New Mexico Angler Satisfaction Report
2021-2022 License Year

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

Cover photo
Alexyana Sandoval (left, with first fish) and Naomi Gabaldon (right) at Seven Springs Hatchery Pond, Jemez Springs, NM. Photo taken by Valerie Sandoval.

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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, seeks input on emerging 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 2022 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 15 to May 31, 2022 (n_{days}=47). An email invitation was sent to 20,000 anglers that purchased a fishing license in the 2021-22 license year (April 1, 2021 to March 31, 2022). This was a 5,000 invitation increase from the 2021 survey in attempt to increase survey responses. During the 2021-22 license year 287,708 fishing licenses were sold, but only 152,339 (52.9%) customers provided an email address when purchasing a license. The survey sample was a random stratified subsample representing the different fishing license types and the percentage sold of each license type (Table 1). The sample comprised of about 72.2% resident anglers and 27.8% non-resident anglers. This was a 6.0% decrease in resident anglers compared to the previous year, but similar to historic ratios. Microsoft Excel was used to get a random representative sample of each license type.

Table 1. Fishing license types showing percentage of total sold in the 2021-22 license year and target sample size of each license type including resident and non-resident.

License type	% of total sold	n resident for sample	n non-resident for sample
One Day Fishing	13.3%	596	2,068
Five Day Fishing	10.7%	62	2,083
Annual Fishing	35.9%	6,078	1,104
Disabled Vet Hunting and Fishing	0.9%	184	n/a
Game Hunting and Fishing	19.0%	3,795	n/a
Handicapped Fishing	1.1%	225	n/a
Handicapped Hunting and Fishing	0.5%	95	n/a
Junior Fishing	6.5%	997	299
Junior Hunting and Fishing	2.3%	467	n/a
Senior 70 and Over Fishing	5.7%	1,136	n/a
Senior Fishing	2.8%	554	n/a
Senior Hunting and Fishing	1.3%	257	n/a
Totals	**100%**	**14,446**	**5,554**

The survey included 25 questions (20 fishing and 5 demographic related) most of which have been included in past surveys. Questions related to trout size, appearance, and quality to guide trout hatchery product were asked again in 2022. Two new questions were added related specifically to Eagle Nest Lake. Anglers may have been asked all or only a few questions depending on their answers to expedite the survey (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 949 licensed anglers resulting in an overall 4.8% response rate. Residents and non-residents demonstrated different response rates with 5.1% and 3.8%, respectively. About 54.1% 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. Average time spent completing the survey by participants was 7 minutes 34 seconds.

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 (i.e., if they did not fish then they were routed to only answer the demographic questions). Of the 949 anglers 12.5% indicated that they did not fish during the past 12 months. This is a decrease from 2021 (14.4%) and about the eight-year average of 12.6% (Figure 1).
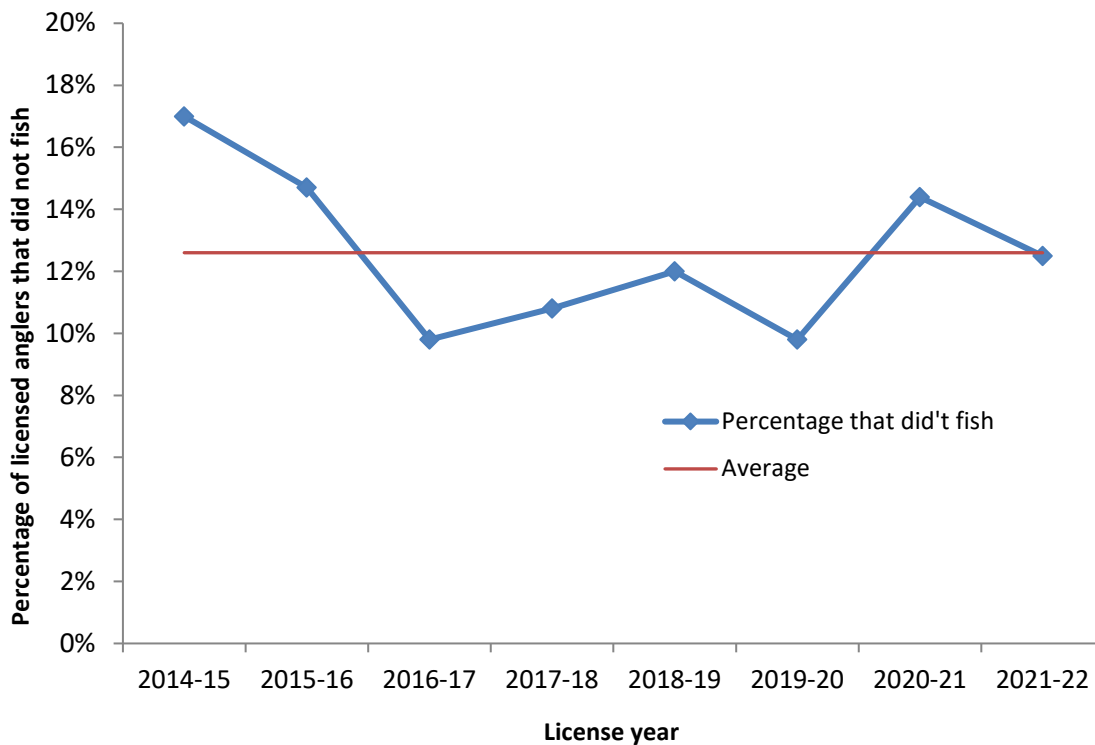
Figure 1. Percentage of licensed anglers that reported they did not fish from the 2014-15 to 2021-22 license years and the eight-year average.

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

When only including the anglers that indicated they fished during the past 12 months (*n*=830) results showed a wide range of days fished from 1 to 365 with a mean of 18.7 (±1.5) days and a median of 10 days. This was an increase in average days fished from last license year and the highest average in eight years (Figure 2). If including anglers that did not fish (i.e., fished zero days) the mean and median was 16.3 (±1.2) days and 8 days, respectively. 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 3). Similar to past surveys, most (66.0%) non-resident anglers fished 5 days or less; whereas most (64.0%) resident anglers fished 6 days or more.
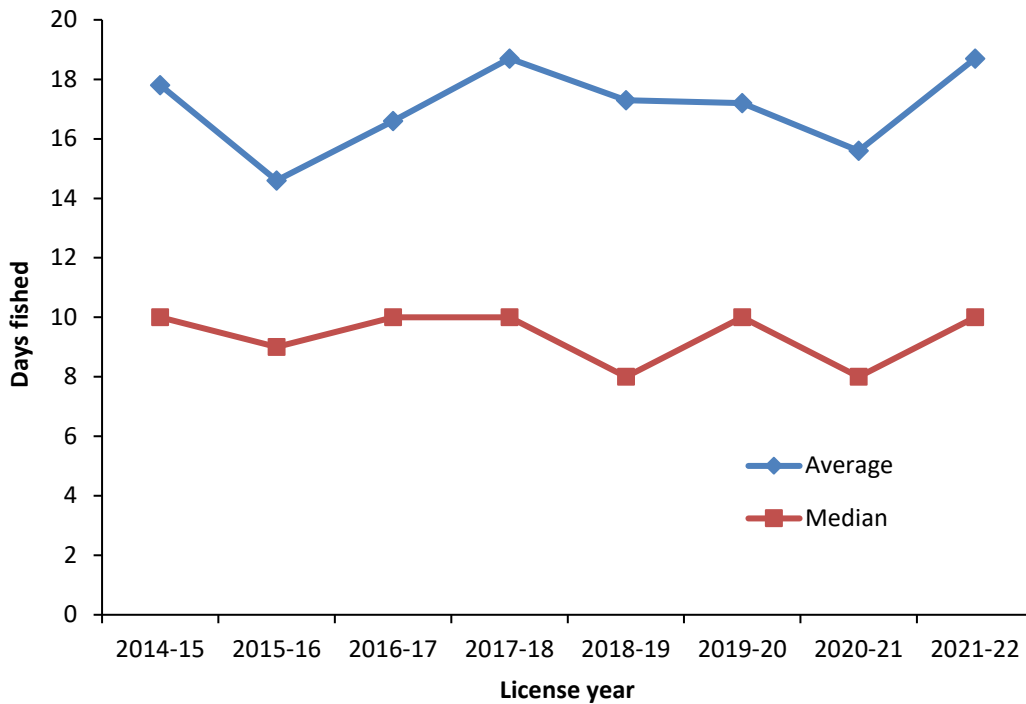
Figure 2. Average and median days fished by anglers that indicated they fished one day or more from the 2014-15 to 2021-22 licenses years.
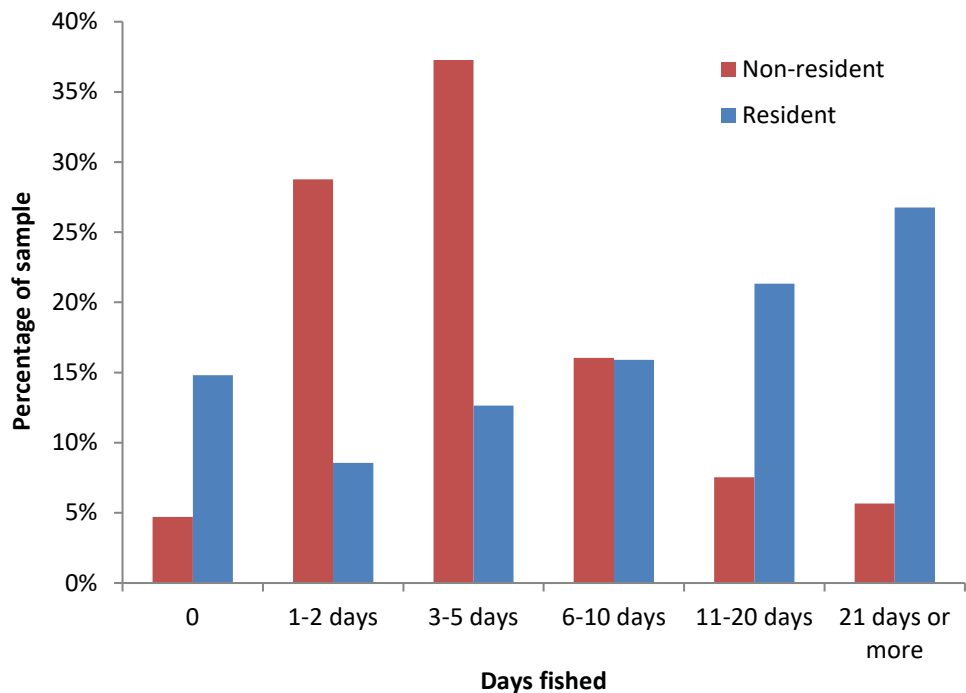

