1	6.0 ¹
Anything	14.9	12.9
Total n	1012	786 ²

1 - Statistically different at less than the .05 level.

2 - Large sample sizes may create false significance.

Opinions About Fishing Regulations

Questionnaire Items:

If there were no minimum length limits, what is the **smallest** length of each species that you would **keep** when fishing [PONDS and LAKES, WARM WATER Game fish]?

When fishing in [PONDS and LAKES, WARM WATER Game fish], what is the **smallest** length of each species that you would consider a **good or quality size** fish?

Fish Length for Trout and Salmon in Ponds and Lakes

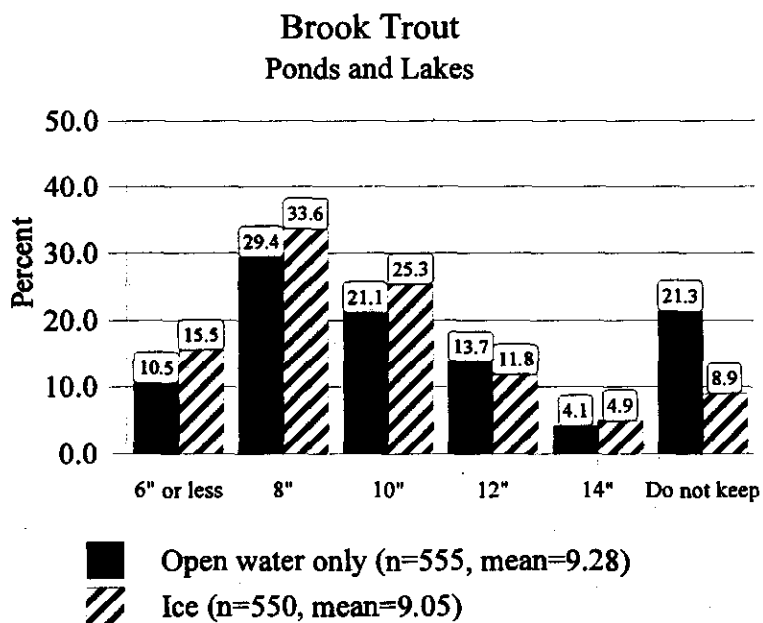


Figure 8-3. The smallest "keeper" size for open water anglers and ice anglers fishing brook trout on ponds and lakes. ($X^2 = 38.04$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

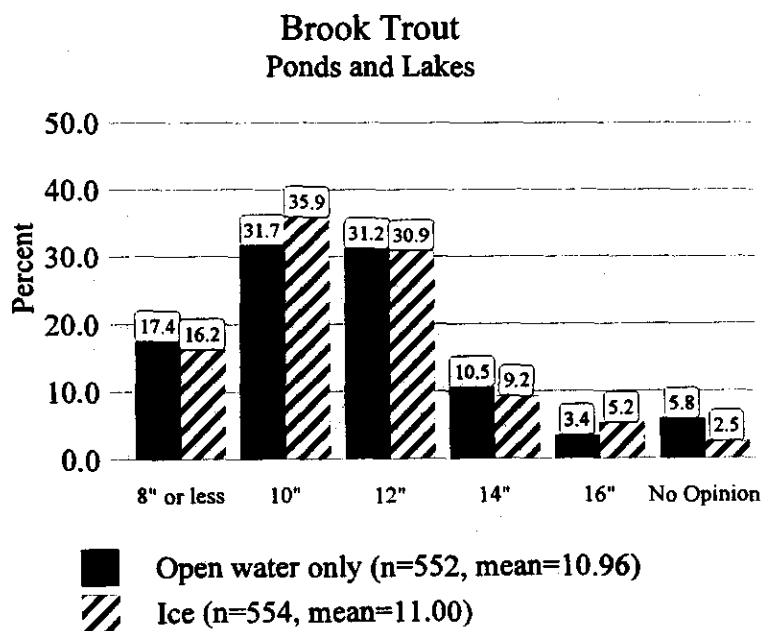


Figure 8-4. The smallest "quality" size for open water anglers and ice anglers fishing brook trout on ponds and lakes. ($X^2 = 11.30$, $df = 5$, $p = .04$) (The "no opinion" responses were excluded from the mean calculation.)

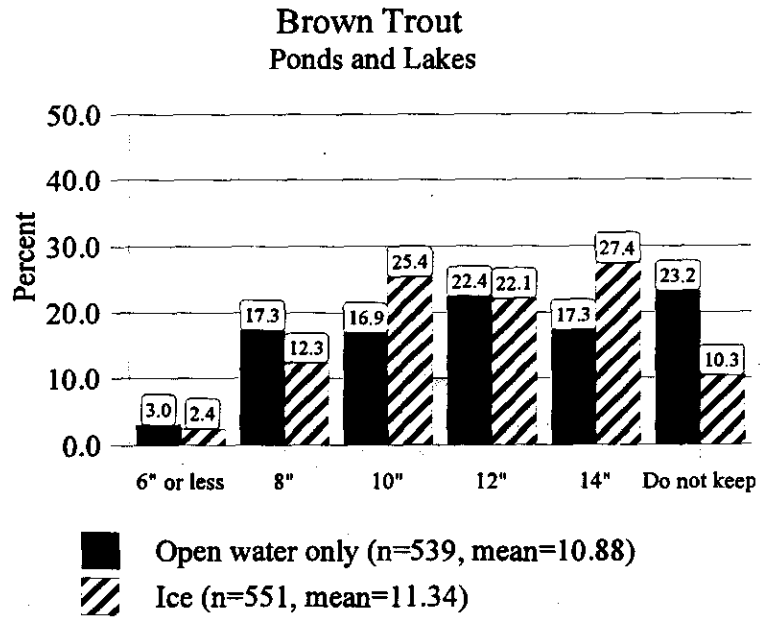


Figure 8-5. The smallest “keeper” size for open water anglers and ice anglers fishing brown trout on ponds and lakes. ($X^2 = 53.65$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

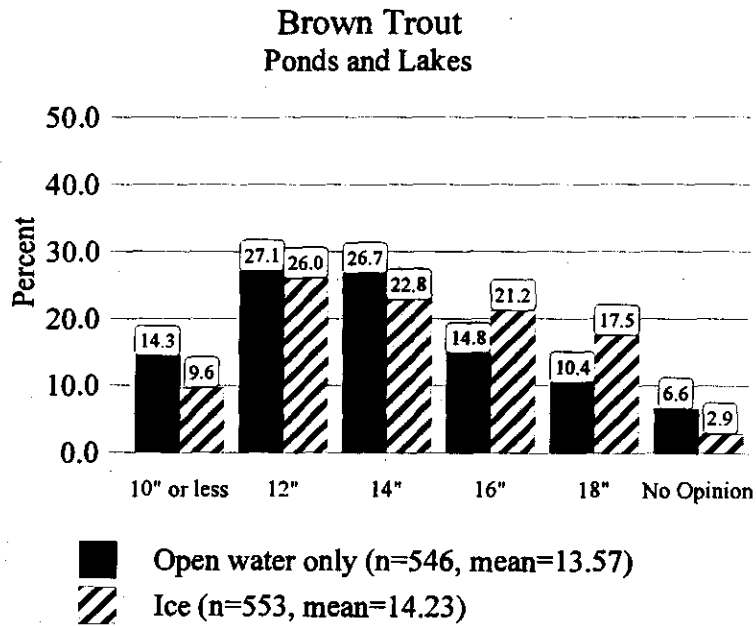


Figure 8-6. The smallest “quality” size for open water anglers and ice anglers fishing brown trout on ponds and lakes. ($X^2 = 30.88$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

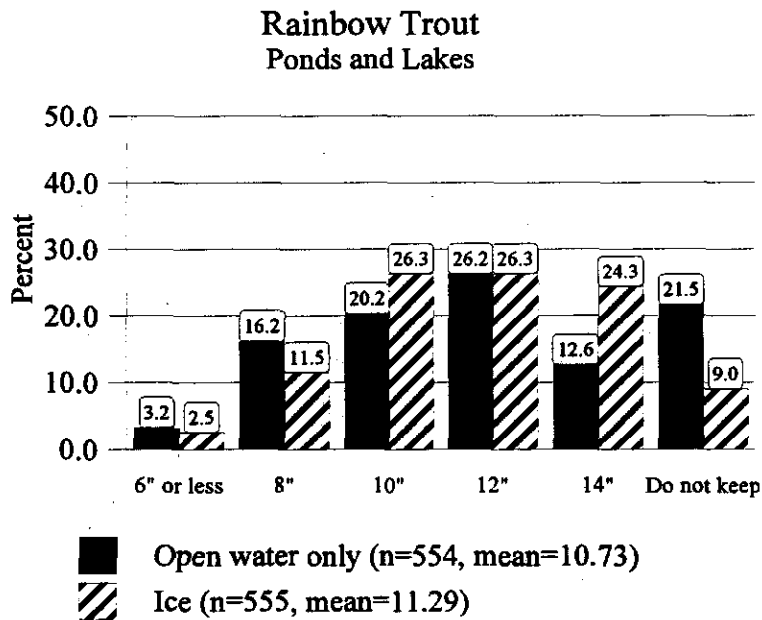


Figure 8-7. The smallest “keeper” size for open water anglers and ice anglers fishing rainbow trout on ponds and lakes. ($X^2 = 58.15$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

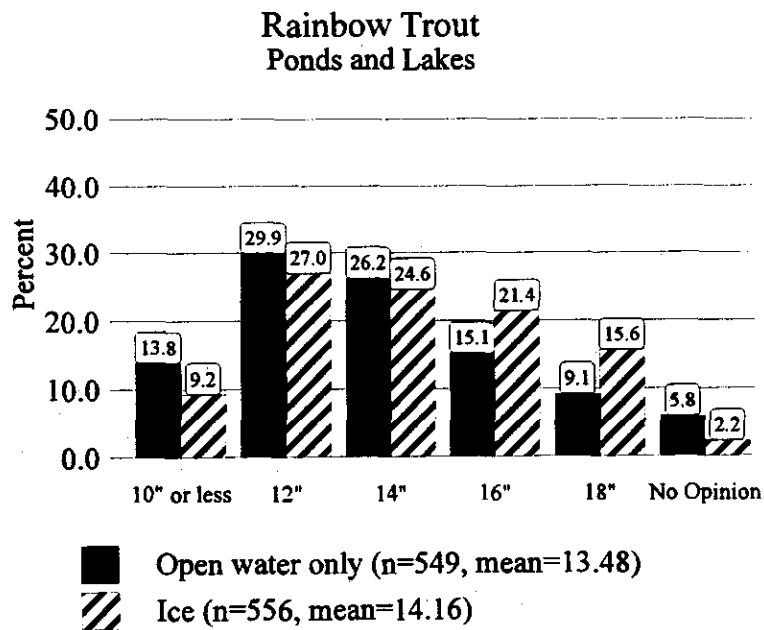


Figure 8-8. The smallest “quality” size for open water anglers and ice anglers fishing rainbow trout on ponds and lakes. ($X^2 = 31.17$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

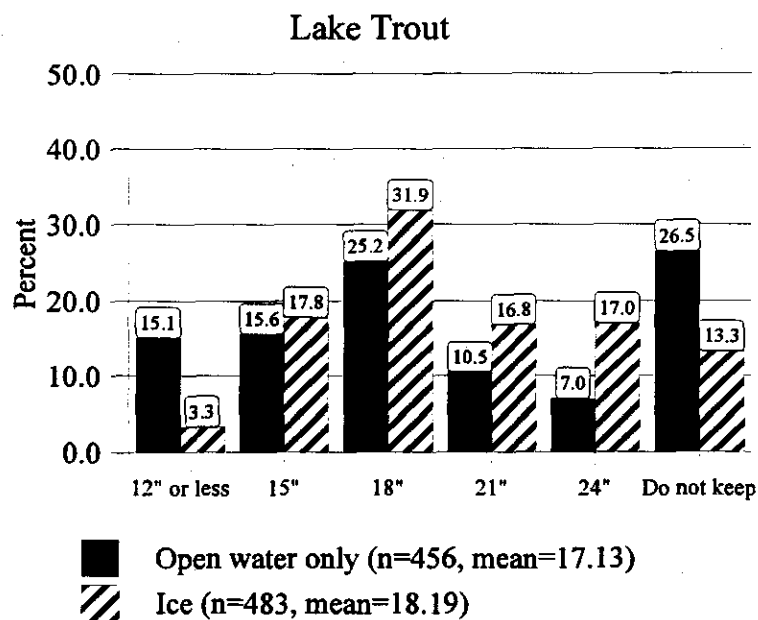


Figure 8-9. The smallest “keeper” size for open water anglers and ice anglers fishing for lake trout. ($X^2 = 87.36$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

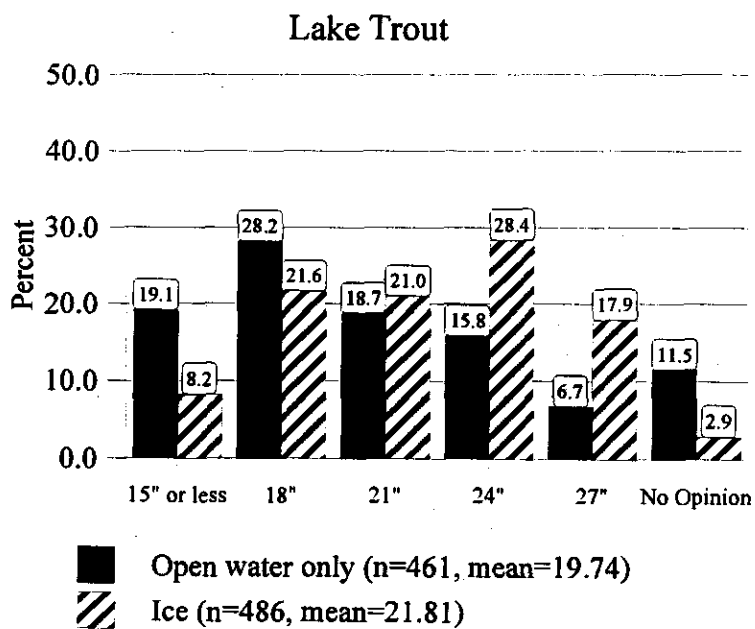


Figure 8-10. The smallest “quality” size for open water anglers and ice anglers fishing for lake trout. ($X^2 = 90.72$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

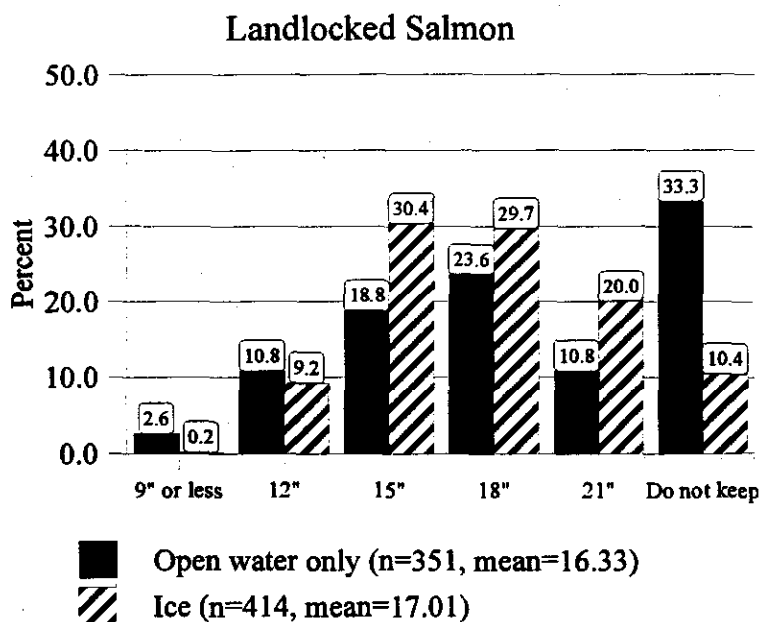


Figure 8-11. The smallest "keeper" size for open water anglers and ice anglers fishing for landlocked salmon. ($X^2 = 79.22$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

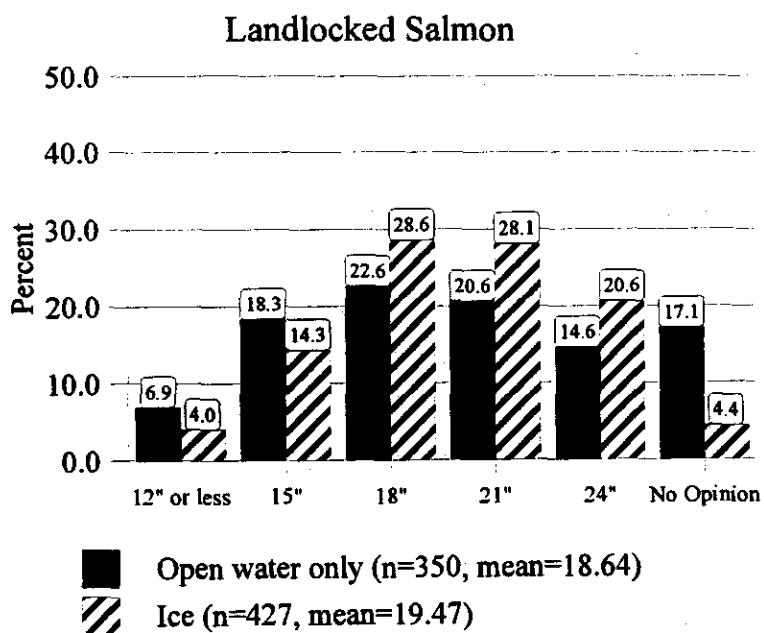


Figure 8-12. The smallest "quality" size for open water anglers and ice anglers fishing for landlocked salmon. ($X^2 = 46.41$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

Fish Length for Warm Water Game Fish

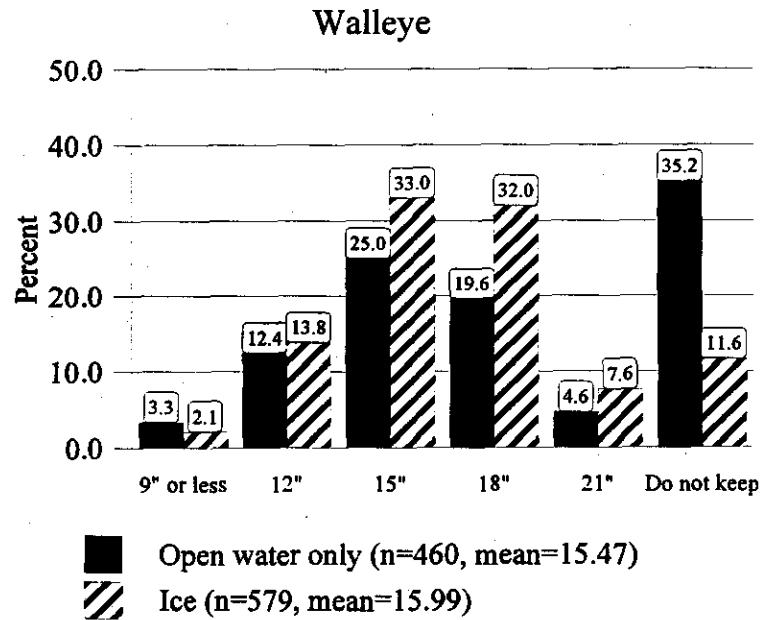


Figure 8-13. The smallest "keeper" size for open water anglers and ice anglers fishing for walleye. ($X^2 = 91.00$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

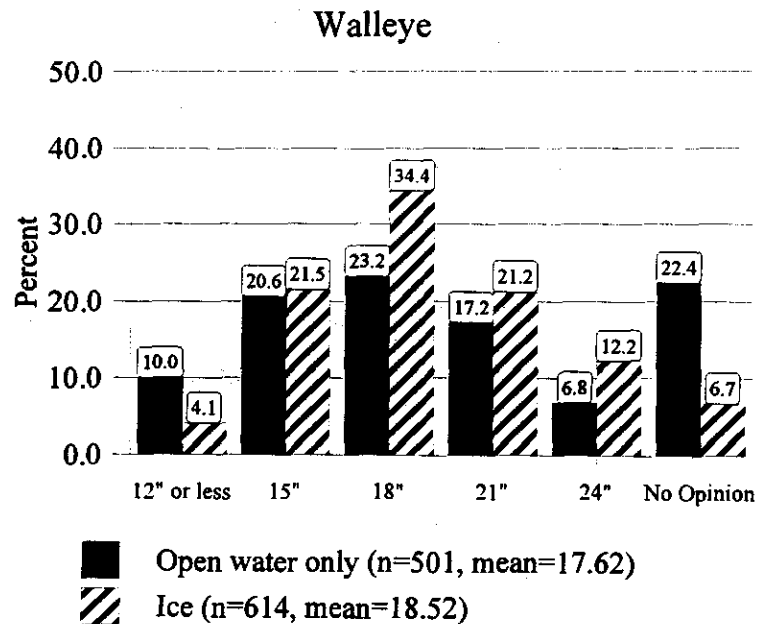


Figure 8-14. The smallest "quality" size for open water anglers and ice anglers fishing for walleye. ($X^2 = 86.27$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

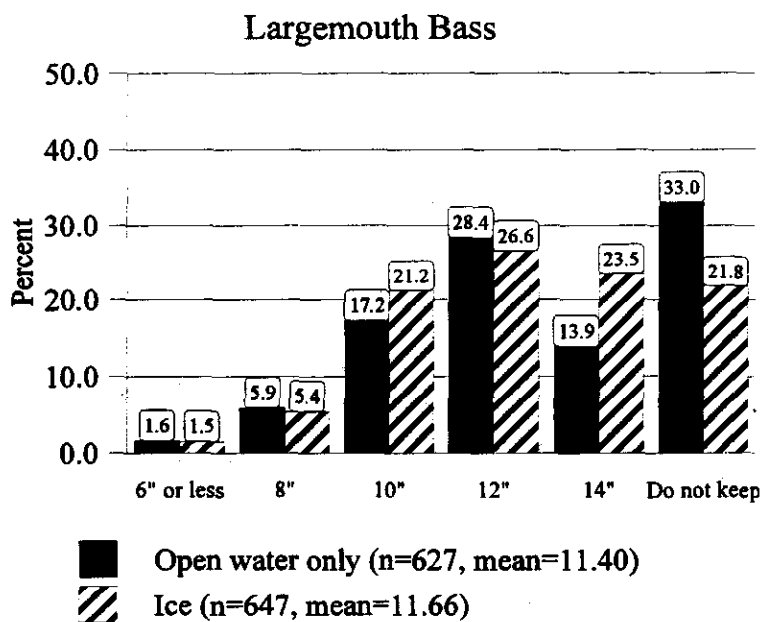


Figure 8-15. The smallest "keeper" size for open water anglers and ice anglers fishing for largemouth bass. ($X^2 = 33.48$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

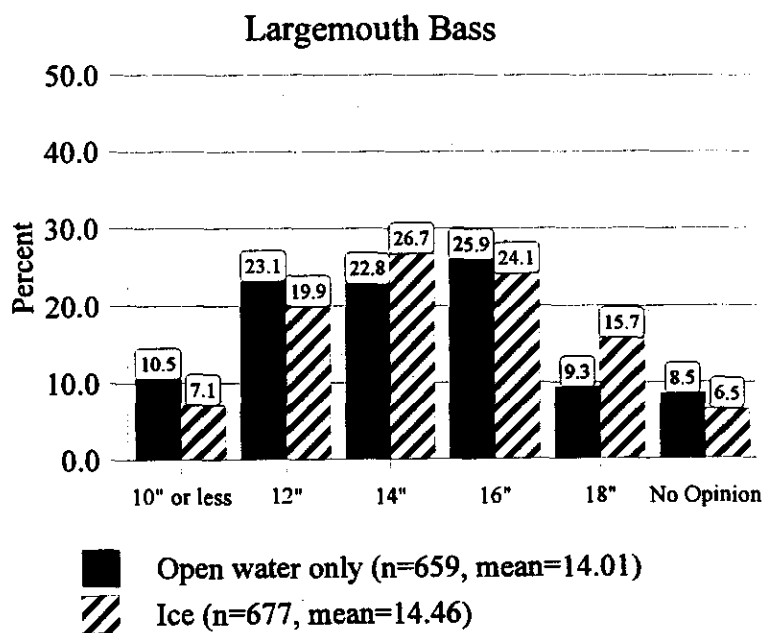


Figure 8-16. The smallest "quality" size for open water anglers and ice anglers fishing for largemouth bass. ($X^2 = 21.19$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

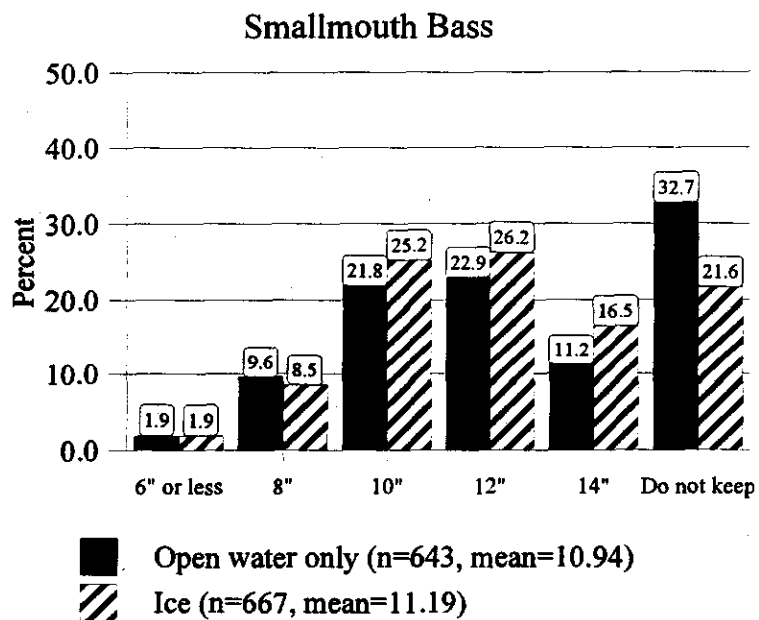


Figure 8-17. The smallest "keeper" size for open water anglers and ice anglers fishing for smallmouth bass. ($X^2 = 25.03$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

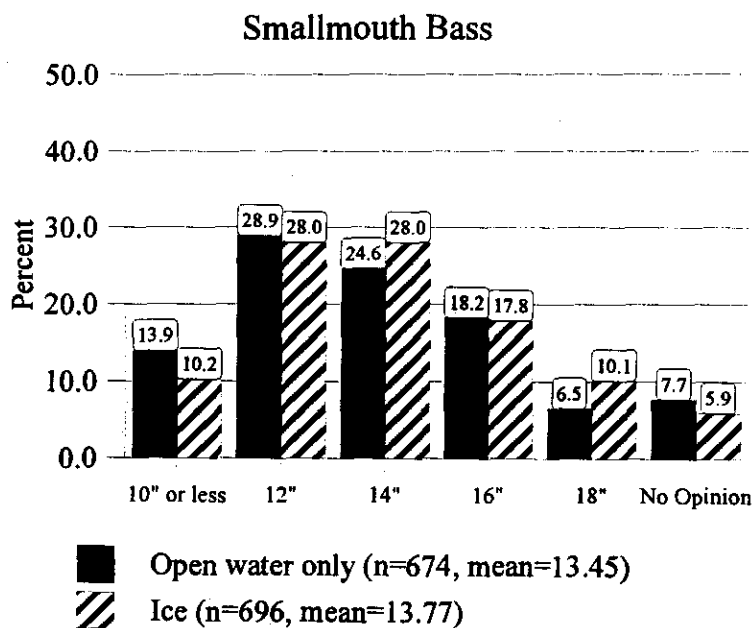


Figure 8-18. The smallest "quality" size for open water anglers and ice anglers fishing for smallmouth bass. ($X^2 = 12.41$, $df = 5$, $p = .03$) (The "no opinion" responses were excluded from the mean calculation.)

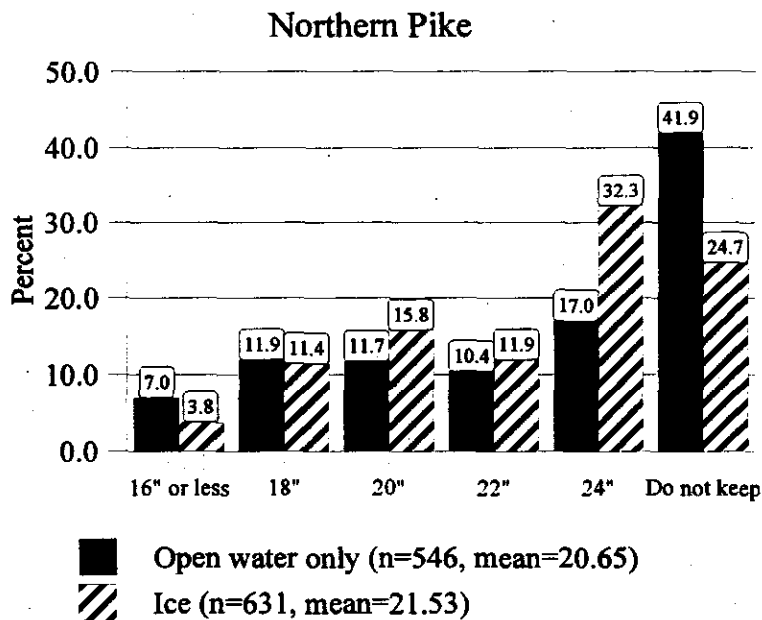


Figure 8-19. The smallest “keeper” size for open water anglers and ice anglers fishing for northern pike. ($X^2 = 63.39$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

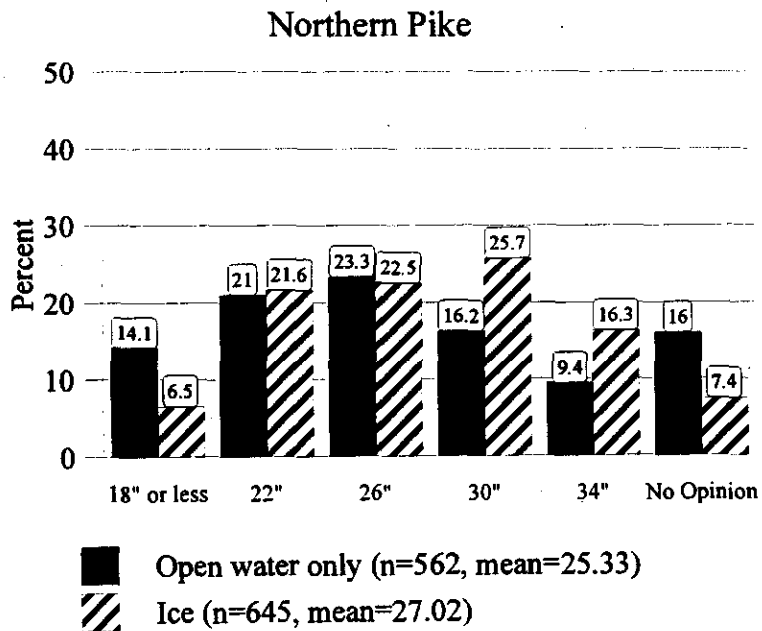


Figure 8-20. The smallest “quality” size for open water anglers and ice anglers fishing for northern pike. ($X^2 = 60.10$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

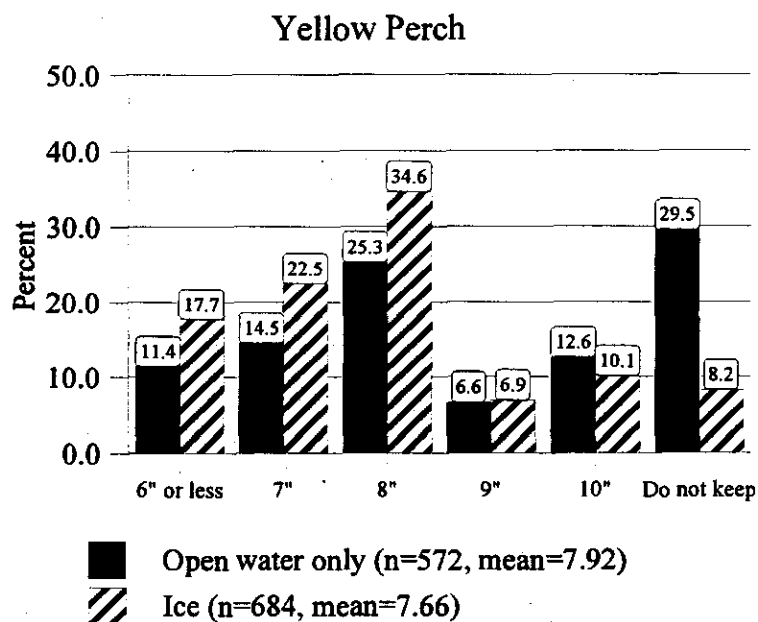


Figure 8-21. The smallest "keeper" size for open water anglers and ice anglers fishing for yellow perch. ($X^2 = 108.93$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

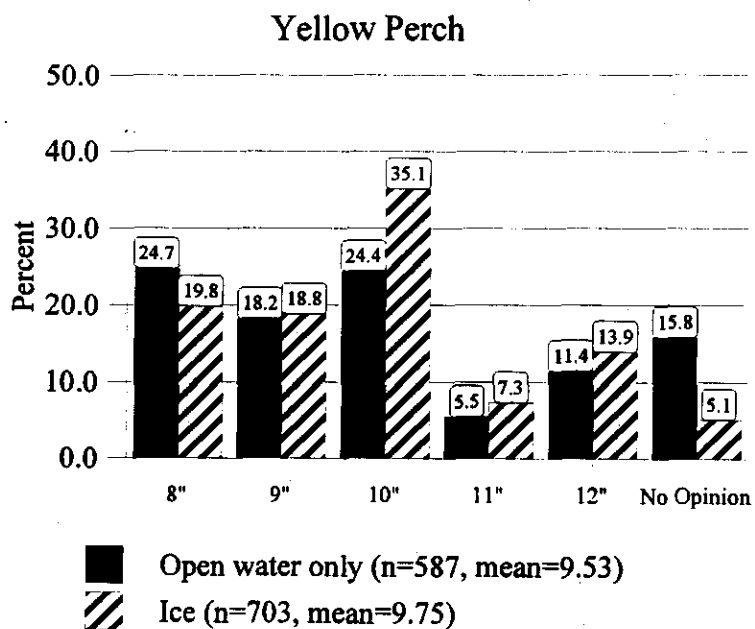


Figure 8-22. The smallest "quality" size for open water anglers and ice anglers fishing for yellow perch. ($X^2 = 55.85$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

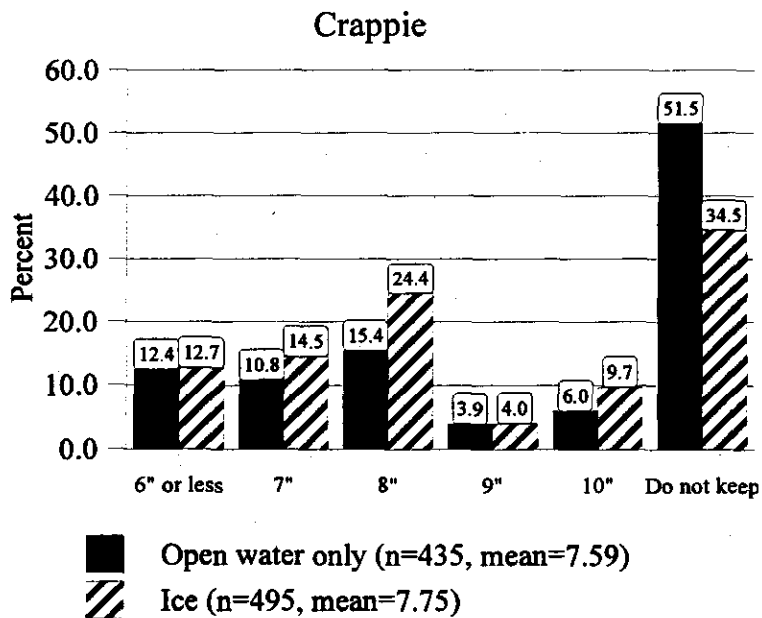


Figure 8-23. The smallest “keeper” size for open water anglers and ice anglers fishing for yellow perch. ($X^2 = 31.61$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

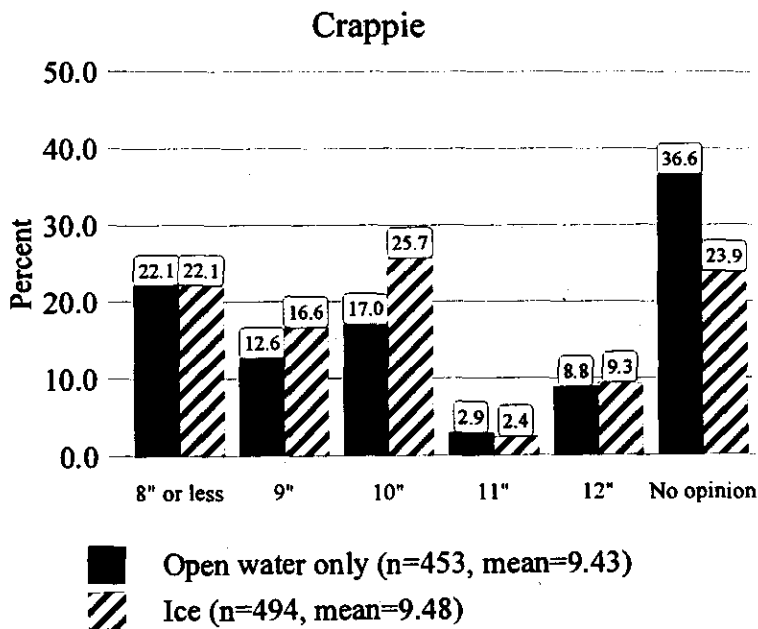


Figure 8-24. The smallest “quality” size for open water anglers and ice anglers fishing for yellow perch. ($X^2 = 23.98$, $df = 5$, $p = ns$) (The “no opinion” responses were excluded from the mean calculation.)

