

New Mexico Angler Satisfaction Report 2018-2019 License Year



Completed by
Fisheries Management Division
New Mexico Department of Game and Fish



Introduction

The New Mexico Department of Game and Fish uses angler satisfaction as one of its measurable objectives for management success. Traditionally the Department has been tasked with maintaining an overall angler satisfaction rate of 80% regarding angler opportunity, fishing experiences, and management of sport fishing issues. Since the 1990's the Department has been conducting some type of polling survey to measure angler satisfaction rate and determine if the objective was met. In addition to measuring angler satisfaction the survey also researches trends in angler needs, identifies potential issues, and provides direction for future management decisions. Information and knowledge gained through this survey is vital to effectively manage the State's aquatic resources. This report summarizes the method used and results from the 2019 survey.

Methods

The survey was conducted using web-based survey software (Snap Surveys LTD). This method involves sending an email invitation to a random sample of licensed anglers. The email contains a uniform resource locator (URL) link to a questionnaire hosted on a Department owned web-server. Once participants complete the survey data is collected and compiled on the web-server.

The survey was conducted April 16 to May 31, 2019 ($n_{\text{days}}=46$). An email invitation was sent to 10,048 anglers that purchased a fishing license in the 2018-19 license year (April 1, 2018 to March 31, 2019). During the 2018-19 license year 244,591 fishing licenses were sold, but only 124,155 customers provided an email address when purchasing a license. The survey sample was a stratified subsample representing the different fishing license types and the percentage sold of each license type (Table 1).

IBM SPSS Statistics was used to get a random representative sample of each license type. The sample comprised of about 72.0% resident anglers and 28.0% non-resident anglers which is consistent with percentages sold during the 2018-19 license year.

Table 1. Fishing license types showing percentage of total sold in the 2018-19 license year and target sample size of each license type including resident and non-resident.

License type	% of total sold	<i>n</i> resident for sample	<i>n</i> non-resident for sample
One Day Fishing	13.3%	305	1,027
Five Day Fishing	11.1%	26	1,083
Annual Fishing	36.5%	3,113	532
Disabled Vet Hunting and Fishing	0.8%	81	n/a
Game Hunting and Fishing	17.2%	1,772	n/a
Handicapped Fishing	1.5%	149	n/a
Handicapped Hunting and Fishing	0.5%	46	n/a
Junior Fishing	7.2%	546	169
Junior Hunting and Fishing	2.1%	208	n/a
I/A Free Hunting and Fishing	<0.1%	0	n/a
Military Hunting and Fishing	<0.1%	0	0
Senior 70 and Over Fishing	6.0%	600	n/a
Senior Fishing	2.7%	273	n/a
Senior Hunting and Fishing	1.2%	118	n/a
Totals	100%	7,237	2,811

The survey included 22 questions (16 fishing and 6 demographic related) most of which have been included in past surveys. Anglers may have been asked all or only a few questions depending on their answers (e.g., if they indicated they did not fish during the license year then they were only asked the demographic questions). Most of the fishing questions were set as “must answer” whereas the demographic questions had a “prefer not to answer” option.

Another email invitation was sent 15 days after the original invitation as a reminder to enhance the response rate.

Results and Discussion

Responses were received from 874 licensed anglers resulting in an overall 8.7% response rate. Residents demonstrated a higher response rate of 9.0% compared to 7.5% from non-resident anglers. About 61.7% of the responses were received within 48 hours of the initial and reminder invitation and response rates significantly declined post 72 hours of the invitations.

The following is a list of the questions asked during the survey and results. All confidence intervals are presented as 80% unless otherwise noted.

Question 1. Did you fish in New Mexico in the past 12 months?

This question was asked to estimate the number of anglers that purchased a fishing license but did not fish. It also expedited the survey for anglers that did not fish. Of the 874 respondents 12.0% indicated that they did not fish during the past 12 months. There is an increasing trend in the percentage of licensed anglers that did not fish since the 2016-17 license year, but the percentage is still below those observed in the 2014-15 and 2015-16 license years (Figure 1).

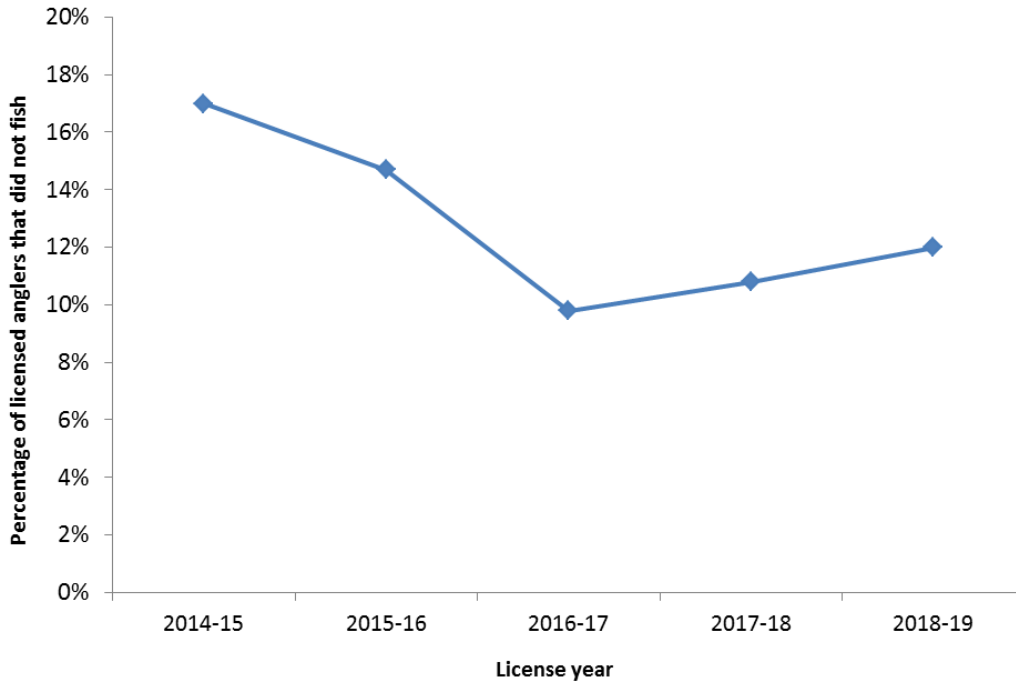


Figure 1. Percentage of licensed anglers that reported they did not fish during the 2014-15 to 2018-19 license years.