Figure 3. Number of days fished during the 2021-22 license year separated into resident and non-resident license types.

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%) anglers indicated being neutral to very 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 (Figure 4). Dissatisfaction decreased from the 2020-21 license year, and the decrease is likely attributed to reduced COVID-19 related issues and closures in the 2021-22 licenses year. About 66.3% of anglers indicated they are satisfied giving a rating of 4 or 5. Non-residents continue to be more satisfied. About 80.7% of non-resident anglers gave a rating of 4 or 5; whereas only 61.8% of resident anglers gave the same rating. Also, dissatisfaction rate for non-resident and resident anglers was 8.0% and 11.8%, respectively (Figure 5).
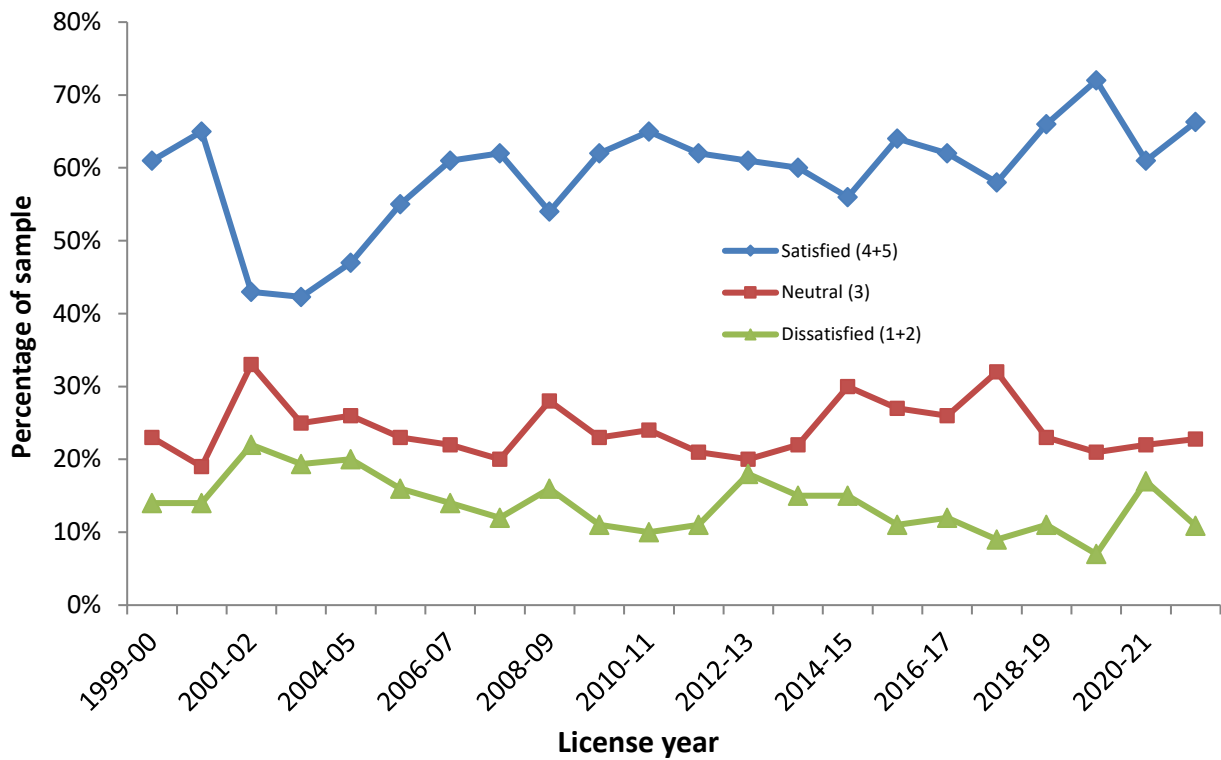

Figure 4. Overall satisfaction rating of anglers surveyed from the 1999-00 to 2021-22 license years.
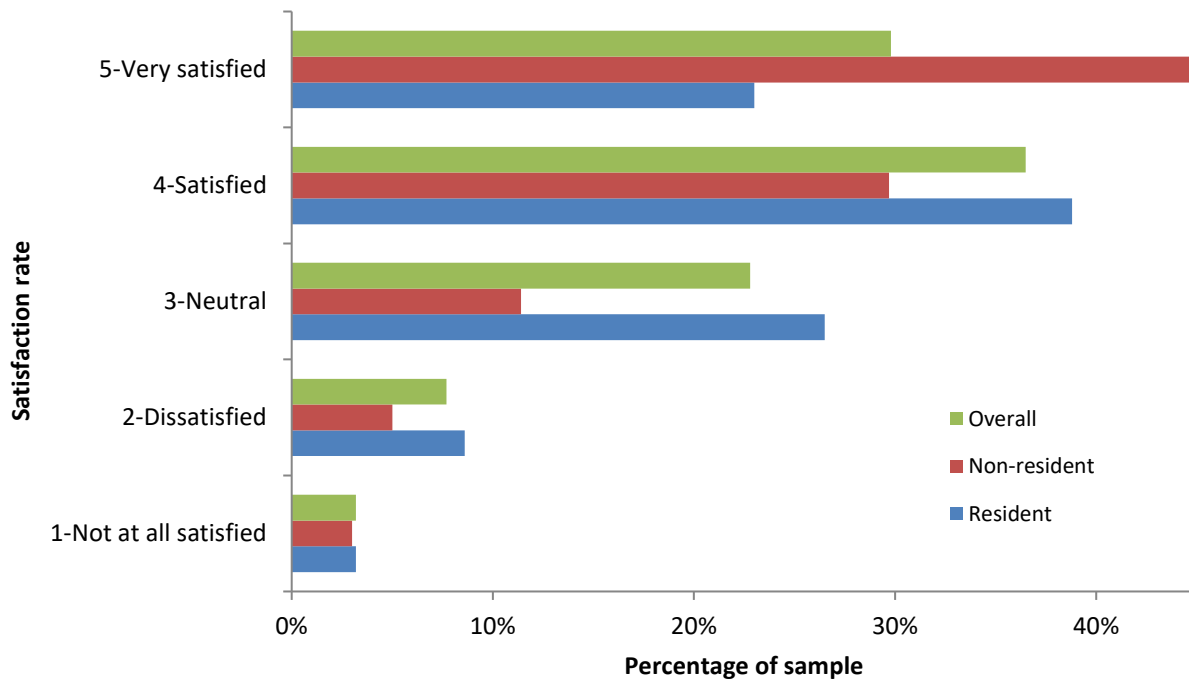
Figure 5. Satisfaction rate of resident and non-resident anglers during the 2021-22 license year.