*Creel Limits***Questionnaire Items:**

The general daily creel limit for trout in PONDS and LAKES is listed below for each species and for a combined trout catch. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

For the majority of lakes in Vermont **that offer lake trout fishing**, the current daily limit for lake trout, landlocked salmon, brook trout, brown trout, lake trout, or rainbow trout is 2 fish of any one species or combination of species. Do you AGREE or DISAGREE with the current limits. (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

The current daily creel limit for several warmwater gamefish and panfish are listed below. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

Table 8-3. Opinions about creel limits among open water only anglers and ice anglers.

	% Agree		% Disagree		Recommended		% No Opinion	
	Open	Ice	Open	Ice	Open	Ice	Open	Ice
Trout - Ponds and Lakes³ (Open sample size=581) (Ice sample size=567)								
Brook	62.5	69.8	25.8	25.7	6.1	7.4 ¹	11.7	4.4
Brown	61.4	67.8	25.8	27.3	4.3	4.7	12.8	5.0
Rainbow	61.6	68.5	26.6	27.3	4.7	4.9	11.8	4.2
Combo	56.1	64.8	31.1	29.4	9.1	9.2	12.8	5.8
Trout - Ponds and Lakes with Lake Trout (Open sample size=578) (Ice sample size=569)								
Lake	62.7	74.5	19.4	17.9	4.0	4.2	17.9	7.6
Salmon	61.9	76.5	13.9	13.4	3.1	3.9	24.3	10.1
Brook	53.3	60.7	30.5	33.8	5.1	6.2 ¹	16.2	5.5
Brown	56.2	67.5	25.9	26.5	4.6	5.3 ¹	17.9	6.0
Rainbow	55.4	65.8	28.3	28.4	4.8	5.2	16.3	5.8
Combo	46.0	55.4	35.6	36.9	5.8	6.3	17.5	7.7
Warm Water Game Fish (Open sample size=733) (Ice sample size=747)								
Walleye	45.3	55.5	18.6	26.9	2.8	3.0	36.1	17.6
Bass	59.2	67.2	23.9	22.1	3.9	3.9	16.9	10.7
Pike	47.0	55.6	23.1	27.5	3.1	3.2	29.9	16.9
Y. Perch	57.0	65.9 ¹	17.7	26.6	24.2	40.9 ¹	25.3	7.5
Crappie	42.0	53.7	13.4	15.5	23.5	24.4	44.6	30.7
Sunfish	55.0	68.5 ¹	6.7	5.0	21.5	31.5	38.4	26.5
Smelt	50.4	68.4 ¹	5.2	10.4	30.6	51.1 ¹	44.5	21.2
Bullhead	55.3	70.6	5.7	6.9	15.0	17.0	39.0	22.4
W. Perch	51.7	68.0	6.7	6.8	19.2	32.1 ¹	41.6	25.2

1 - Significantly different at less than the .05 level.

Special Fishing Regulations

Questionnaire Item:

Special regulations can be used in certain waters to increase the number and/or size of fish available. (Please fill in ALL the special regulations that you might support for trout fishing in some PONDS and LAKES for the types of fishing listed below).

Trout in Some Ponds and Lakes

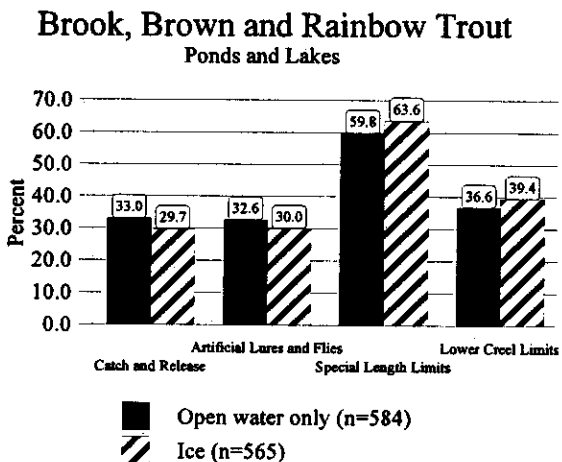


Figure 8-25. Support for special trout regulations on some ponds and lakes among open water anglers and ice anglers.

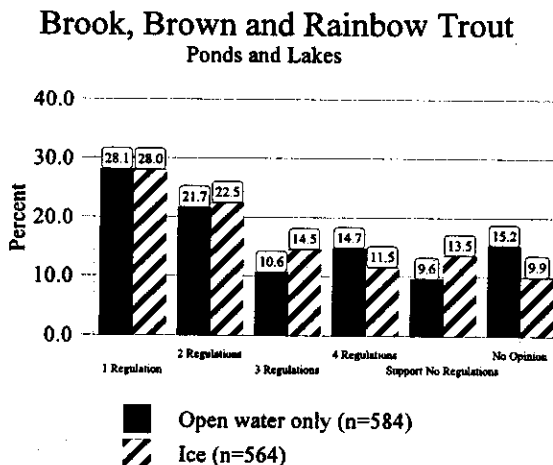


Figure 8-26. Degree of support for special trout regulations on ponds and lakes among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 16.01$, $df = 5$, $p = .00$)

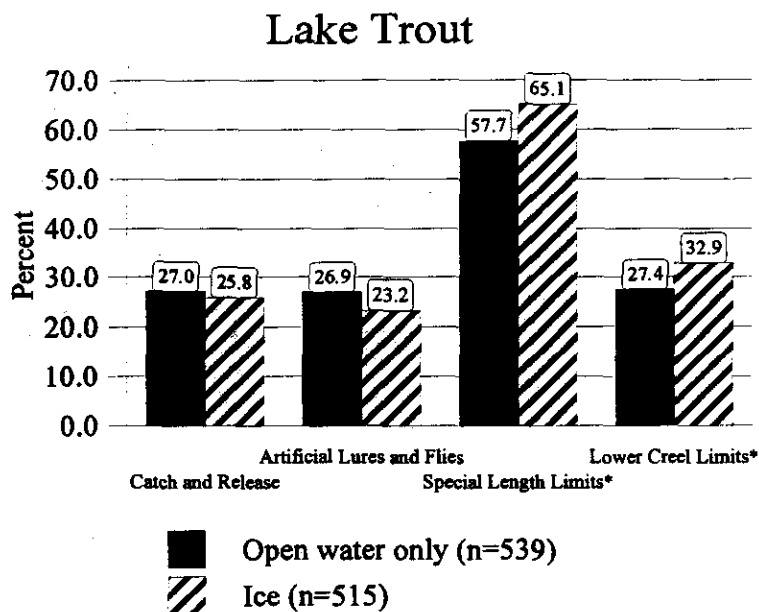


Figure 8-27. Support for special lake trout regulations among open water anglers and ice anglers. (* - Statistically different at less than the .05 level.)

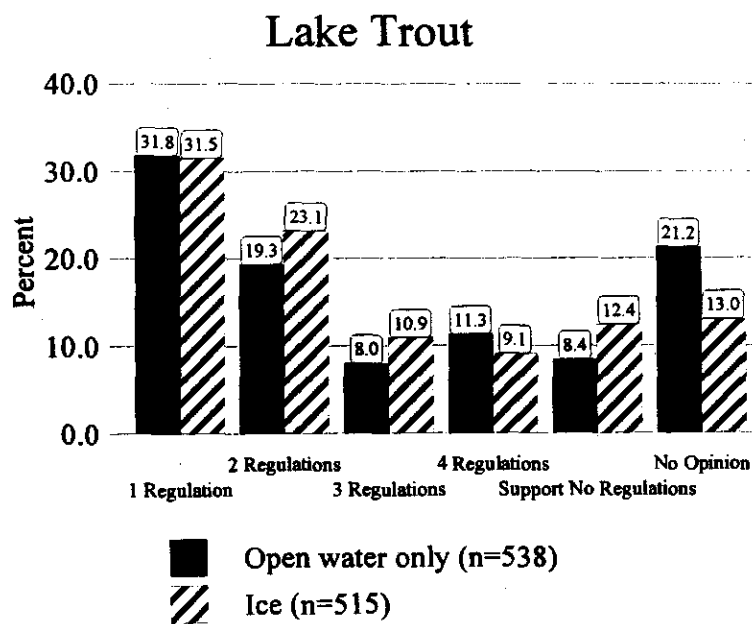


Figure 8-28. Degree of support for special lake trout regulations among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 19.79$, $df = 5$, $p = .00$)

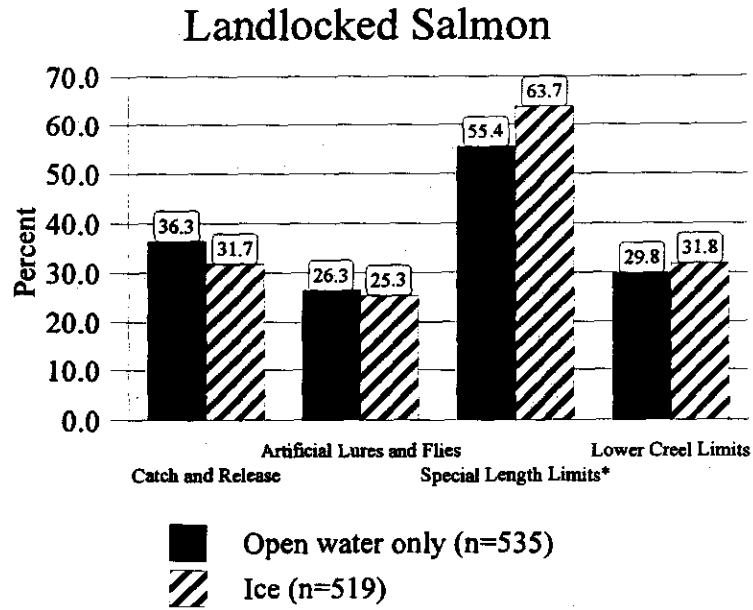


Figure 8-29. Support for special landlocked salmon regulations among open water anglers and ice anglers. (* - Statistically different at less than the .05 level.)

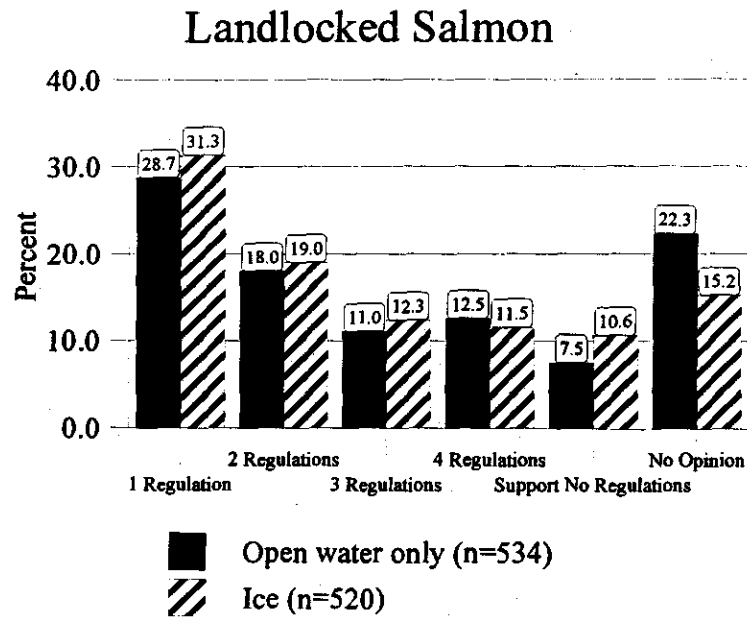


Figure 8-30. Degree of support for special landlocked salmon regulations among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 11.21$, $df = 5$, $p = .04$)

Warm Water Game Fish

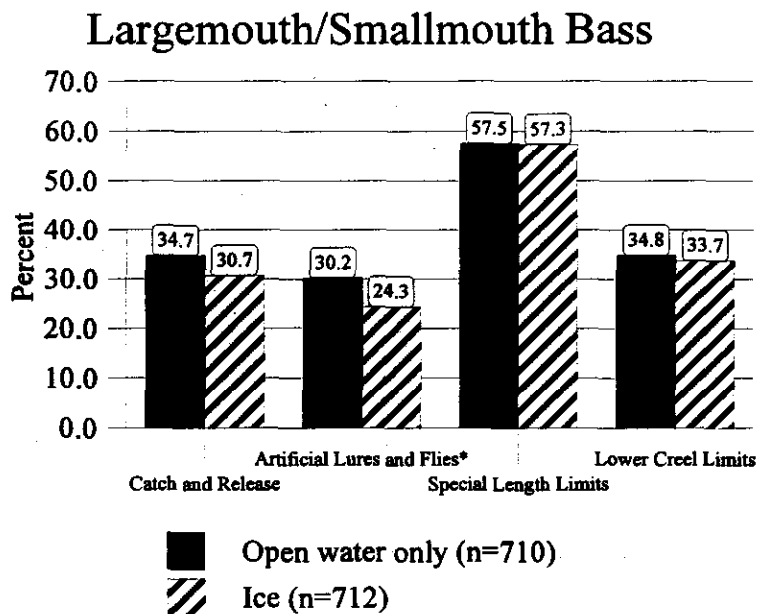


Figure 8-31. Support for special largemouth or smallmouth bass regulations among open water anglers and ice anglers. (* - Statistically different at less than the .05 level.)

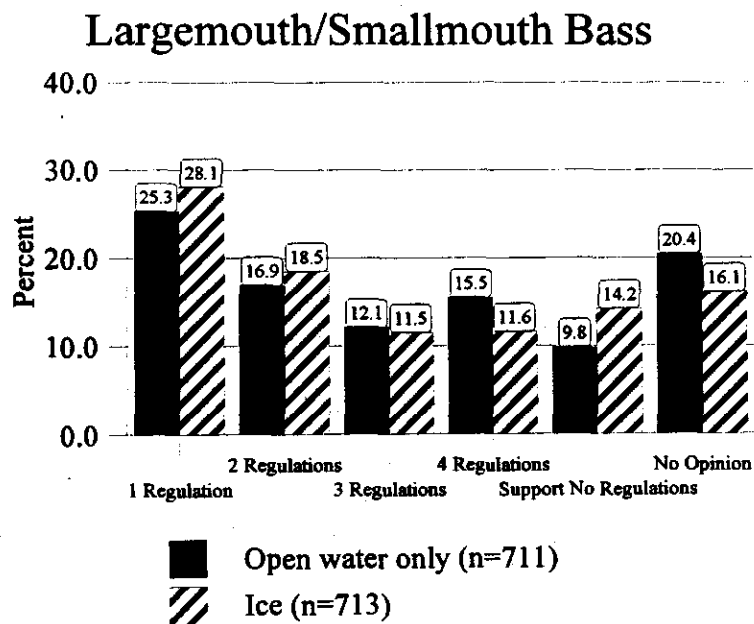


Figure 8-32. Degree of support for special largemouth or smallmouth bass regulations among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 14.57$, $df = 5$, $p = .01$)

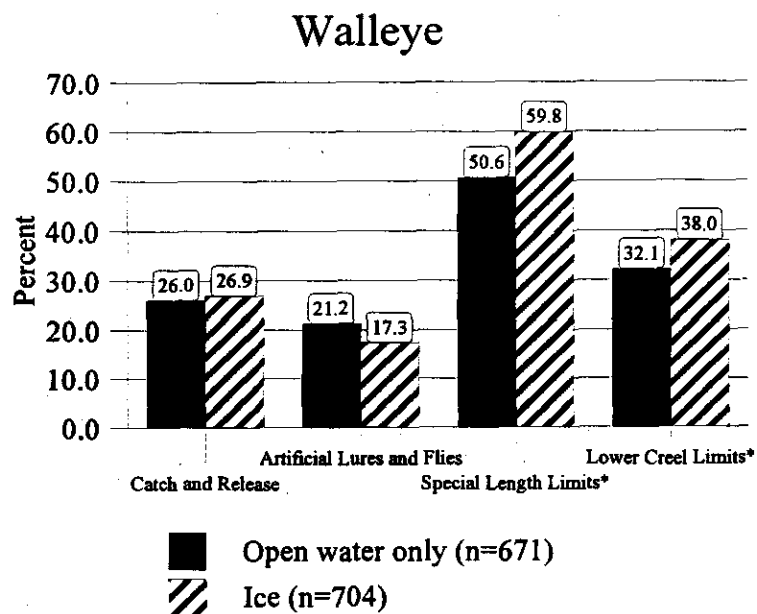


Figure 8-33. Support for special walleye regulations among open water anglers and ice anglers. (* - Statistically different at less than the .05 level.)

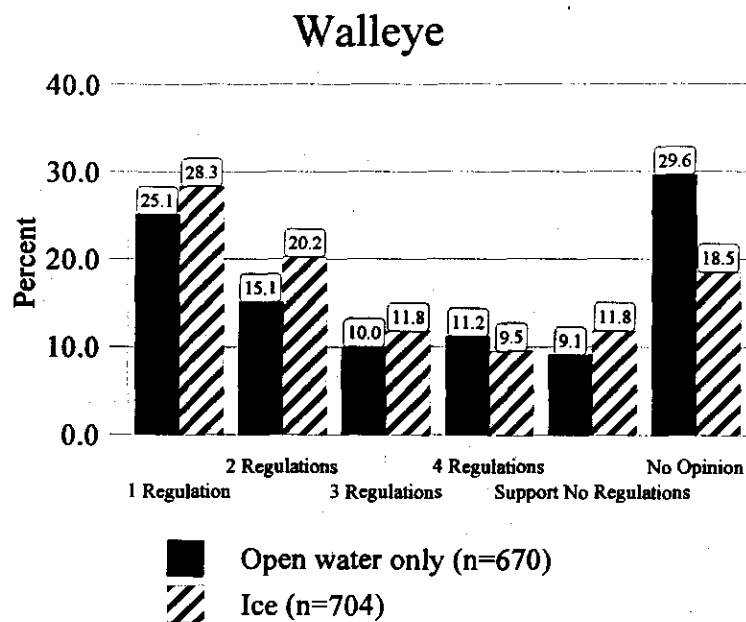


Figure 8-34. Degree of support for special walleye regulations among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 28.32$, $df = 5$, $p = .00$)

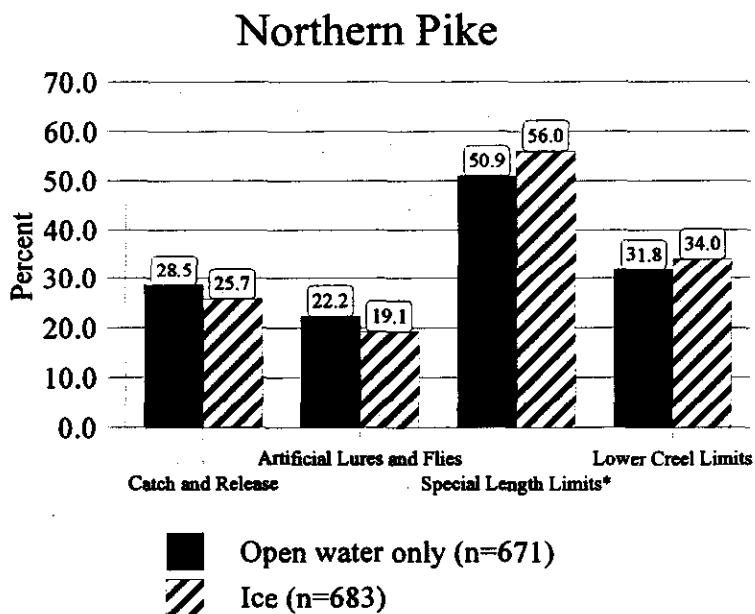


Figure 8-35. Support for special northern pike regulations among open water anglers and ice anglers. (* - Statistically significant at less than the .05 level.)

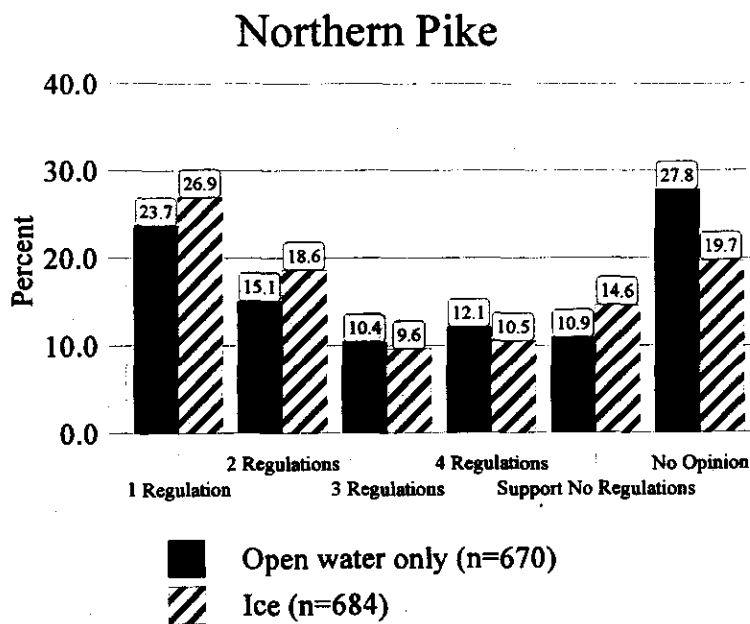


Figure 8-36. Degree of support for special northern pike regulations among open water anglers and ice anglers. (Summed total of regulations supported by each respondent.) ($X^2 = 17.61$, $df = 5$, $p = .00$)

Hatchery Trout

Questionnaire Item:
 We would like to find out your opinion on the use of HATCHERY TROUT in managing Vermont's fisheries.

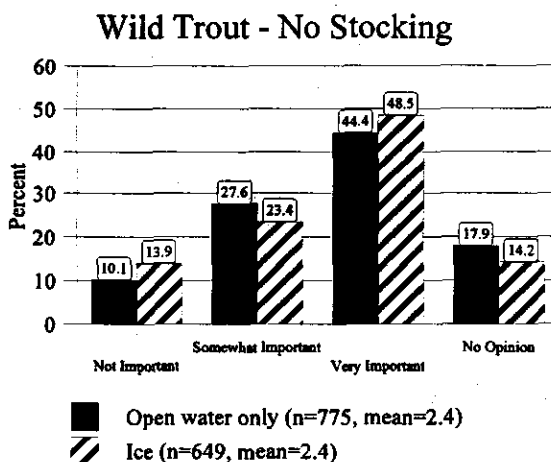


Figure 8-37. Opinions about the importance of managing for wild trout on some streams and rivers among open water anglers and ice anglers. ($X^2 = 11.13$, $df = 3$, $p = .01$) (1=not important, 2=somewhat important, 3=very important. The “no opinion” responses were excluded from the mean calculation.)

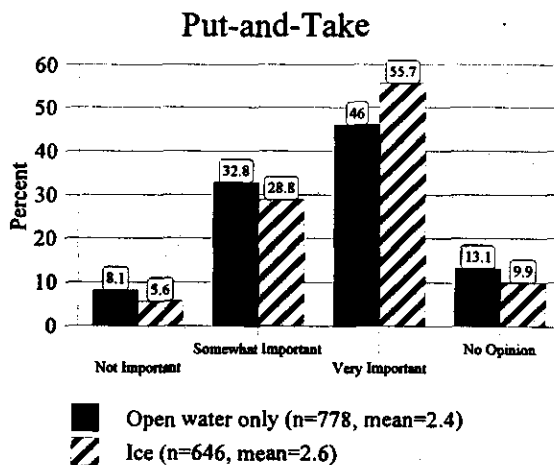


Figure 8-38. Opinions about the importance of managing put-and-take streams and rivers among open water anglers and ice anglers. ($X^2 = 14.75$, $df = 3$, $p = .00$) (1=not important, 2=somewhat important, 3=very important. The “no opinion” responses were excluded from the mean calculation.)

Allowable Number of Fishing Lines

Questionnaire Item:

General regulations allow the use of 2 lines when fishing during the OPEN-WATER season and 8 lines during the ICE-FISHING season. Do you agree with the number of lines allowed in each season? (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommended number of lines.)

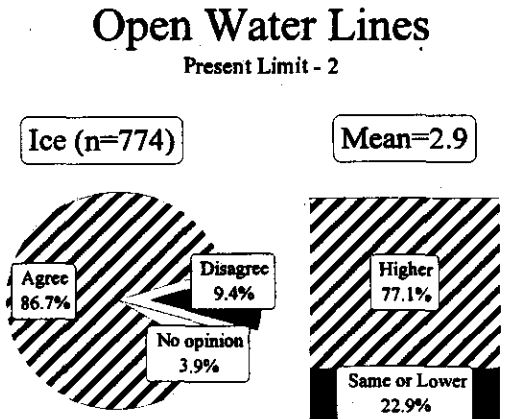
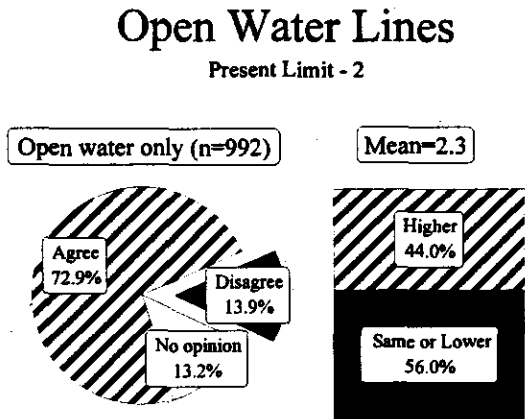


Figure 8-39. Agreement with the number of lines allowed and recommended limits for those who disagree - open water fishing among open water-only anglers.

Figure 8-40. Agreement with the number of lines allowed and recommended limits for those who disagree - open water fishing among ice anglers.

$(X^2 = 59.3, df = 2, p = .00)$

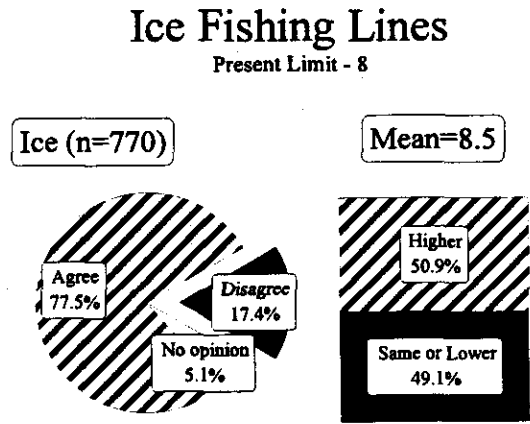
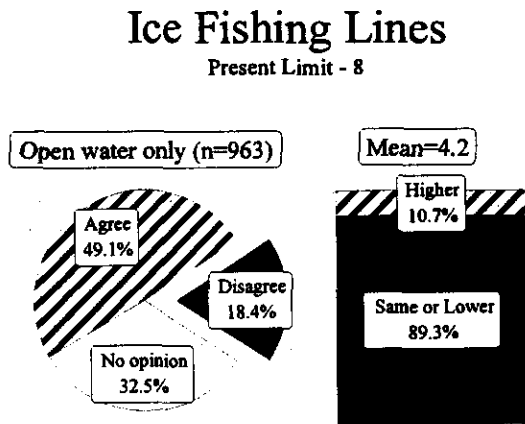


Figure 8-41. Agreement with the number of lines allowed and recommended limits for those who disagree - ice fishing among open water-only anglers.

Figure 8-42. Agreement with the number of lines allowed and recommended limits for those who disagree - ice fishing among ice anglers.

$(X^2 = 214.8, df = 2, p = .00)$

Lake Champlain Fishing

Lake Champlain Length Limits

Questionnaire Item:

The current minimum length limits for several fish species in Lake Champlain are listed below. (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommendation.)

Table 8-4. Opinions about Lake Champlain length limits among open water only anglers and ice anglers.

	% Agree		% Disagree		Recommended		% No Opinion	
	Open	Ice	Open	Ice	Open	Ice	Open	Ice
Brown/								
Rainbow (12")	13.1	15.3	65.4	72.8	14.5	14.6	21.5	11.8
L. Trout (15")	18.9	19.2	58.3	68.4	18.4	18.4	22.9	12.4
Salmon (15")	17.8	17.8	53.6	66.9	18.6	18.2	28.7	15.4
Walleye (18")	13.8	13.4	59.6	74.1	19.6	17.3 ¹	26.6	12.5
L. Bass (10")	33.4	30.2	53.7	59.6	13.3	12.9	12.9	10.2
S. Bass (10")	30.6	25.7 ¹	56.5	64.1	13.2	12.6 ¹	12.9	10.2
Pike (20")	24.8	25.5	53.3	63.1	24.0	24.5	21.9	11.4
Crappie (8")	7.9	7.0	52.8	64.2	9.7	8.4 ¹	39.4	28.8

¹ - Significantly different at less than the .05 level.

Lake Champlain Creel Limits

Questionnaire Item:

The current daily creel limit for several fish species in Lake Champlain are listed below. Do you agree with the present daily creel limits? (Circle one response for each species. If you disagree, please write in your recommended daily limit.)

Table 8-5. Opinions about Lake Champlain creel limits among open water only anglers and ice anglers.

	% Agree		% Disagree		Recommended		% No Opinion	
	Open	Ice	Open	Ice	Open	Ice	Open	Ice
Brown/								
Rainbow (3)	16.3	15.4	56.2	69.1	5.4	4.1	27.4	15.4
L. Trout (3)	18.1	15.4 ¹	54.4	68.4	4.8	3.9	27.5	16.2
Salmon (2)	12.7	11.4	56.5	71.8	4.8	3.3	30.9	16.8
Walleye (5)	22.1	29.7	48.3	57.1	3.6	3.4	29.6	13.2
L. Bass (5)	22.1	19.6	60.8	69.7	3.8	4.2	17.2	10.7
S. Bass (5)	22.1	19.1 ¹	60.8	70.6	3.9	5.9	17.2	10.3
Pike (5)	23.4	24.0	52.7	64.9	3.7	4.1	23.9	11.1
Y. Perch (75)	23.1	32.6	49.6	60.1	32.3	51.1 ¹	27.3	7.4
Crappie (25)	11.9	9.7 ¹	48.2	65.3	14.9	29.8 ¹	39.9	25.0
Sunfish (nl) ²	7.5	3.4 ¹	53.8	70.8	24.7	32.2	38.7	25.9
Smelt (nl) ²	7.5	8.7	53.8	70.1	24.0	63.1 ¹	38.7	21.2
Bullhead (nl) ²	5.8	5.2	54.0	70.7	20.8	22.4	40.2	24.1
W. Perch (nl) ²	6.6	6.2	54.2	69.4	22.0	34.2	39.2	24.4
n	369	545			77	161		

1 - Significantly different at less than the .05 level.

