# New Mexico Angler Satisfaction Report
# 2019-2020 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 2020 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 7 to May 31, 2020 ($n_{days}$=55). An email invitation was sent to 10,000 anglers that purchased a fishing license in the 2019-20 license year (April 1, 2019 to March 31, 2020). During the 2019-20 license year 269,287 fishing licenses were sold, but only 137,241 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 71.2% resident anglers and 28.8% non-resident anglers which is consistent with percentages sold during the 2019-20 license year.

Table 1.  Fishing license types showing percentage of total sold in the 2019-20 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 | 13.6% | 313 | 1,052 |
| Five Day Fishing | 11.2% | 27 | 1,098 |
| Annual Fishing | 37.0% | 3,147 | 554 |
| Disabled Vet Hunting and Fishing | 0.8% | 75 | n/a |
| Game Hunting and Fishing | 16.4% | 1,636 | n/a |
| Handicapped Fishing | 1.4% | 137 | n/a |
| Handicapped Hunting and Fishing | 0.4% | 42 | n/a |
| Junior Fishing | 7.4% | 561 | 175 |
| Junior Hunting and Fishing | 1.9% | 190 | n/a |
| Senior 70 and Over Fishing | 6.0% | 599 | n/a |
| Senior Fishing | 2.8% | 278 | n/a |
| Senior Hunting and Fishing | 1.2% | 116 | n/a |
| **Totals** | **100%** | **7,120** | **2,880** |

The survey included 26 questions (21 fishing and 5 demographic related) most of which have been included in past surveys.  Six new questions were added related to fishing regulations and the New Mexico Rules and Information booklet.  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 849 licensed anglers resulting in an overall 8.5% response rate.  Residents and non-residents demonstrated similar response rates with 8.4% and 8.6%, respectively.  About 57.2% 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 6 minutes 5 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.  Of the 849 anglers 9.8% indicated that they did not fish during the past 12 months.  This is a slight decrease from the 2018-19 license year (Figure 1).
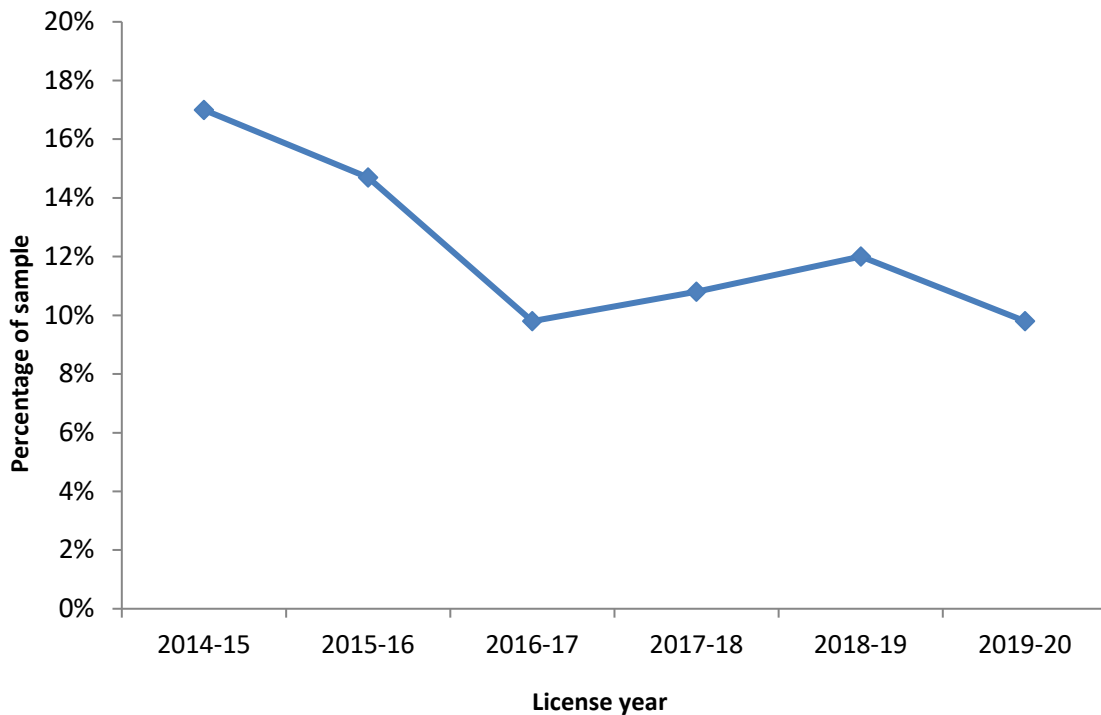
Figure 1. Percentage of licensed anglers that reported they did not fish during the 2014-15 to 2019-20 license years.