Question 4. Why do you feel this way?
This was a follow up to Question 3 to identify key reasons related to satisfaction or dissatisfaction. This question was optional to answer, but 91.9% of anglers provided an answer. Even though anglers provided a wide range of reasons to support their satisfaction rate, most of the answers fit into 24 categories. "Poor catch rates" was the primary reason for dissatisfaction followed by "poor water levels, conditions, flow". "Poor catch rates" was also the primary reason for neutral satisfaction. Alternatively, "good catch rates" was the primary reasons for satisfaction (Table 2). COVID-19 related issues were still mentioned in the 2021-22 license year, but the frequency decreased compared to the 2020-21 license year (Figure 6).

Table 2. Categorized reasons for satisfaction rating given by surveyed anglers and percentage of frequency by rating for the 2021-22 license year. Note: Sum of each category equals 100% since the percentages are totaled by grouped rating. **Bolded** percentages are the highest for each grouped rating.

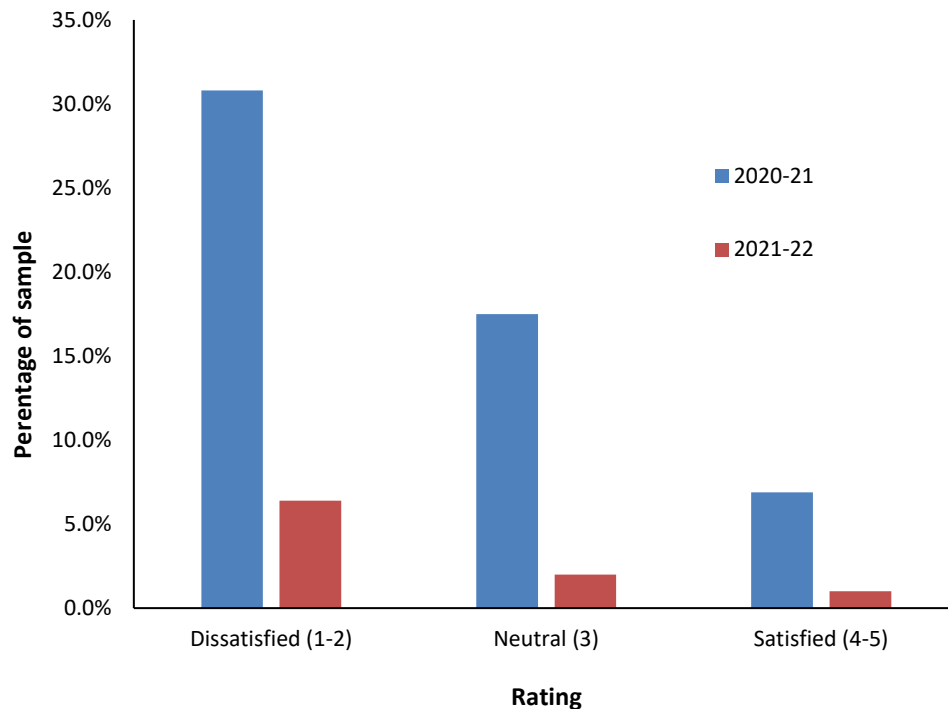| Reason for satisfaction rating	Dissatisfied (1-2)	Neutral (3)	Satisfied (4-5)
Good catch rates		2.0%	**27.2%**
Poor catch rates	**32.7%**	**24.1%**	3.7%
Large fish caught			4.6%
Fish too small	6.4%	7.0%	1.6%
Good water levels, conditions, flow			1.8%
Poor water levels, conditions, flow	16.4%	15.1%	5.0%
Too crowded	8.2%	10.6%	2.9%
Good opportunity or access			9.6%
Poor opportunity or access	10.0%	10.6%	2.8%
Facilities good or clean			3.3%
Facilities poor or trashy	3.6%	5.0%	2.0%
Good stocking		0.5%	3.9%
Poor stocking	10.0%	9.0%	1.0%
Regulations good/enforcement adequate	0.9%	0.5%	0.3%
Regulations poor/not enough enforcement	0.9%	1.0%	0.7%
Beautiful location			6.7%
Enjoyable experience/just like to fish			11.4%
Weather	0.9%	0.5%	1.0%
Good fisheries management		0.5%	2.4%
Poor fisheries management	2.7%	2.5%	0.7%
Others not following rules		2.0%	1.6%
License/activity costs too high	0.9%	0.5%	
COVID-19 related closures and issues	6.4%	2.0%	1.0%
Other		6.0%	5.0%

Figure 6. Percentage COVID-19 related issues and closures were mentioned by participants as the supporting reason for their fishing experience by grouped rating in the 2020-21 to 2021-22 license years.

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 (53.8%) indicated they preferred to fish for "cold water" species such as trout and salmon. About 36.4% of anglers indicated they preferred to fish for both "cold water" and "warm water" species. Overall, this percentage has not changed significantly since the 2014-15 license year and almost identical to the 2020-21 license year (Figure 7). When combining anglers that indicated they preferred to fish for "cold water" species and "both" it appears that most (90.2%) of anglers fish for cold water species compared to 46.2% for warm water species.
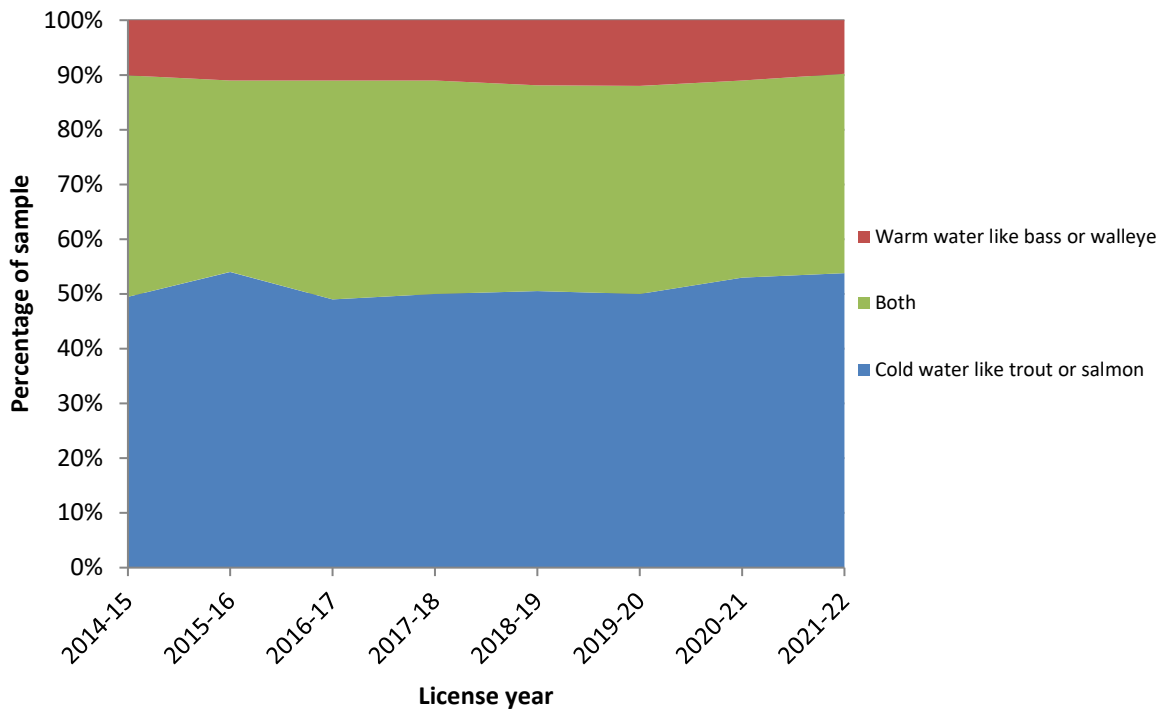
Figure 7. Fishing preference to fish for "cold water", "warm water", or "both" species of surveyed anglers during from the 2014-15 to 2021-22 license years.

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". Similar to the past several years, Rainbow Trout and Brown Trout continue to be the cold water species most preferred (Table 3). Preference percentages for most of the other species were similar to past years except for Lake Trout. During the 2022 survey, "mackinaw" was added to the Lake Trout name in the survey form to better describe the species. There was concern that participants may be confusing all trout species that occur in lakes as Lake Trout versus the actual species *Salvelinus namaychus*. The concern may have been valid as there was a noticeable decrease in preference for Lake Trout compared to previous years (Figure 8).

Table 3. Cold water species in order of preference by anglers during the 2021-22 license year.