2 - No length limit.

Opinions about the Lake Champlain Walleye Season

Questionnaire Item:

The fishing season for WALLEYE in Lake Champlain is from the 1st Saturday in May to the following March 15th. What is your opinion about the length of the season? (Fill in all that apply.)

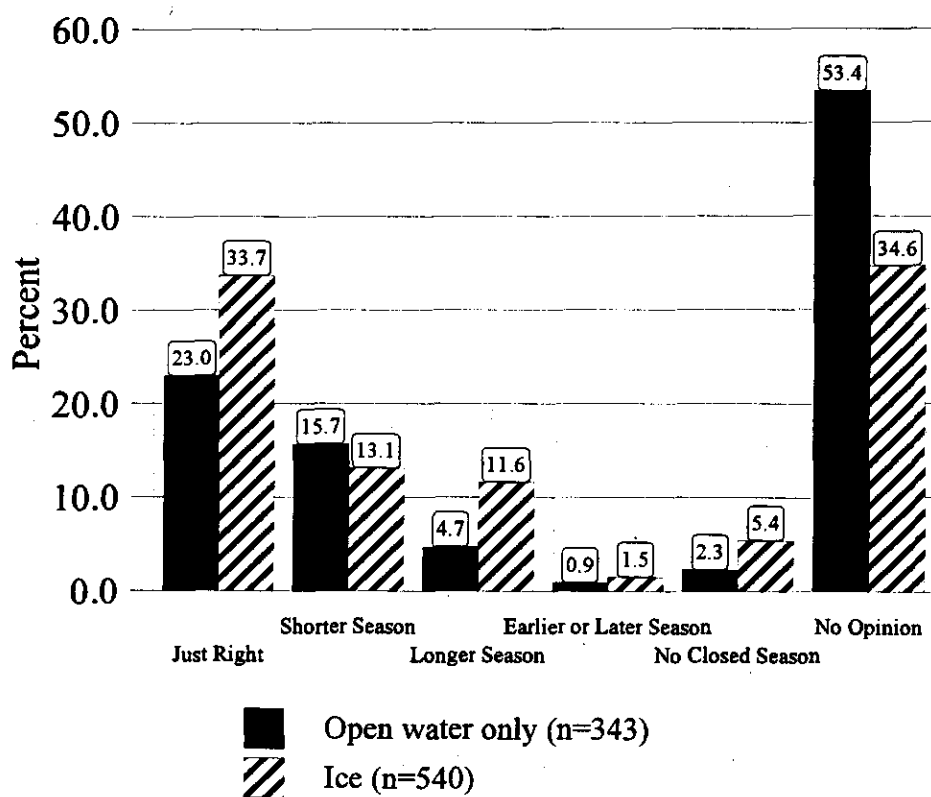


Figure 8-43. Opinions about the fishing season for walleye on Lake Champlain among open water anglers and ice anglers.

Tip-up or Hand Held Lines on Lake Champlain

Questionnaire Item:

Current regulations for ice-fishing on Lake Champlain allow the use of 15 lines (tip-ups or handlines). Do you agree with the current number of lines allowed? (Please circle whether you agree or disagree with the current number. If you disagree, please write in your recommendation.)

Number of Lines

Present Limit - 15

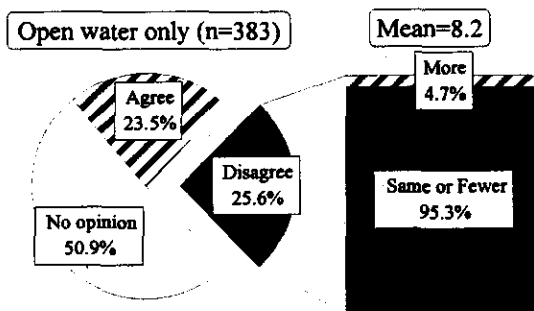


Figure 8-44. Agreement among open water anglers about the number of tip-up lines or hand lines allowed and recommended limits among those who disagree - Lake Champlain ice fishing.

Number of Lines

Present Limit - 15

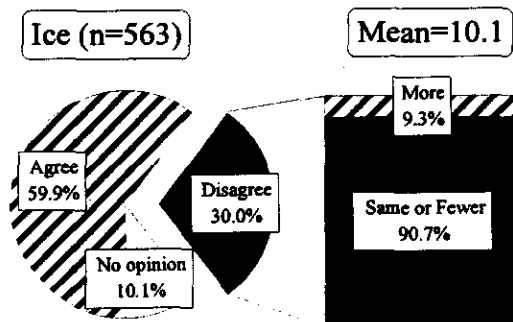


Figure 8-45. Agreement among ice anglers about the number of tip-up lines or hand lines allowed and recommended limits for those who disagree - Lake Champlain ice fishing.

$(X^2 = 210.7, df = 2, p = .00)$

Angler Opinions about Fishing

Questionnaire Items:

Overall, how would you rate the present quality of fishing for:

- TROUT in STREAMS AND RIVERS
- trout and salmon in PONDS AND LAKES
- warmwater GAMEFISH and PANFISH
- the following species that you fish for in Lake Champlain

in Vermont?

Table 8-6. Mean quality rating of open water anglers and ice anglers. (1=poor, 2=fair, 3=good, 4=very good, 5=excellent)

	n	Open Water	n	Ice
Brook, Brown, Rainbow Trout (Streams and Rivers)	718	2.56	614	2.47
Brook, Brown, Rainbow Trout (Ponds and Lakes)	553	2.55	562	2.49
Lake Trout	478	2.53	528	2.51
Landlocked Salmon	432	2.20	496	2.25
Walleye	521	2.32	659	2.11 ¹
Largemouth Bass	664	2.86	695	2.84
Smallmouth Bass	675	3.00	706	2.94
Northern Pike	571	2.70	671	2.77
Yellow Perch	616	3.05	735	2.90 ¹
Crappie	491	2.75	570	2.55 ¹
Lake Champlain Fishes				
Brown Trout	197	2.22	388	2.14
Steelhead/Rainbow Trout	195	2.24	380	2.13
Lake Trout	204	2.64	389	2.74
Landlocked Salmon	192	2.38	386	2.39
Walleye	212	2.31	415	2.11 ¹
Largemouth Bass	286	3.07	433	2.99
Smallmouth Bass	287	3.22	434	3.06 ¹
Northern Pike	240	2.87	430	2.93
Yellow Perch	222	3.14	477	2.84 ¹
Crappie	161	2.86	347	2.61 ¹
Sunfish	172	3.24	331	3.15
Bullhead	164	2.85	344	3.01
White Perch	161	2.86	325	3.01

¹ - Significantly different at less than the .05 level.

Questionnaire Item:
What is your opinion of the following issues in Vermont?

Table 8-7. Mean quality rating of open water anglers and ice anglers. (1=no problem, 2=minor problem, 3=moderate problem, 4=serious problem)

	n	Open Water	n	Ice
Conflict between open water and ice fishing	832	1.31	729	1.30
Conflict between fishing and other recreational uses (skiing, boating)	905	2.29	753	2.28
Shooting/spearing northern pike in Lake Champlain	753	2.28	719	1.78 ¹
Commercial sale of angler caught perch	828	1.90	736	2.16 ¹
Commercial sale of angler caught crappie	811	1.76	702	1.92 ¹
Commercial sale of angler caught sunfish	799	1.64	707	1.77 ¹
Fishing derbies/tournaments (not "kids" derbies)	880	1.40	749	1.45
Your ability to understand VT fishing regulations	912	1.45	757	1.54 ¹
Your ability to access fishing areas	913	1.59	750	1.69 ¹
Contaminant levels in fish	896	2.63	746	2.60
Crowding at fishing areas	902	2.05	755	2.12
Fishing with lead sinkers	906	2.45	737	2.22 ¹

1 - Statistically different at less than the .05 level.

*Environmental Factors Affecting Fish Health and Fishing Quality***Questionnaire Item:**

Many factors may influence the health of fish populations and the quality of fishing. Please tell us whether or not you believe the following factors are affecting fishing in Vermont.

Table 8-7. Mean quality rating of open water anglers and ice anglers. (1=no problem, 2=minor problem, 3=moderate problem, 4=serious problem)

	n	Open Water	n	Ice
Poor water quality	960	3.70	769	3.77
Excessive aquatic plant growth	951	3.83	766	3.89
Overfishing	952	3.57	761	3.50
Lake water level fluctuations	927	3.18	756	3.15
Inadequate stream flows below dams	938	3.38	761	3.51 ¹
Poor habitat or cover	941	3.31	763	3.29
Erosion and siltation	941	3.58	761	3.61
Exotic species	927	3.46	754	3.44
Barriers to fish migration	953	3.65	762	3.69
Inadequate streamside/lakeside vegetation	940	3.29	763	3.24
Stream channel instability	938	3.32	763	3.30

¹ - Statistically different at less than the .05 level.

Angler Profile

Questionnaire Item:
How would you rate your fishing skills?

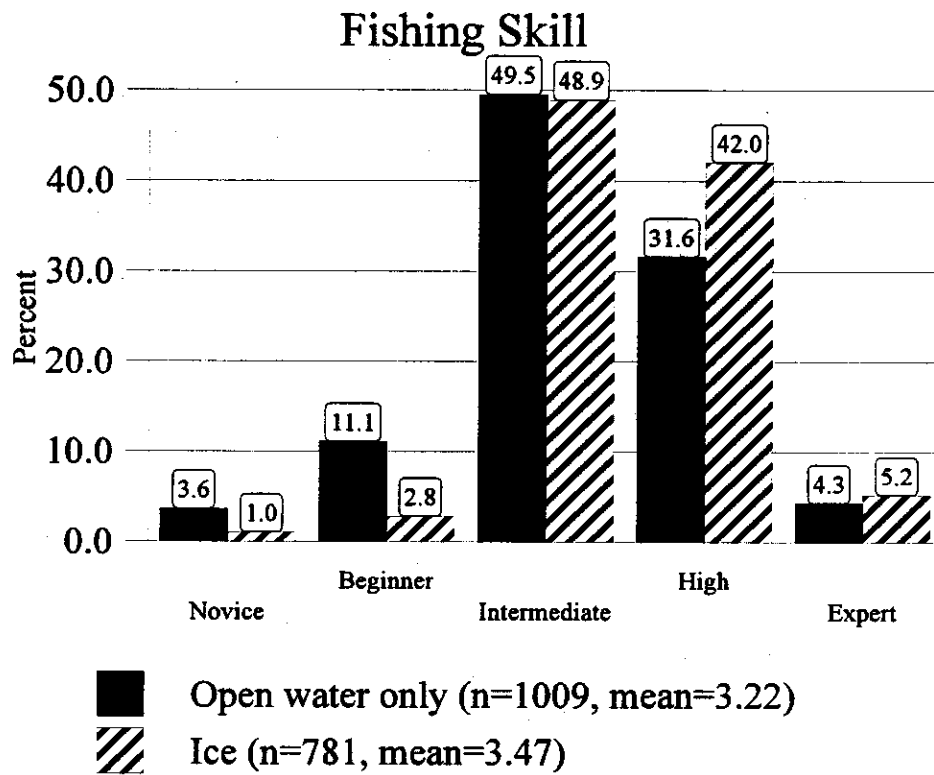


Figure 8-46. Perceived fishing skill among open water anglers and ice anglers. ($X^2 = 66.0$, $df = 4$, $p = .00$) (1=novice, 5=expert).

Questionnaire Item:
Are you a member of a fishing organization , fish and game club, or watershed group?

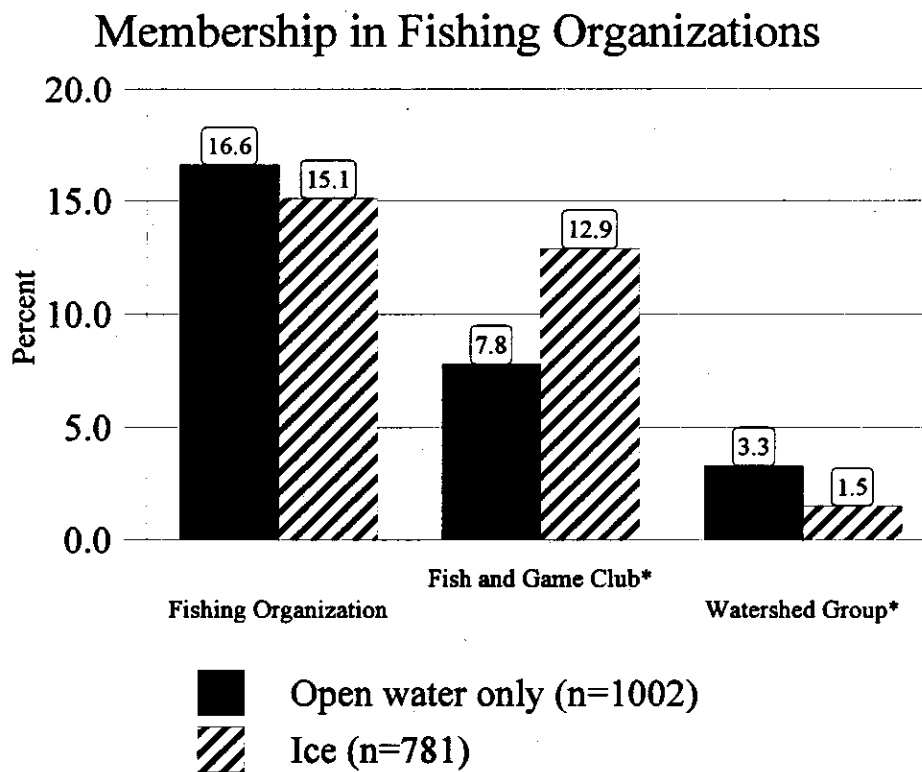


Figure 8-47. Membership in a fishing organization, fish and game club, or watershed group among open water anglers and ice anglers. (* - Significantly different at less than the .05 level.)

Questionnaire Item:

For some people, fishing may be one of the most important things in their lives. To others, it may be just one of a number of interests they have, something that they enjoy but aren't strongly committed to. How would you personally rate your own level of commitment to fishing?

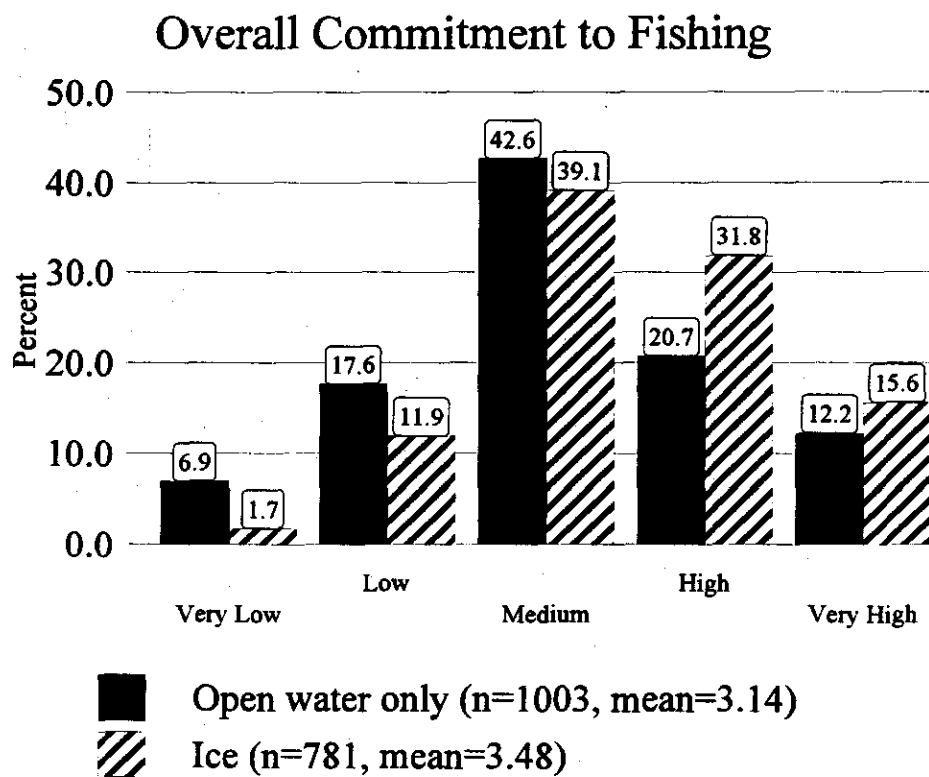


Figure 8-48. Commitment to fishing among open water anglers and ice anglers. ($X^2 = 61.54$, $df = 4$, $p = .00$) (1=very low, 5=very high)

Questionnaire Item:
 Since you first began fishing, how regularly have you been going over the years?

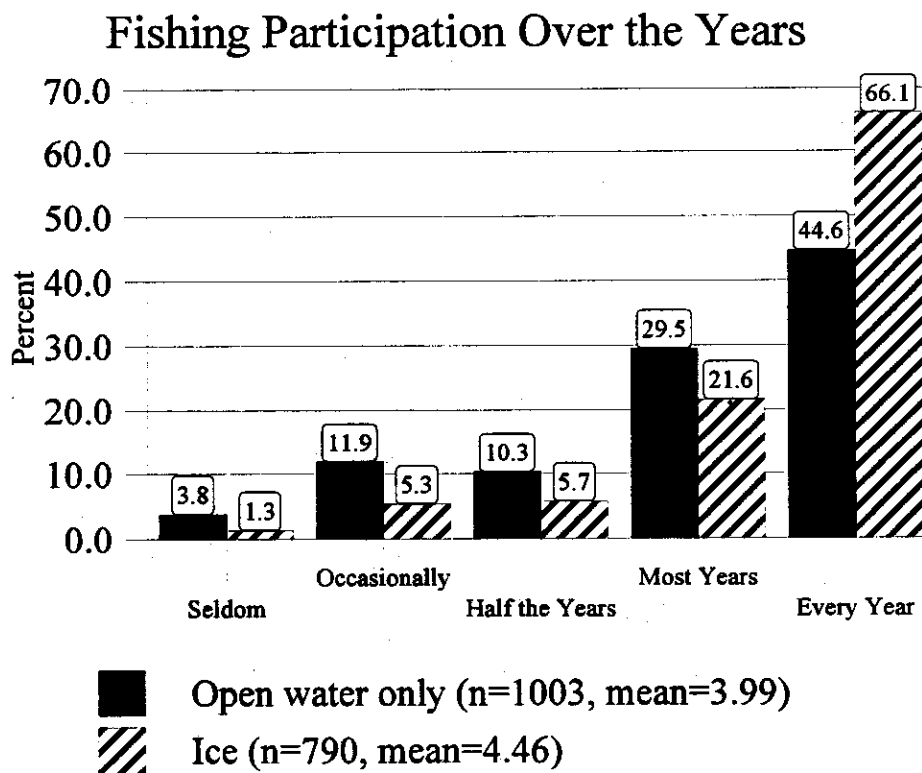


Figure 8-49. Frequency of fishing participation over the years among open water anglers and ice anglers. ($X^2 = 91.13$, $df = 4$, $p = .00$) (1=seldom, 5=every year).

Part 9



Change Among Vermont Anglers - 1990 to 1999

Measuring Longitudinal Change Among Vermont Anglers

The 2000 Vermont Angler Survey provided the opportunity to replicate a number of questions that had been asked on a similar survey of Vermont anglers in 1991. Both surveys were statewide surveys, sampled to represent all Vermont anglers. And both surveys used a number of items with identical wording in both surveys to allow for cross-year comparisons. Such a research design allows one to assess changes in Vermont angler behavior and opinions during the 9 year interval.

Three limitations to this analysis must be noted: First, resident sample sizes are large - 1,630 people in 2000 and 3,996 people in 1991. In statistical tests, samples of this size create statistical significance out of small differences. So while the tables and graphs below may show statistical significance, the reader should also evaluate whether there is also substantive significance in the findings reported here. Second, the nonresident sample size in 2000 was 216 people. Comparisons between the full 1991 and 2000 nonresidents are valid, but comparisons with partial nonresident samples (e.g., nonresident ice anglers) may not be valid because of the small sample size. Finally, data from the 2000 Angler Survey were weighted to correct for sampling error, while data from the 1991 Angler Survey were not. Nevertheless, this difference should have little effect on statistical significance.

Change in Fishing Behavior and Species Preferences

Questionnaire Item:

Which of the following fish do you fish for in Vermont? (Circle the number(s) of ALL the kinds of fish that you fish for).

Table 9-1. Percentage of Vermont Anglers who fished for various species in 1990 and 1999.

10 Most Popular Species	VT Residents		Nonresidents	
	1990	1999	1990	1999
Brook Trout	79	78	54	59
Rainbow Trout	73	75	57	57
Brown Trout	67	70 ¹	52	57
Smallmouth Bass	64	67 ¹	56	59
Yellow Perch	73	65 ¹	45	29 ¹
Largemouth Bass	60	63 ¹	56	56
Northern Pike	48	47	41	36
Lake Trout	48	44 ¹	36	35
Walleye	44	37 ¹	31	22 ¹
Bullhead	38	34 ¹	14	10
Specialty Species				
Pickeral	32	28 ¹	30	17 ¹
Landlocked Salmon	27	26	22	24
Sunfish	17	23 ¹	20	17
Smelt	27	18 ¹	8	5
Rock Bass	18	18	18	13
White Perch	14	17 ¹	11	9
Crappie	10	16 ¹	13	17
Channel Catfish	9	11 ¹	4	8 ¹
Less Popular Fish Species				
Sucker	3	4	1	1
Drum	3	3	2	2
Muskellunge	6	3 ¹	7	7
Carp	2	3 ¹	1	0
Sauger	3	3	2	1
Gar	8	2 ¹	1	0
American Shad	2	2	1	1
Whitefish	1	2	1	1
Anything	12	15 ¹	8.5	
Total N	3,996	1,588	665	216

1 - Significantly different at less than the .05 level.

Participation in Open Water Fishing and Ice Fishing

Questionnaire Items:
 "Do you fish during the OPEN-WATER season in Vermont (spring, summer, fall)?"
 "Do you ICE-FISH in Vermont?"

Table 9-2. Percentage of Vermont anglers who fished open water and who ice-fished in 1990 and 1999.

	VT Residents 1990	VT Residents 1999	Nonresident 1990	Nonresident 1999
Open water only	46.3	51.8	75.0	85.2
Ice fishing only	0.7	0.4	4.1	2.8
Open water and ice	52.7	47.0	20.3	12.0
Did not fish	0.4	0.7	0.6	0.0
X ²	20.04 ¹		10.27 ¹	
Total open water	99	99	95	97
Total ice fishing	53	47 ²	24	15 ²
Total n	3959	1623	654	216

1 - Three degrees of freedom, $p = .01$.

2 - Significantly different at less than the .05 level.

Change in the Types of Fishing Participation

Questionnaire Items:
 Do you fish for brook, brown or rainbow trout in STREAMS or RIVERS in Vermont?
 Do you fish for trout or salmon in PONDS or LAKES in Vermont?
 Do you fish for walleye, bass, pike, yellow perch, sunfish, crappie, bullhead or smelt
 in Vermont?

Table 9-3. Residents and nonresidents fishing participation in 1990 and 1999.

	Residents		Nonresidents	
	1991	2000	1991	2000
Trout - Streams/Rivers	82	80	.56	.55
Trout - Ponds/Lakes	71	68 ¹	.53	.48
Warm Water Game Fish	88	84 ¹	.75	.63 ¹

1 - Significantly different at less than the .05 level.

*Most Preferred Fish Species***Questionnaire Item:**

What kinds of fish (listed in question 1) do you prefer to fish for during the OPEN-WATER season in Vermont? (Please rank your top three choices by writing the species number in the appropriate box.)

Table 9-4. Most preferred game fish species among resident open water Vermont anglers in 1991 and 2000.

	Most Preferred (%)		Scaled Preference ¹	
	1991 n=3398	2000 n=1305	1991	2000
Brook Trout	32.8	26.3	22.55	21.64
Rainbow Trout	14.9	13.4	15.81	17.08
Largemouth Bass	10.5	11.5	9.87	11.39
Brown Trout	6.9	5.3	11.08	11.20
Smallmouth Bass	7.0	8.5	8.35	11.11
Yellow Perch	5.7	3.7	7.33	5.71
Walleye	8.1	5.2	7.20	5.09
Landlocked Salmon	3.8	4.2	3.60	4.18
Lake Trout	4.2	2.5	5.38	4.15
Northern Pike	3.1	1.6	3.90	3.32
Bullhead	1.6	1.1	2.29	1.64
White Perch	0.4	0.7	0.52	0.74
Crappie	0.2	0.4	0.29	0.68
Channel Catfish	0.4	0.6	0.39	0.64
Pickeral	0.1	0.1	0.57	0.42
Sunfish	0.1	0.1	0.23	0.34
Rock Bass	0.0	0.1	0.11	0.18
Smelt	0.1	0.1	0.34	0.13
Sauger	0.0	0.1	0.03	0.13
American Shad	0.0	0.0	0.01	0.09
Carp	0.0	0.1	0.01	0.5
Muskellunge	0.0	0.0	0.04	0.5
Sucker	0.0	0.0	0.01	0.4
Drum	0.0	0.0	0	0.1
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0	0

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1, and then dividing each score by the total number of points.

Table 9-5. Most preferred game fish species among **resident ice anglers** in Vermont in 1991 and 2000.

	Most Preferred (%)		Scaled Preference ¹	
	1991 n=1884	2000 n=656	1991	2000
Yellow Perch	50.4	44.5	39.20	31.73
Northern Pike	8.9	13.0	11.98	14.52
Lake Trout	10.8	9.9	10.78	10.84
Smelt	10.4	6.7	12.45	8.89
Walleye	8.1	7.0	9.19	7.61
Rainbow Trout	2.3	4.5	3.64	5.72
Brown Trout	2.6	3.7	3.03	4.77
Landlocked Salmon	2.1	3.1	2.65	4.63
Largemouth Bass	1.0	2.2	1.45	3.04
Brook Trout	0.9	2.5	0.88	1.90
Pickeral	1.0	0.3	1.82	1.70
White Perch	1.0	1.0	0.71	1.64
Crappie	0.2	0.4	0.28	1.14
Smallmouth Bass	0.5	0.6	0.79	1.12
Sunfish	0.1	0.1	0.10	0.33
Sauger	0.0	0.0	0.16	0.20
Bullhead	0.1	0.0	0.12	0.11
Rock Bass	0.0	0.0	0.05	0.06
Muskellunge	0.1	0.0	0.14	0.06
Channel Catfish	0.0	0.0	0.06	0
American Shad	0.0	0.0	0.01	0
Carp	0.0	0.1	0.01	0
Sucker	0.0	0.0	0	0
Drum	0.0	0.0	0	0
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0.51	0

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1, and then dividing each score by the total number of points.

Table 9-6. Preferred game fish species among nonresident open water anglers in 1991 and 2000.

	Most Preferred (%)		Scaled Preference ¹	
	1991 n=547	2000 n=157	1991	2000
Largemouth Bass	15.9	11.8	14.21	16.54
Smallmouth Bass	9.9	15.4	11.12	15.88
Rainbow Trout	15.2	12.7	15.26	15.22
Brook Trout	22.9	16.6	17.07	15.01
Brown Trout	6.9	7.1	10.53	11.94
Northern Pike	4.4	4.4	6.82	7.34
Landlocked Salmon	3.7	4.7	3.99	5.37
Lake Trout	5.7	5.4	5.73	5.26
Walleye	7.7	1.5	6.57	2.41
Yellow Perch	3.8	1.7	4.24	1.86
Channel Catfish	0.7	0.7	0.50	0.66
Sunfish	0.2	0.3	0.22	0.66
Bullhead	0.4	0.5	0.93	0.55
Pickrel	0.4	0.0	0.53	0.55
Crappie	0.7	0.7	0.90	0.44
Muskellunge	0.7	0.0	0.50	0.22
White Perch	0.0	0.0	0.16	0
Rock Bass	0.4	0.0	0.22	0
Smelt	0.0	0.0	0.06	0
Sauger	0.2	0.0	0.31	0
American Shad	0.0	0.0	0	0
Carp	0.0	0.0	0	0
Sucker	0.0	0.0	0	0
Drum	0.0	0.0	0	0
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0	0

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1, and then dividing each score by the total number of points.

Table 9-7. Most preferred game fish species among nonresident ice anglers in 1991 and 2000.

	Most Preferred (%)		Scaled Preference ¹	
	1991 n=136	2000 ² n=31	1991	2000 ²
Northern Pike	16.9	23.5	15.92	17.47
Lake Trout	11.0	19.9	10.34	16.27
Yellow Perch	33.8	15.5	24.80	15.66
Landlocked Salmon	2.2	0.8	3.05	11.45
Brook Trout	2.2	4.1	1.46	10.84
Smelt	8.1	6.7	8.09	7.23
Rainbow Trout	3.7	6.3	5.31	4.82
Walleye	11.8	1.8	11.27	4.22
Crappie	0.0	0.0	3.32	4.22
Largemouth Bass	4.4	1.4	4.24	3.61
Brown Trout	2.9	18.2	3.18	3.01
Pickrel	1.5	0.0	3.85	0.60
Muskellunge	0.0	0.0	0.40	0.60
White Perch	0.7	0.0	1.33	0
Smallmouth Bass	0.0	0.0	1.19	0
Sunfish	0.7	0.0	1.46	0
Sauger	0.0	0.0	0.53	0
Bullhead	0.0	0.0	0	0
Rock Bass	0.0	0.0	0.13	0
Channel Catfish	0.0	0.0	0	0
American Shad	0.0	0.0	0.13	0
Carp	0.0	0.0	0	0
Sucker	0.0	0.0	0	0
Drum	0.0	0.0	0	0
Gar	0.0	0.0	0	0
Whitefish	0.0	0.0	0	0

1 - The scale was created by multiplying the number of "most preferred" responses by 3, the "second most preferred" responses by 2, and the "third most preferred" responses by 1, and then dividing each score by the total number of points.

2 - Small sample size. Percentages and scales may not be reliable.

Change in the Number of Annual Angler Days

Questionnaire Item:

About how many days did you fish in Vermont in 1999? (Write the number of days in the appropriate box.)

Table 9-8. Percent of days that anglers spent open water and ice fishing in 1990 and 1999.

Days	Open Water				Ice			
	Resident		Nonresident		Resident		Nonresident	
	1990	1999	1990	1999	1990	1999	1990	1999 ¹
0	3.6	2.6	2.5	1.0	16.2	12.1	25.0	13.3
1-5	13.6	15.8	38.4	48.8	28.2	35.8	33.3	50.0
6-10	16.5	16.9	24.0	26.8	22.7	21.8	23.4	20.0
11-20	24.3	22.2	19.5	13.6	19.7	17.7	13.4	3.3
21-30	18.6	19.0	9.9	5.4	7.7	7.0	3.9	6.6
31-40	7.0	7.7	1.8	1.9	2.0	2.5	0.0	0.0
41-50	4.4	5.2	1.3	0.5	1.0	1.0	0.0	0.0
50+	11.8	10.5	2.9	1.9	2.2	1.9	1.1	3.3
Mean days	27	27	12	9 ²	11	11	7	9
Total n	3911	1597	631	207	2159	764	180	32

1 - Small sample size. Percentages and statistics may not be reliable.

2 - Significantly different at less than the .05 level.

Fishing Outside of Vermont

Questionnaire Item:

About how many days did you fish in the following types of water outside of Vermont in 1999. (Please write in the number of days fished in the appropriate box.)

Table 9-9. Mean number of days spent fishing outside of Vermont in 1990 and 1999.

	Resident		Nonresident	
	1990 (n)	1999 (n)	1990 (n)	1999 (n)
Great Lakes	6.3 (423)	7.2 (109)	5.8 (109)	7.1 (27)
Other Freshwater	15.5 (789)	13.3 (406)	28.2 (483)	31.7 (156)
Saltwater	3.7 (703)	4.9 (332) ¹	12.7 (229)	17.0 (89)

1 - Significantly different at less than the .05 level.

Days Spent Fishing for Specific Species of Fish

Questionnaire Item:

About how many days did you spend fishing in each of the following categories during the 1999 open-water and ice seasons? (Write in the number of days fished in the appropriate box. Total days fished does not have to equal total in question 4.)

Table 9-10. Mean number of days spent fishing on open water for each category of game fish in 1990 and 1999.

	Resident n		Resident		Nonresident n		Nonresident	
	1990	1999	1990	1999	1990	1999 ¹	1990	1999 ¹
Brook, Brown, or Rainbow in small brooks/ponds	2626	937	10.6	11.3	240	73	5.8	11.2
Brook, Brown, or Rainbow in large streams/rivers	2499	882	10.3	12.4 ²	250	83	5.8	6.7
Brook, Brown, or Rainbow in ponds/lakes	1986	747	8.0	10.1	224	54	7.2	8.9
Lake Trout	1218	408	9.1	8.8	153	32	6.9	7.6
Landlocked Salmon	706	264	10.9	10.0	86	34	8.1	6.2
Walleye	1226	354	9.9	10.0	144	26	10.3	6.2
Smallmouth or Largemouth Bass	2091	840	13.2	13.8	355	104	9.1	13.9 ²
Pike, Pickerel, or Muskellunge	1232	485	11.3	11.8	212	57	9.3	8.1
American Shad	41	26	8.6	7.5	4	1	3.7	2.0
Yellow Perch	1795	604	12.4	13.0	206	35	10.8	8.2
Smelt	217	56	9.7	8.5	13	5	14.1	13.8
Panfish	429	250	13.0	11.9	101	24	9.2	9.1
Bullhead	962	11	8.9	9.2	64	9	9.3	3.1
Other	118	36	11.7	13.8	17	9	11.7	3.8

1 - Small sample size. Percentages and statistics may not be reliable.