Question 2. How many days of parts of days did you fish in New Mexico during the past 12 months?

When only including the respondents that indicated they fished during the past 12 months ($n=769$) results showed a wide range of days fished from 1 to 300 with a mean of 17.3 (± 2.0) days and a median of 8 days. If including anglers that fished zero days the mean was 15.2 (± 1.2) days and the median was 6 days. Responses were separated into six categories (0 days, 1-2 days, 3-5 days, 6-10 days, 11-20 days, and 21 days or more) and into resident and non-resident license type for analysis (Figure 2). Similar to past surveys, most (75.5%) non-resident anglers fished 5 days or less; whereas most (61.5%) resident anglers fished 6 days or more.

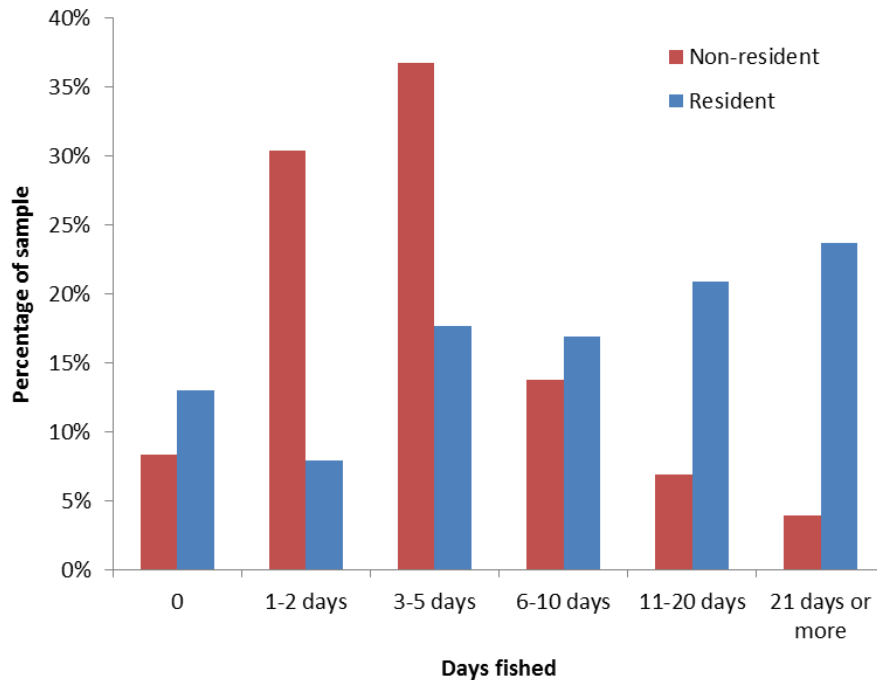


Figure 2. Number of days fished during the 2018-19 license year separated into resident and non-resident license types.

Question 3. In general, how satisfied or dissatisfied were you with fishing in New Mexico during the past 12 months (Fishing Satisfaction Rate)?

Anglers were asked to rate their fishing experience on a Likert scale of 1 to 5. A rating of 1 was “not at all satisfied” and a rating of 5 was “very satisfied”. Most (89.1%) respondents indicated being neutral to satisfied with their fishing experience giving a rating of 3, 4, or 5; whereas 10.9% indicated being dissatisfied giving a rating of 1 or 2. About 66.1% of anglers indicated they are satisfied giving a rating of 4 or 5. This was a 7.8% increase from the 2017-18 license year and continues the overall increasing trend since the 2001-02 license year (Figure 3). The percentage of anglers that indicated they were dissatisfied did show a slight increase from 2017-18 to 2018-19 license years, but the percentage still remains below the 20 year average of 15.0%. Non-residents continue to be more satisfied. About 80.7% of non-resident anglers gave a rating of 4 or 5; whereas only 61.3% of resident anglers gave the same rating. Also, dissatisfaction rate for non-resident and resident anglers was 8.0% and 12.0%, respectively (Figure 4).