Species	Percent preferred[*]
Rainbow Trout	86.4%
Brown Trout	74.1%
Cutthroat Trout	40.4%
Brook Trout	22.6%
Lake Trout	12.0%
Kokanee	18.3%
Gila Trout	8.7%

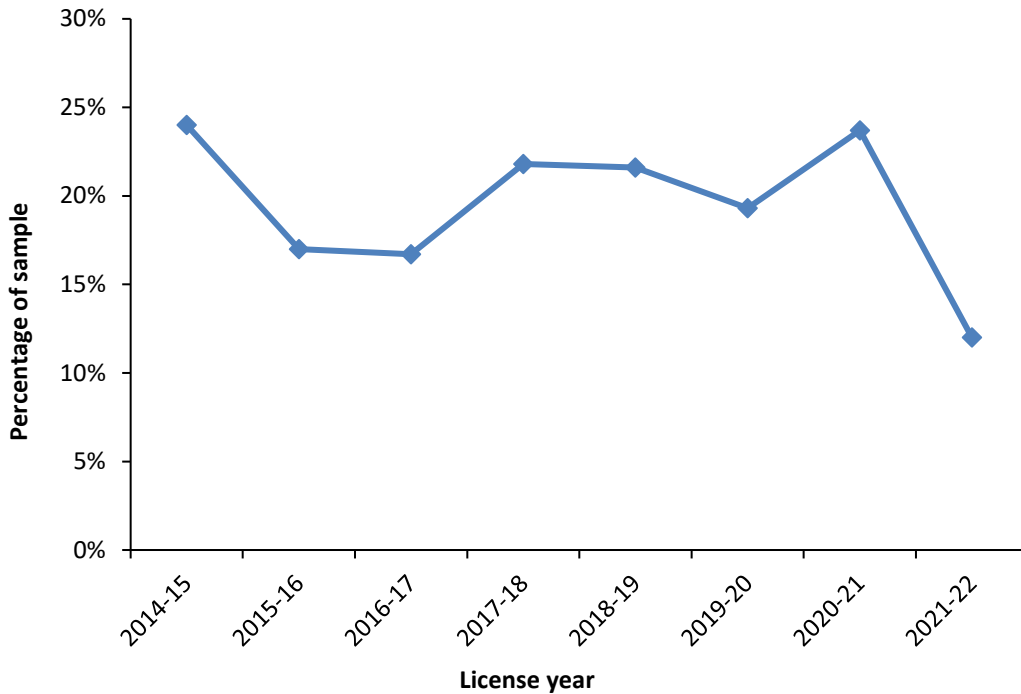*Percentages do not sum 100% since this is a multiple response question

Figure 8. Percentage of anglers indicating preference for Lake Trout from the 2014-15 to 2021-22 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 was to identify if anglers chose their fishing location where they expected to catch stocked fish or wild fish. The percentage of anglers indicating they chose their fishing location where they expected to catch wild fish (58.0%) was higher than those indicating they chose their fishing location where they expected to catch stocked fish (42.0%). There appears to be an increasing trend in the preference for anglers selecting fishing locations for wild trout (Figure 9).
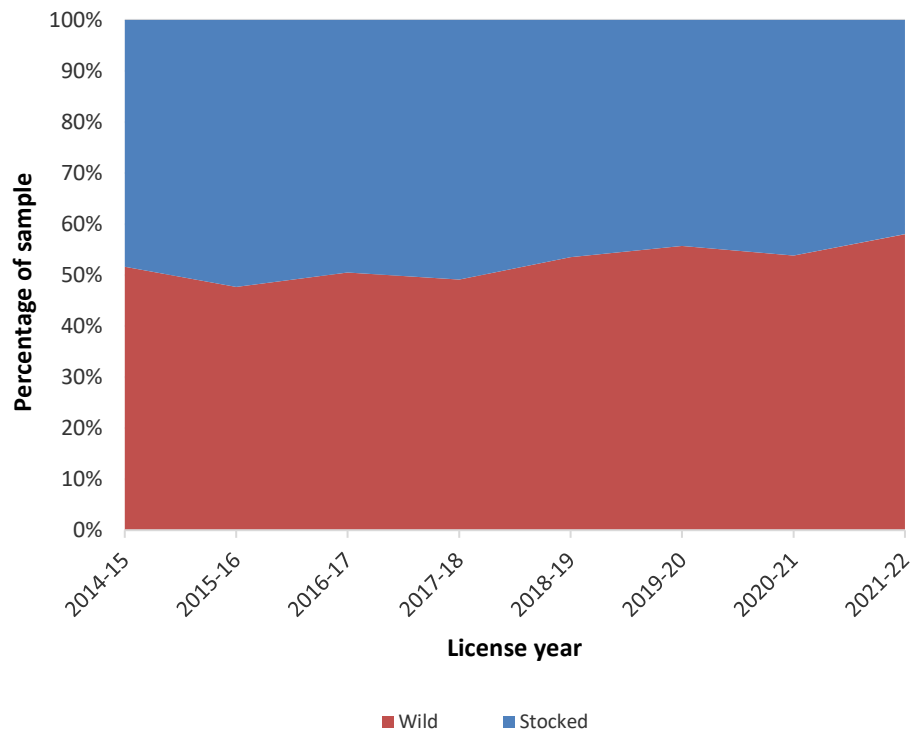
Figure 9. Percentage of cold water anglers that indicated they chose their fishing location where they expect to catch wild fish versus stocked fish from the 2014-15 to 2021-22 license years.

Question 8. What is the most important to you when catching a trout?
Questions 8 through 12 were asked if anglers indicated they fished for "cold water" species or "both". These were new questions in the 2021 survey and were asked again in 2022 to provide more insight on trout characteristics important to anglers to help guide hatchery product quality. Trout "length" and "appearance" were the most important characteristics with 39.3% of anglers indicating "length" as the most important and 38.9% of anglers indicating "appearance" as the most important. Trout "weight" was the least important to anglers (Figure 10). Survey participants were also given the opportunity to provide "other" characteristics. About 26.8% of the participants provided "other" characteristics. Other characteristics provided were highly variable, but some of the more consistent themes include; trout health (22.0%), fight/vigor while catching (7.5%), wild, not stocked (5.5%), and taste/flavor while eating the trout (3.4%).
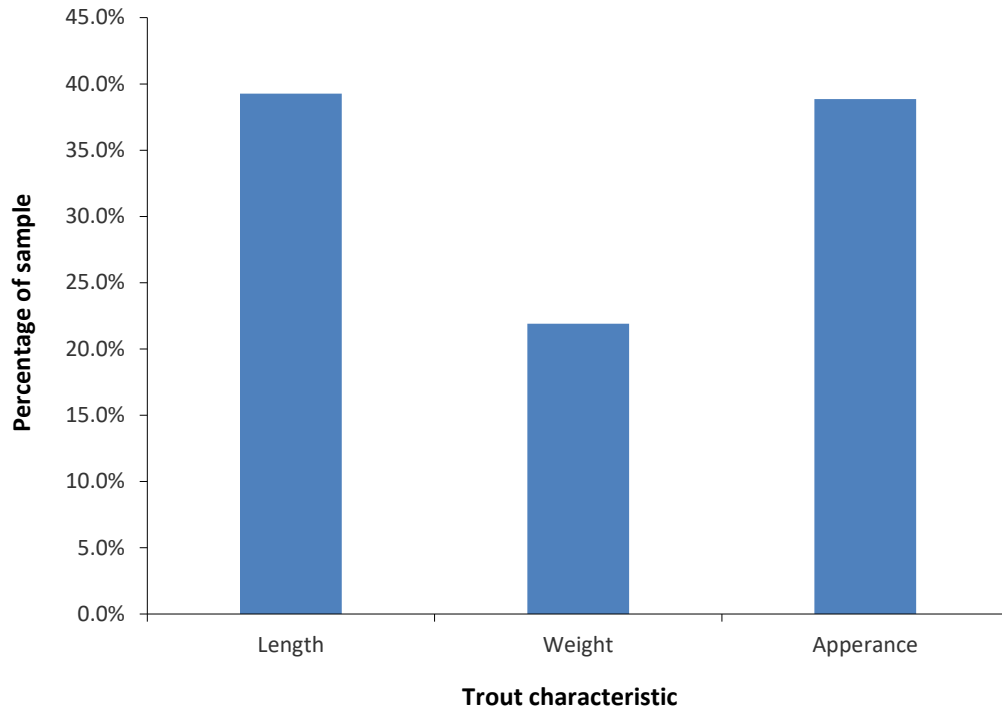
Figure 10. Percentage of characteristics that are important to anglers when catching trout during the 2021-22 license year.

Questions 9 to 11. What is the minimum length (inches) of trout you would harvest? What length (inches) would you consider a _quality_ sized trout? What length (inches) would you consider a _trophy_ sized trout?