2 - Significantly different at less than the .05 level.

Table 9-11. Mean number of days spent fishing on ice fishing for each category of game fish in 1990 and 1999.

	Resident n		Resident		Nonresident n		Nonresident	
	1990	1999	1990	1999	1990	1999 ¹	1990	1999 ¹
Brook, Brown, or Rainbow in ponds/lakes	303	125	8.0	10.1 ²	29	7	6.2	5.4
Lake Trout	426	137	7.3	8.6	31	9	5.5	4.8
Landlocked Salmon	175	87	8.2	10.3	13	7	7.1	5.8
Walleye	356	108	7.9	11.3 ²	32	3	5.4	7.5
Smallmouth or Largemouth Bass	177	85	8.5	10.1	22	4	6.6	4.6
Pike, Pickerel, or Muskellunge	536	182	9.6	9.3	42	7	5.9	7.6
Yellow Perch	1127	332	11.2	11.2	76	11	8.4	11.3
Smelt	560	147	9.0	8.8	33	6	9.9	15.5
Panfish	48	52	9.8	10.8	17	4	8.9	20.4 ²
Bullhead	27	11	7.6	4.5	0	0	0.0	0.0
Other	13	9	7.5	9.0	0	0	0.0	0.0

1 - Small sample size. Percentages and statistics may not be reliable.

2 - Significantly different at less than the .05 level.

Change in Overall Satisfaction With Vermont's Fishery

Questionnaire Item:
 Overall, how would you rate the present quality of fishing in Vermont?

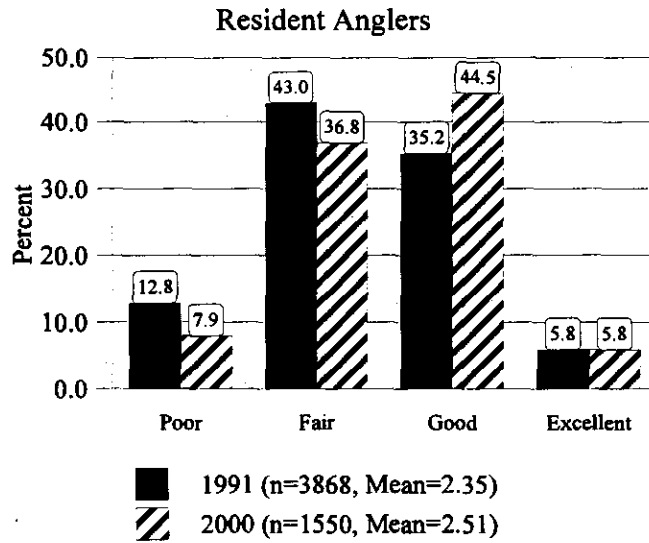


Figure 9-1. Overall resident satisfaction with Vermont's fishery. (F=46.01, p=.00) (1=poor, 2=fair, 3=good, 4=excellent).

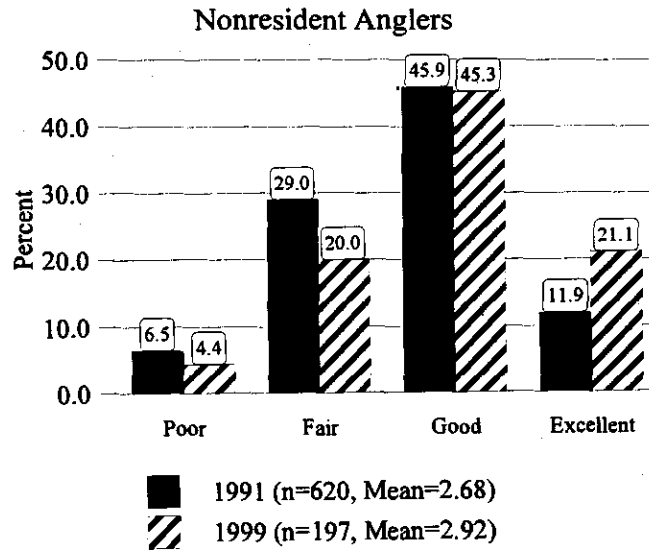


Figure 9-2. Overall nonresident satisfaction with Vermont's fishery. (F=13.6, p=.00) (1=poor, 2=fair, 3=good, 4=excellent).

Angler Opinions About Fishing Regulations

Questionnaire Items:

If there were no minimum length limits, what is the **smallest** length of each species that you would **keep** when fishing [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish]?

When fishing in [STREAMS and RIVERS, PONDS and LAKES, WARM WATER Game fish], what is the **smallest** length of each species that you would consider a **good** or **quality** size fish?

Change in Opinions About Fish Length for Trout in Streams and Rivers

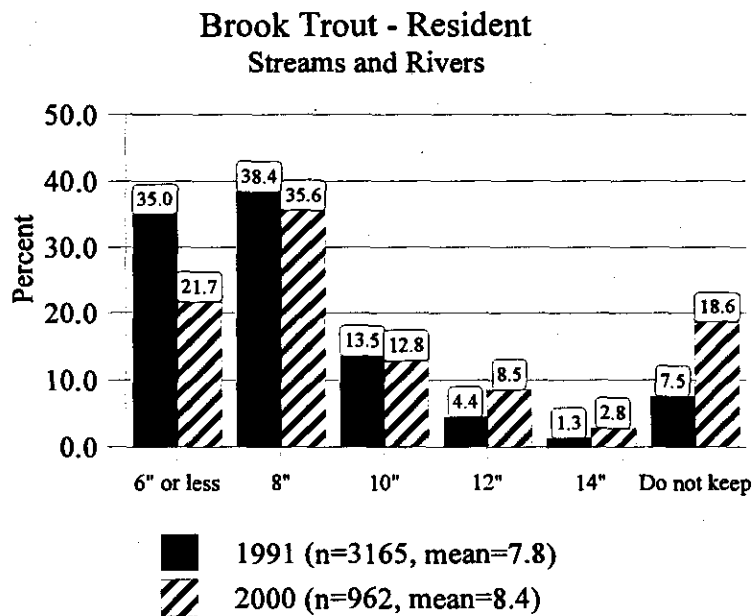


Figure 9-3. The smallest “keeper” size for residents fishing brook trout on streams and rivers in 1991 and 2000. ($X^2 = 191.91$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

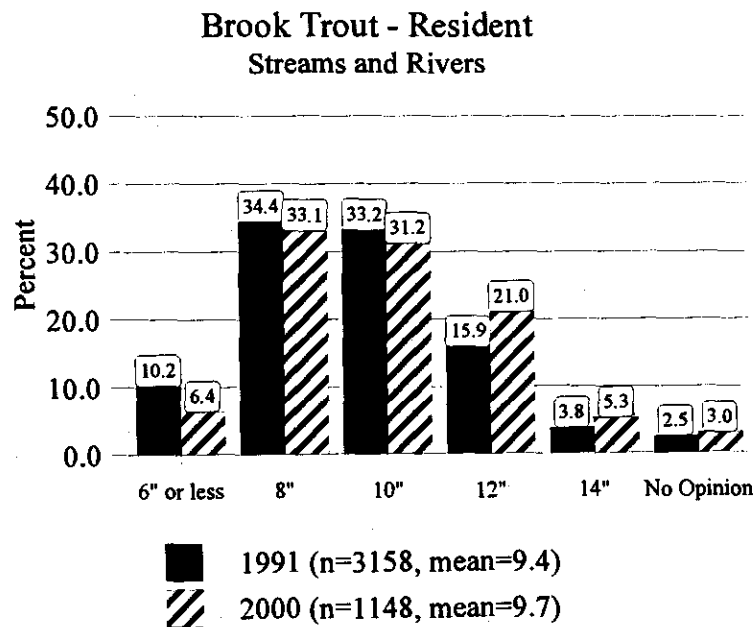


Figure 9-4. The smallest “quality” size for residents fishing brook trout on streams and rivers in 1991 and 2000. ($X^2 = 33.07$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

Brook Trout - Nonresident
Streams and Rivers

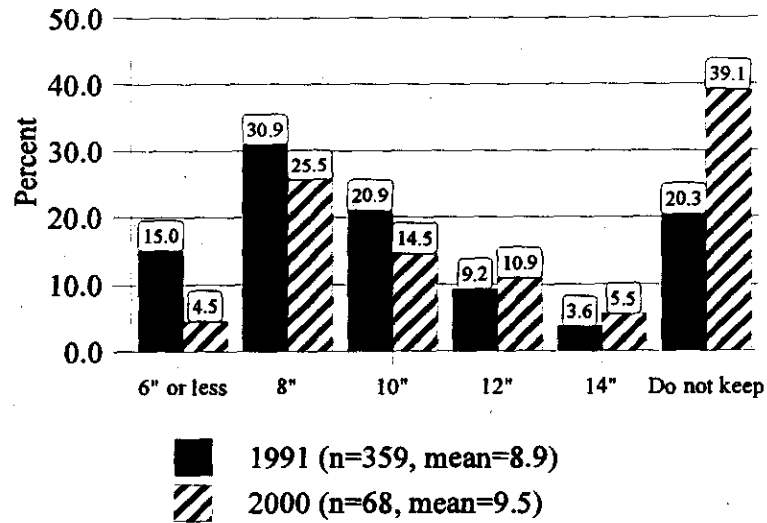


Figure 9-5. The smallest "keeper" size for nonresidents fishing brook trout on streams and rivers in 1991 and 2000. ($X^2 = 22.90$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

Brook Trout - Nonresident
Streams and Rivers

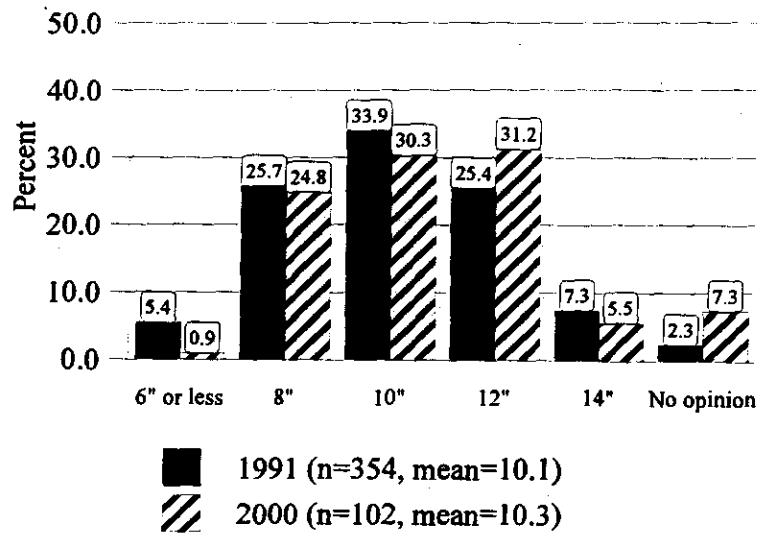


Figure 9-6. The smallest "quality" size for nonresidents fishing brook trout on streams and rivers in 1991 and 2000. ($X^2 = 11.85$, $df = 5$, $p = .04$) (The "no opinion" responses were excluded from the mean calculation.)

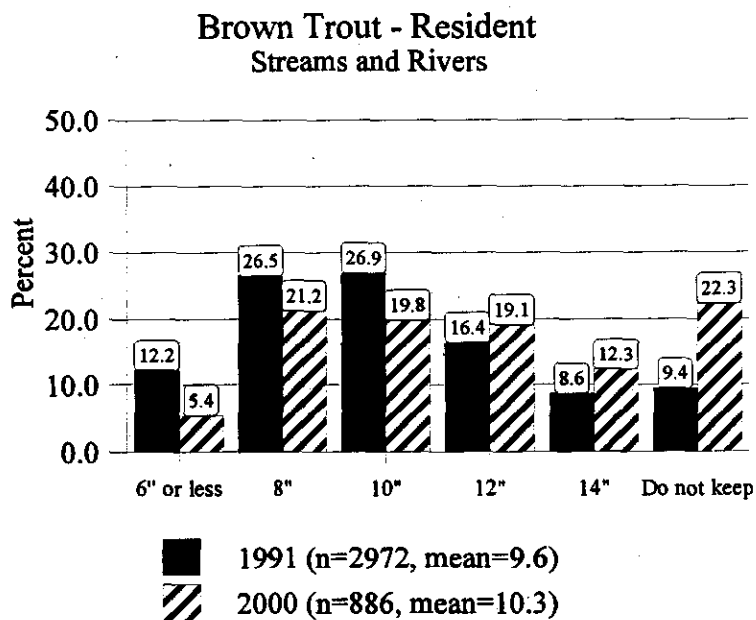


Figure 9-7. The smallest "keeper" size for residents fishing brown trout on streams and rivers in 1991 and 2000. ($X^2 = 184.10$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

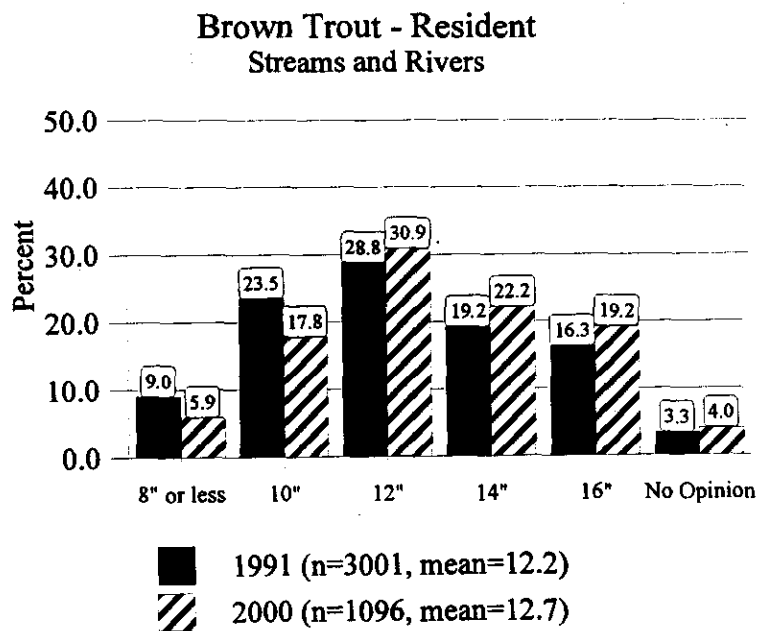


Figure 9-8. The smallest "quality" size for residents fishing brown trout on streams and rivers in 1991 and 2000. ($X^2 = 32.72$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

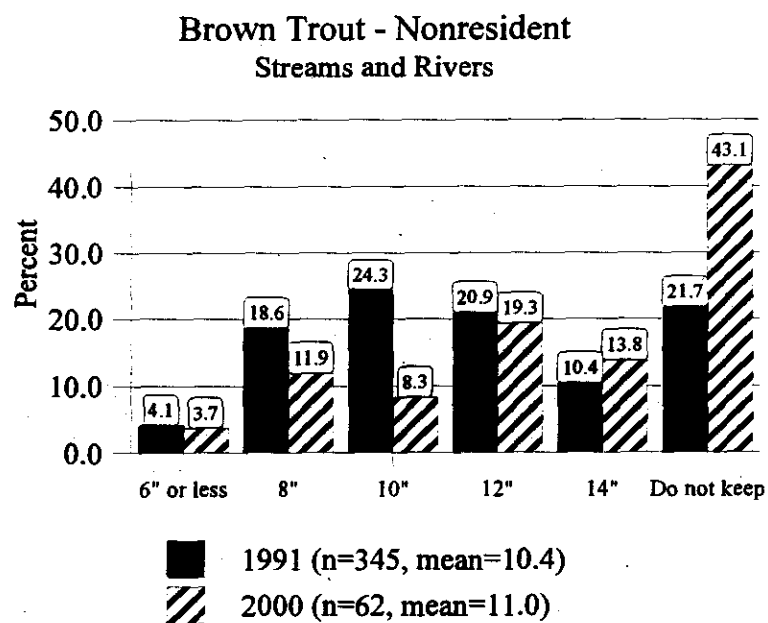


Figure 9-9. The smallest "keeper" size for nonresidents fishing brown trout on streams and rivers in 1991 and 2000. ($X^2 = 27.65$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

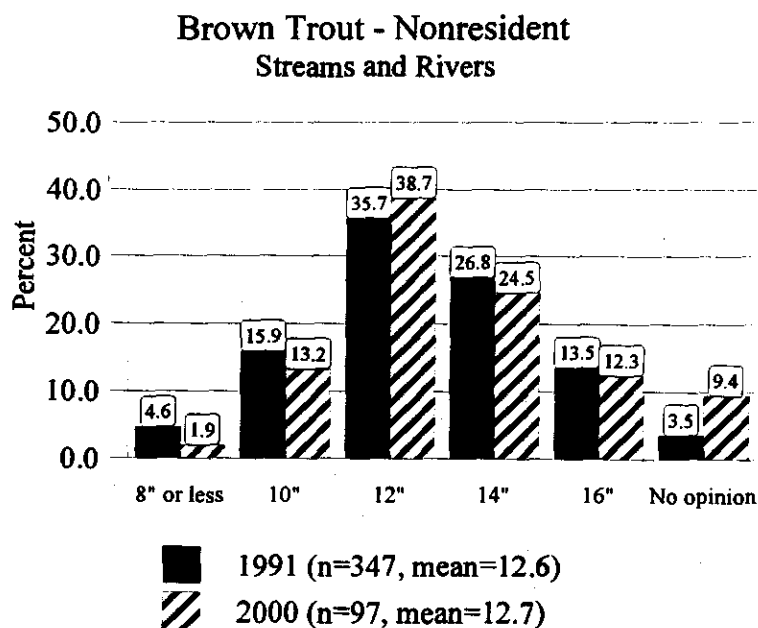


Figure 9-10. The smallest "quality" size for nonresidents fishing brown trout on streams and rivers in 1991 and 2000. ($X^2 = 8.31$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

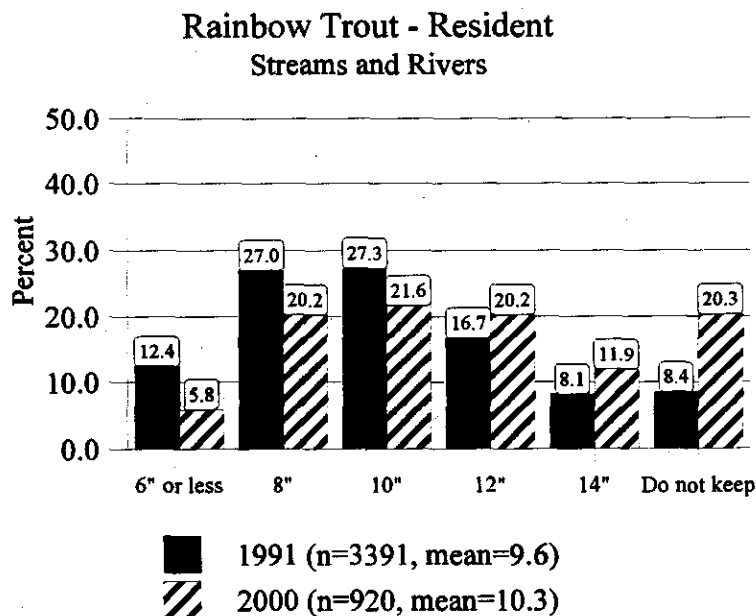


Figure 9-11. The smallest "keeper" size for residents fishing rainbow trout on streams and rivers in 1991 and 2000. ($X^2 = 181.14$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

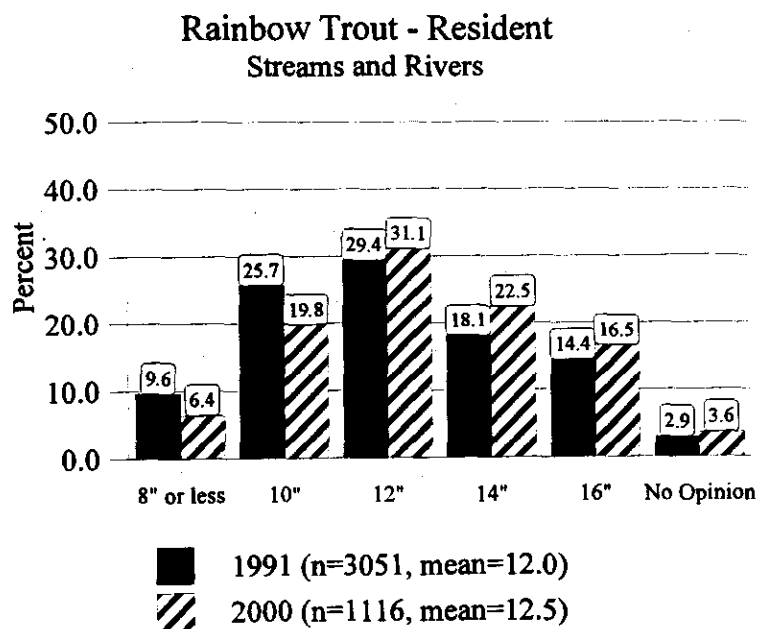


Figure 9-12. The smallest "quality" size for residents fishing rainbow trout on streams and rivers in 1991 and 2000. ($X^2 = 35.32$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

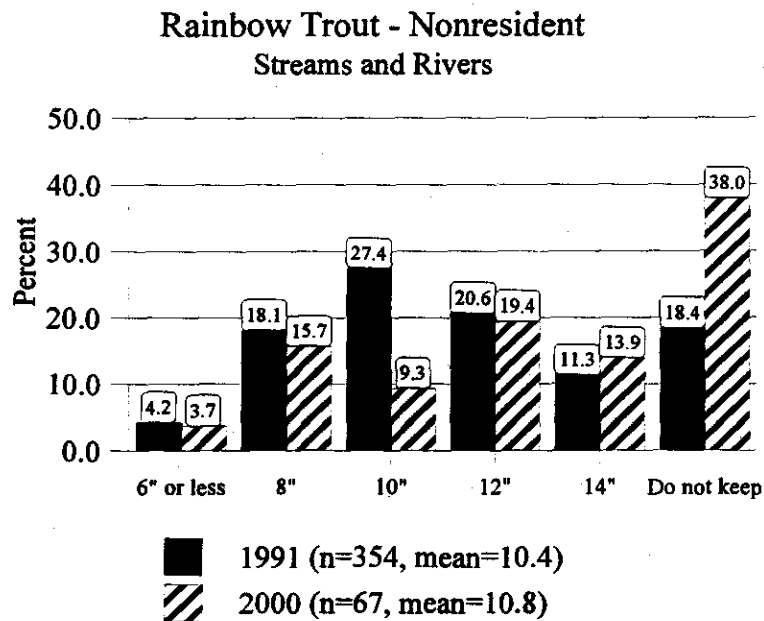


Figure 9-13. The smallest "keeper" size for nonresidents fishing rainbow trout on streams and rivers in 1991 and 2000. ($X^2 = 26.45$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

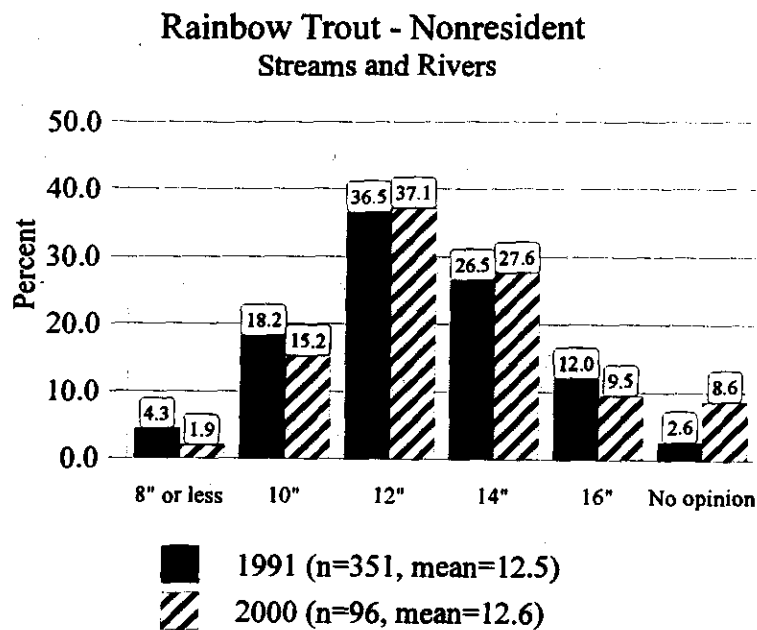


Figure 9-14. The smallest "quality" size for nonresidents fishing rainbow trout on streams and rivers in 1991 and 2000. ($X^2 = 9.5$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

Change in Opinions About Length for Trout and Salmon in Ponds and Lakes

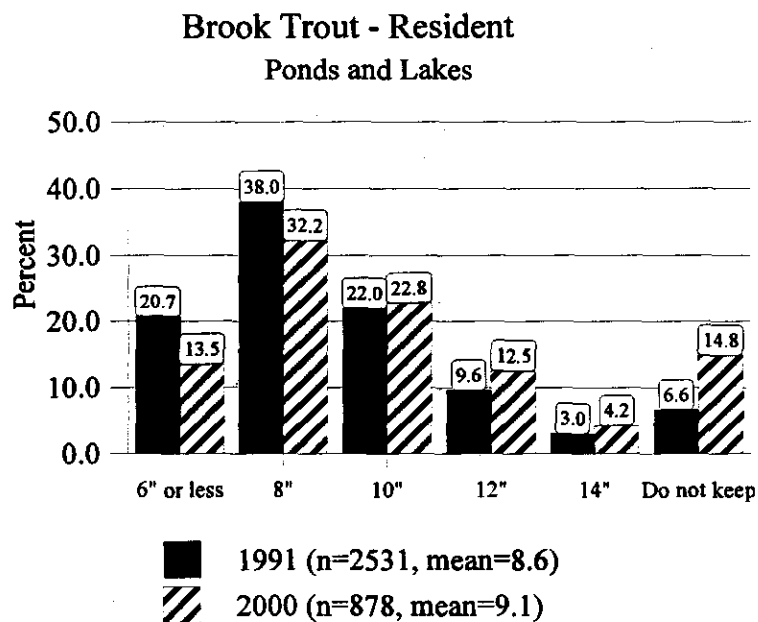


Figure 9-15. The smallest "keeper" size for residents fishing brook trout on ponds and lakes in 1991 and 2000. ($X^2 = 90.22$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

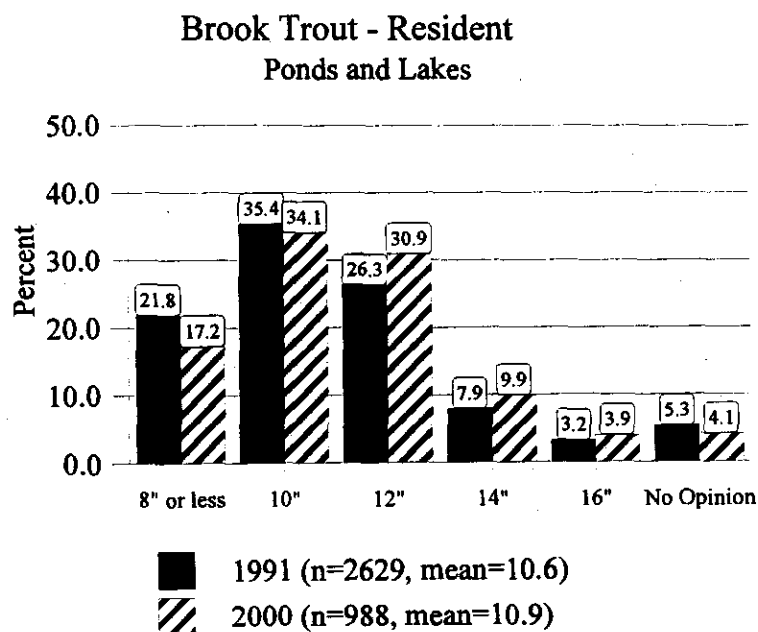


Figure 9-16. The smallest "quality" size for residents fishing brook trout on ponds and lakes in 1991 and 2000. ($X^2 = 20.90$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

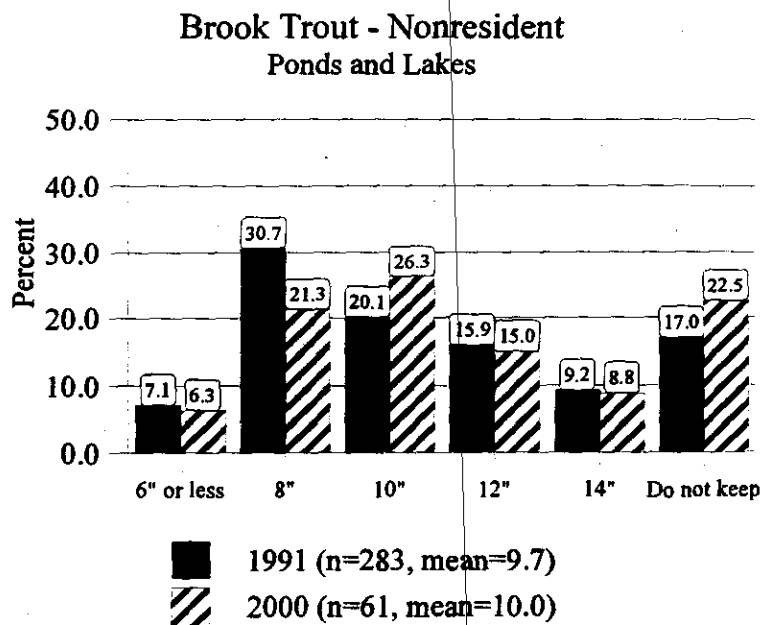


Figure 9-17. The smallest "keeper" size for nonresidents fishing brook trout on ponds and lakes in 1991 and 2000. ($X^2 = 4.20$, $df = 5$, $p = ns$) (The "do not keep" responses were excluded from the mean calculation.)