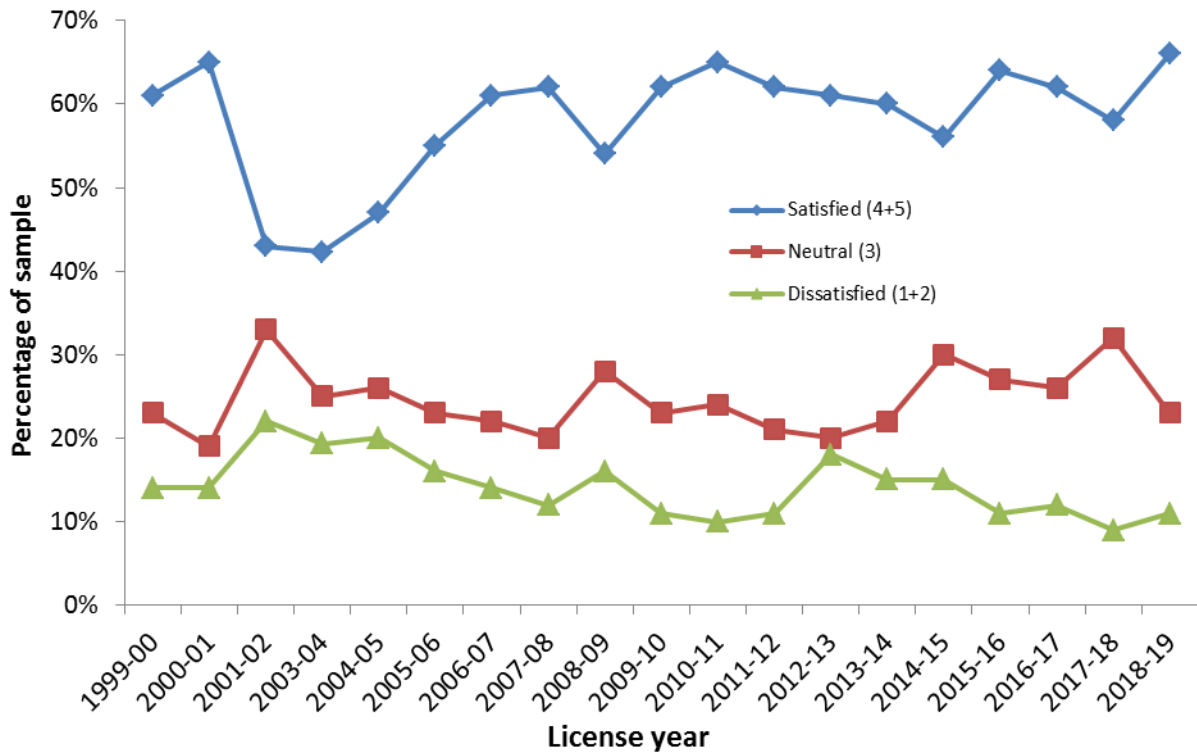


Figure 3. Overall satisfaction rating of anglers surveyed from the 1999-00 to 2018-19 license years.

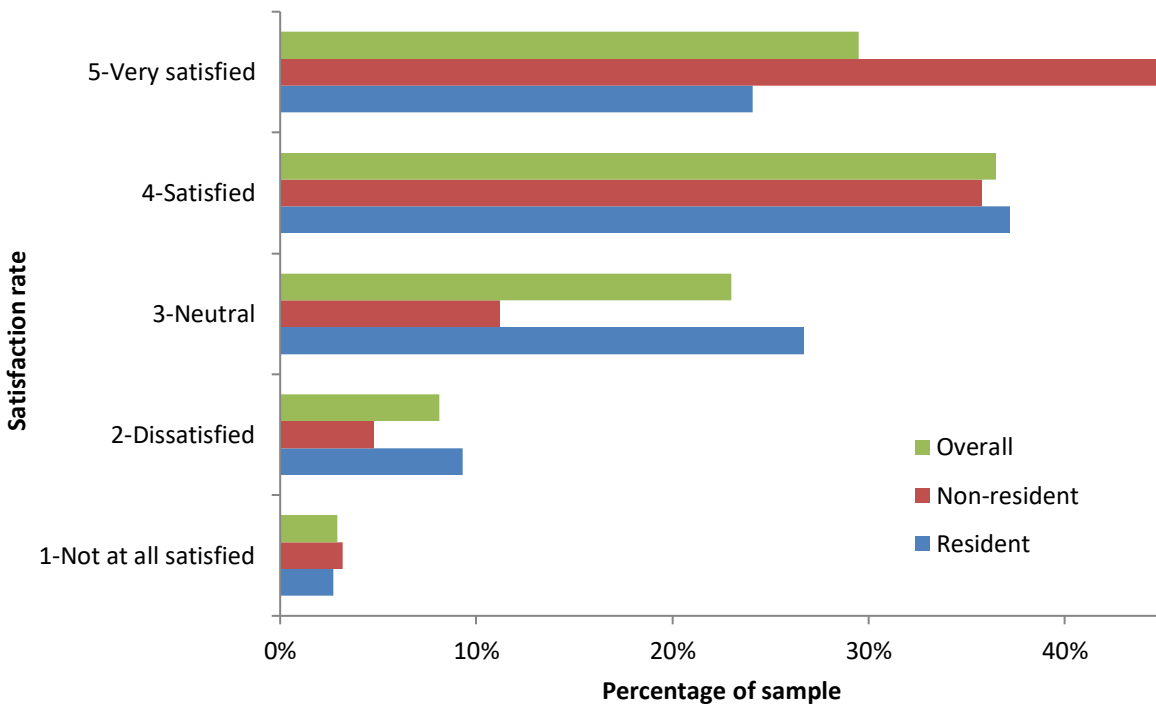


Figure 4. Satisfaction rate of resident and non-resident anglers during the 2018-19 license year.

Question 4. Why do you feel this way?

Question 4 was a follow up to Question 3 to identify key reasons related to satisfaction or dissatisfaction. This question was optional to answer, but 91.2% of respondents provided an answer. Even though respondents provided a wide range of reasons to support their satisfaction rate, most of the answers fit into 22 categories. “Poor catch rates” and “poor waters levels, conditions, flow” were the primary reasons for neutrality or dissatisfaction. Alternatively, “good catch rates” and “fishing is enjoyable experience” were the primary reasons for satisfaction (Table 2).

Table 2. Categorized reasons for satisfaction rating given by surveyed anglers and percentage of frequency by rating for the 2018-19 license year. Note: Sum of each category equals 100%.

Reason for satisfaction rating	Rating		
	Dissatisfied (1-2)	Neutral (3)	Satisfied (4-5)
Good catch rates		2.0%	32.3%
Poor Catch rates	32.1%	30.1%	5.2%
Large fish caught			1.7%
Fish too small	6.0%	5.2%	1.3%
Good water levels, conditions, flow			2.8%
Poor water levels, conditions, flow	22.6%	16.3%	5.0%
Too crowded		6.5%	1.1%
Good opportunity or access			5.2%
Poor opportunity or access	3.6%	9.8%	1.1%
Facilities good or clean			1.1%
Facilities poor or trashy	4.8%	5.9%	1.7%
Good stocking			2.6%
Poor stocking	9.5%	4.6%	1.7%
Regulations good/enforcement adequate			0.2%
Regulations poor/not enough enforcement	3.6%	2.6%	1.5%
Beautiful location			4.1%
Enjoyable experience/just like to fish			18.5%
Weather		2.0%	1.7%
Good fisheries management			2.2%
Poor fisheries management		3.3%	1.7%
Invasive/unwanted fish species	2.4%	3.3%	0.4%
Other	6.0%	7.8%	6.0%

Question 5. Regarding your species preference, do you prefer to fish for cold water species like trout or salmon or do you prefer to fish for warm water species like bass or walleye?