These three questions are related and were asked to determine anglers' opinions about trout lengths compared to regularly used management size categories. A wide range of lengths for each category were provide from 0 to 99 inches, and mean lengths provided by anglers for minimum harvest, quality, and trophy trout were 11.9 (±0.4), 15.1 (±0.2), and 21.3 (±0.3) inches, respectively (Figure 11). Median lengths for the same categories were 12.0, 15.0, and 20.0 inches, respectively. Means and medians for all categories were almost identical to results from the 2021 survey.
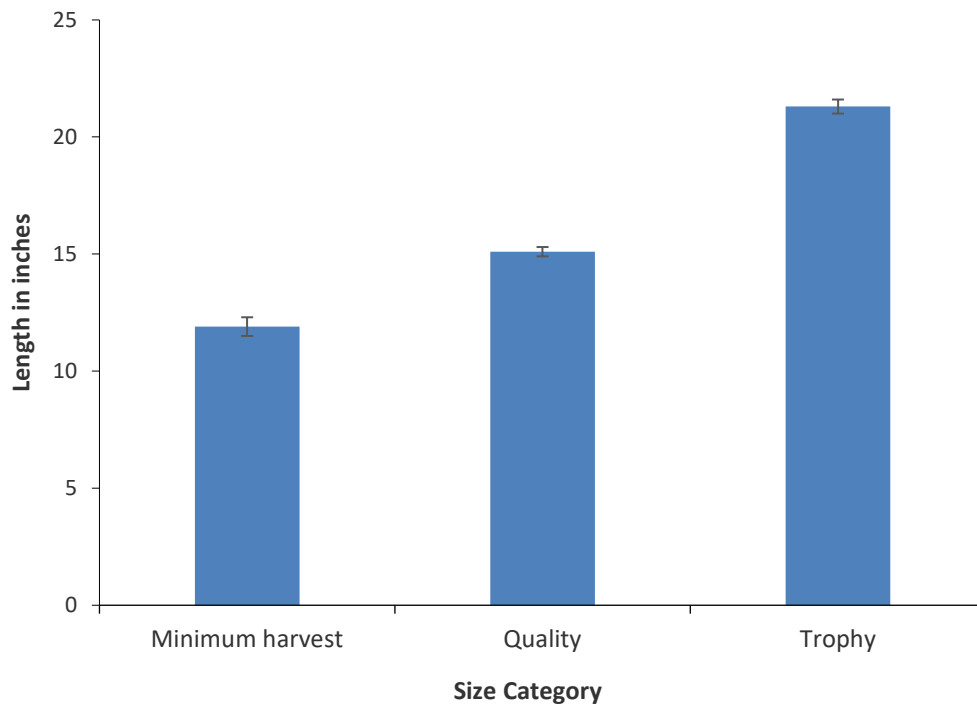
Figure 11. Mean lengths for minimum harvest, quality, and trophy trout categories provided by anglers during the 2021-22 license year.

Question 12. When considering appearance, what is the most important characteristic of a desired trout?

This was a "drag-and-drop" question type where survey participants were asked to arrange trout appearance characters in order of importance. Similar to the 2021 survey results, "Skin and scale condition" and "vibrant color" were the characteristics selected as the most important; whereas, "eyes look normal" and "fin condition" were the least important to anglers (Figure 12). Survey participants were also given the opportunity to provide "other" appearance characteristics. About 13.9% of participants provided "other" appearance characteristics, but no discernable pattern could be determined on a specific characteristic. General "health" related responses were provided 20.2% of the time and was the only consistent characteristic provided.
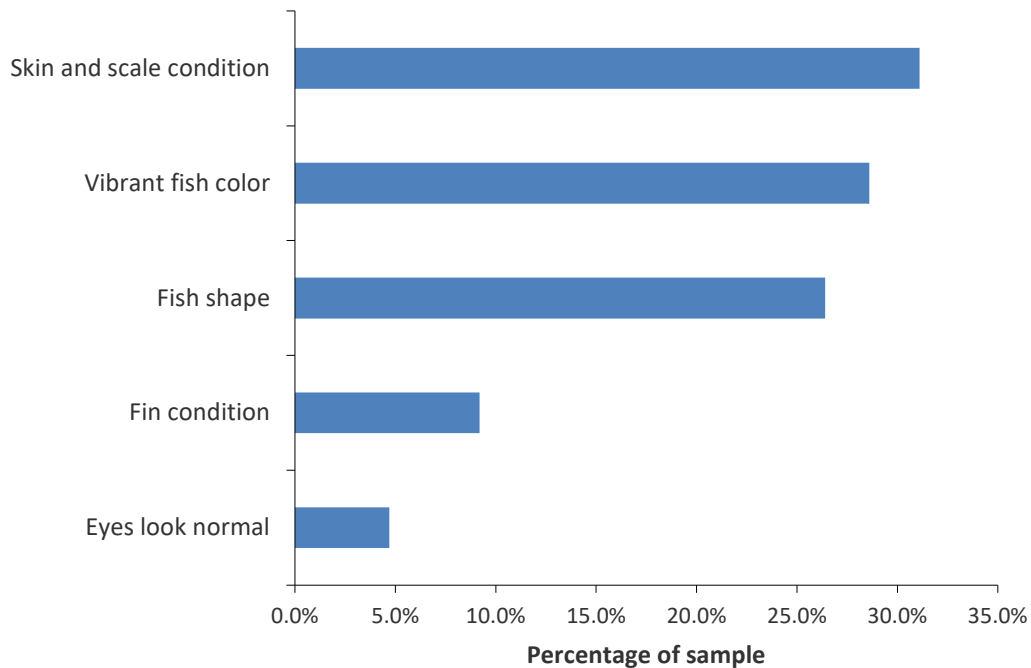
Figure 12. Trout appearance characteristics and percentage of time each was selected as the most important by anglers during the 2021-22 license year.

Question 13. 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 warm water species followed by Walleye, Smallmouth Bass, and catfish (Table 4). Yellow Perch and Spotted Bass continue to be the least popular warm water species.

Table 4. Warm water species in order of preference by anglers during the 2021-22 license year.

Species	Percent preferred[*]
Largemouth bass	52.2%
Walleye	39.2%
Smallmouth bass	35.2%
Catfish	35.0%
White bass	24.3%
Crappie	23.0%
Northern pike	17.5%
Striped bass	15.1%
Bluegill/sunfish	12.8%
Tiger muskie	12.0%
Yellow perch	7.0%
Spotted bass	4.2%

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

Question 14. 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 (69.3%) anglers indicated they prefer to release most of the fish they catch. This question has been included in the survey for multiple years and there's a noticeable increasing trend in the percentage of anglers that prefer to practice catch-and-release (Figure 13).
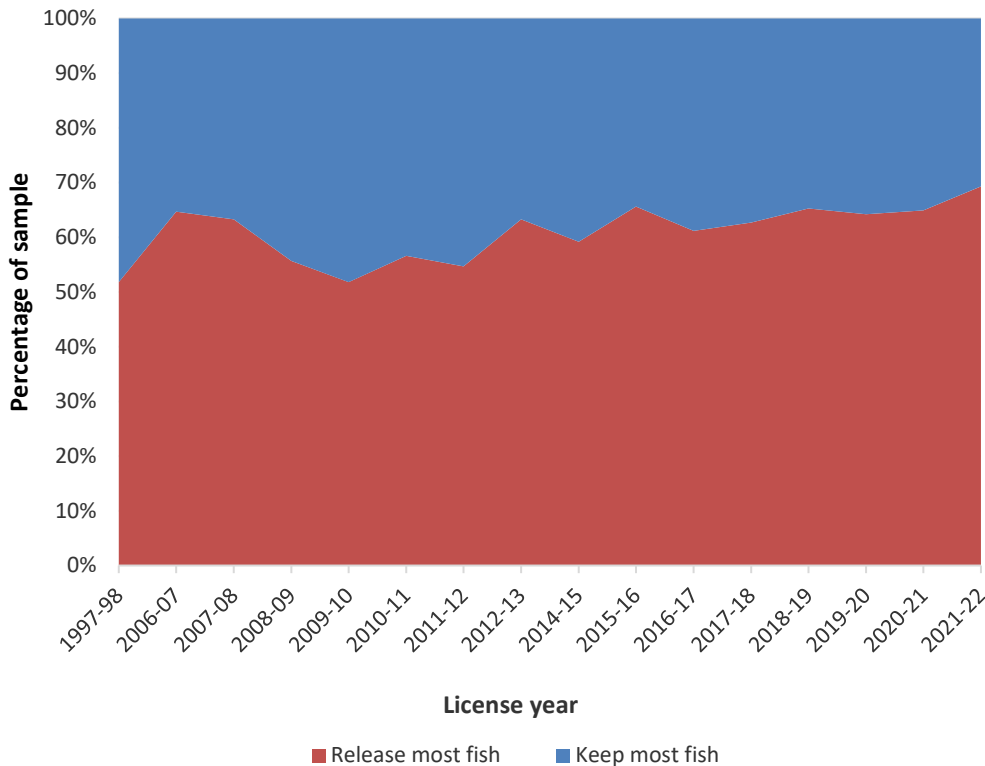

Figure 13. Percentage of anglers that indicated they keep most of the fish they catch versus release most of the fish they catch from 1997-98 to 2021-22 license years.