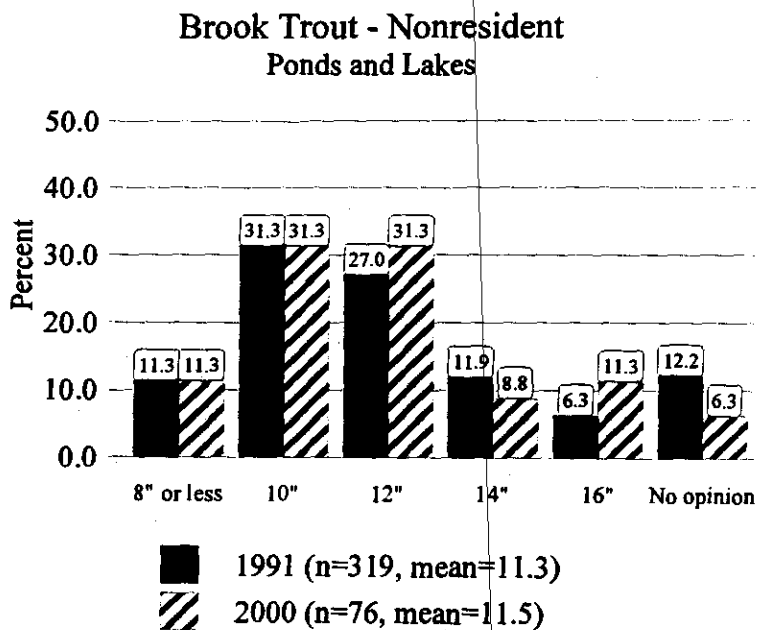


Figure 9-18. The smallest "quality" size for nonresidents fishing brook trout on ponds and lakes in 1991 and 2000. ($X^2 = 5.25$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

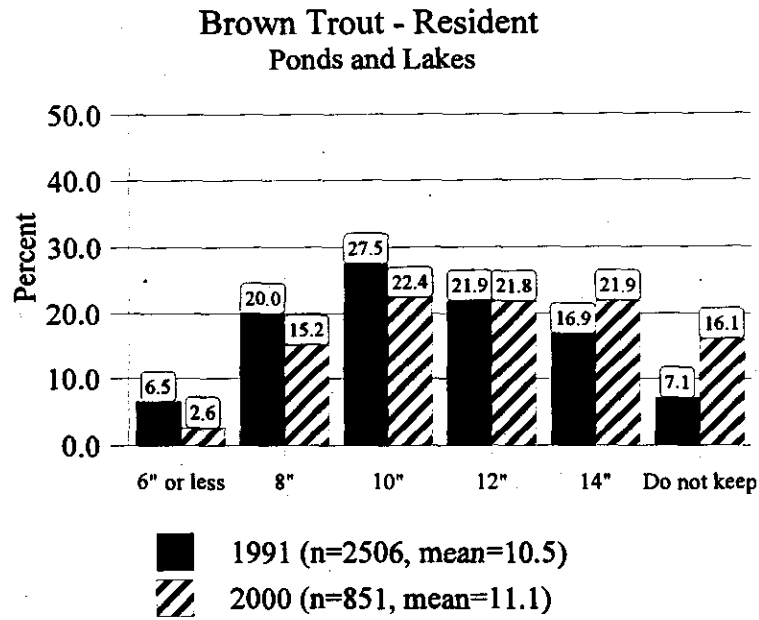


Figure 9-19. The smallest "keeper" size for residents fishing brown trout on ponds and lakes in 1991 and 2000. ($X^2 = 106.36$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

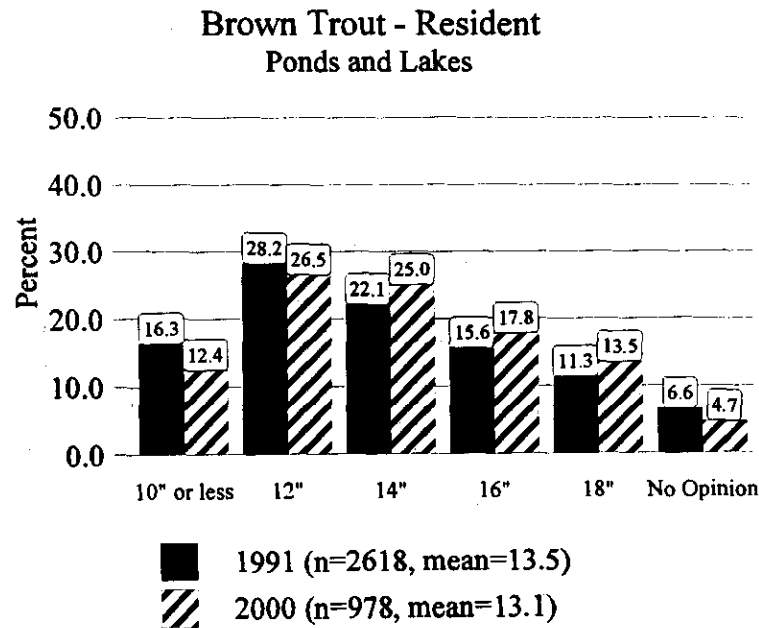


Figure 9-20. The smallest "quality" size for residents fishing brown trout on ponds and lakes in 1991 and 2000. ($X^2 = 26.99$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

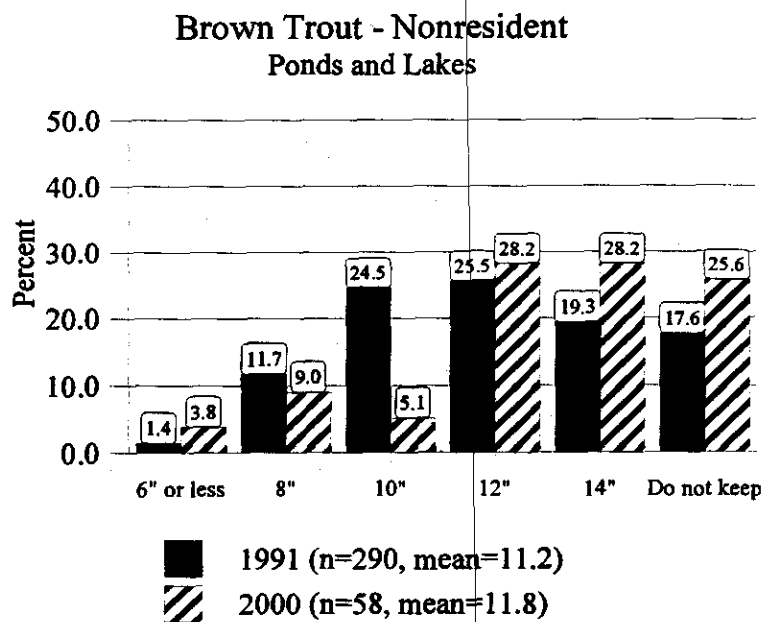


Figure 9-21. The smallest "keeper" size for nonresidents fishing brown trout on ponds and lakes in 1991 and 2000. ($X^2 = 18.21$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

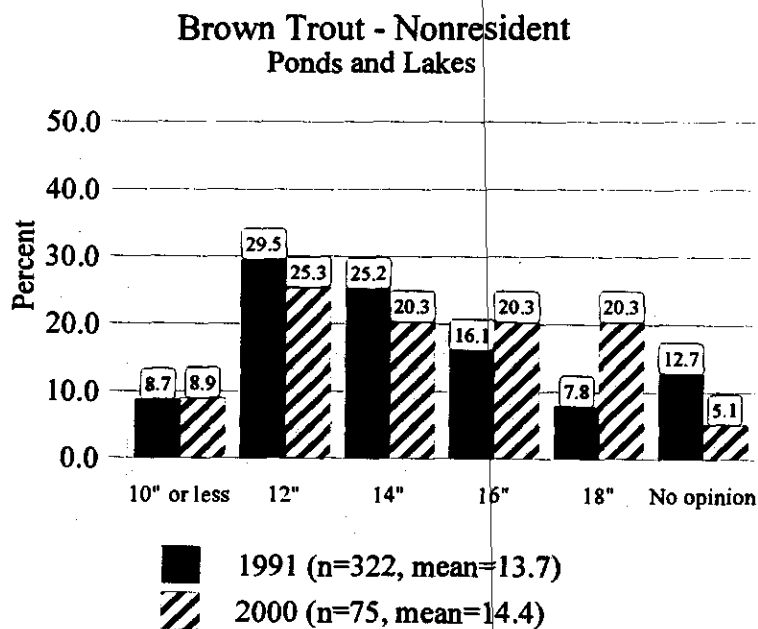


Figure 9-22. The smallest "quality" size for nonresidents fishing brown trout on ponds and lakes in 1991 and 2000. ($X^2 = 14.65$, $df = 5$, $p = .01$) (The "no opinion" responses were excluded from the mean calculation.)

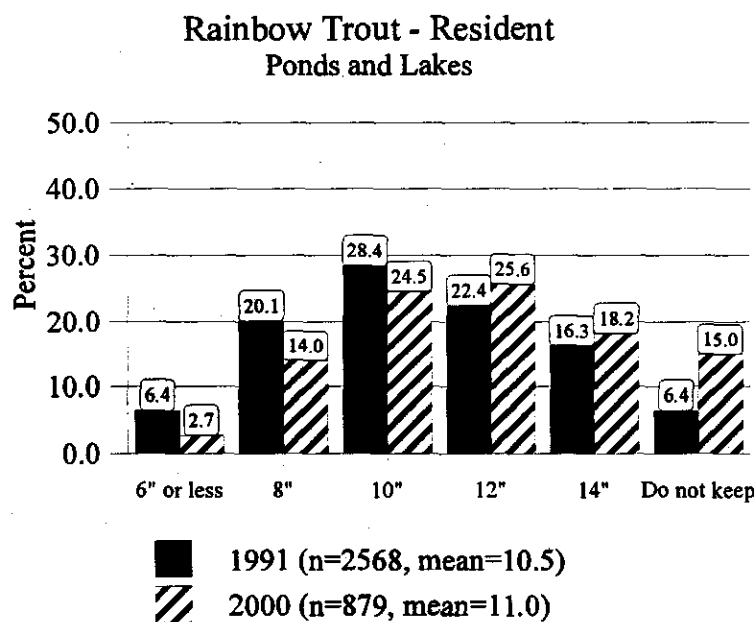


Figure 9-23. The smallest "keeper" size for residents fishing rainbow trout on ponds and lakes in 1991 and 2000. ($X^2 = 104.44$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

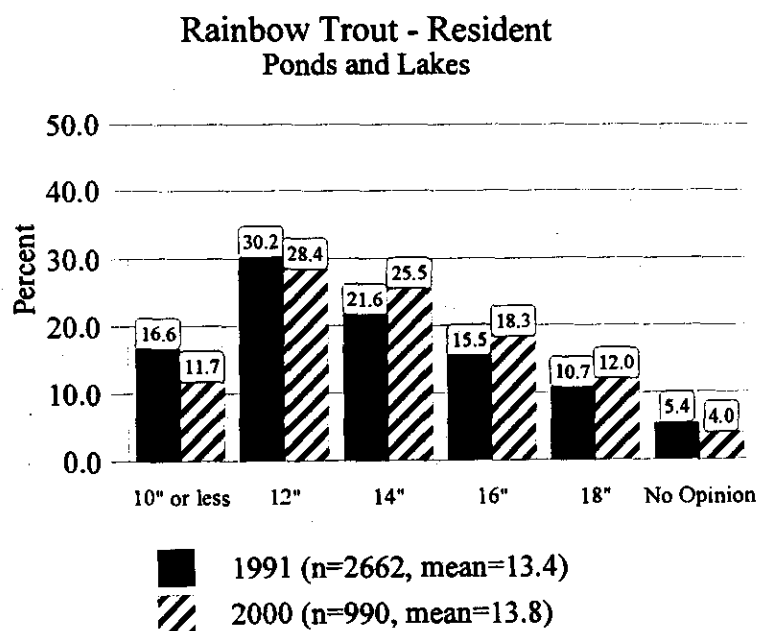


Figure 9-24. The smallest "quality" size for residents fishing rainbow trout on ponds and lakes in 1991 and 2000. ($X^2 = 31.07$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

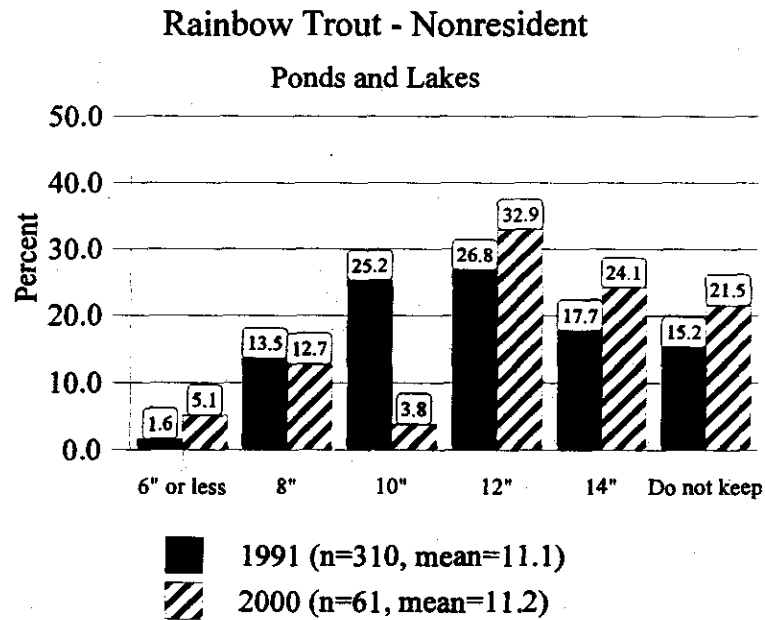


Figure 9-25. The smallest "keeper" size for nonresidents fishing rainbow trout on ponds and lakes in 1991 and 2000. ($X^2 = 20.78$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

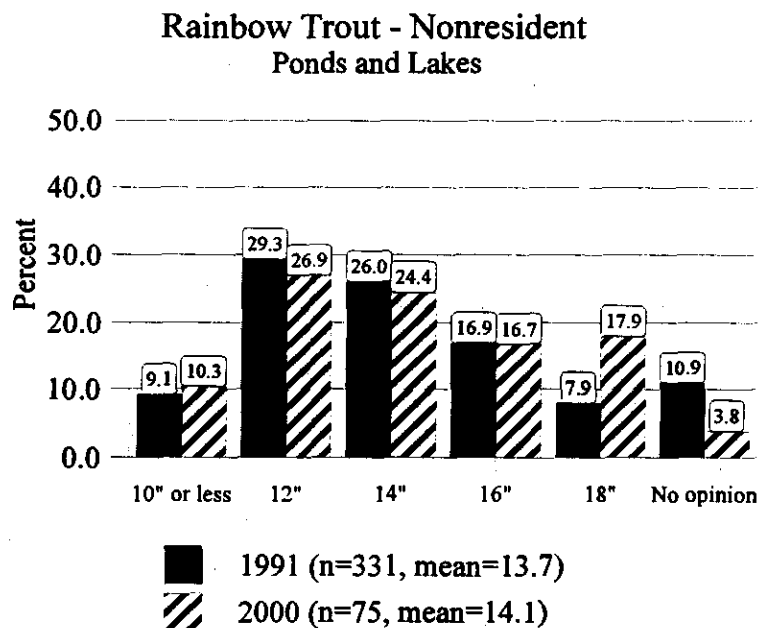


Figure 9-26. The smallest "quality" size for nonresidents fishing rainbow trout on ponds and lakes in 1991 and 2000. ($X^2 = 10.14$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

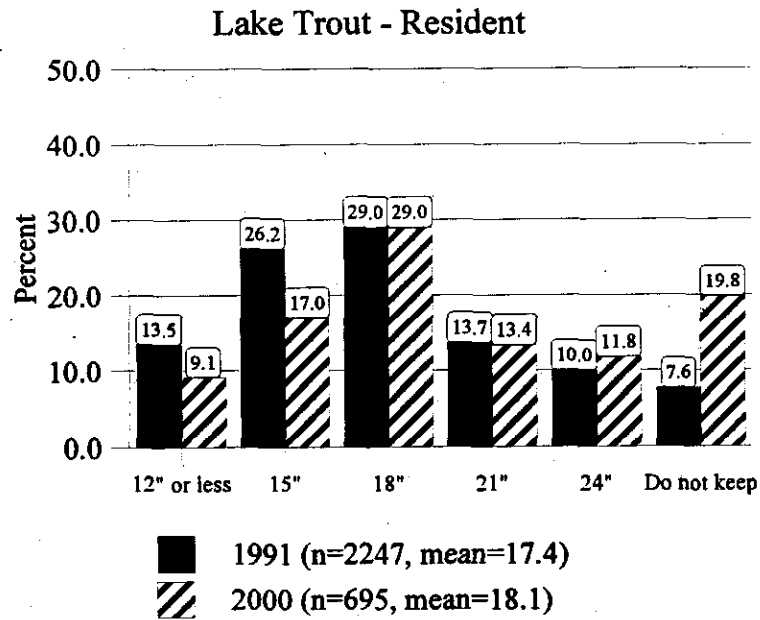


Figure 9-27. The smallest "keeper" size for residents fishing lake trout in 1991 and 2000. ($X^2 = 120.27$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

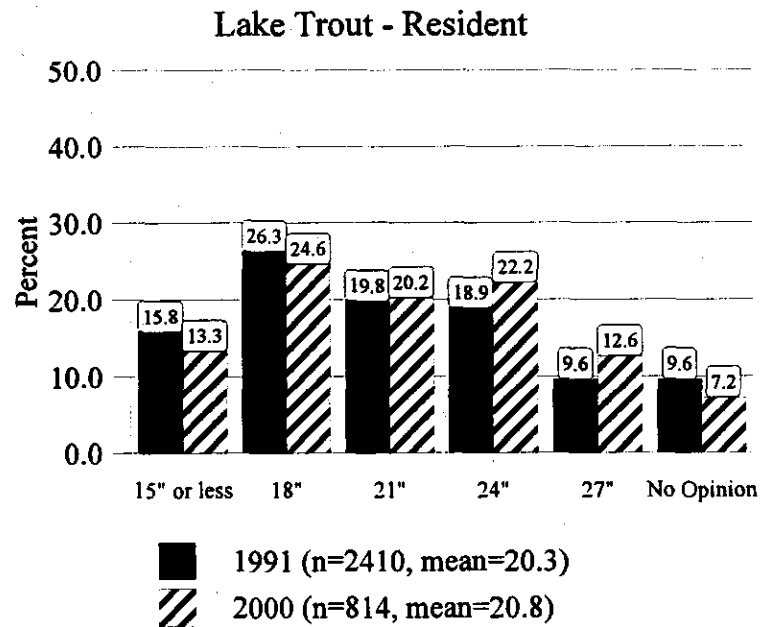


Figure 9-28. The smallest "quality" size for residents fishing lake trout in 1991 and 2000. ($X^2 = 16.61$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

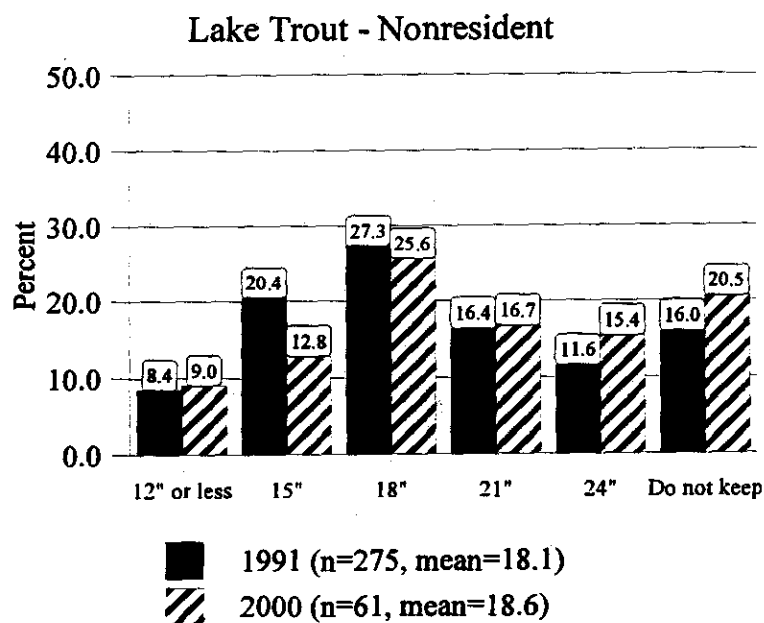


Figure 9-29. The smallest "keeper" size for nonresidents fishing lake trout in 1991 and 2000. ($X^2 = 3.35$, $df = 5$, $p = ns$) (The "do not keep" responses were excluded from the mean calculation.)

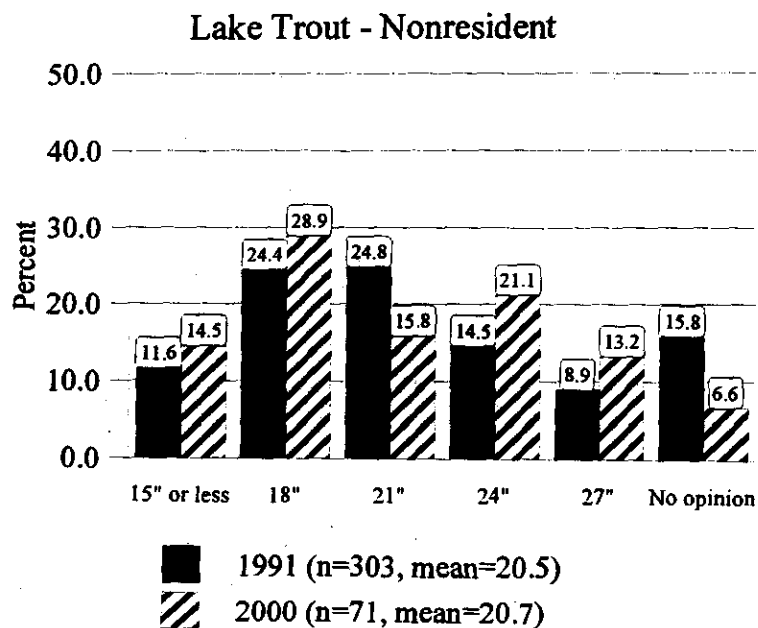


Figure 9-30. The smallest "quality" size for nonresidents fishing lake trout in 1991 and 2000. ($X^2 = 9.53$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

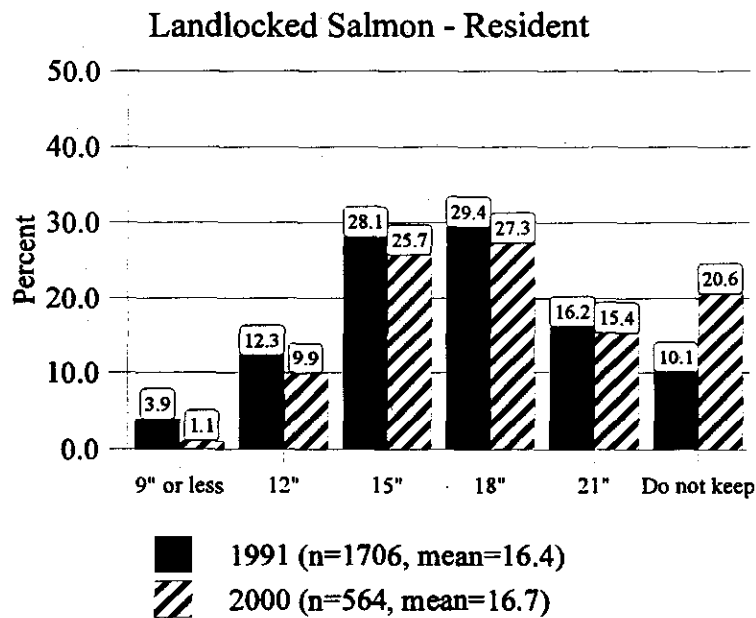


Figure 9-31. The smallest "keeper" size for residents fishing landlocked salmon in 1991 and 2000. ($X^2 = 58.96$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

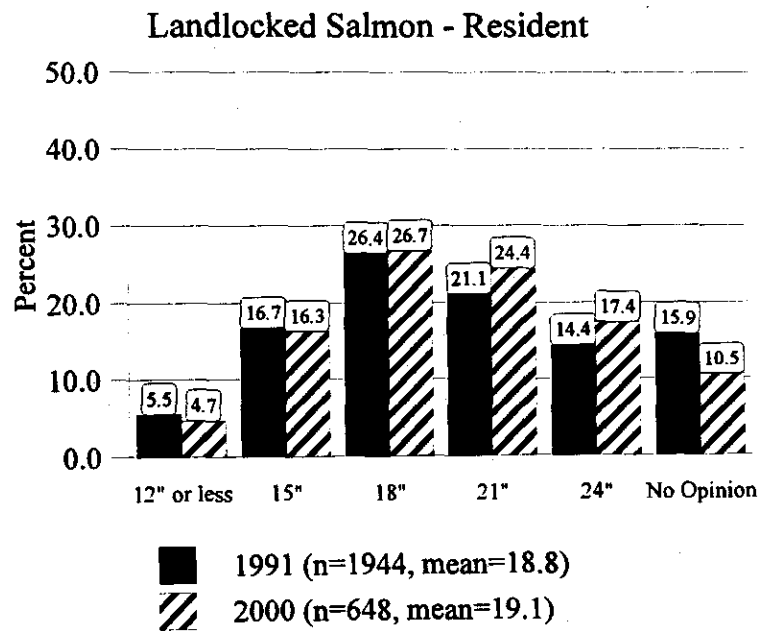


Figure 9-32. The smallest "quality" size for residents fishing landlocked salmon in 1991 and 2000. ($X^2 = 17.14$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

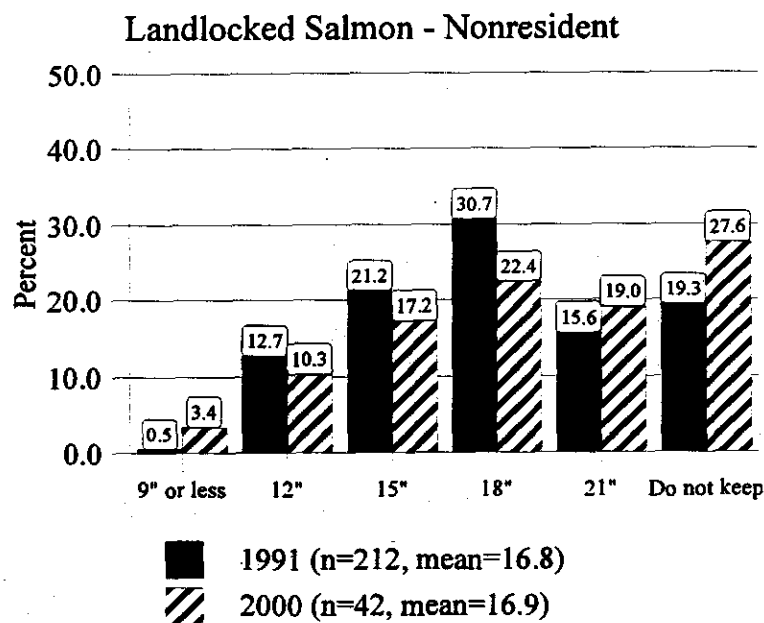


Figure 9-33. The smallest "keeper" size for nonresidents fishing landlocked salmon in 1991 and 2000. ($X^2 = 7.06$, $df = 5$, $p = ns$) (The "do not keep" responses were excluded from the mean calculation.)

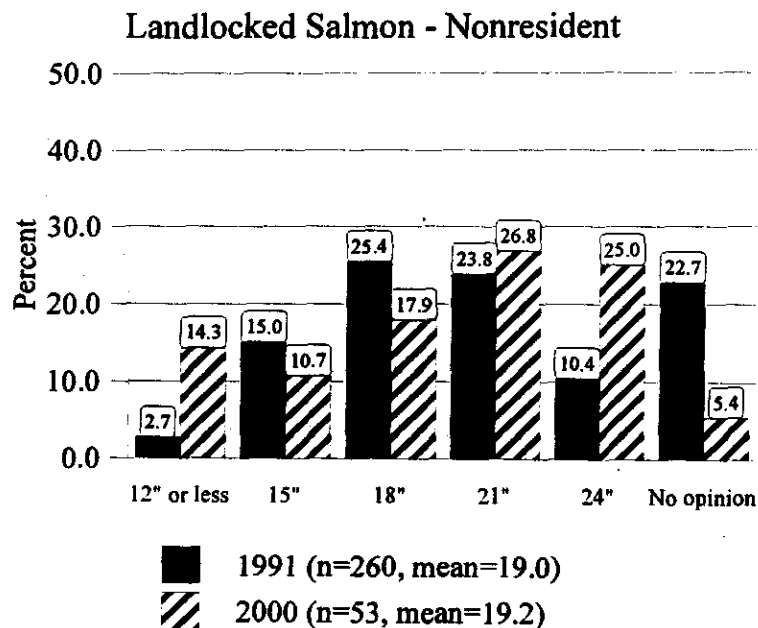


Figure 9-34. The smallest "quality" size for nonresidents fishing landlocked salmon in 1991 and 2000. ($X^2 = 29.53$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

Change In Opinions About Length for Warm Water Game Fish

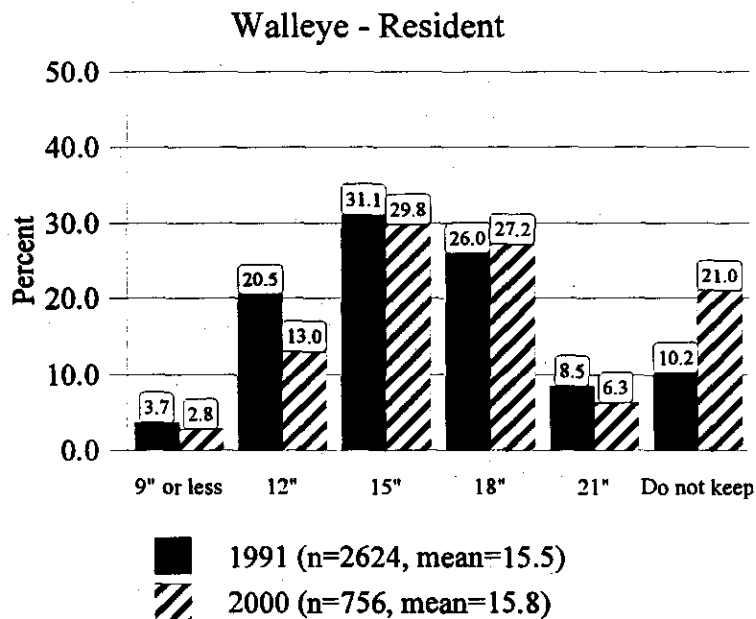


Figure 9-35. The smallest "keeper" size for residents fishing walleye in 1991 and 2000. ($X^2 = 91.19$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

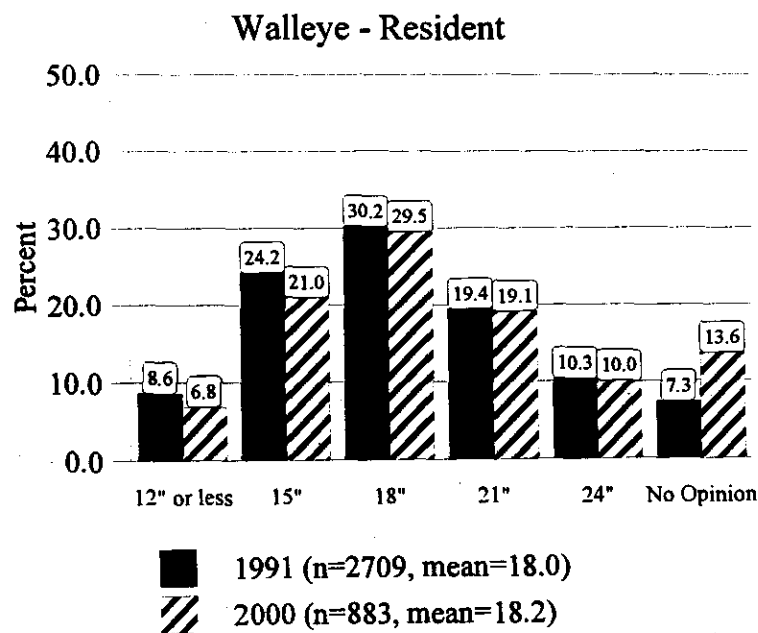


Figure 9-36. The smallest "quality" size for residents fishing walleye in 1991 and 2000. ($X^2 = 38.48$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

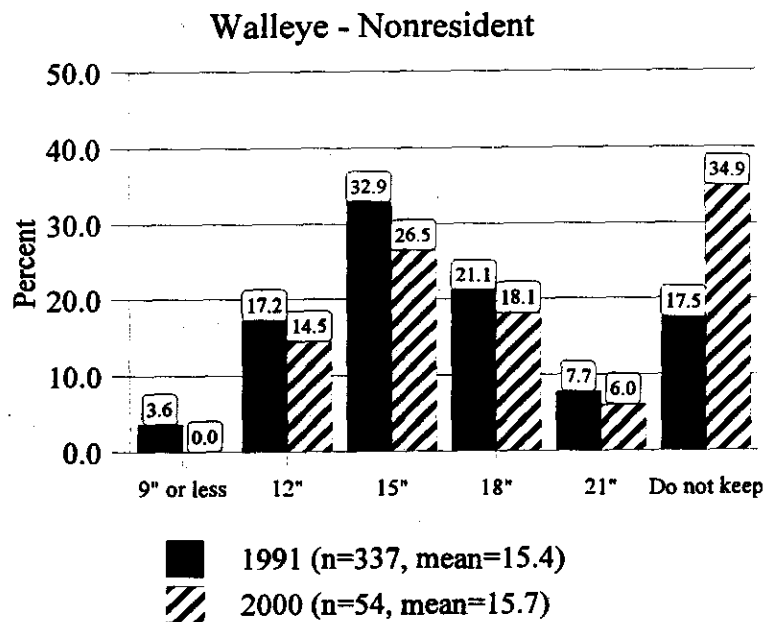


Figure 9-37. The smallest "keeper" size for nonresidents fishing walleye in 1991 and 2000. ($X^2 = 14.33$, $df = 5$, $p = .01$) (The "do not keep" responses were excluded from the mean calculation.)