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

When only including the anglers that indicated they fished during the past 12 months (*n*=766) results showed a wide range of days fished from 1 to 300 with a mean of 17.2 (±1.2) days and a median of 10 days. If including anglers that fished zero days the mean was 15.6 (±1.1) days and the median was 7 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 (72.0%) non-resident anglers fished 5 days or less; whereas most (63.2%) resident anglers fished 6 days or more.
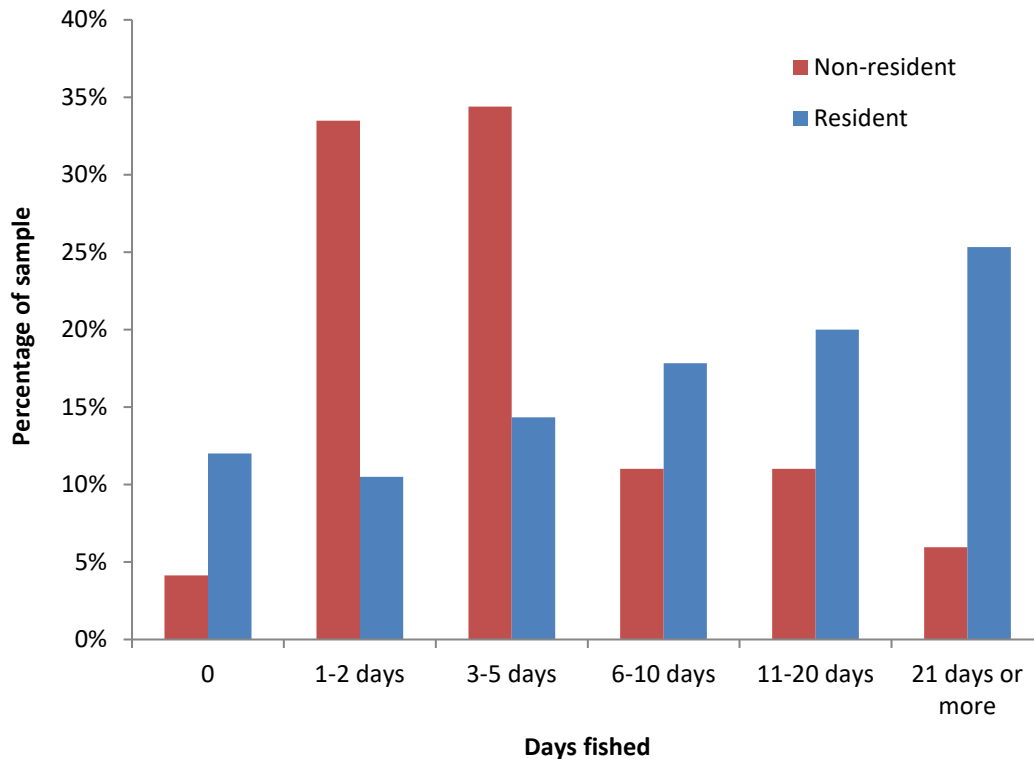
Figure 2. Number of days fished during the 2019-20 license year separated into resident and non-resident license types.