The largest percentage of the anglers indicated they preferred to fish for “cold water” species such as trout and salmon. About 38.0% of anglers indicated they preferred to fish for “both” cold and “warm water” species. Overall, this percentage has not changed significantly since the 2014-15 license year (Figure 5). When combining anglers that indicated they preferred to fish for “cold water” species and “both” it appears that 88.4% of anglers fish for cold water species compared to 49.5% for warm water species. These percentages are near identical to previous license years.

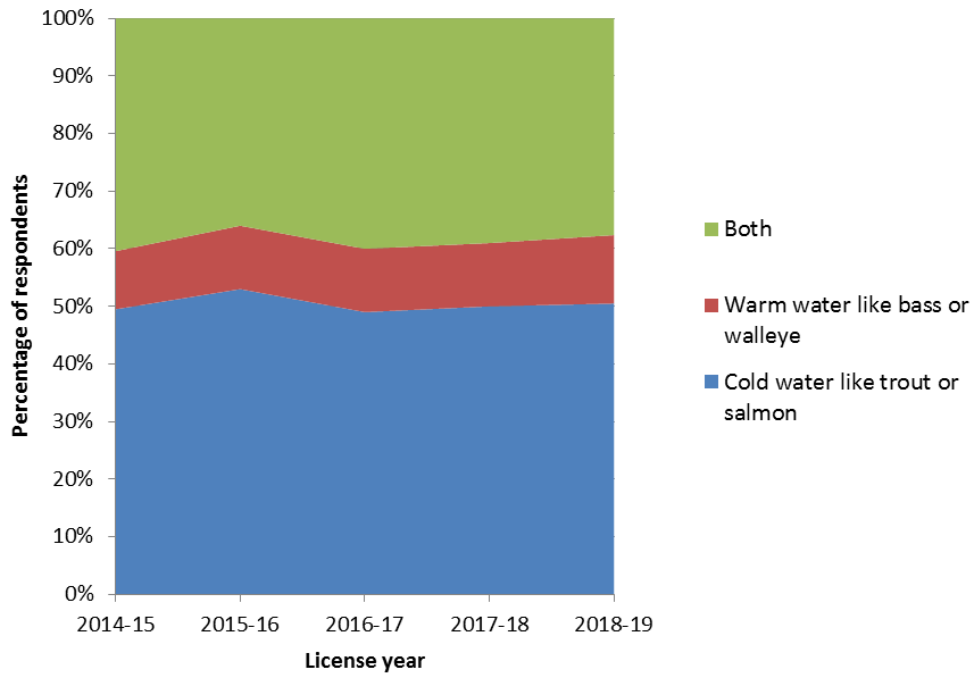


Figure 5. Fishing preference to fish for “cold water”, “warm water”, or “both” species of surveyed anglers during from the 2014-15 to 2018-19 license years. Note: data from web-based surveys.

Question 6. Which cold water species do you prefer to fish for in New Mexico (May select up to 3)?

Anglers were asked this question if they indicated they prefer to fish for “cold water” species or “both”. It appears that rainbow trout and brown trout continue to be the cold water species most preferred (Table 3). Gila trout continues to be the least cold water species preferred, but interestingly preference for this species has steadily increased since the 2014-15 license year (Figure 6). Overall the other percentages and order of preference were similar to past surveys.

Table 3. Cold water species in order of preference by anglers during the 2018-19 license year.

Species	Percent preferred*
Rainbow trout	88.2%
Brown trout	67.8%
Cutthroat trout	33.5%
Lake trout	21.6%
Brook trout	20.4%
Kokanee salmon	16.0%
Gila trout	7.5%

*Percentages do not sum 100% since this is a multiple response question

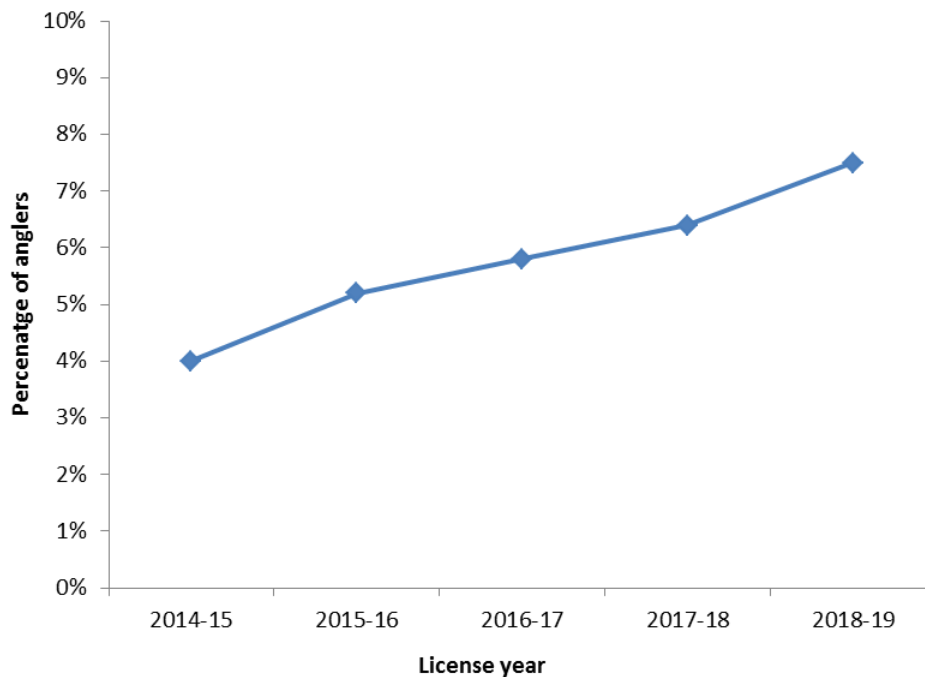


Figure 6. Percentage of anglers indicating preference for Gila trout from the 2014-15 to 2018-19 license years.