Question 15. 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 (63.4%) anglers indicated they chose their fishing location based on where they will "catch lots of fish". This percentage increased slightly from the 2020-21 license year, but overall percentages haven't changed significantly since the 2014-15 license year (Figure 14).
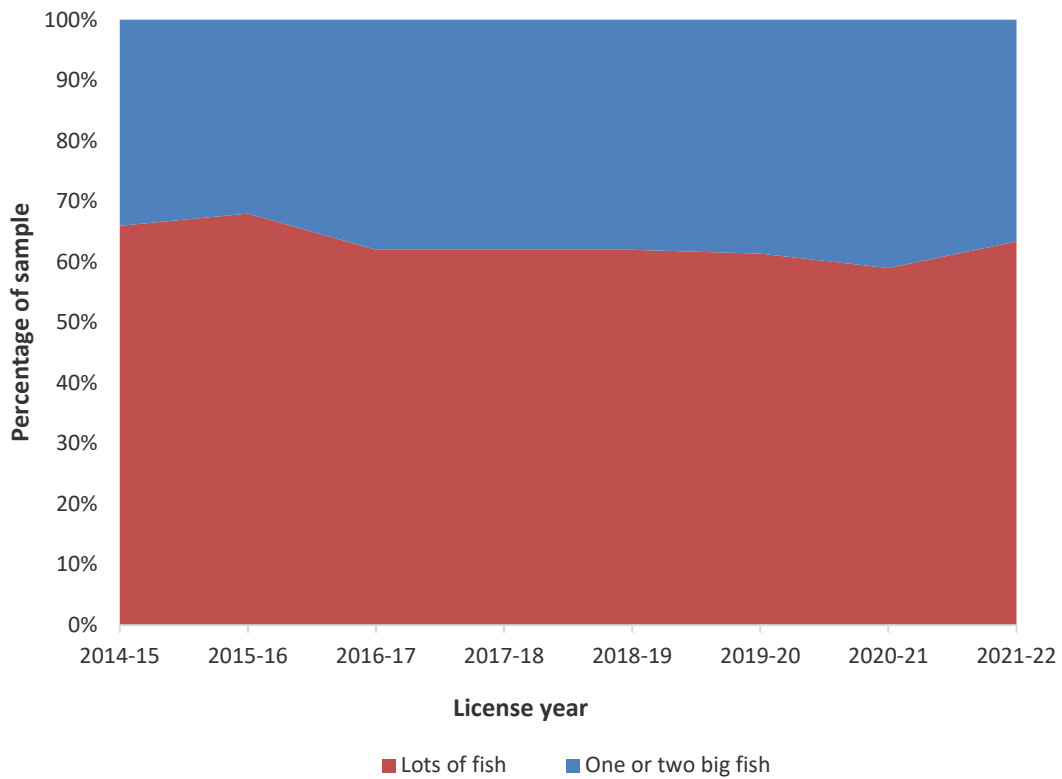
Figure 14. Fishing location chosen by anglers based upon catching "lots of fish" or "one or two large fish" from the 2014-15 to 2021-22 license years.

Question 16. Do you use live bait when fishing?
Most (70.6%) anglers indicated they do not use live bait when fishing. This was a slight increase from the 2020-21 license year, but not significantly different from past years (Figure 15).
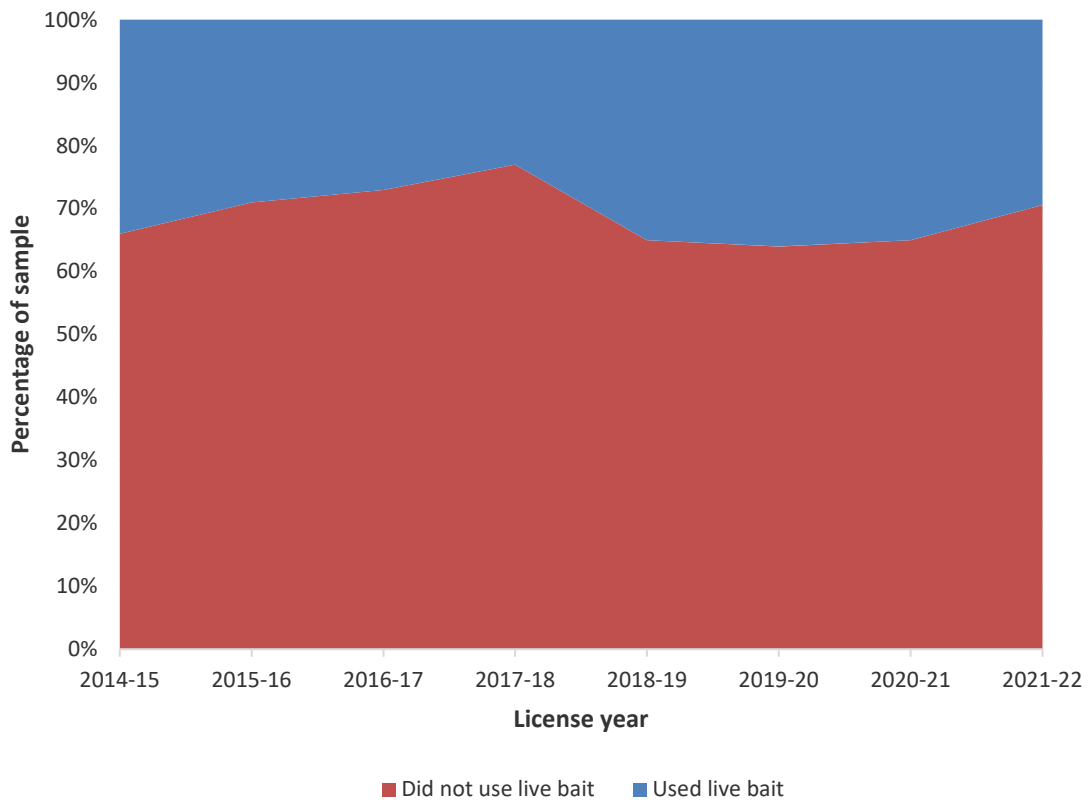
Figure 15. Percentage of anglers that indicated they used live bait versus those that did not use live bait while fishing from the 2014-15 to 2021-22 license years.

Question 17. What types of live bait do you use when fishing?

This was a follow up question to Question 16 for the 29.4% 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. "Water dogs/salamander larvae" continue be the least popular. "Earthworm/night crawler" use hasn't changed significantly in several years, and the other live bait types showed slight increases from the 2020-21 license year (Figure 16).
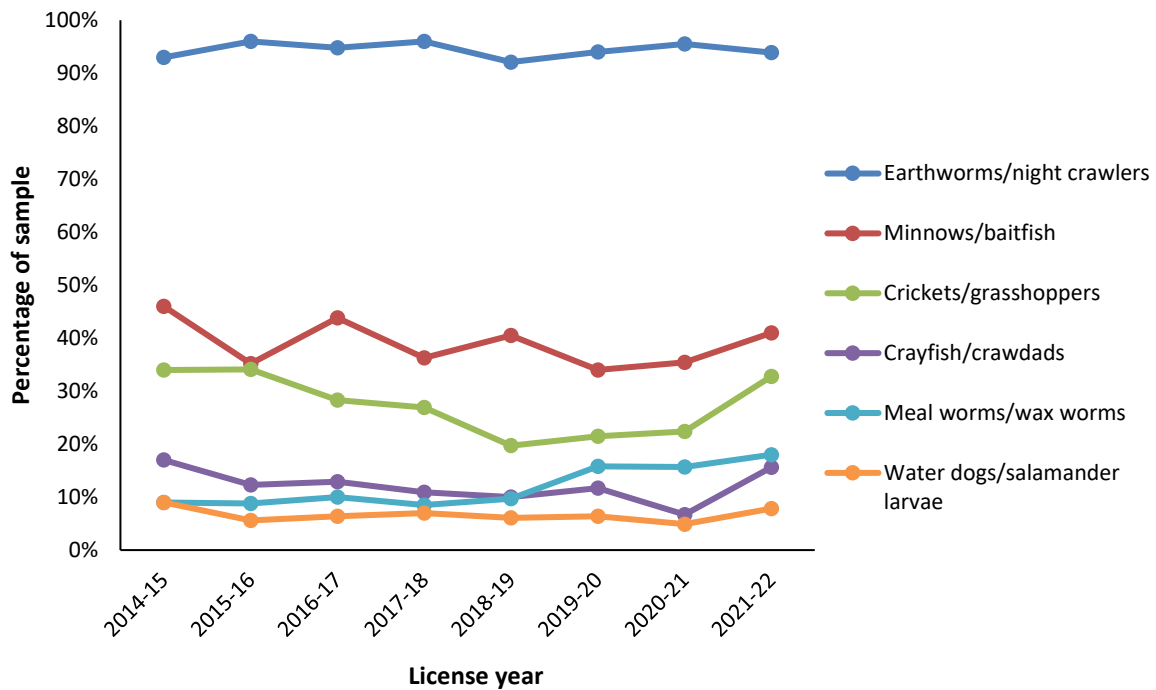
Figure 16. Types and percentage of live bait used by anglers from the 2014-15 to 2021-22 license years. Note: percentages do not equal 100% since this is a multiple response question.