**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 (92.8%) anglers indicated being neutral to satisfied with their fishing experience giving a rating of 3, 4, or 5; where as 7.2% indicated being dissatisfied giving a rating of 1 or 2. About 71.4% of anglers indicated they are satisfied giving a rating of 4 or 5. This was the highest satisfaction rate detected since anglers have been surveyed and continued an overall increasing trend since the 2001-02 license year (Figure 3). Conversely, the dissatisfaction rate was the lowest since anglers have been surveyed and continues a decreasing trend since the 2012-13 license year. Non-residents continue to be more satisfied. About 87.6% of non-resident anglers gave a rating of 4 or 5; whereas only 65.7% of resident anglers gave the same rating. Also, dissatisfaction rate for non-resident and resident anglers was 2.9% and 8.3%, respectively (Figure 4).
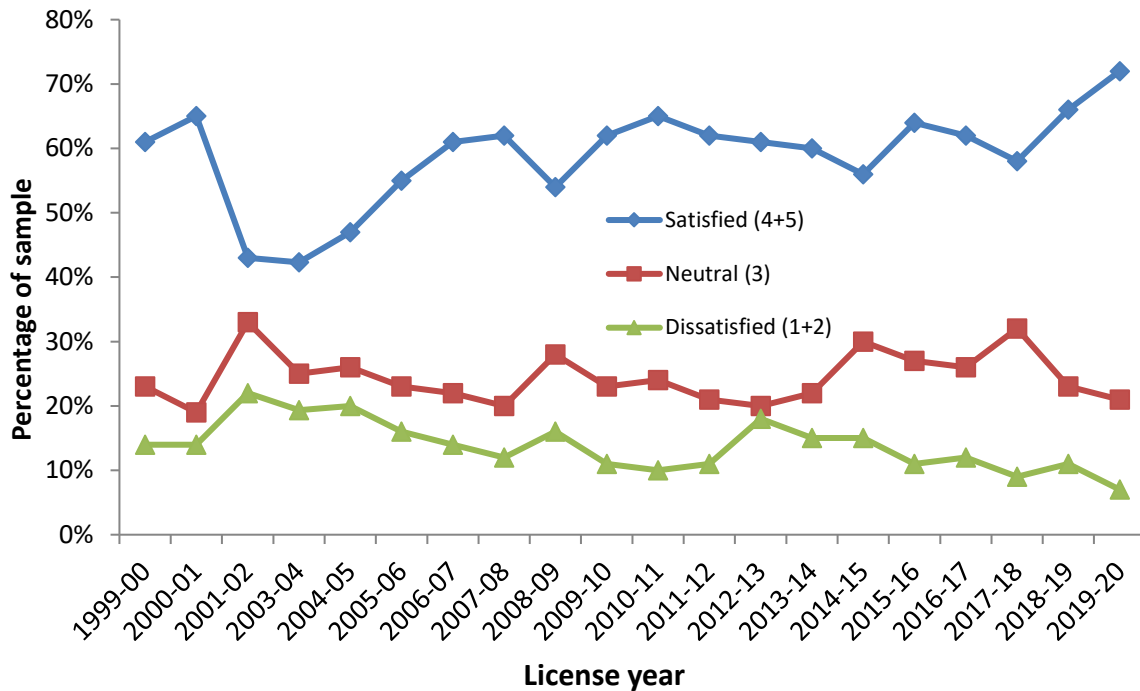
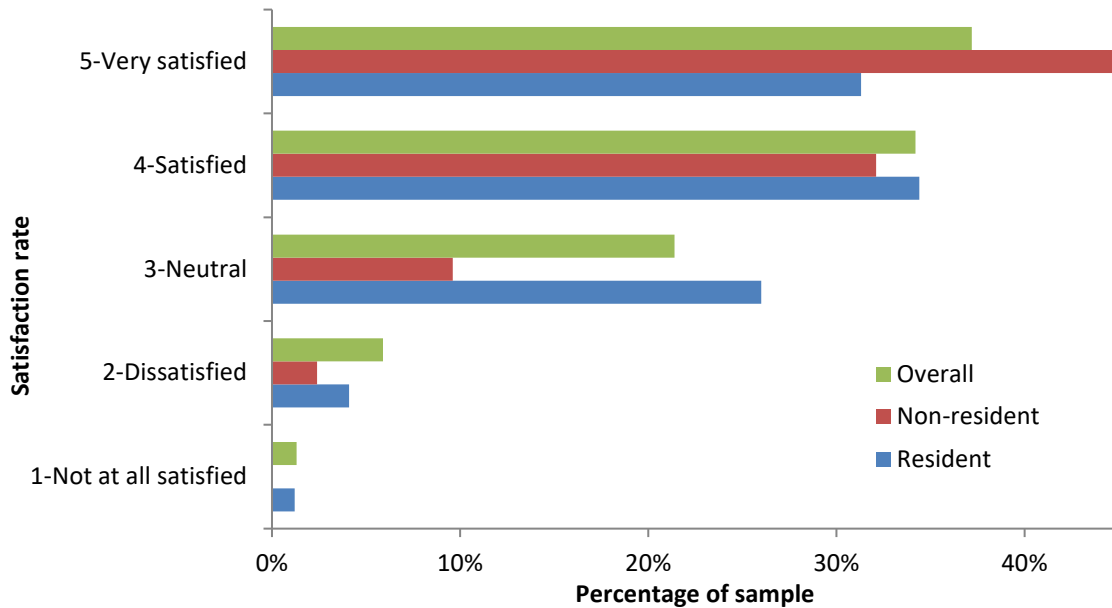Figure 3.  Overall satisfaction rating of anglers surveyed from the 1999-00 to 2019-20 license years.