Question 7. Of the following statements which comes closest to your personal view when fishing for cold water species? (Stocked vs. wild fish)

This question was asked if anglers indicated they fished for “cold water” species or “both”. The purpose of this question is to identify if anglers chose their fishing location where they expect to catch stocked fish or wild fish. The percentage of anglers indicating they chose their fishing location where they expect to catch wild fish (53.5%) was slightly higher than those indicating they chose their fishing location where they expect to catch stocked fish (46.5%).

Question 8. Which warm water species do you prefer to fish for in New Mexico (May select up to 3)?

Anglers were asked this question if they fished for “warm water” species or “both”. When comparing results to past surveys there were slight percentage changes for each species, but largemouth bass continues to be the most popular species followed by walleye, catfish, and smallmouth bass. Yellow perch and spotted bass continue to be the least popular warm water species (Table 4).

Table 4. Warm water species in order of preference by anglers during the 2018-19 license year.

Species	Percent preferred*
Largemouth bass	53.0%
Walleye	36.2%
Catfish	36.2%
Smallmouth bass	36.0%
Crappie	25.5%
White bass	21.8%
Striped bass	16.3%
Northern pike	14.4%
Tiger muskie	9.4%
Bluegill/sunfish	9.7%
Yellow perch	5.2%
Spotted bass	5.0%

*Percentages do not sum 100% since this is a multiple response question

Question 9. Of the following statements which comes closest to your personal view? (Catch-and-release vs. catch-and-keep)

This question was to determine if anglers prefer to practice catch-and-release or keep most of the fish they catch. During this survey most (65.3%) anglers indicated they prefer to release most of the fish they catch. This question has been included in the surveys since 2007. There continues to be an increasing trend of anglers that practice catch-and-release since the 2009-10 license year (Figure 7).

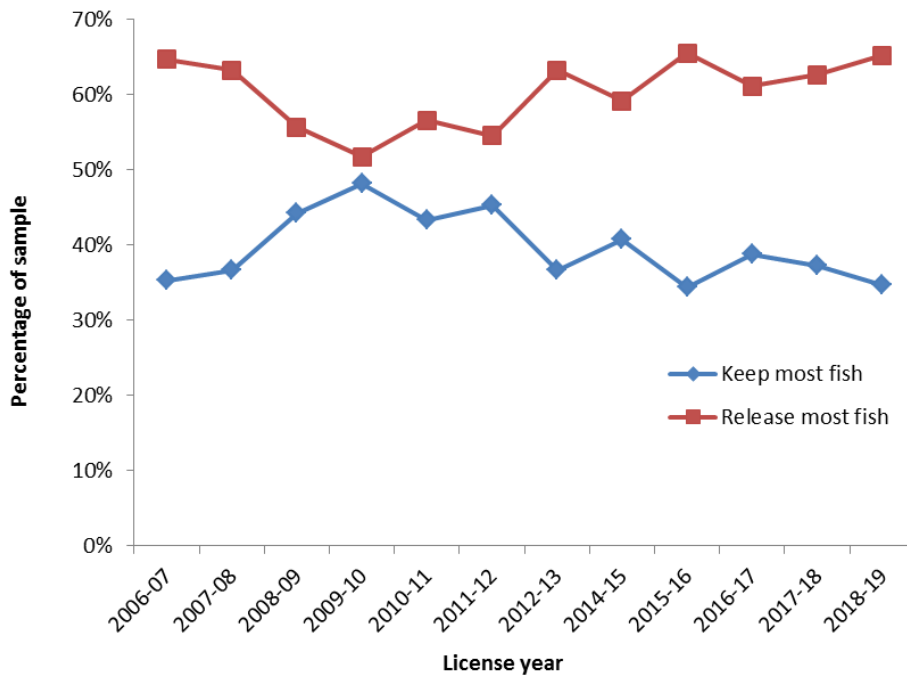


Figure 7. Percentage of anglers that indicated they prefer to release or keep most of the fish they catch from the 2006-07 to 2018-19 license years.

Question 10. Of the following statements which comes closest to your personal view? (Lots of fish vs. one or two large fish)

This question was asked to determine if anglers chose fishing locations based upon where they will “catch lots of fish” or “one or two larger fish”. Most (62.2%) anglers indicated they chose their fishing location based on where they will “catch lots of fish” (Figure 8).

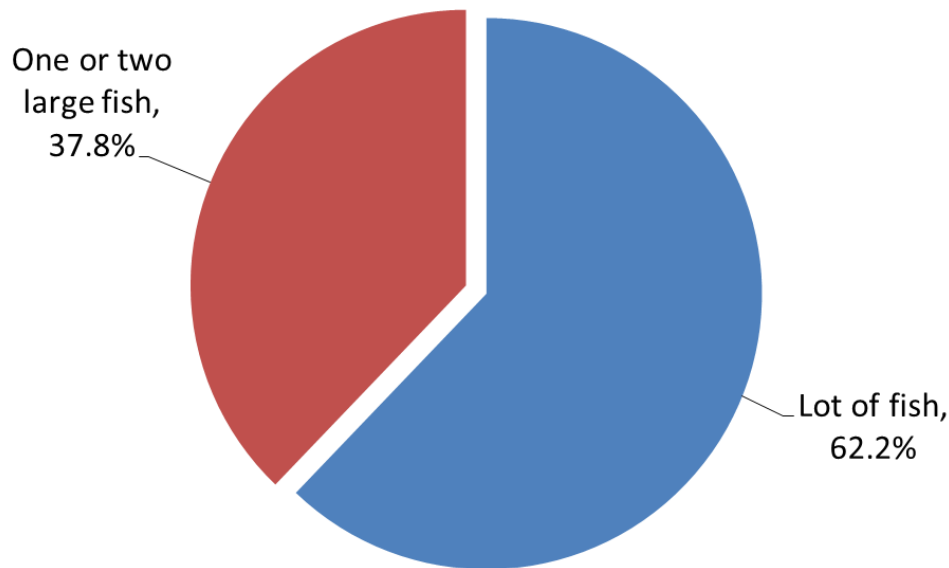


Figure 8. Fishing location preference by anglers based upon “catching lots of fish” or “catching one or two large fish” during 2018-19 license year.