Question 18. In what major river drainage do you use live bait in when fishing?

The Rio Grande drainage continues to receive the most (58.2%) live bait use according to anglers surveyed. The Mimbres River drainage continued to receive the least amount of live bait use (Table 5). There were slight increases of live bait use in the San Juan and Canadian drainages compared to the 2020-21 license year.

Table 5. Live bait use by major river drainage and order of use by anglers during the 2020-21 license year in order of usage.

Major River Drainage	Percent preferred[*]
Rio Grande	58.2%
Pecos	32.0%
San Juan	21.7%
Canadian	20.9%
Gila and San Francisco	13.1%
Mimbres	3.3%

*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 2021-22 license year.

Bait type	Rio Grande	Pecos	Gila and San Francisco	Canadian	San Juan	Mimbres
Earthworms/night crawlers	54.9%	30.3%	12.7%	20.5%	20.5%	2.9%
Meal worms/wax worms	12.3%	7.4%	2.9%	5.3%	4.1%	0.8%
Minnows/baitfish	24.6%	13.5%	5.3%	10.7%	9.8%	2.0%
Water dogs/salamander larvae	5.3%	1.6%	1.2%	0.8%	3.7%	0.8%
Crayfish/crawdads	9.0%	4.5%	3.0%	3.3%	5.3%	1.2%
Crickets/grasshoppers	20.5%	12.7%	0.8%	8.2%	7.8%	1.2%

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

Question 19. Do you fish at Eagle Nest Lake?
This was a new question and asked as part of a focused management effort at Eagle Nest Lake. It was also used to identify Eagle Nest Lake anglers for follow up Question 20. About 19.9% angler indicated they fish at Eagle Nest Lake.

Question 20. What species is most important to you while fishing at Eagle Nest Lake?
This was a follow question for anglers that indicated they fish at Eagle Nest Lake. This question was asked to identify which fish species are the most important to Eagle Nest Lake anglers to guide management efforts and focus. This was a "drag and drop" question where survey participants were asked to arrange fish species in order of importance. Rainbow Trout was the most important species with 65.7% of participants selecting this species first (Figure 17; Table 7). Yellow Perch was selected as the least important with 49.4% of participants selecting this species as last.
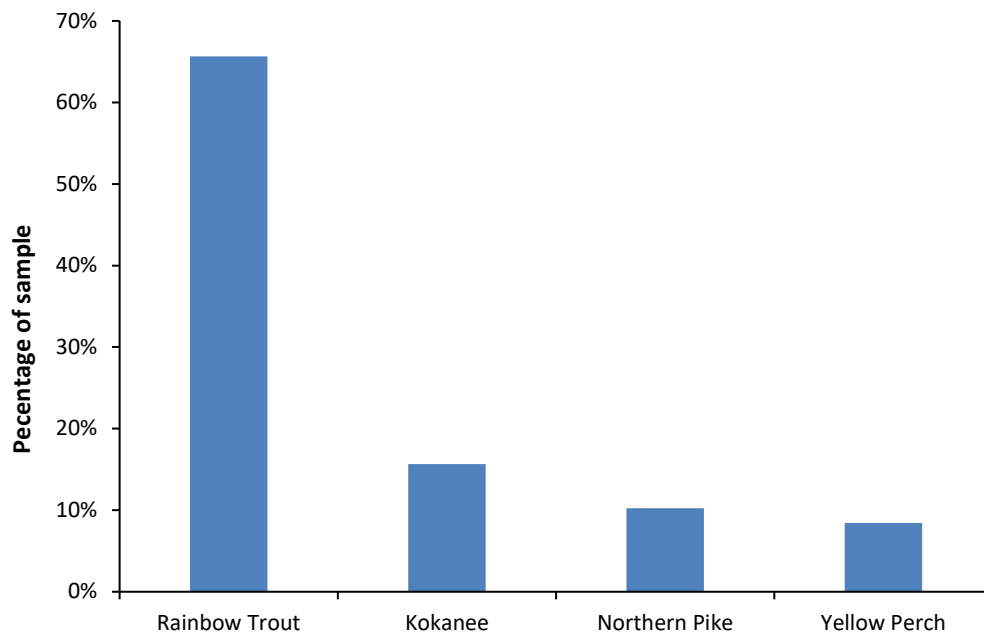

Figure 17. Percentage each fish species was selected as the most important by Eagle Nest Lake anglers during the 2021-22 license year.

Table 7. Eagle Nest Lake species and percentage of time each was selected by ranked order of importance by anglers during the 2021-22 license year. **Bolded** percentages represent highest percentage category for each species.

Species	1st	2nd	3rd	4th
Rainbow Trout	**65.7%**	22.9%	7.8%	3.6%
Kokanee	15.7%	**48.2%**	20.5%	15.7%
Northern Pike	10.2%	18.7%	**39.8%**	31.3%
Yellow Perch	8.4%	10.2%	31.9%	**49.4%**

Questions 21 to 25 were related to demographics and were optional to answer by survey participants.

Question 21. What is your gender?

Most of the survey participants identified themselves as male, representing 86.6% of the sample (Figure 18). Based on 2021-22 license purchasing data about 25.5% of fishing license buyers were female which was similar to the survey invitee pool (25.6%). Similar to past surveys, female license buyers seem to be under represented in the survey as only 11.0% of respondents identify themselves as female.
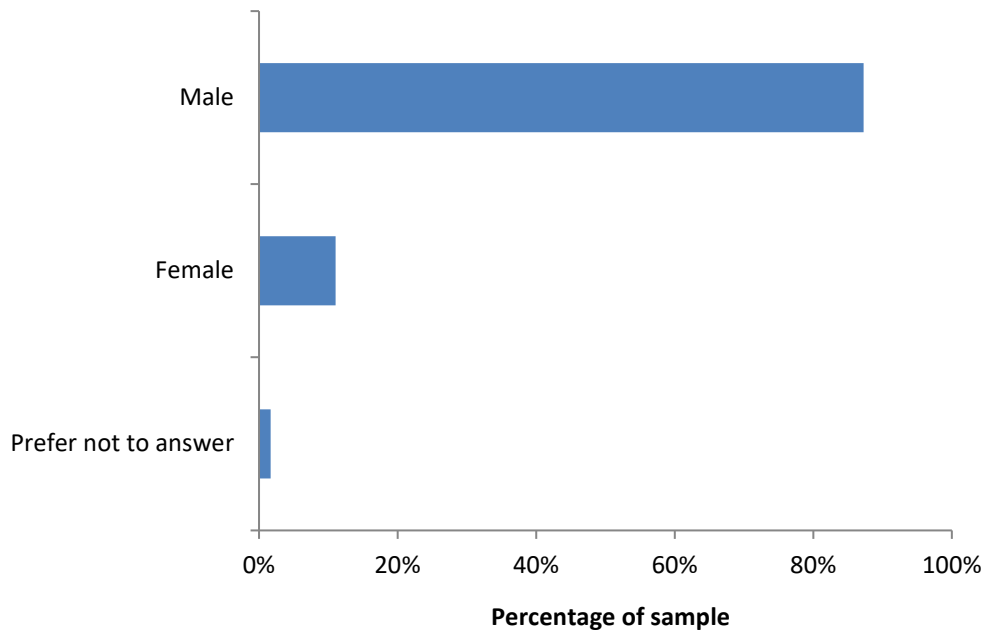

Figure 18. Gender of survey participants by percentage.

Question 22. What is your age category?