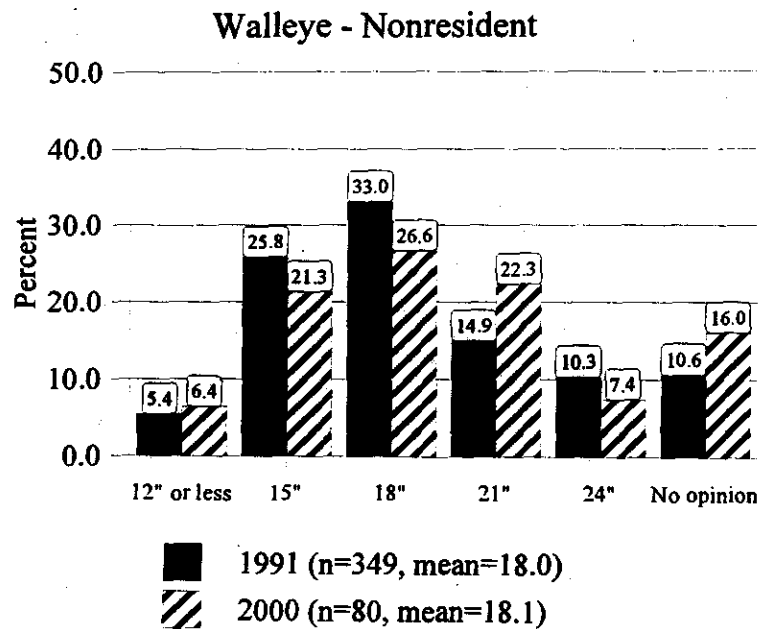


Figure 9-38. The smallest "quality" size for nonresidents fishing walleye in 1991 and 2000. ($X^2 = 6.59$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

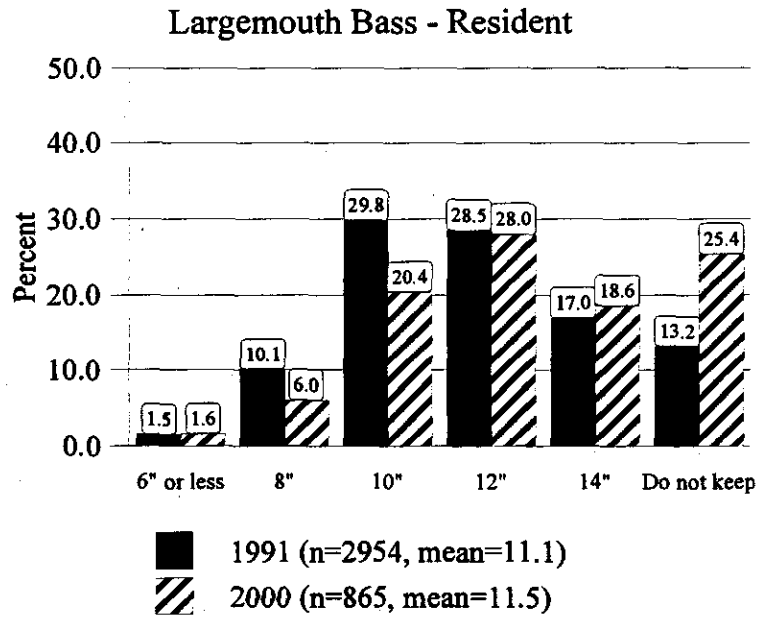


Figure 9-39. The smallest “keeper” size for residents fishing largemouth bass in 1991 and 2000. ($X^2 = 118.17$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

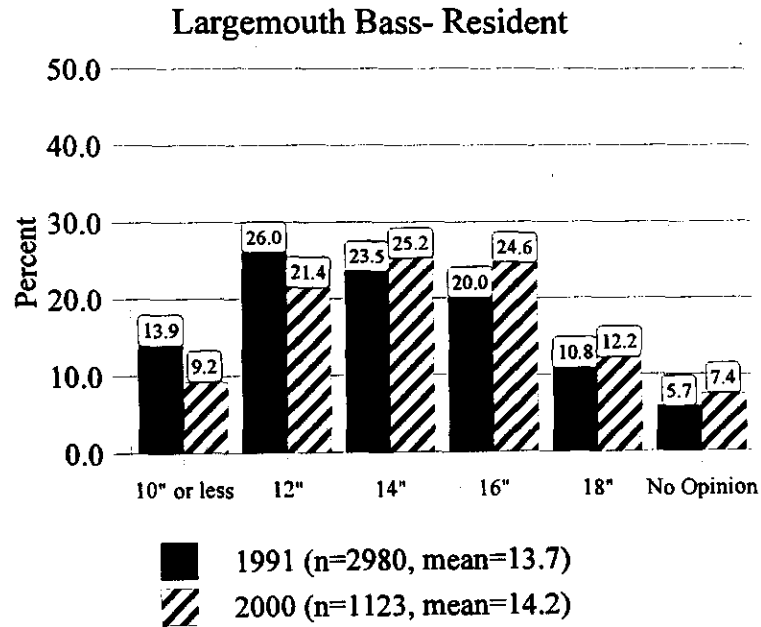


Figure 9-40. The smallest “quality” size for residents fishing largemouth bass in 1991 and 2000. ($X^2 = 37.08$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

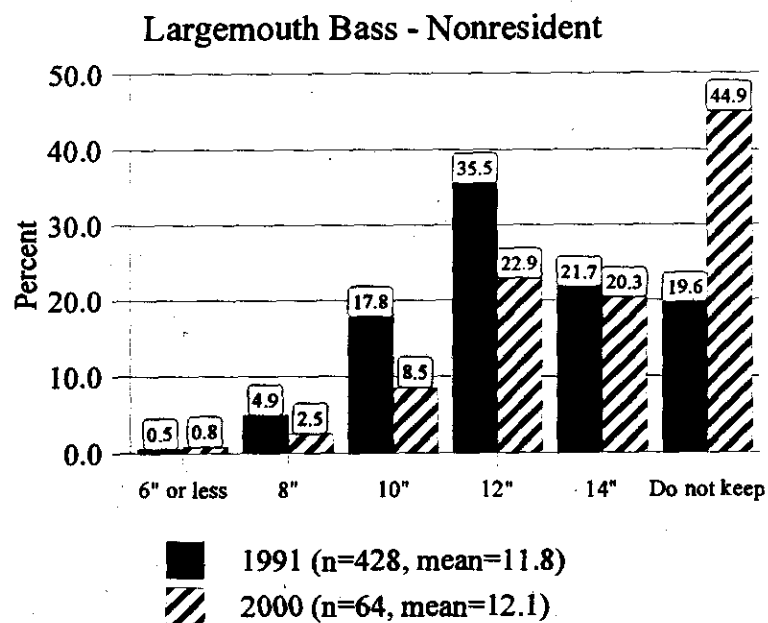


Figure 9-41. The smallest "keeper" size for nonresidents fishing largemouth bass in 1991 and 2000. ($X^2 = 34.64$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

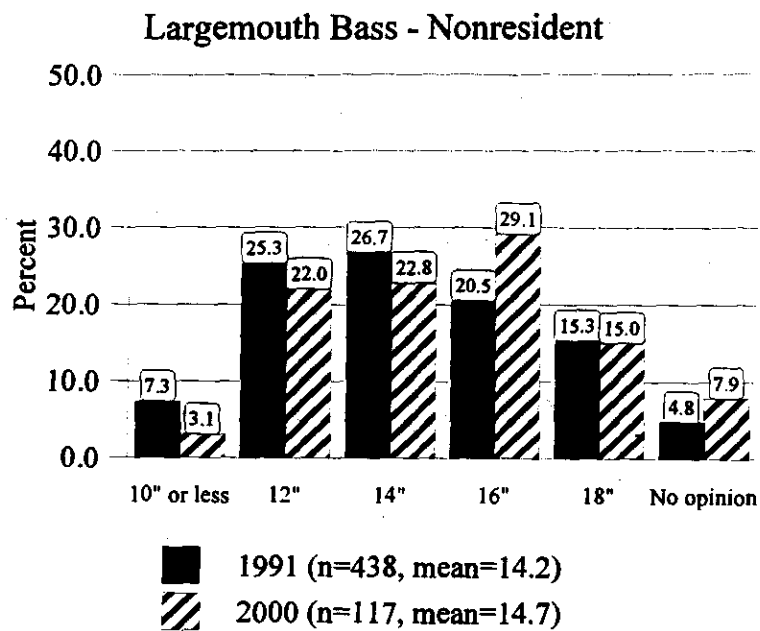


Figure 9-42. The smallest "quality" size for nonresidents fishing largemouth bass in 1991 and 2000. ($X^2 = 8.61$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

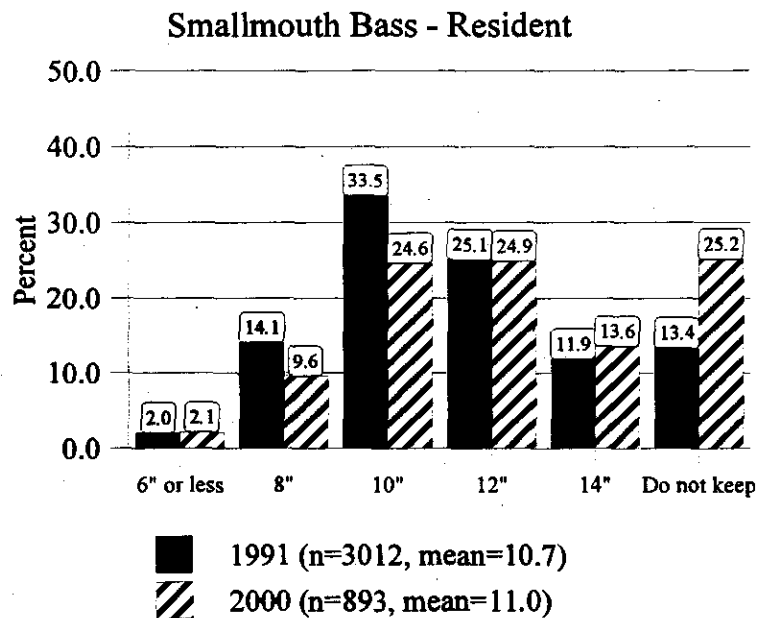


Figure 9-43. The smallest "keeper" size for residents fishing smallmouth bass in 1991 and 2000. ($X^2 = 107.52$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

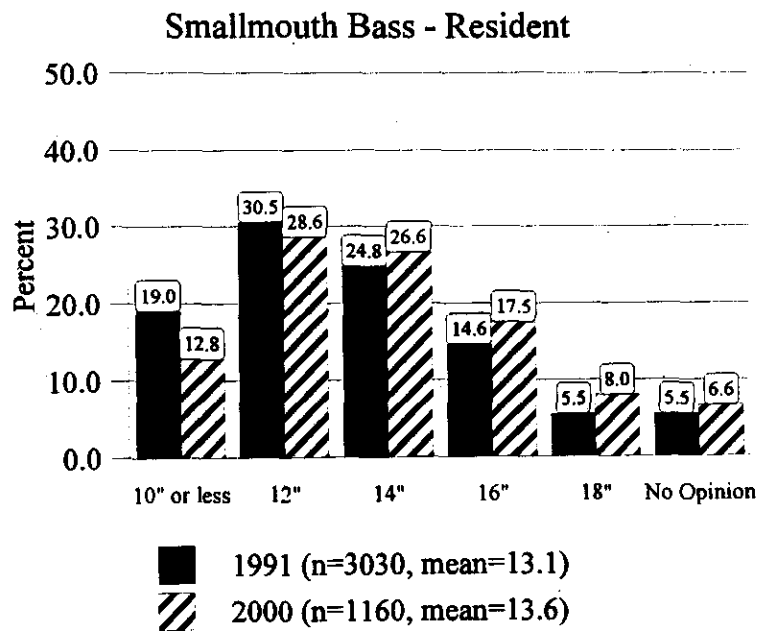


Figure 9-44. The smallest "quality" size for residents fishing smallmouth bass in 1991 and 2000. ($X^2 = 36.53$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

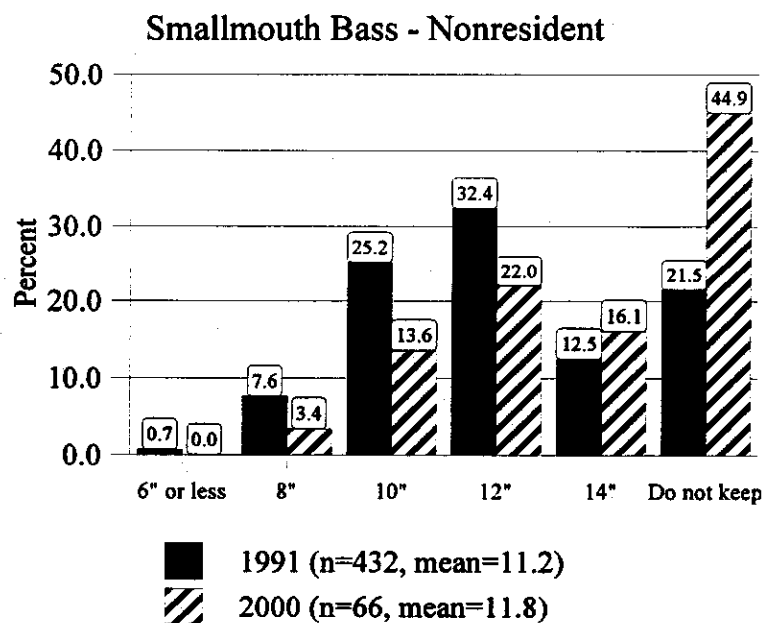


Figure 9-45. The smallest "keeper" size for nonresidents fishing smallmouth bass in 1991 and 2000. ($X^2 = 32.17$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

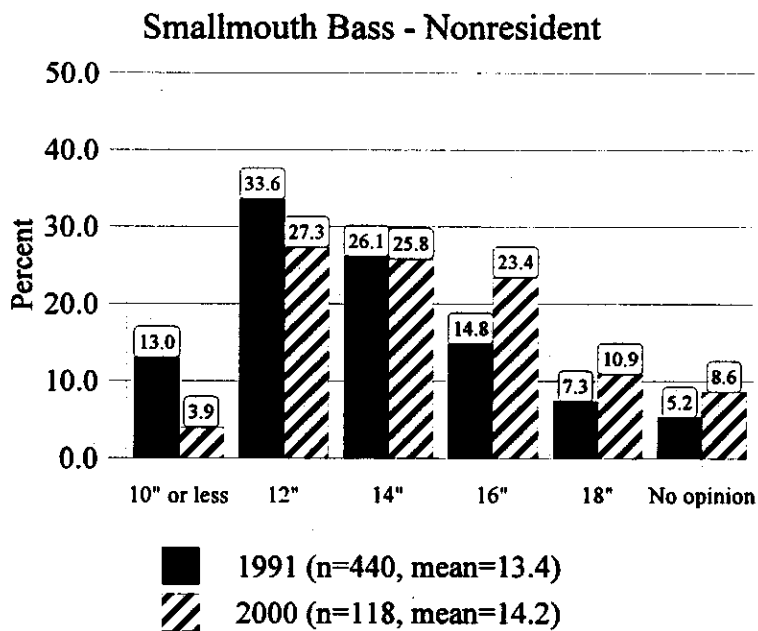


Figure 9-46. The smallest "quality" size for nonresidents fishing smallmouth bass in 1991 and 2000. ($X^2 = 16.63$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

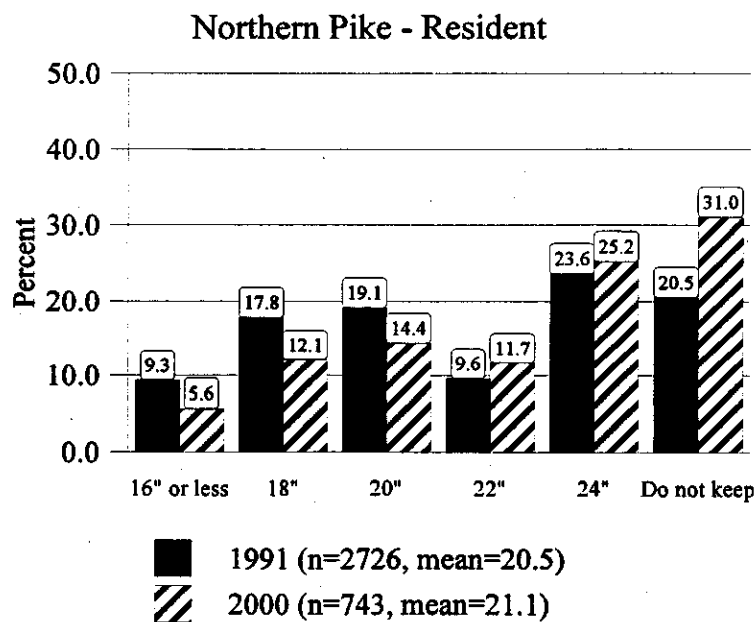


Figure 9-47. The smallest "keeper" size for residents fishing northern pike in 1991 and 2000. ($X^2 = 78.67$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

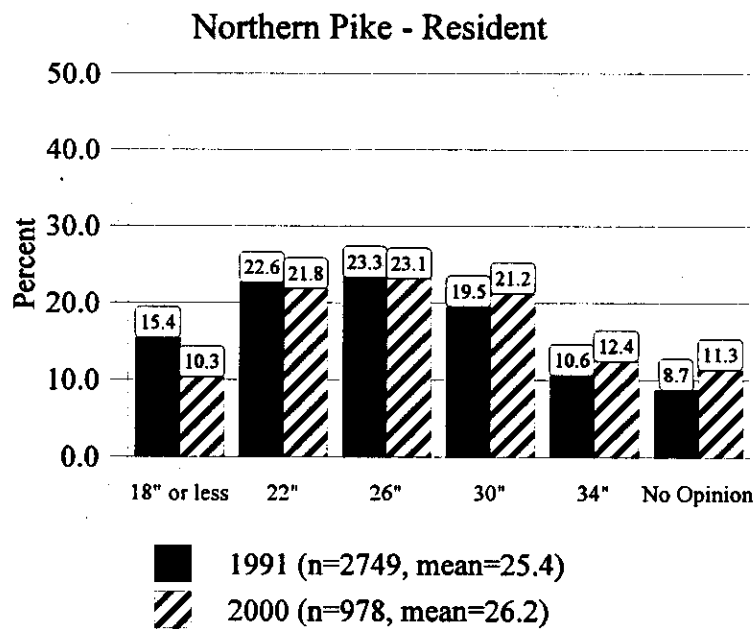


Figure 9-48. The smallest "quality" size for residents fishing northern pike in 1991 and 2000. ($X^2 = 24.24$, $df = 5$, $p = .00$) (The "no opinion" responses were excluded from the mean calculation.)

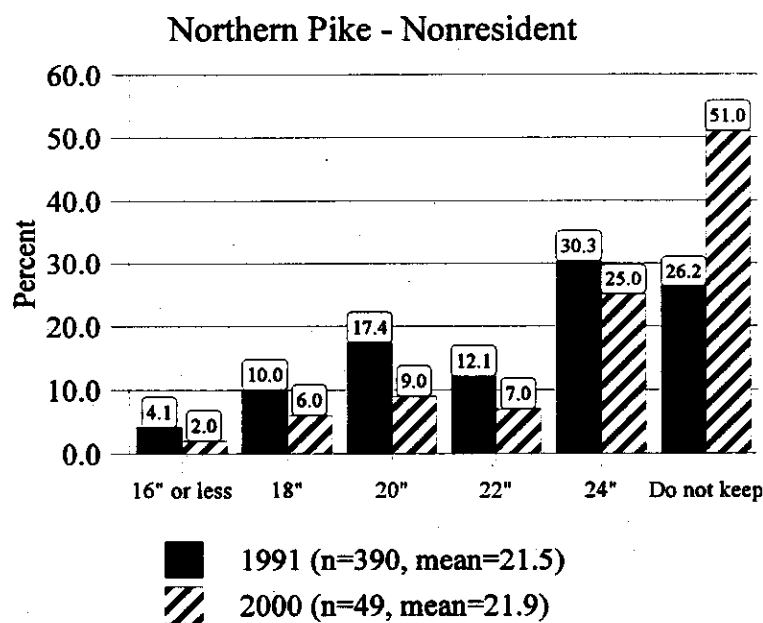


Figure 9-49. The smallest "keeper" size for nonresidents fishing northern pike in 1991 and 2000. ($X^2 = 24.28$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

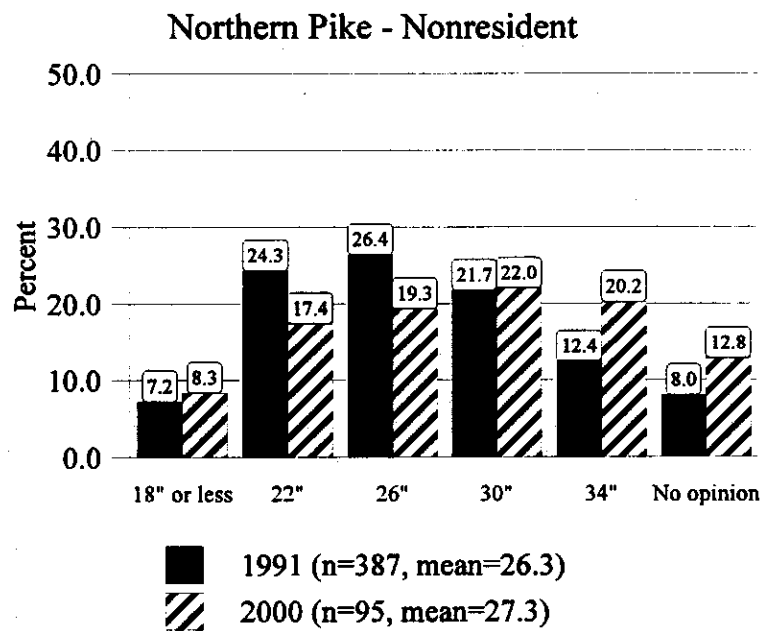


Figure 9-50. The smallest "quality" size for nonresidents fishing northern pike in 1991 and 2000. ($X^2 = 9.44$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

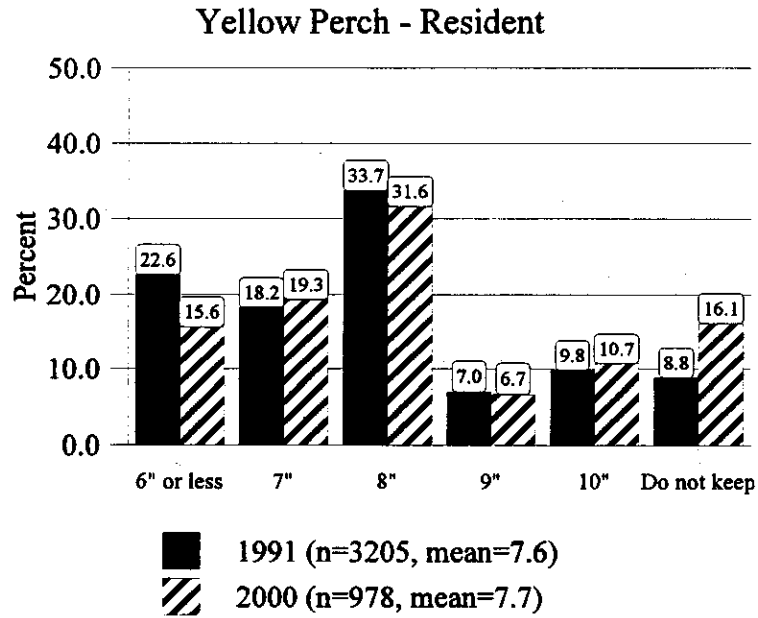


Figure 9-51. The smallest “keeper” size for residents fishing yellow perch in 1991 and 2000. ($X^2 = 64.06$, $df = 5$, $p = .00$) (The “do not keep” responses were excluded from the mean calculation.)

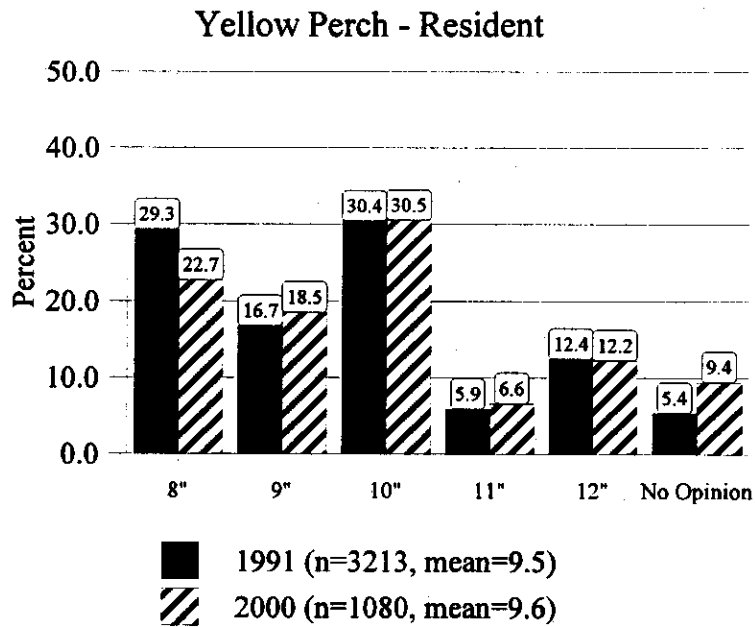


Figure 9-52. The smallest “quality” size for residents fishing yellow perch in 1991 and 2000. ($X^2 = 38.53$, $df = 5$, $p = .00$) (The “no opinion” responses were excluded from the mean calculation.)

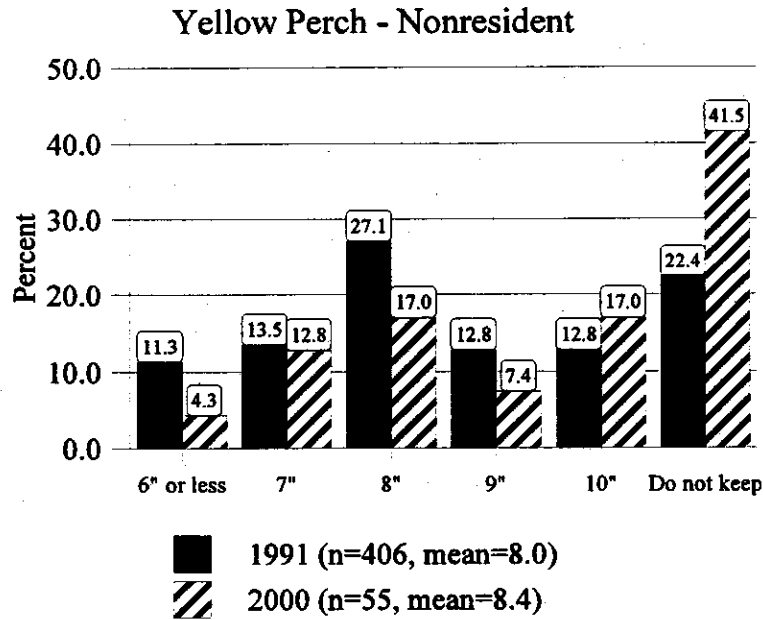


Figure 9-53. The smallest "keeper" size for nonresidents fishing yellow perch in 1991 and 2000. ($X^2 = 20.46$, $df = 5$, $p = .00$) (The "do not keep" responses were excluded from the mean calculation.)

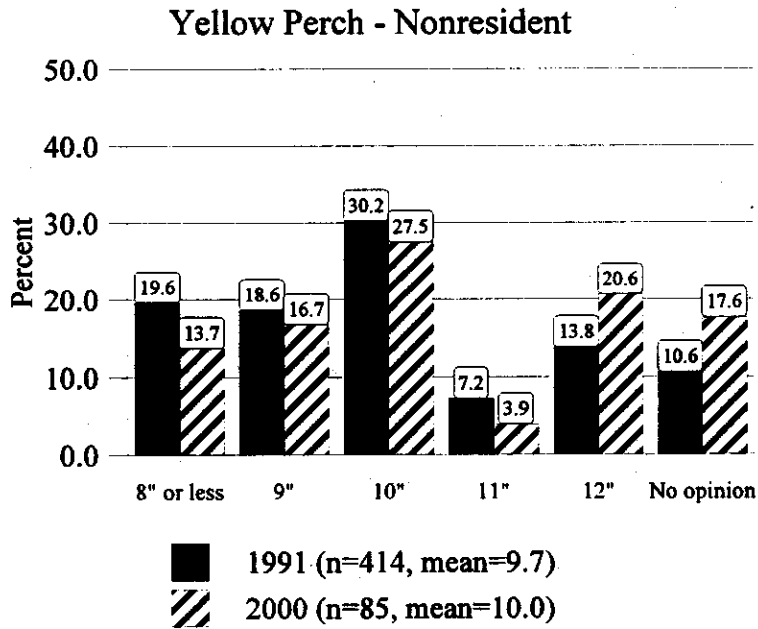


Figure 9-54. The smallest "quality" size for nonresidents fishing yellow perch in 1991 and 2000. ($X^2 = 9.14$, $df = 5$, $p = ns$) (The "no opinion" responses were excluded from the mean calculation.)

Change in Opinions about Creel Limits

Questionnaire Items:

The general daily creel limit for trout in [STREAMS or RIVERS, PONDS and LAKES] is listed below for each species and for a combined trout catch. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

For the majority of lakes in Vermont that offer lake trout fishing, the current daily limit for lake trout, landlocked salmon, brook trout, brown trout, lake trout, or rainbow trout is 2 fish of any one species or combination of species. Do you AGREE or DISAGREE with the current limits. (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

The current daily creel limit for several warmwater gamefish and panfish are listed below. Do you agree with the present daily creel limits? (Fill in AGREE or DISAGREE for each species. If you disagree, please write in your recommended daily limit.)

Table 9-12. Resident opinions about creel limits in 1991 and 2000.

	% Agree		% Disagree		Recommended		% No Opinion	
	1991	2000	1991	2000	1991	2000	1991	2000
Trout - Streams and Rivers² (1991 sample size = 3087) (2000 sample size = 1147)								
Brook	67.7	60.7 ¹	28.2	33.0	7.9	6.7 ¹	4.1	6.3
Brown	60.6	63.7 ¹	33.2	28.6	5.8	5.4	6.2	7.7
Rainbow	60.8	64.2 ¹	33.6	29.0	6.0	5.4 ¹	5.6	6.8
Combo	68.0	61.9 ¹	25.7	28.9	10.0	9.5	6.3	9.2
Trout - Ponds and Lakes³ (1991 sample size = 2703) (2000 sample size = 981)								
Brook	63.7	67.1 ¹	30.6	25.7	7.3	6.9	5.7	7.2
Brown	56.9	65.6 ¹	36.1	26.4	5.8	4.7 ¹	7.0	8.0
Rainbow	57.7	66.2 ¹	36.3	26.8	5.9	4.9 ¹	6.1	7.0
Combo	64.7	61.3	27.8	30.6	9.3	9.3	7.5	8.1
Warm Water Game Fish (1991 sample size = 3347) (2000 sample size = 1155)								
Walleye	60.1	50.9 ¹	19.2	23.0	3.6	3.0 ¹	20.6	26.1
Pike	61.2	52.6 ¹	17.0	24.0	4.0	3.3 ¹	21.9	23.4
Sunfish	70.6	62.7 ¹	3.1	5.0	13.7	27.0 ¹	26.3	32.3
Smelt	73.2	60.6 ¹	5.7	8.3	27.5	45.1 ¹	21.0	31.1
Bullhead	75.5	64.4	5.8	6.2	15.9	16.5	18.6	29.4

1 - Significantly different at less than the .05 level.

2 - Creel limits for Brown and Rainbow Trout on streams and rivers changed in 1993 from 12 to 6.

3 - Creel limits for all trout on ponds and lakes changed in 1993 from 12 to 6.

Table 9-13. Nonresident opinions about creel limits in 1990 and 1999.

	% Agree		% Disagree		Recommended		% No Opinion	
	1991	2000	1991	2000	1991	2000	1991	2000
Trout - Streams and Rivers² (1991 sample size = 353) (2000 sample size = 98)								
Brook	47.3	36.0	48.4	50.0	6.1	4.9 ¹	4.2	14.0
Brown	44.3	44.1	50.9	37.8	5.3	2.9 ¹	4.9	18.0
Rainbow	45.0	45.0	51.3	37.8	5.6	3.3 ¹	3.7	17.1
Combo	51.1	43.6	43.1	39.1	7.0	6.1	5.7	17.3
Trout - Ponds and Lakes³ (1991 sample size = 330) (2000 sample size = 77)								
Brook	48.5	54.7 ¹	45.4	26.3	6.0	5.2	6.1	18.9
Brown	45.3	53.7 ¹	48.3	27.4	5.5	3.1 ¹	6.4	18.9
Rainbow	47.0	52.7 ¹	48.2	28.0	5.7	3.8 ¹	4.9	19.4
Combo	52.3	51.1	41.5	26.1	7.2	6.9	6.2	28.8
Warm Water Game Fish (1991 sample size = 473) (2000 sample size = 124)								
Walleye	57.1	46.7	18.0	20.0	4.1	2.7 ¹	24.9	33.3
Pike	54.4	39.8 ¹	22.3	37.6	3.8	2.3 ¹	23.4	22.6
Sunfish	75.4	54.2 ¹	5.9	13.0	14.0	22.0 ¹	18.7	32.8
Smelt	66.1	49.6	6.8	3.8	18.7	44.7 ¹	27.1	46.6
Bullhead	66.7	50.8	9.4	7.6	10.3	15.0 ¹	23.9	41.7

1 - Significantly different at less than the .05 level.

2 - Creel limits for Brown and Rainbow Trout on streams and rivers changed in 1993 from 12 to 6.

3 - Creel limits for all trout on ponds and lakes changed in 1993 from 12 to 6.

Change in Support for Special Regulations

Questionnaire Item:

Special regulations can be used in certain waters to increase the number and/or size of fish available. (Please fill in ALL the special regulations that you might support [for trout fishing in some STREAMS and RIVERS; in some PONDS and LAKES for the types of fishing listed below; on some waters for the types of fishing listed below]).

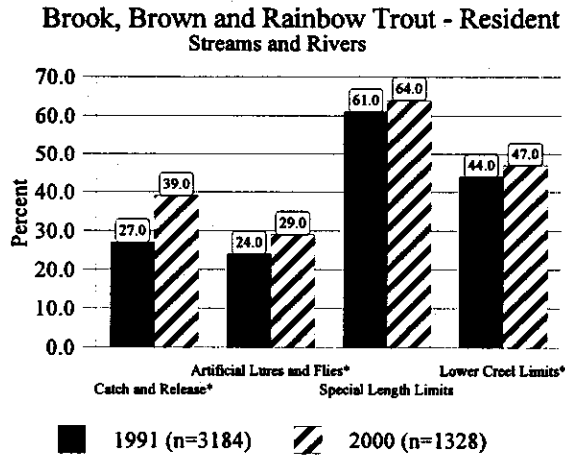


Figure 9-55. Resident support for special trout regulations on some streams and rivers in 1990 and 1999. (* - Significantly different at less than the .05 level.)

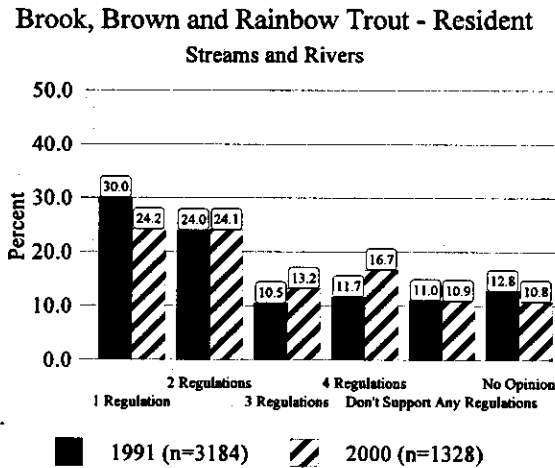


Figure 9-56. Degree of resident support for special trout regulations on streams and rivers in 1990 and 1991. ($X^2 = 37.89$, $df = 5$, $p = .00$)

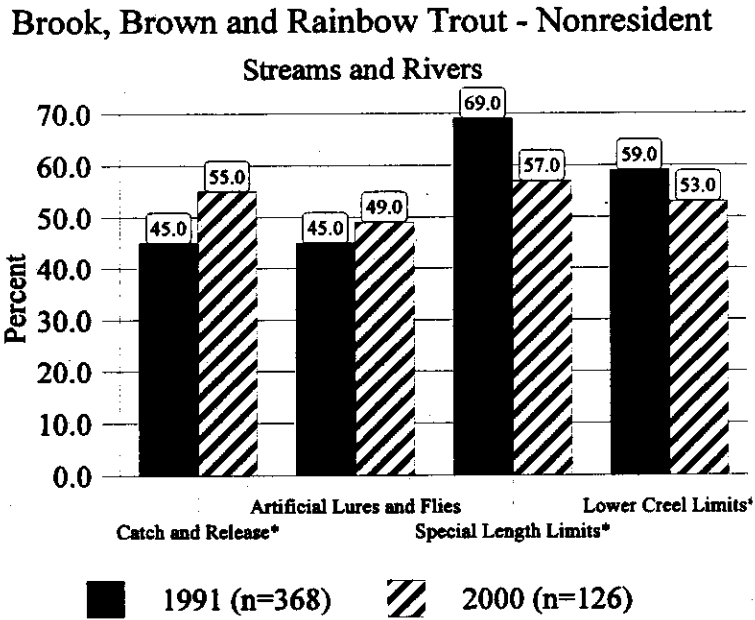


Figure 9-57. Nonresident support for special trout regulations on some streams and rivers in 1990 and 1991. (* Significantly different at less than the .05 level.)