Question 11. What type of tackle do you use most of the time while fishing?

This was a new question added to the 2019 survey and the purpose of this question was to determine the percentage of anglers that use fly fishing versus spin fishing tackle. It was also used to determine the percentage of anglers that use bait versus artificial lures. Most anglers (65.3%) indicated they use spin fishing tackle compared to fly fishing tackle. About 32.2% of the anglers indicated they use bait while spin fishing which suggest most anglers use artificial flies or lures while fishing.

Question 12. Do you use live bait when fishing?

Most (63.7%) anglers indicated they use do not live bait when fishing, and this was a significant decrease from 71.5% during the 2017-18 license year.

Question 13. What types of live bait do you use when fishing?

This was a follow up question to Question 12 for the 36.3% of anglers that indicated they use live bait when fishing. Similar to past surveys, “earthworms/night crawlers” were by far the most popular live bait used. There was an increase of anglers indicating they used “minnows/baitfish”

from 36.3% in the 2017-18 license year to 41.0% in the 2018-19 license year. “Water dogs/salamander larvae” and “meal worms/wax worms” seemed to be the least popular (Figure 9).

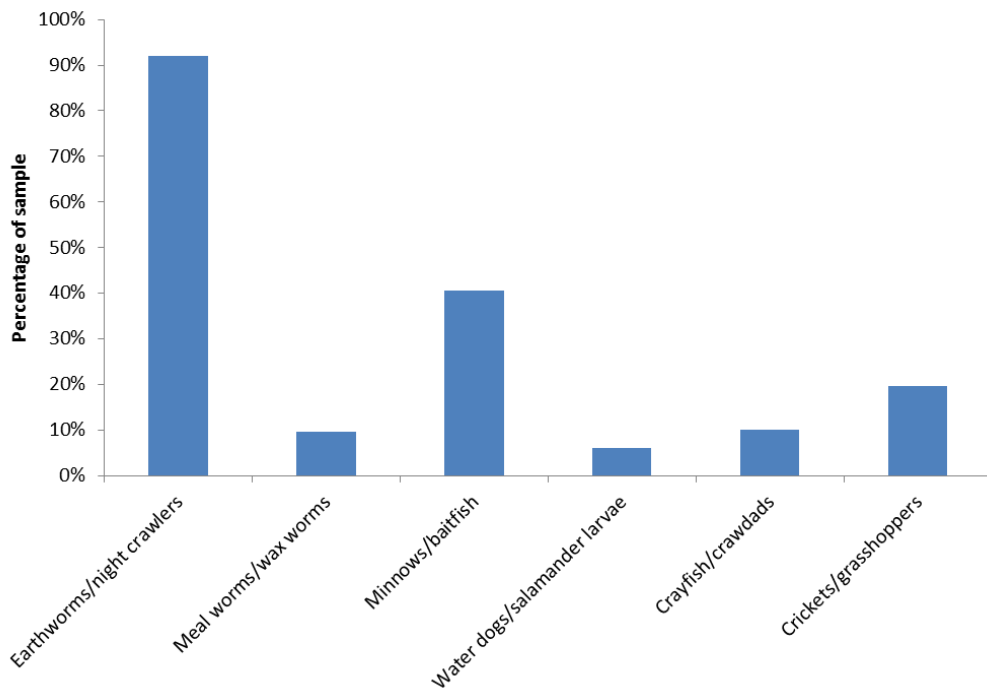


Figure 9. Types and percentage of live bait used by anglers during the 2018-19 license year. Note: percentages do not equal 100% since this is a multiple response question.

Question 14. In what major river drainage do you use live bait in when fishing?

The Rio Grande drainage continues to receive the most live bait use (53.4%) according to anglers surveyed. The Mimbres and Gila/San Francisco river drainages receive the least amount of live bait use (Table 5). There were slight differences from the 2017-18 license year but overall changes were not significant.

Table 5. Live bait use by major river drainage and order of use by anglers during the 2018-19 license year in order of usage.

Major River Drainage	Percent preferred*
Rio Grande	53.4%
Pecos	31.2%
Canadian	18.3%
San Juan	16.9%
Gila and San Francisco	8.2%
Mimbres	2.5%

*Percentages do not sum 100% since this is a multiple response question

When comparing types of live bait used and percentage of use by major river drainage “earthworms/night crawlers” continue to be the most utilized in all drainages, whereas

“waterdogs/salamander larvae” and “crayfish/crawdads” were consistently used the least in all drainages (Table 6).

Table 6. Types of live bait and percentage* of reported use by anglers in major river drainages during the 2018-19 license year.

Bait type	Rio		Gila and San			
	Grande	Pecos	Francisco	Canadian	San Juan	Mimbres
Earthworms/Night crawlers	49.1%	29.7%	8.2%	16.5%	15.1%	2.5%
Meal worms/wax worms	7.2%	2.5%	0.7%	0.7%	3.2%	0.7%
Minnows/baitfish	20.4%	11.1%	2.9%	9.7%	7.2%	0.7%
Water dogs/salm. larvae	4.7%	2.2%	0.7%	1.4%	1.1%	0.4%
Crayfish/crawdads	7.9%	2.9%	0.4%	2.5%	1.8%	0%
Crickets/grasshoppers	12.5%	9.0%	2.2%	5.0%	0.7%	0.4%

*Percentages do not sum 100% since this is a multiple response question

Question 15. Did you spear fish or bow fish during the past 12 months?