The largest age category was 65 years and older, representing 33.9% of the sample, followed by age category 50 to 64 years (Figure 19).
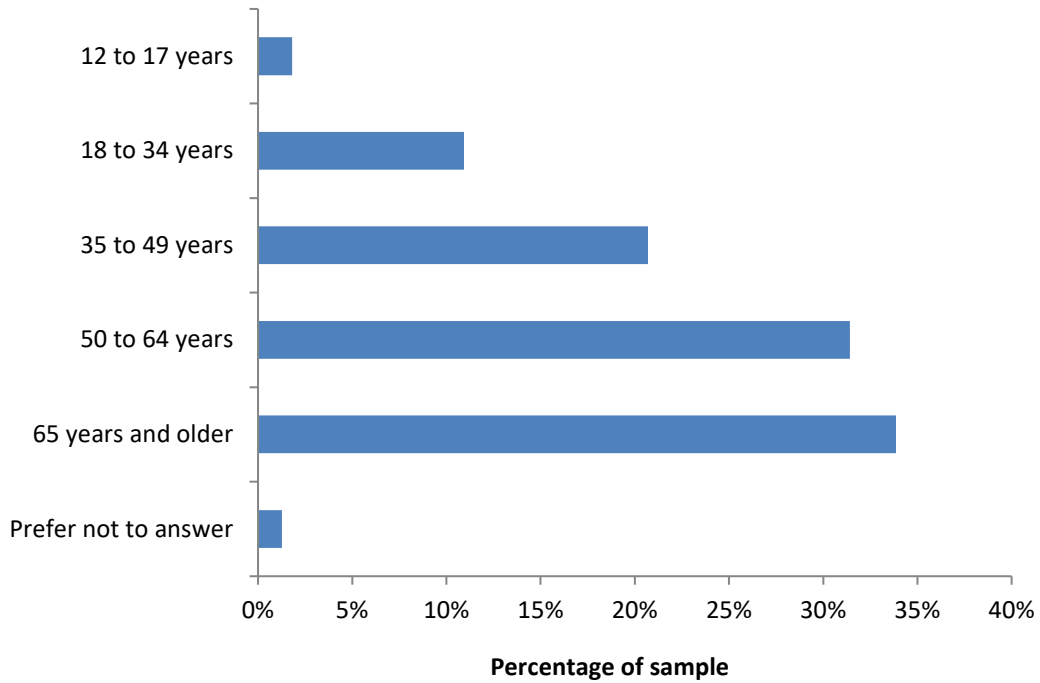
Figure 19. Age categories of survey participants by percentage.

Question 23. Do you consider yourself to be (ethnicity):
Most of the participants consider themselves Anglo/Caucasian representing about 60.2% of the sample (Figure 20).
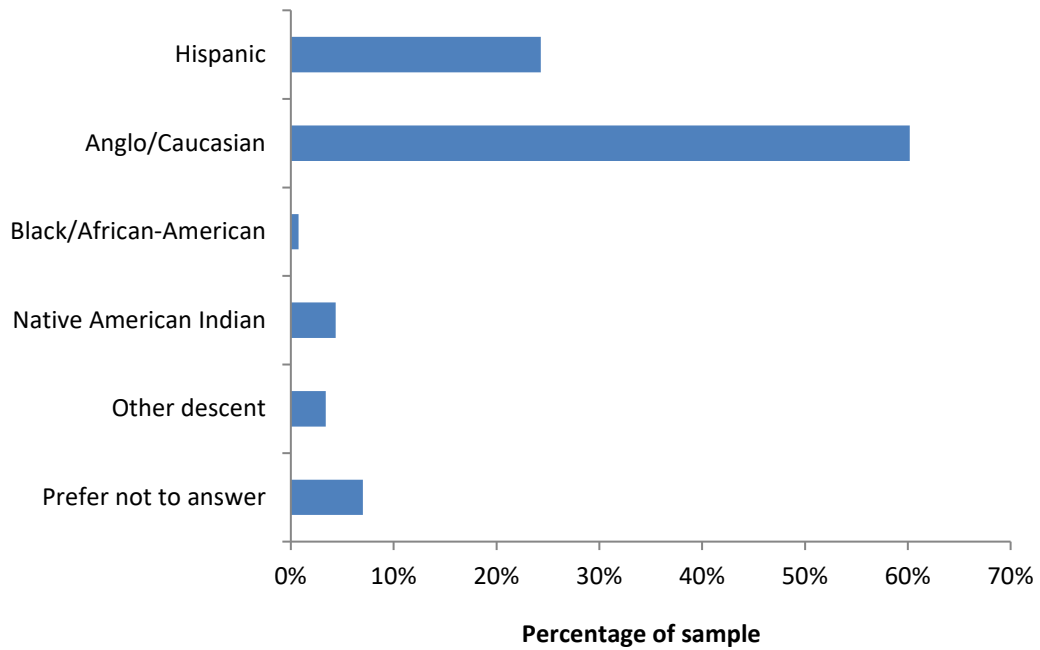

Figure 20. Ethnicity of survey participants by percentage.

Question 24. What is the highest level of education you have had the opportunity to complete?
The largest percentage of participants indicated completing "some college/associates degree/vocational certificate" representing 33.5% of the sample. Participants that indicated "grade school" was the smallest percentage (Figure 21).
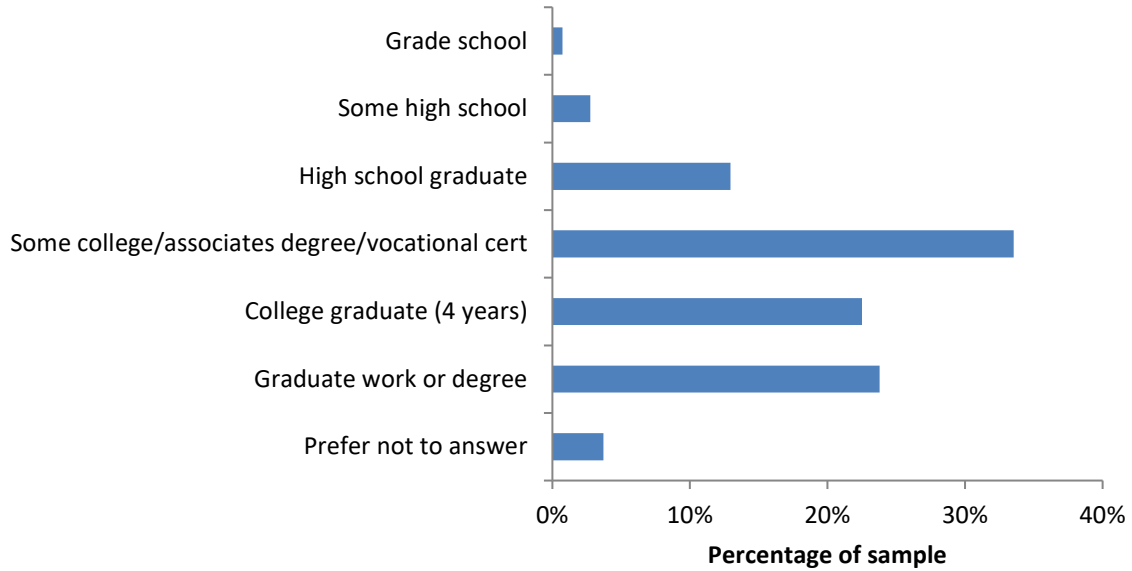

Figure 21. Highest education level of survey participants by percentage.

Question 25. What is the zip code of your residence?
Survey participants represented 342 different zip codes and 29 different states (Figure 22). One hundred sixty-two of the 365 (44.4%) New Mexico zip codes were represented.
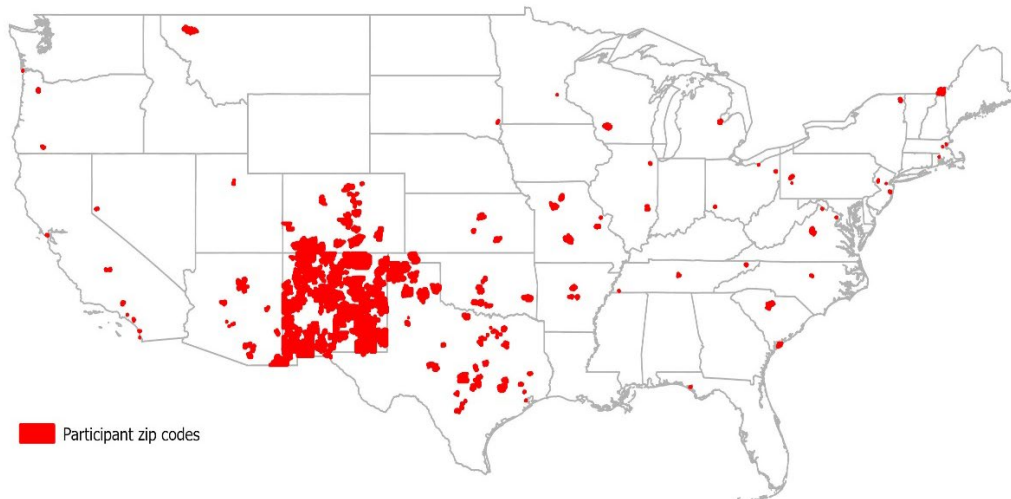

Figure 22. Location of survey participants based upon zip code. Note: Alaska and Hawaii not displayed since there were no survey participants from these states.