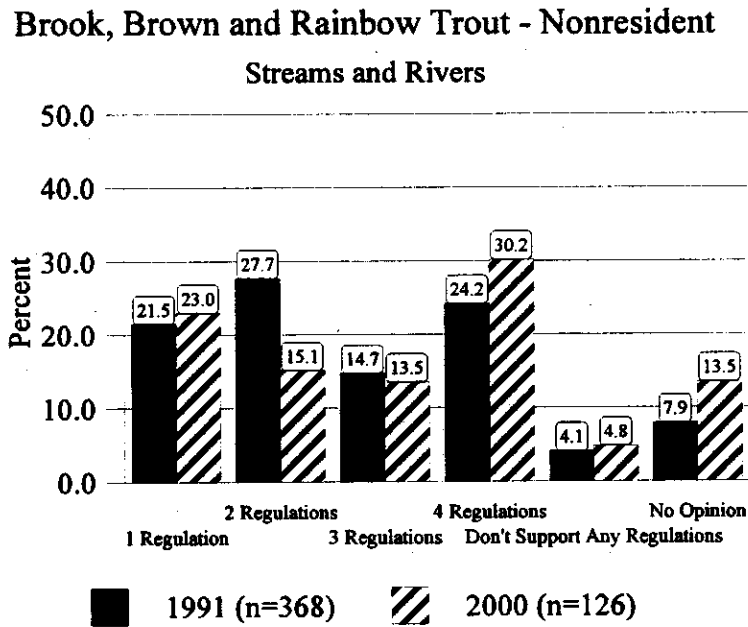


Figure 9-58. Degree of nonresident support for special trout regulations on some streams and rivers in 1990 and 1999. ($X^2 = 10.89$, $df = 5$, $p = .05$)

Brook, Brown, Rainbow Trout - Resident Ponds and Lakes

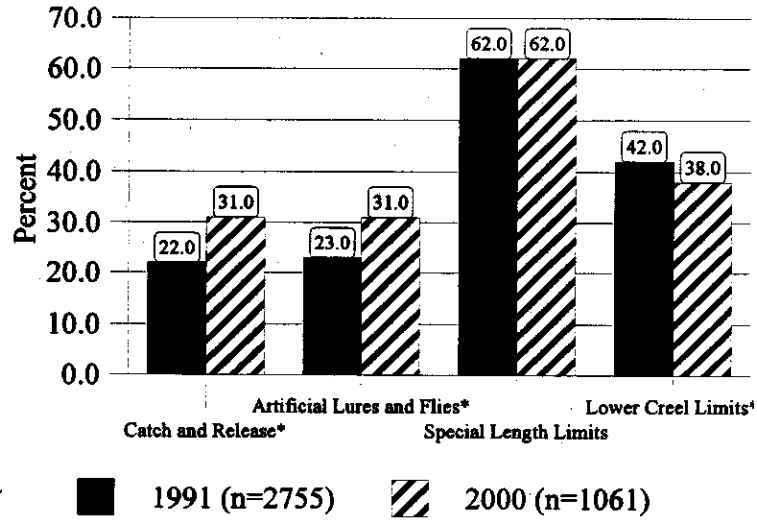


Figure 9-59. Resident support for special trout regulations on some ponds and lakes in 1990 and 1999. (* - Significantly different at less than the .05 level.)

Brook, Brown, Rainbow Trout - Resident Ponds and Lakes

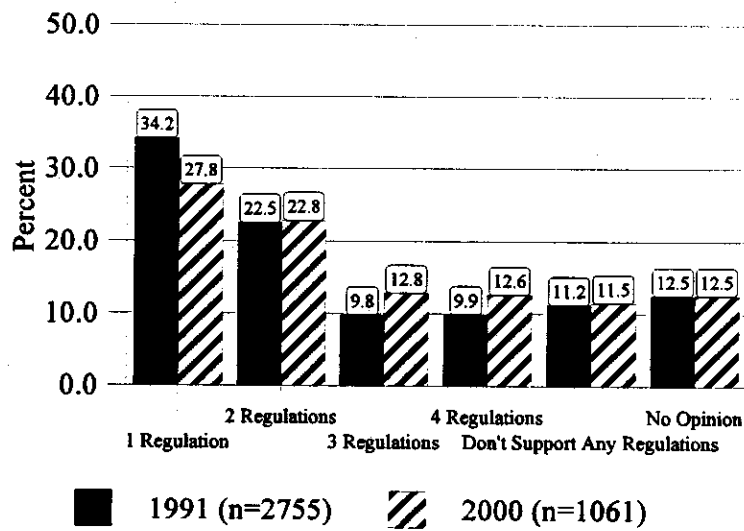


Figure 9-60. Degree of resident support for special trout regulations on some ponds and lakes in 1990 and 1999. ($X^2 = 21.56$, $df = 5$, $p = .00$)

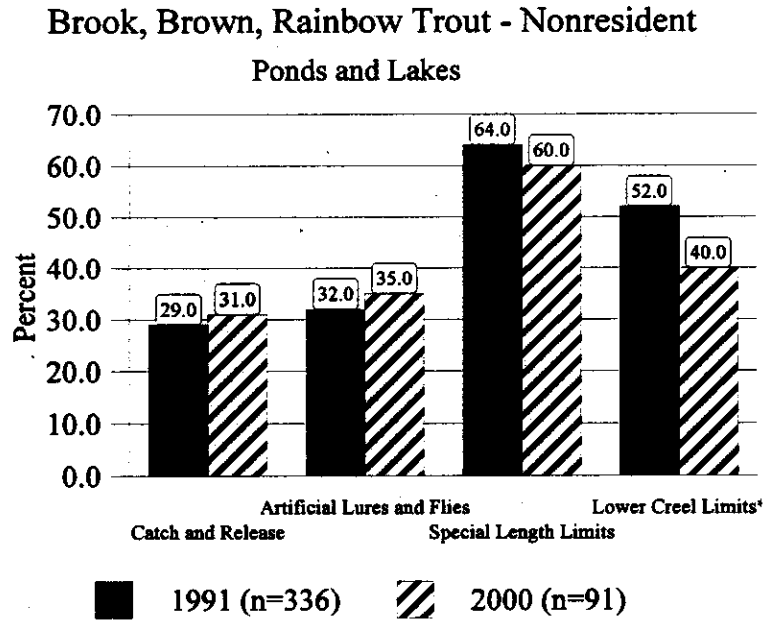


Figure 9-61. Nonresident support for special trout regulations on some ponds and lakes in 1990 and 1999. (* Significantly different at less than the .05 level)

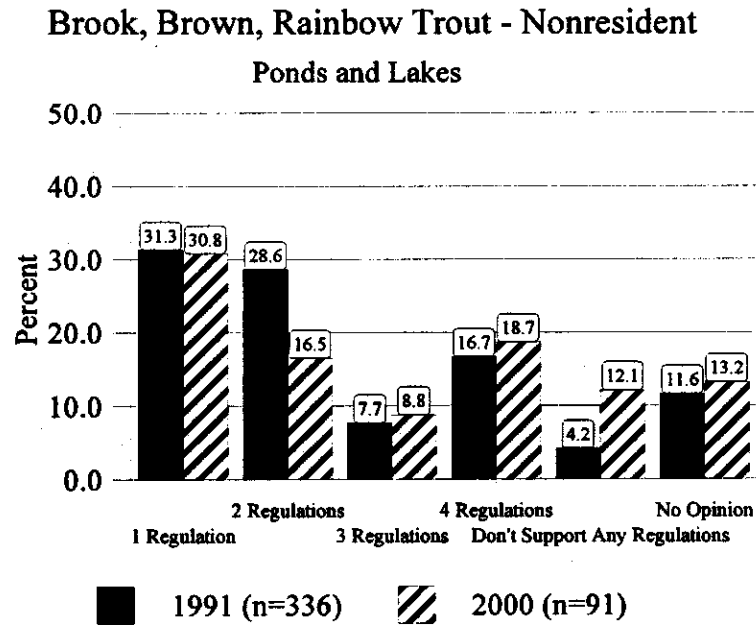


Figure 9-62. Degree of nonresident support for special trout regulations on some ponds and lakes in 1990 and 1991. ($X^2 = 12.12$, $df = 5$, $p = .03$)

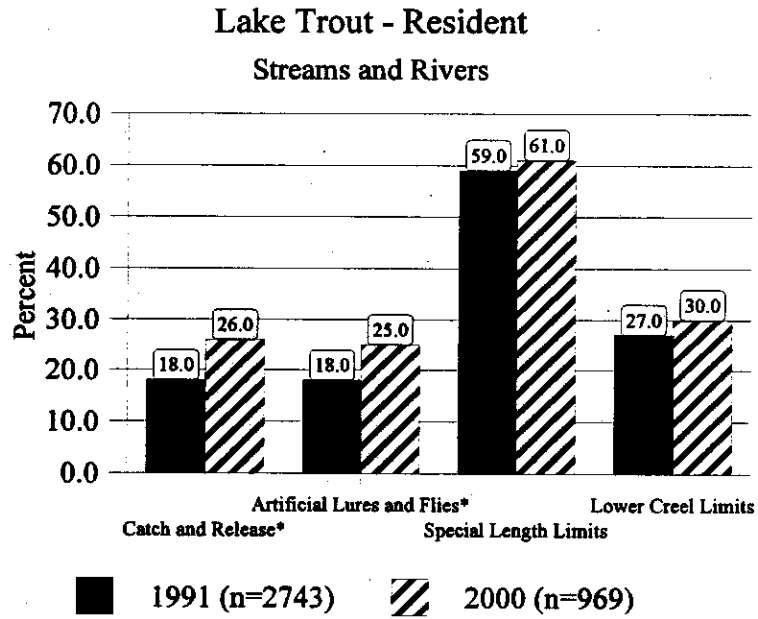


Figure 9-63. Resident support for special lake trout regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

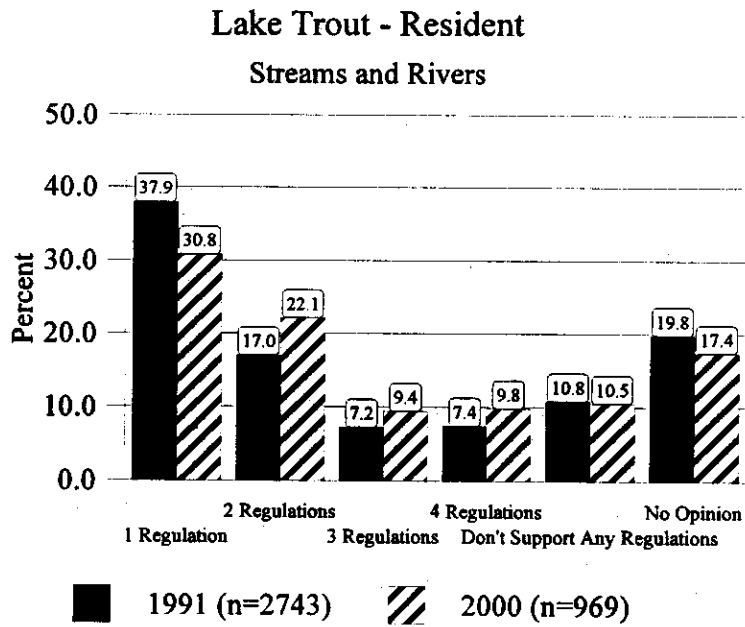


Figure 9-64. Degree of resident support for special lake trout regulations in 1990 and 1999. ($X^2 = 32.26$, $df = 5$, $p = .00$)

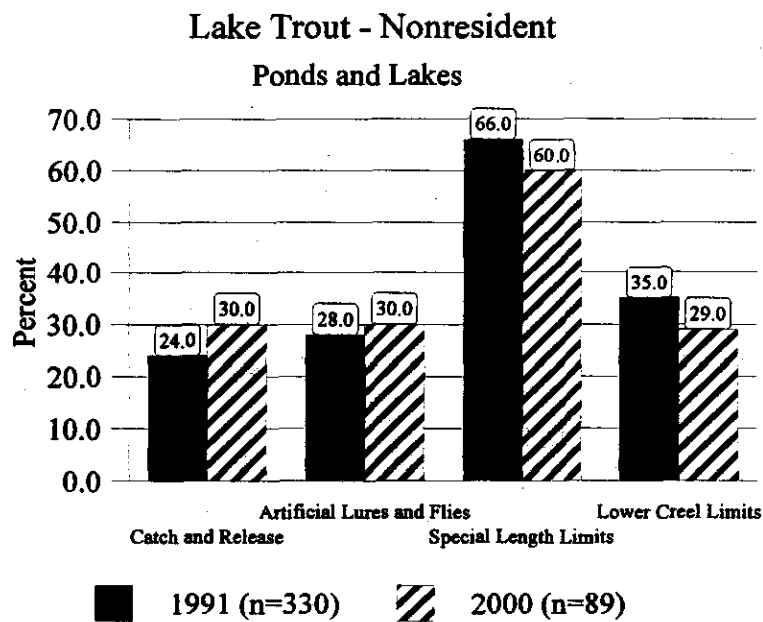


Figure 9-65. Nonresident support for special lake trout regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

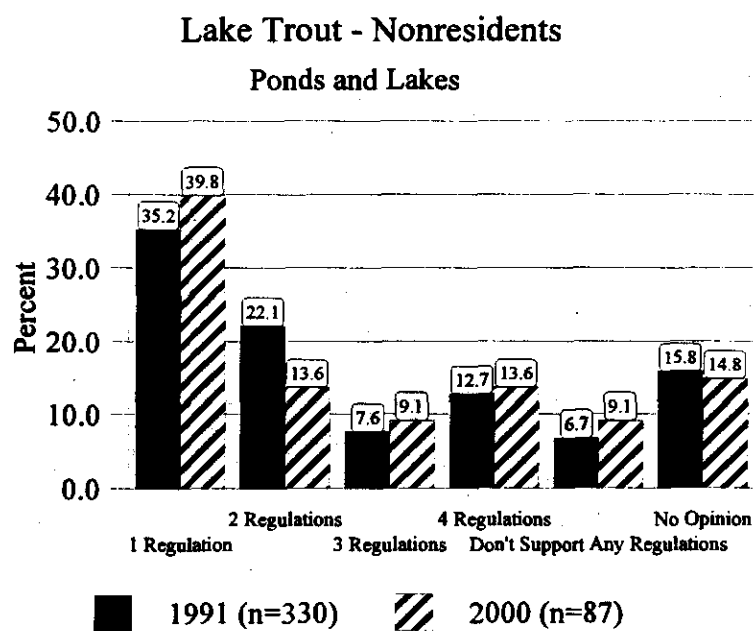


Figure 9-66. Degree of nonresident support for special lake trout regulations in 1990 and 1999. ($X^2 = 3.73$, $df = 5$, $p = ns$)

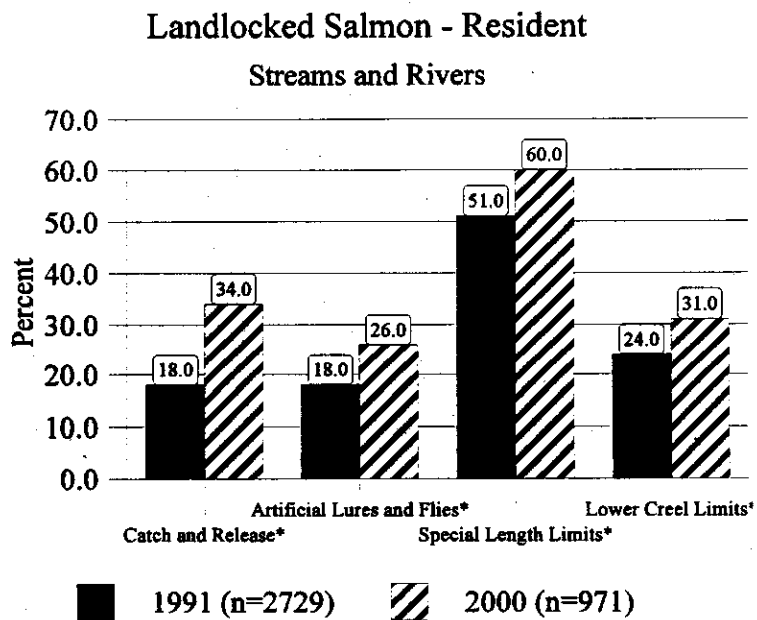


Figure 9-67. Resident support for special landlocked salmon regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

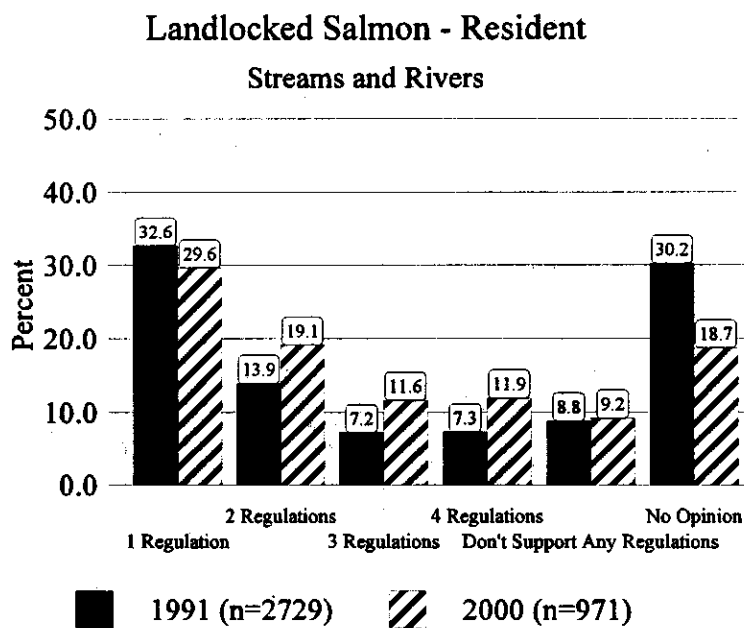


Figure 9-68. Degree of resident support for special landlocked salmon regulations in 1990 and 1991. ($X^2 = 84.85$, $df = 5$, $p = .00$)

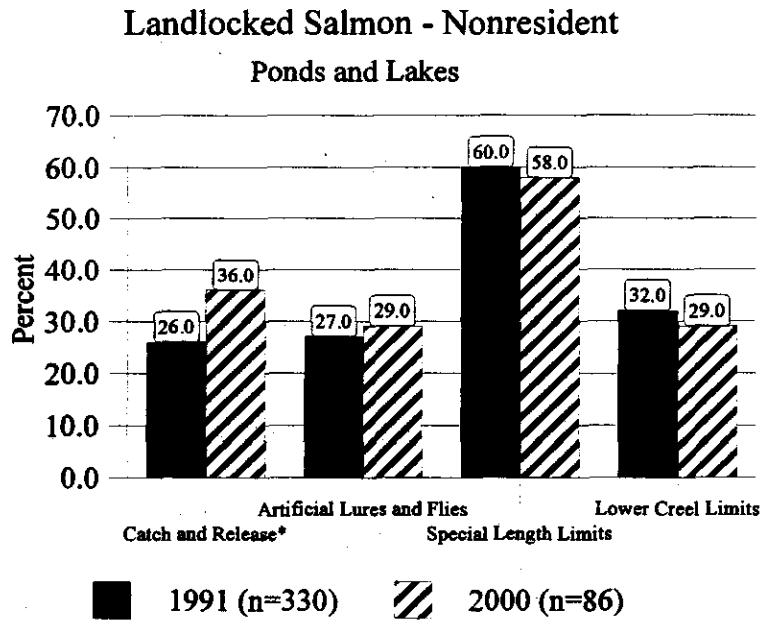


Figure 9-69. Nonresident support for special landlocked salmon regulations in 1990 and 1999. (* - Significantly different at less than the .05 level.)

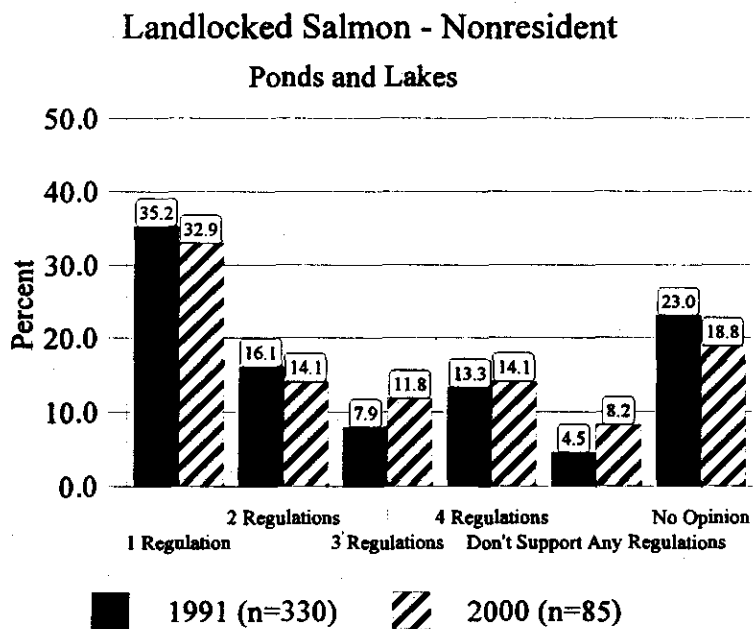


Figure 9-70. Degree of nonresident support for special landlocked salmon regulations in 1990 and 1999. ($X^2 = 3.74$, $df = 5$, $p = ns$)

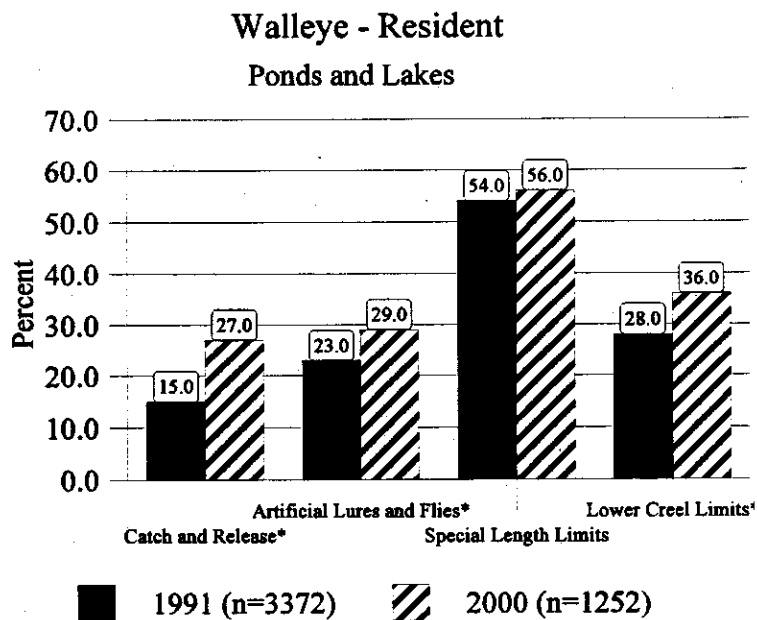


Figure 9-71. Resident support for special walleye regulations in 1990 and 1999. (* - Significantly different at less than the .05 level.)

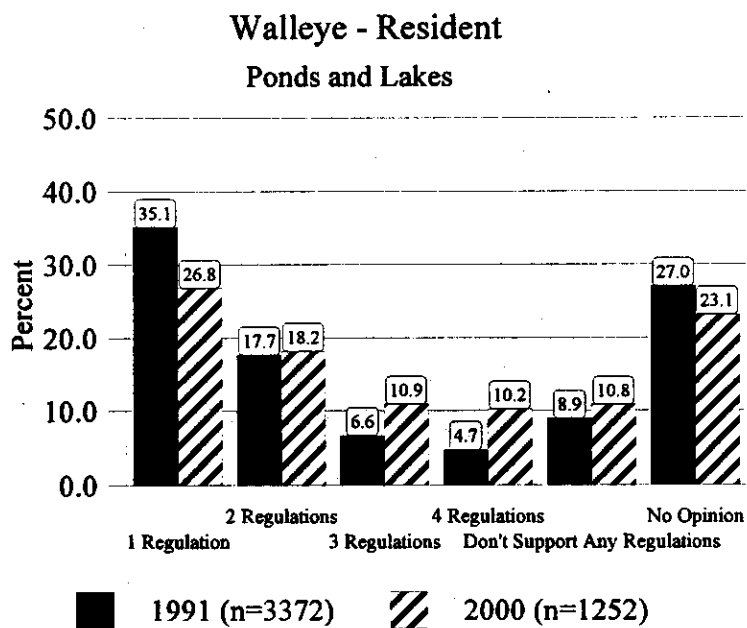


Figure 9-72. Degree of resident support for special walleye regulations in 1990 and 1999. ($X^2 = 92.61$, $df = 5$, $p = .00$)

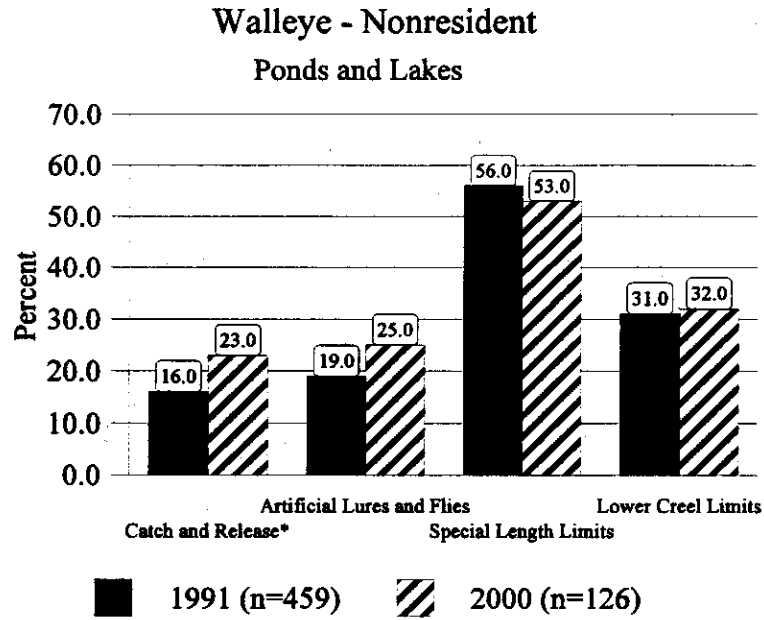


Figure 9-73. Nonresident support for special walleye regulations on some ponds and lakes in 1990 and 1999. (* Significantly different at less than the .05 level)

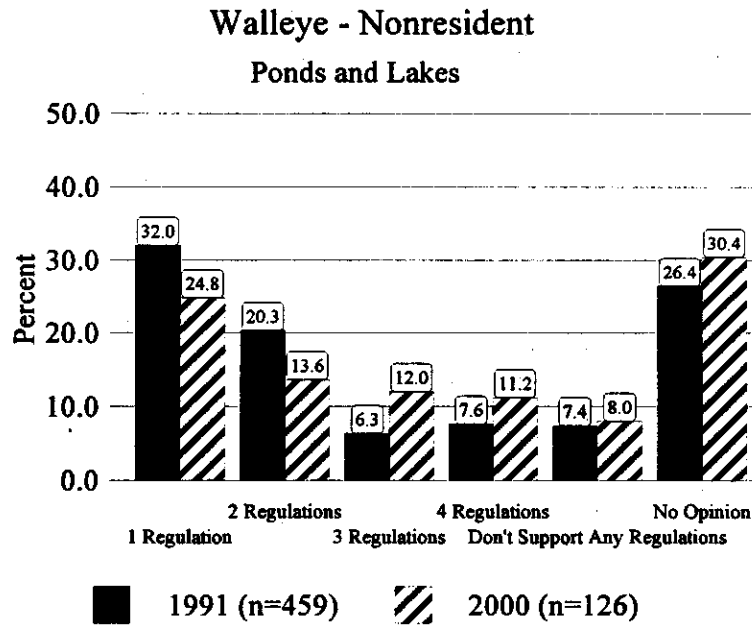


Figure 9-74. Degree of nonresident support for special walleye regulations on some ponds and lakes in 1990 and 1991. ($X^2 = 10.33$, $df = 5$, $p = ns$)

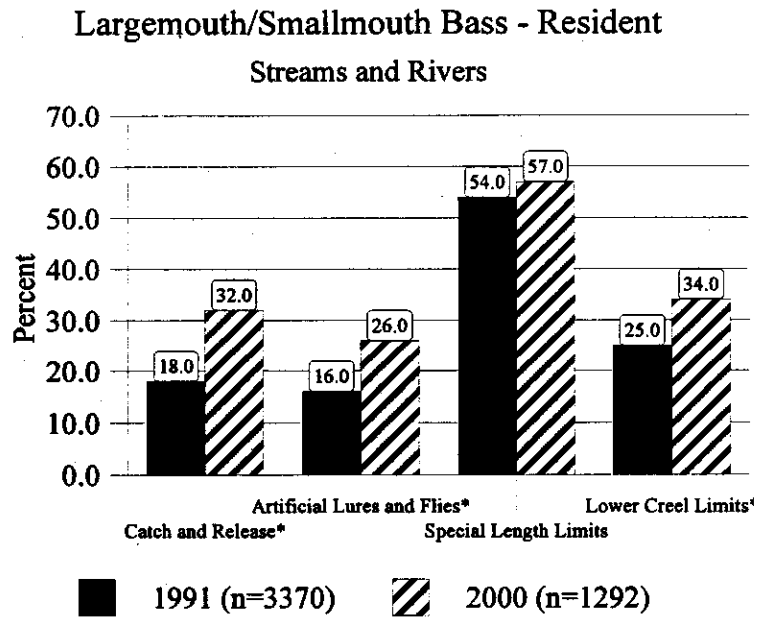


Figure 9-75. Resident support for special smallmouth or largemouth bass regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

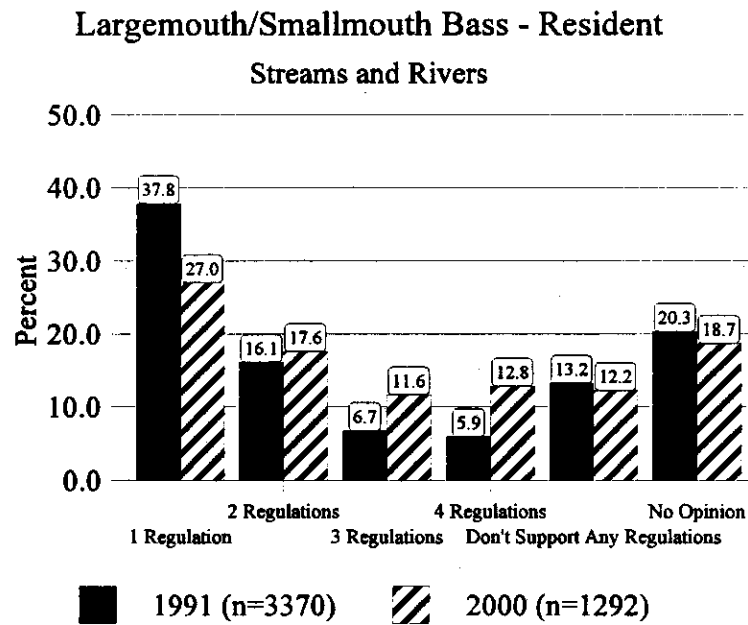


Figure 9-76. Degree of resident support for special smallmouth or largemouth bass regulations in 1990 and 1999. ($X^2 = 121.09$, $df = 5$, $p = .00$)

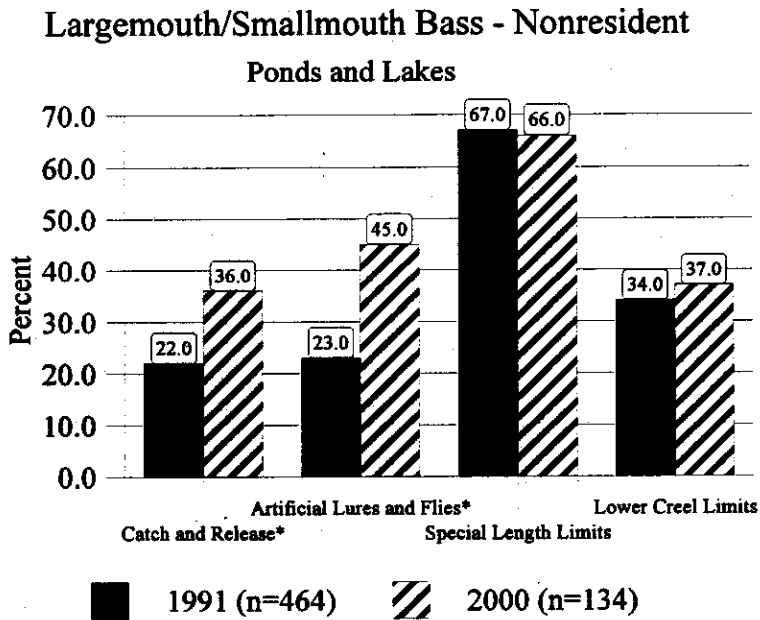


Figure 9-77. Nonresident support for special smallmouth or largemouth bass regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

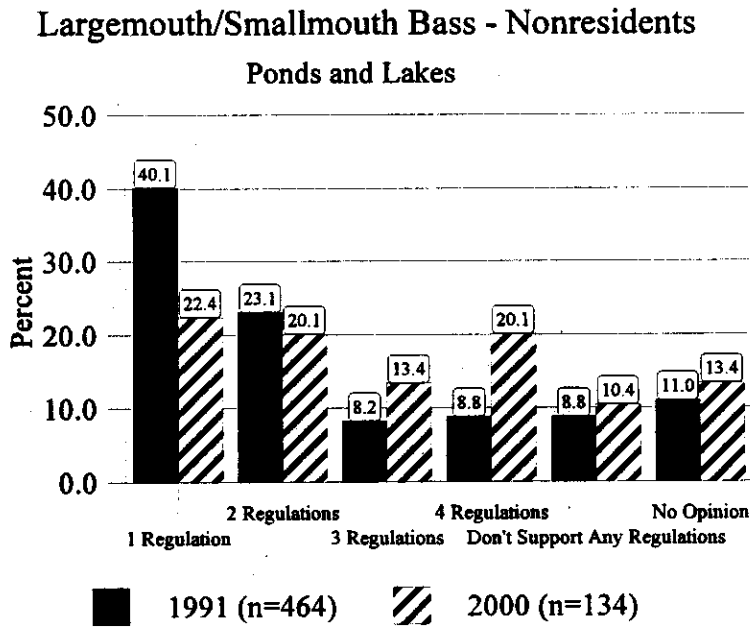


Figure 9-78. Degree of nonresident support for special smallmouth or largemouth bass regulations in 1990 and 1999. ($X^2 = 24.99$, $df = 5$, $p = .00$)

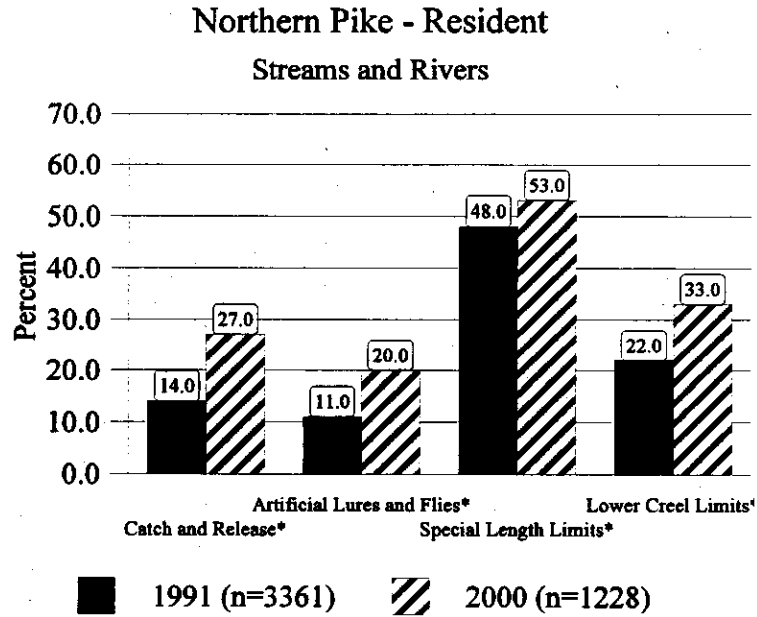


Figure 9-79. Resident support for special northern pike regulations in 1990 and 1991. (* - Significantly different at less than the .05 level.)