This was a new question added to the survey to quantify spear fishing and bow fishing use in New Mexico. Only 1.3% (n=10) respondents indicated they had spear or bow fished the past 12 months. Seven out of the 10 indicated they bow fished, one indicated they spear fished, and two indicated they both spear and bow fished.

Question 16. Which type of fish did you spear fish or bow fish for the past twelve months?

Question 16 was a follow up to Question 15 and asked if anglers stated they did spear fish or bow fish during the past 12 months. This question was asked to gauge if anglers are spear or bow fishing for game fish (e.g., bass, catfish, walleye, trout, etc.) or non-game fish (e.g., carp, suckers, etc.). Most (70%) indicated they only spear or bow fished for non-game species (Figure 10).

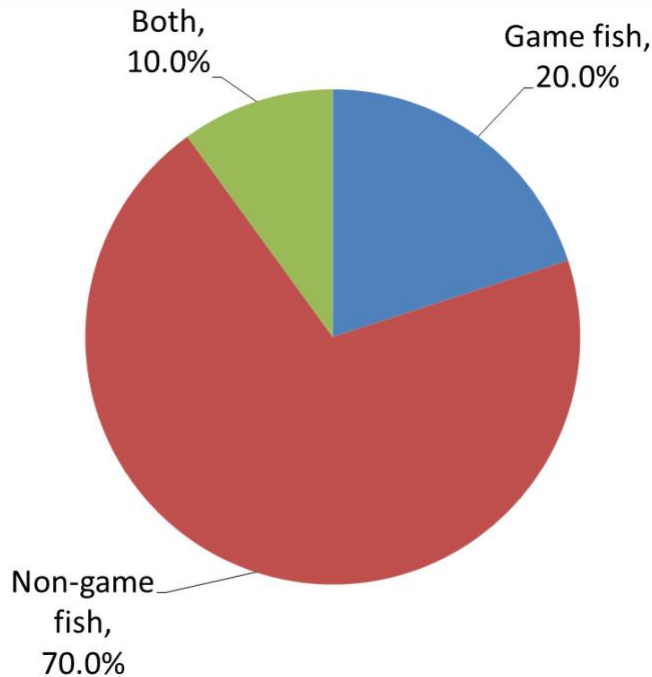


Figure 10. Types of fish anglers indicated they spear and bow fished for the past 12 months.

Questions 17 to 22 were related to demographics and were optional to answer by survey participants.

Question 17. What is your gender?

Most of the survey participants were male, representing 88.2% of the sample (Figure 11).

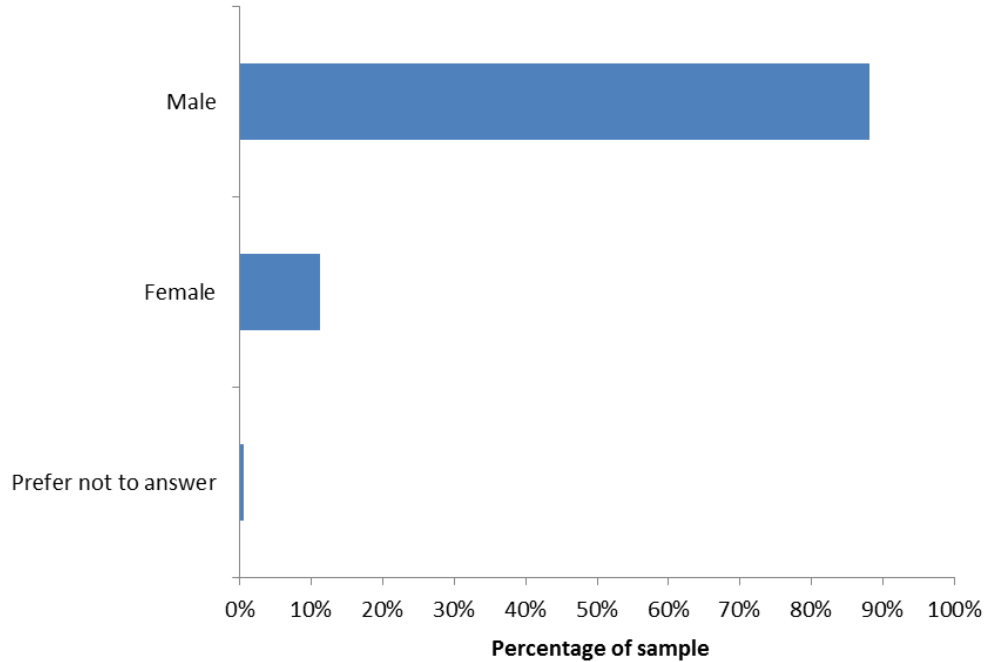


Figure 11. Gender of survey participants by percentage.

Question 18. What is your age category?

The largest age category was 50 to 64, representing 32.4% of the sample, followed by age category 65 and older (Figure 12).

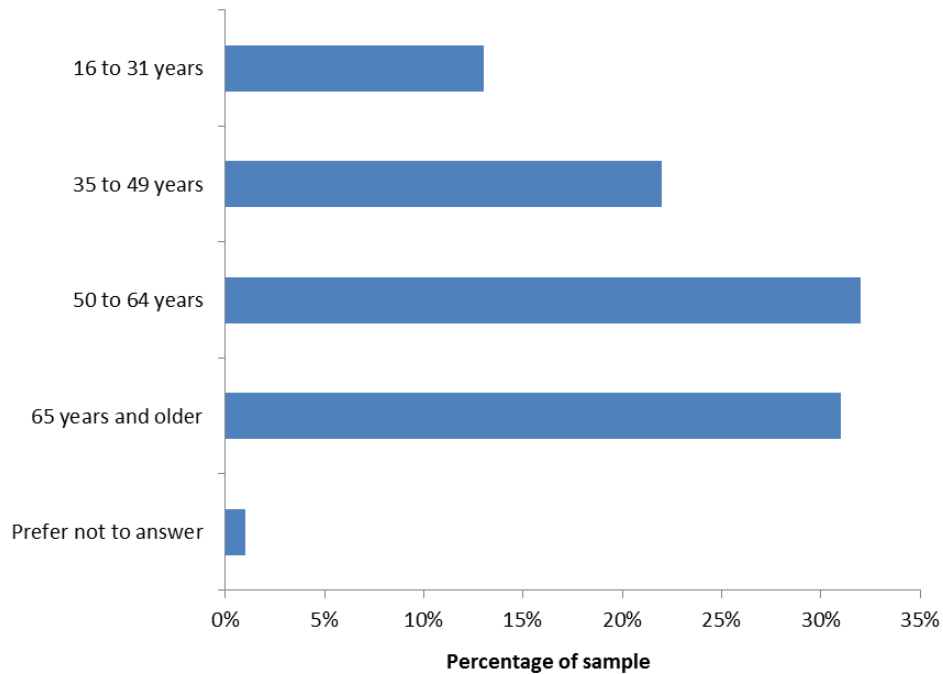


Figure 12. Age categories of survey participants by percentage.

Question 19. Do you consider yourself to be:

Most of the participants consider themselves Anglo/Caucasian representing about 62.9% of the sample (Figure 13).

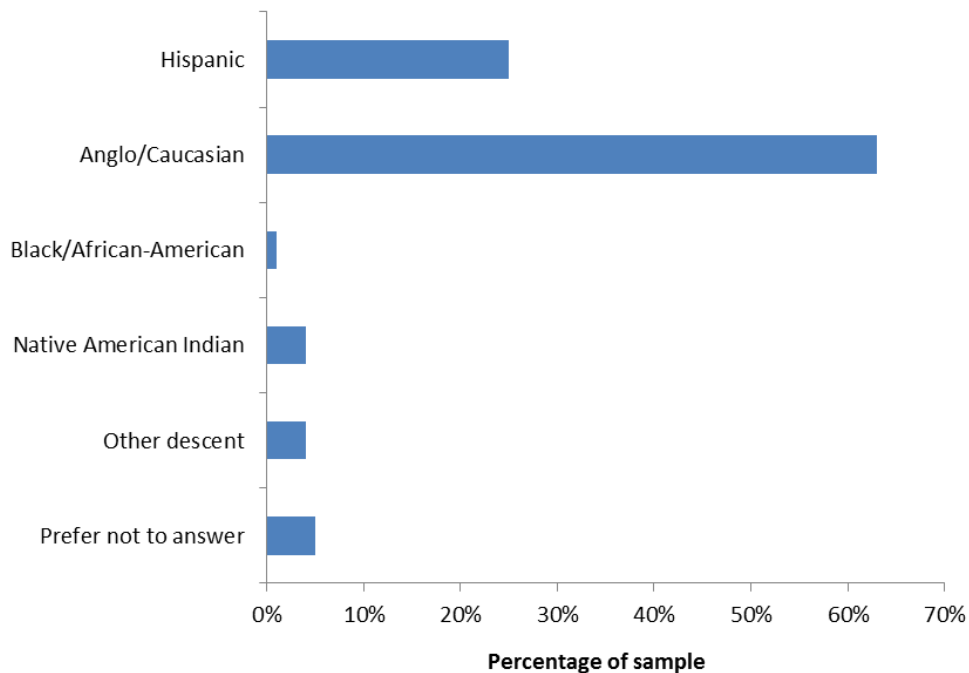


Figure 13. Ethnicity of survey participants by percentage.

Question 20. What is the highest level of education you have had the opportunity to complete? Similar to past surveys, the largest percentage of participant indicated completing some college/associates degree/vocational certificate. Participants that indicated some high school was the smallest percentage (Figure 14).

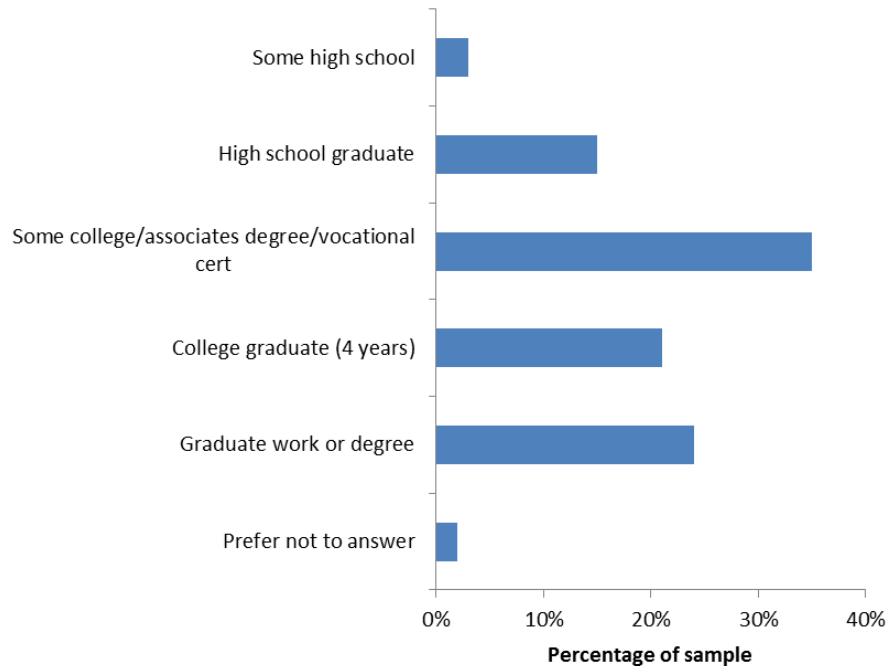


Figure 14. Highest education level of survey participants by percentage.

Question 21. Do you own a boat or personal watercraft that you use for fishing?

Most (64.9%) survey participants indicated they do not own a boat or personal watercraft.

Question 22. What is the zip code of your residence?

Almost all survey participants provided a zip code of their residence. Survey participants represented 321 different zip codes and 28 different states. Most non-resident survey participants were located in the neighboring states surrounding New Mexico (Figure 15).