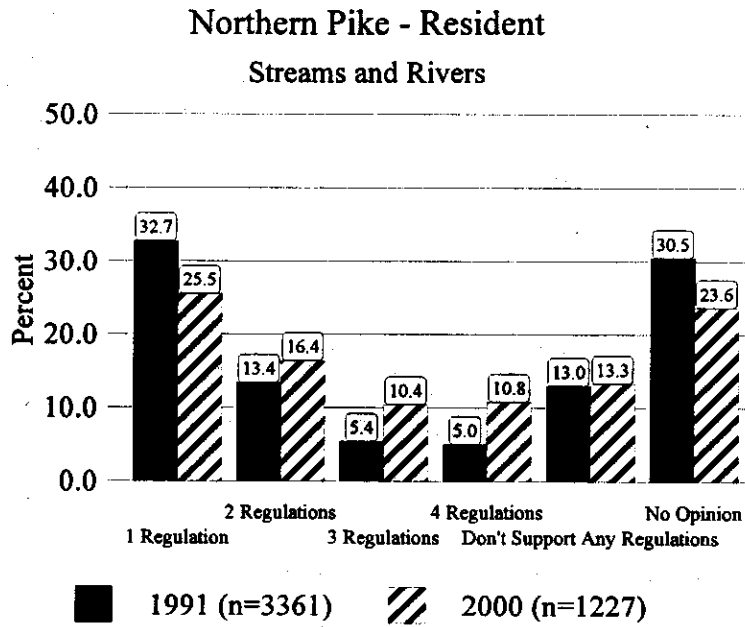


Figure 9-80. Degree of resident support for special northern pike regulations in 1990 and 1991. ($X^2 = 115.29$, $df = 5$, $p = .00$)

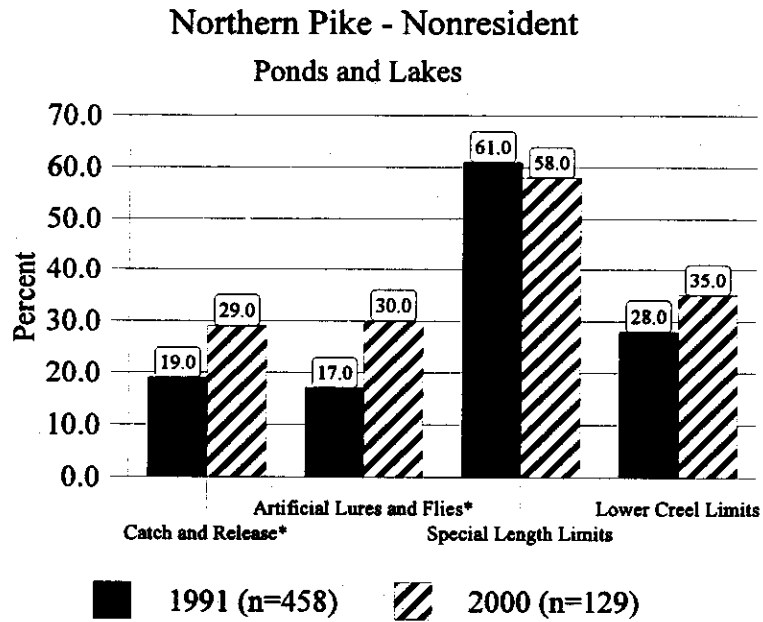


Figure 9-81. Nonresident support for special northern pike regulations in 1990 and 1999. (* - Significantly different at less than the .05 level.)

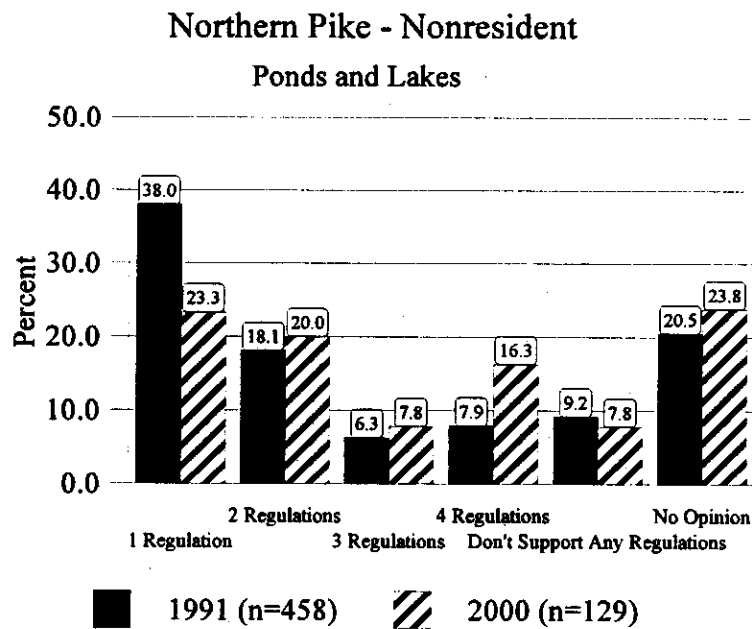


Figure 9-82. Degree of nonresident support for special northern pike regulations in 1990 and 1999. ($X^2 = 15.25$, $df = 5$, $p = .00$)

Change in Attitudes About Hatchery Management

Questionnaire Item:
 We would like to find out your opinion on the use of HATCHERY TROUT in managing Vermont's fisheries.

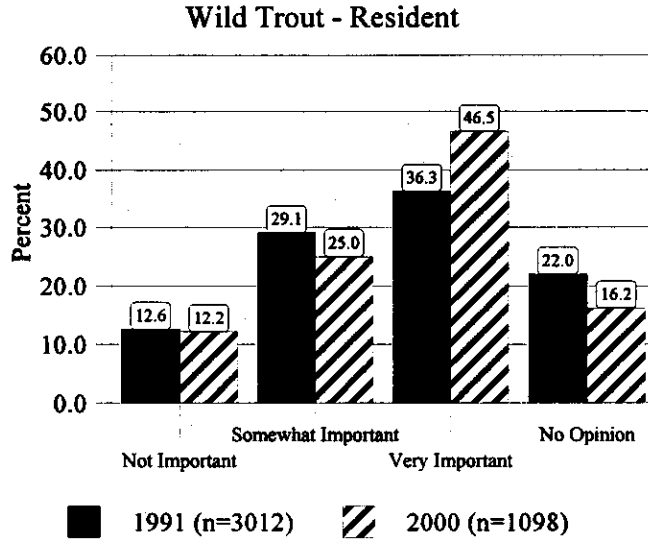


Figure 9-83. Resident support for wild trout management (no stocking) in some streams and rivers in 1990 and 1991. ($X^2 = 48.60$, $df = 3$, $p = .00$)

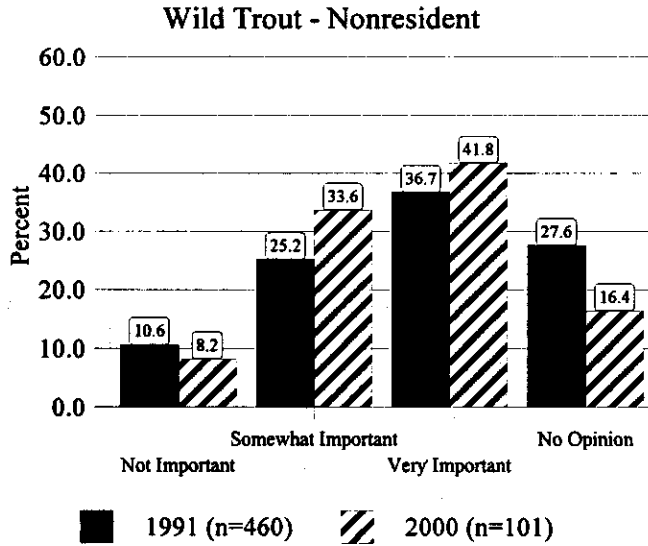


Figure 9-84. Nonresident support for wild trout management (no stocking) on some streams and rivers in 1990 and 1991. ($X^2 = 8.95$, $df = 5$, $p = .03$)

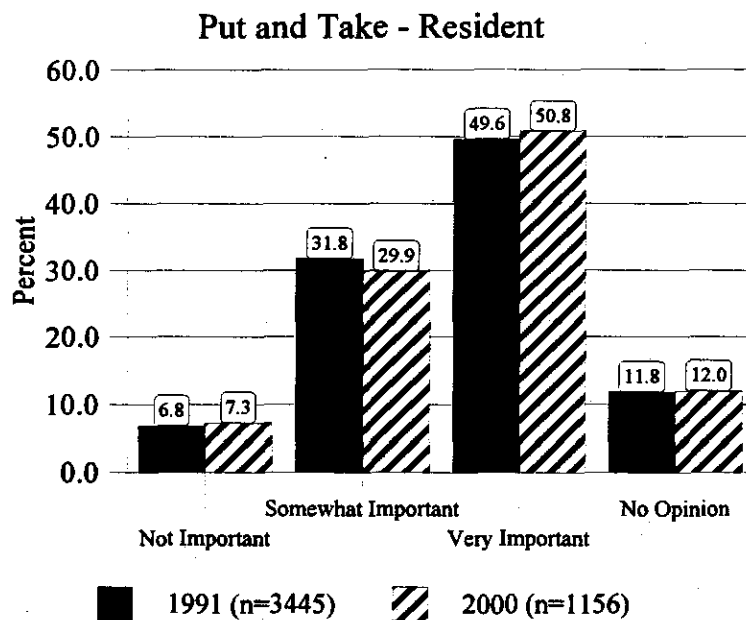


Figure 9-85. Resident support for put-and-take management on some streams and rivers in 1990 and 1999. ($X^2 = 1.86$, $df = 3$, $p = ns$)

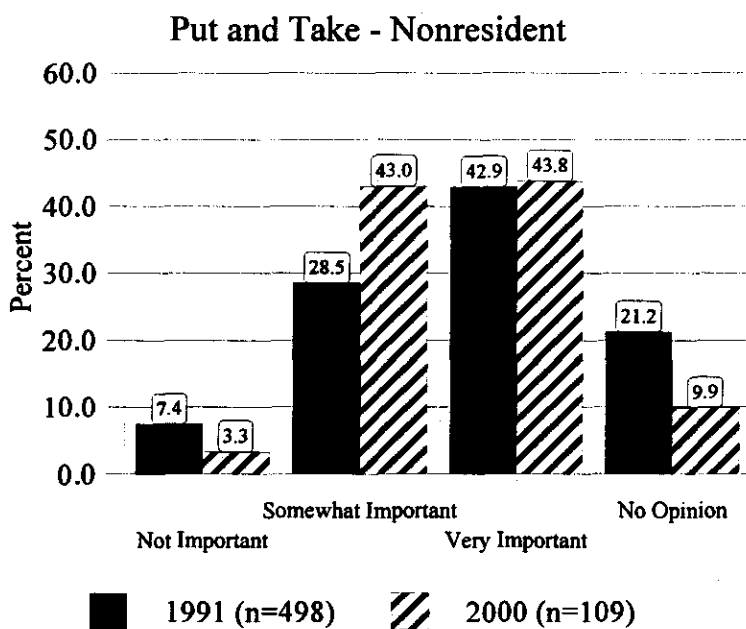


Figure 9-86. Nonresident support for put-and-take management on some streams and rivers in 1990 and 1999. ($X^2 = 16.17$, $df = 5$, $p = .00$)

Change in Opinions About Line Limits

Questionnaire Item:

General regulations allow the use of 2 lines when fishing during the OPEN-WATER season and 8 lines during the ICE-FISHING season. Do you agree with the number of lines allowed in each season? (Please fill in AGREE or DISAGREE with the current limit. If you disagree, please write in your recommended number of lines.)

Table 9-14. Opinions about line limits in 1991 and 2000.

	% Agree		% Disagree		Recommended		% No Opinion	
	1991	2000	1991	2000	1991	2000	1991	2000
Residents (1991 sample size = 3996) (2000 sample size = 1574)								
Open	81.2	80.0 ¹	14.3	11.4	2.1	2.6 ¹	4.5	8.6
Ice	61.4	63.8 ¹	20.9	17.5	6.3	6.2	17.7	18.7
Nonresidents (1991 sample size = 665) (2000 sample size = 208)								
Open	75.7	70.8	15.6	14.8	1.4	2.1 ¹	8.7	14.4
Ice	47.0	44.0	23.3	21.5	5.2	5.4	29.7	34.5

1 - Significantly different at less than the .05 level.

Note. Large sample sizes may create false significance.

Lake Champlain Fishing Participation

Questionnaire Item:

About how many days did you spend fishing on Lake Champlain for each of the following species during the 1999 open-water and ice-fishing seasons?

Table 9-15. Mean number of days spent fishing each category of game fish in open water on Lake Champlain in 1990 and 1999.

	Resident				Nonresident			
	Sample Size		Days		Sample Size		Days	
	1990	1999	1990	1999	1990	1999 ¹	1990	1999 ¹
Walleye	1036	327	7.9	8.4	126	29	9.9	9.3
Northern Pike	896	351	8.5	8.6	144	45	9.1	9.6
Yellow Perch	1067	366	9.4	10.1	125	33	11.2	9.8
Crappie	180	155	9.0	9.0	31	22	16.1	12.3
Sunfish	209	125	9.4	8.4	45	15	11.6	16.2
Smelt	144	58	8.2	7.3	11	5	10.6	12.8
Bullhead	541	183	8.2	7.6	35	10	12.2	7.1

1 - Small sample size. Percentages and statistics may not be reliable.

Note - outliers above 60 days were excluded from this analysis.

Table 9-16. Mean number of days spent fishing each category of game fish when ice fishing on Lake Champlain in 1990 and 1999.

	Resident				Nonresident			
	Sample Size		Days		Sample Size		Days	
	1990	1999	1990	1999	1990 ¹	1999 ¹	1990 ¹	1999 ¹
Walleye	378	86	7.0	9.0	36	6	6.8	9.9
Northern Pike	383	134	7.6	8.5	37	7	5.4	9.4
Yellow Perch	887	252	9.5	9.7	61	8	10.8	13.0
Crappie	43	47	8.4	10.4	13	6	13.6	13.0
Sunfish	32	24	9.2	8.8	10	5	11.0	18.0
Smelt	445	125	7.1	7.2	21	5	8.7	11.6
Bullhead	22	20	5.7	4.5	4	4	9.8	14.4

1 - Small sample size. Percentages and statistics may not be reliable.

Note - outliers above 60 days were excluded from this analysis.

Part 10



Appendix

Appendix 1

Research Methods

Sampling Design

The goal of the study was to gather information that represented the opinions and behaviors of all anglers in Vermont. To do this, a sample was selected from the population of all 1999 Vermont fishing and hunting/fishing combination license holders. The Vermont resident portion of the sample was stratified according to one's region of residence. The state was divided into 5 zones, each zone encompassing 2 to 3 counties. Since fewer licenses were sold in 1999 to residents in the Northeast Kingdom, fewer residents were included in the sample. And since more residents from Northwest Vermont purchased fishing licenses in 1999, more were included in the sample. The nonresident sample was a simple random sample of all 1999 license holders who lived outside Vermont (U.S. residents only). Members of the sample were selected randomly using the random sampling function in SPSS statistical software.

Sample Size

The Vermont Department of Fish and Wildlife conducted a similar study of Vermont anglers in 1991. The 1991 survey sent questionnaires to 6,250 Vermont residents and 1,000 non-residents who purchased Vermont fishing licenses. This sample size was based on the assumption that a minimum of 400 responses per zone would yield a margin of error of plus or minus 5% on dichotomous questions.

This sample size estimation was based on a textbook formula where population size (total license sales) is the only available information: $\text{sample size} = N/(1-N(e)^2)$ where 'N' is the population size (total license holders) and 'e' is the desired margin of error. The margin of error actually achieved in the 1991 survey on dichotomous variables, however, was between plus or minus 1.5% and plus or minus 1.8%. One could therefore achieve a similar level of precision (plus or minus 2% on dichotomous variables) with a smaller sample size.

A more precise way to estimate sample sizes is to incorporate standard deviations from past surveys: $e = 1.96(\text{sd}/\text{square root of } n)$ where 'e' equals the margin of error, 'sd' equals the standard deviation, and 'n' equals the estimated sample size. Since standard deviations are available from the 1991 survey, one can calculate a better estimate of sample size. Calculations showed that a plus or minus 2% margin of error would require a mailing to 4,680 residents and 634 nonresidents (assuming a 50% response rate).

Sample Selection

Researchers selected members of the sample from the 1999 license holder database of people who purchased fishing and hunting/fishing combination licenses. There were 138,256 entries in the 1999 database. A number of these entries were excluded from sample selection. First there were 4,229 entries that did not have adequate address information. Second, all international residents were excluded from the selection process (3,480 entries). Canadians were excluded from the sample because most were from Quebec and there was no easy way to translate the questionnaire into French. Third, many people had purchased multiple licenses and therefore had duplicate entries in the database. Among nonresidents, there were 10,244 duplicate entries from people who may have purchased multiple 1-day, 3-day, or 7-day licenses. Among residents, there were 4,242 duplicate entries that were culled from the final sampling list. Removing duplicates ensured that each individual in the 1999 database had an equal opportunity of selection. The final sampling frame from which names were selected included 76,079 residents and 40,688 nonresidents.

Sample size estimates called for a resident sample of 4,680 people. The sample was then selected proportionate to the number of licenses sold in each zone (Table A-1). Based on the percentage of total license sales in each region of the state, the 4,680 sample was proportioned among 5 different zones. This means that 560 people were selected from the Northeast Kingdom (Essex, Orleans, and Caledonia Counties), 1,080 people were selected from East Central Vermont (Lamoille, Washington, and Orange Counties), 850 people were selected from Southern Vermont (Windsor, Windham, and Bennington Counties), 825 people were selected from West Central Vermont (Rutland and Addison Counties), and 1,380 people were selected from Northwest Vermont (Chittenden, Franklin, and Grand Isle Counties).

Table A-1. Resident sample selection stratified by region of residence.

Region	Population N	Population Percent	Sample n	Sample Percent
Zone 1	9,041	11.8	560	11.9
Zone 2	17,579	23.0	1,080	23.0
Zone 3	13,862	18.1	850	18.1
Zone 4	13,411	17.5	825	17.6
Zone 5	22,447	29.4	1,380	29.3
Total	76,079	100.0	4,695	100.0

Nonresidents anglers were selected using a simple random sample of all 40,688 names. There were 600 names drawn from this list, with a target of 300 completed responses (assuming a 50% response rate). Future studies may wish to increase the sample size of nonresident anglers. With the response rate achieved, the statistical comparisons may not always have been reliable.

Questionnaire

An 18-page questionnaire was mailed to each person selected in the sample. The questionnaire was designed to assess 3 major areas. First was angler behavior, including species fished for, preferred species, angler days, bait use and disposal, and type of fishing gear used. Second was angler opinions about creel limits, fish length, special regulations, current fishing related controversies in Vermont, and factors that affect fishing quality and water quality. Finally, the questionnaire was designed to provide a profile of the Vermont angler, including commitment to fishing and various socioeconomic indicators.

The survey was also designed to make direct comparisons with a similar statewide angler survey conducted in 1991. To compare data in a longitudinal research design, the wording of questions in the 2000 survey was identical to the question wording in the 1991 survey for most of the creel limit questions, the length limit questions, equipment use questions, special regulation questions, and angler behavior question. New additions to the 2000 survey included an expanded section on Lake Champlain fishing, a section of bait use and disposal, questions on the use of lead-free sinkers and jigs, items measuring angler commitment, and opinion items about water quality and fishing quality.

While the 2000 questionnaire preserved many of the 1991 questions for comparison, future studies should evaluate how useful these comparisons may have been. Some of the currently used questions have some difficulty with scaling (hatchery trout questions, overall quality question) and no opinion responses (the methods literature recommends against a 'no opinion' option). The "not applicable" category was also confusing to some respondents.

A number of respondents had trouble with the creel limit question format, and many people (perhaps 20 to 30 percent) who marked "disagree" failed to offer a recommended daily limit, while another small percentage who marked "agree," did offer a different recommended daily limit. Another problematic question was the item that asked about fishing outside of Vermont. The freshwater fishing item is probably inflated because many people did not read the "outside Vermont" phrase in the question instructions.

Further, the questionnaire can be demanding for respondents, particularly the questions that ask about the number of days fished for each species by open water and ice. There are some questions about the recall accuracy when thinking back to the previous fishing season. Studies have even shown that diaries administered during participation have some difficulty with recall accuracy. A number of respondents (as many as 10%) also had difficulty with the skip instructions in the questionnaire, answering 'no' to a screener question, yet still responding to the questions they should have skipped. Future surveys should be printed on larger pages (8 ½ by 11) and should be spaced better. The questionnaire designer should work on making the skip instructions clear and unambiguous. The current questionnaire design, with its packed pages, may have affected the response rate achieved in this study.

Response Rate

Standard procedures in mailed surveys call for an initial mailing that includes a cover letter requesting the recipient's participation, along with a copy of the questionnaire. The questionnaires included a return address on the back cover and a postage paid permit so that respondents did not have to pay the postage to return the survey. The original mailing was posted in the mail on May 12th, 2000 (Table A-2). This first mailing yielded a 13.4% response rate. Sixteen days later, a follow-up post card was sent to those who had not yet returned their questionnaires reminding them to complete and return their questionnaire. This yielded another 8.1% response. A third mailing was sent 17 days after the post-card which included another cover letter explaining the importance of their participation and which included another copy of the questionnaire. This third appeal, however, only yielded an additional 10.4% response.

Traditionally, a 3-mail back technique was sufficient for mailed surveys (Dillman, 1978). In the 1970s, Dillman said this technique would yield at least a 60% response rate. However, response rates to mailed surveys (and telephone surveys) have been plummeting nationwide. Given this nationwide decline in response rates and the 32% response from 3 mailings, we opted for a 4th mailing - a post card reminder from Tim Hess (Fisheries Division Director for the Vermont Department of Fish and Wildlife) stressing the importance of the survey and making one final appeal for participation. This 4th post card reminder was mailed on July 7th, 2000 and produced another 5.7% response. The total response rate for both residents and nonresidents was 37.7%.

Table A-2. Response rates.

Date Mailed	Returned		Undeliverable		Total Response %
	Resident	Nonresident	Resident	Nonresident	
5/12/00	583	79	202	22	13.4
5/27/00	356	44	50	13	8.1
6/13/00	453	62	32	4	10.4
7/10/00	251	32	39	9	5.7
Total n	1643	218	323	48	
Response (%)	37.5	39.3	6.9	8.0	37.7

Table A-3. Response rates by region of residence. (Response rate calculations do not include undeliverables)

	Mailed	Returned	Total Response (%)
Zone 1 (NE Kingdom)	560	203	36.3
Zone 2 (East Central)	1080	367	34.0
Zone 3 (Southern)	850	313	36.8
Zone 4 (West Central)	825	280	33.9
Zone 5 (Northwest)	1380	468	33.9

Fourteen of the returned surveys were either blank, or had unusable data. So the final sample size was 1630 residents and 217 nonresidents.

The 37.7% response rate was smaller than expected. This might be due to recent trends where response rates to mail (and telephone) surveys have plummeted. People in the 1990s have been bombarded with unsolicited mail, and surveys such as this may wind up in the trash along with other pieces of unwanted mail. Another reason might have been the timing of the survey. The questionnaire was mailed in mid May, a time when the open water season was just beginning. People may have preferred to spend their spare time fishing rather than filling out a survey. Respondent recall of the 1999 fishing season may have also been problematic. In the future, response to a survey such as this may be better if delivered to respondents in January.

The sample size achieved in the survey's administration is not problematic in and of itself. The targeted 50% response rate would have provided a margin of error on dichotomous variables of plus or minus 2%. For public opinion polls, this is a very high level of precision. Most research methodologies only specify a margin of error between plus or minus 3% to 5%. So the sample size is not a problem for statistical estimation.

The problem with low response rates, however, is an issue of representation. Does the data collected from the sample represent the population of all anglers in Vermont? When a majority of the sample responds to a survey, one can be reasonably comfortable that their answers to items on a questionnaire will represent the targeted population. When response rates fall below a majority, there is less certainty about the representativeness of the responses (even though larger sample sizes tend to reduce the uncertainty). There are two methods for correcting this uncertainty. One is data weighting to correct for sampling error, and another is nonresponse follow-up to determine if nonrespondents answers to questionnaire items is systematically different from respondent answers.

Weighting

Data weighting is a method that compares known characteristics of a population (usually socioeconomic characteristics) with the same characteristics of sample respondents to determine what sectors of a population are over represented or under represented in a sample. Where a sector is over represented, their responses in a statistical analysis are given less weight (or mathematical importance), and where a sector is under represented, their responses are given more weight when calculating statistical estimates.

In this study, comparisons were made between the population of 1999 license holders and the questionnaire respondents on gender, age, and the type of license purchased. Table A-3 shows that there was no significant difference between the population and the sample gender ratios.

Table A-4 shows that older people were more likely to respond than younger people. People in the 45-54 year old group and the 55-64 year old group were over represented in the sample while people in the 18-24 year old group and the 25-34 year old group were under represented.

Table A-4. Ratio of men to women anglers among 1999 license holders.

	1999 Resident License Holder	2000 Resident Respondent	1999 Nonres. License Holder	2000 Nonres. Respondent
Male	80.0	82.2	86.7	88.5
Female	20.0	17.8	13.3	11.5
Total N	83,499	1,630	50,900	217

Table A-5. Age distribution of Vermont residents, 1999 Vermont license holders, and 2000 survey respondents (percent).

AGE	1999 Resident License Holder	2000 Resident Respondent	1999 Nonres. License Holder	2000 Nonres. Respondent
15-17	2.7	0.6	1.8	0.0
18-24	11.9	6.0	6.5	2.3
25-34	21.2	15.8	18.5	13.8
35-44	27.6	27.6	27.8	23.5
45-54	22.1	28.6	23.4	27.2
55-64	12.2	17.4	13.7	20.3
65+	2.3	4.0	8.4	12.9
Total N	83,007	1,627	50,478	217
Mean	4.00	4.46	4.39	4.88

Table A-5 shows that, among residents, people who purchased a combination hunting and fishing license were over represented in the sample while people with only a fishing license were under represented in the survey. Among nonresidents, people with a nonresident fishing license were over represented, while people with temporary 1-day, 3-day, or 7-day licenses were under represented in the sample.

Table A-6. License purchases by 1999 Vermont license holders and 2000 survey respondents (percent).

License Type	1999 Resident License Holder	2000 Resident Respondent	1999 Nonres. License Holder	2000 Nonres. Respondent
RESIDENT				
Fishing	48.6	43.6	0.2	0.0
Youth Fishing	4.0	0.0	0.0	0.0
Combination	46.2	54.9	0.2	0.5
Hunting	0.1	0.0	0.0	0.0
Youth Hunting	0.9	0.0	0.0	0.0
Archery	6.0	7.4	0.0	0.0
Second Archery	0.6	0.0	0.0	0.0
Turkey	5.4	7.3	0.0	0.0
Muzzleloader	6.1	9.1	0.0	0.0
Second Muzzleloader	0.1	0.0	0.0	0.0
Trapping	0.3	0.4	0.0	0.0
NONRESIDENT				
Fishing	0.7	1.2	27.7	44.0
Youth Fishing	0.1	0.0	1.7	0.0
1-Day Fishing	0.2	0.0	20.5	13.4
3-Day Fishing	0.1	0.0	29.5	21.3
7-Day Fishing	0.1	0.1	15.6	13.0
Combination	0.1	0.2	4.7	8.3
Small Game	0.0	0.0	0.2	0.0
Archery	0.0	0.1	1.2	1.4
Second Archery	0.0	0.0	0.1	0.0
Archery Only	0.1	0.2	0.1	0.0
Turkey	0.0	0.0	1.2	1.9
Muzzleloader	0.0	0.1	0.6	1.4
Total N	83,542	1,613	50,932	216

Weights were therefore assigned based on age and license type. Responses from those that were over represented (e.g., a 50 year old resident with a combination fishing hunting license) were given less weight - a value between 0 and 1. Responses from those that were under represented (e.g. a 25 year old nonresident with a 3-day fishing license) were given more weight - a value greater than 1.0. Using the weight function in SPSS, these values were incorporated in all statistical calculations to correct for sampling error.

Margin of Error

With weighted data, margins of error for dichotomous variables from the full sample (n=1847) ranged between plus or minus 1.8% and plus or minus 3.5%. Margins of error for dichotomous

variables from sub-samples of the data (e.g., residents of zone 1, the Northeast Kingdom - n=203) were generally between plus or minus 4.0% and plus or minus 6.0%. So, levels of precision for data from the 2000 Angler Survey were well within statistically acceptable standards.

Nonresponse Bias

Researchers contacted 35 resident nonrespondents from all 5 regions of the state by phone and asked them a small subset of questions from the questionnaire to determine if nonrespondent answers were systematically different from respondent answers. Nonrespondents were asked questions about their number of days fishing in 1999 (open water and ice), angling skill, overall quality of Vermont fishing, opinions about contaminant levels in fish, opinions about fishing area access, and their age. These responses were then compared with responses from the 2000 Angler Survey sample to determine whether nonrespondents were different from respondents, and to evaluate whether the sample was representative of the population of 1999 license holders.

The results (Table A-6) show that nonrespondents were more likely to fish less than respondents. Resident respondents fished an average of 11 days on ice and 26 days on open water in 1999. Nonrespondents fished an average of 5 days on ice and 10 days on open water in 1999. Nonrespondents did not differ from respondents in age or fishing skill. Nonrespondents also did not differ from respondents on their ratings of fishing quality in Vermont or their concerns about contaminant levels in fish. The only difference in opinion was about fishing access. Nonrespondents, who fish less than respondents, were less concerned about fishing access than were respondents who fish more.

The people systematically excluded from this survey were a self-selected group of people who probably had less of a stake in fishery management issues because their level of participation in the activity tends to be more minimal. Like most surveys, the nonrespondents were more often those who didn't care about the issues. Are there more today, than in 1991, who don't care? That answer would require a separate research design.

Table A-7. Nonresponse bias.

	2000 Resident Respondent	2000 Resident Nonrespondent	F	p
Days Fished (Ice)	10.7	5.1	3.0	ns
Days Fished (Open)	26.1	9.7	11.2	.00
Age	44	46	1.0	ns
Fishing Skill	3.3	3.2	.82	ns
Overall Quality	2.5	2.5	.00	ns
Contaminant Levels	2.6	2.5	1.0	ns
Fishing Access	1.7	1.2	8.2	.00

Data Analysis

The analysis of the 2000 Angler Survey primarily used frequency distributions with measures of central tendency (mean and median where appropriate) in describing the aggregate opinions and behaviors of respondents. Separate frequency distributions are reported for Vermont residents and nonresidents.

When making comparisons between different subgroups, one-way analysis of variance and chi-square statistics were calculated to show statistically significant differences. Analysis of variance is a means-difference test. It is the preferred type of test because in testing differences in central tendency, it gives a clear and precise indication of difference (or change). Analysis of variance reports an F value, which is similar to a t-distribution around the mean. The higher the F-value, the greater the difference.

Where the response options are categorical or contain a "no opinion" or "do not keep" option, chi-square will test differences in response distributions – a slightly less precise indicator of difference than analysis of variance. To do a means test in these situations would either be meaningless (for categorical variables), or it would be unrepresentative because one would have to exclude the "no opinion" responses. A chi-square test compares the expected distribution of a variable with an observed distribution. The larger the difference between expected and observed, the larger the chi-square statistic and the more evidence for difference.

Comparisons were made between residents in different regions of Vermont, between ice anglers and those who only fish on open water, and between the 1991 and 2000 surveys. Comparisons were not made between residents and nonresidents because the large resident sample size and the small nonresident sample size make the comparisons unreliable. A .05 level of significance was the standard used for judging significant differences between categories of anglers.

Large sample sizes are problematic in these comparative tests of difference, because they can produce statistically significant results when there may be little substantive difference. Consequently, one must also evaluate the face-validity of differences in drawing conclusions about difference or change.