Figure 4.  Satisfaction rate of resident and non-resident anglers during the 2019-20 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 81.2% 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 23 categories.   "Poor catch rates" was the primary reason 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 2019-20 license year.  Note: Sum of all categories equals 100%.

| Reason for satisfaction rating | Dissatisfied (1-2) | Rating Neutral (3) | Satisfied (4-5) |
|---|---|---|---|
| Good catch rates | | 0.3% | 18.4% |
| Poor Catch rates | 3.6% | 7.1% | 4.2% |
| Large fish caught | | | 1.2% |
| Fish too small | 0.1% | 1.2% | 0.6% |
| Good water levels, conditions, flow | | | 2.6% |
| Poor water levels, conditions, flow | 0.4% | 1.6% | 1.5% |
| Too crowded | 0.7% | 0.9% | 1.3% |
| Good opportunity or access | | 0.1% | 4.6% |
| Poor opportunity or access | 1.3% | 1.9% | 2.0% |
| Facilities good or clean | | | 2.0% |
| Facilities poor or trashy | | 1.2% | 0.7% |
| Good stocking | | | 4.2% |
| Poor stocking | 0.6% | 2.8% | |
| Regulations good/enforcement adequate | 0.1% | 0.4% | 0.6% |
| Regulations poor/not enough enforcement | | | 0.1% |
| Beautiful location | | | 4.4% |
| Enjoyable experience/just like to fish | | 0.3% | 11.3% |
| Weather | 0.1% | | 0.6% |
| Good fisheries management | | | 0.8% |
| Poor fisheries management | 0.2% | 1.6% | 0.4% |
| Invasive/unwanted fish species | | | 0.1% |
| Others not following rules | 0.1% | 0.7% | 0.1% |
| Other | 0.3% | 2.8% | |

**Question 5. In general, are the New Mexico fishing rules and regulations easy to understand?**
Anglers were asked to rate how easy the New Mexico fishing rules and regulations are to understand on a Likert scale of 1 to 5.  Only 3.0% of survey participants felt fishing rules and regulations were confusing giving a rating of 1 or 2.  It appears most (89.9%) anglers felt fishing rules and regulations are easy to understand giving a rating of 4 or 5 (Figure 5).
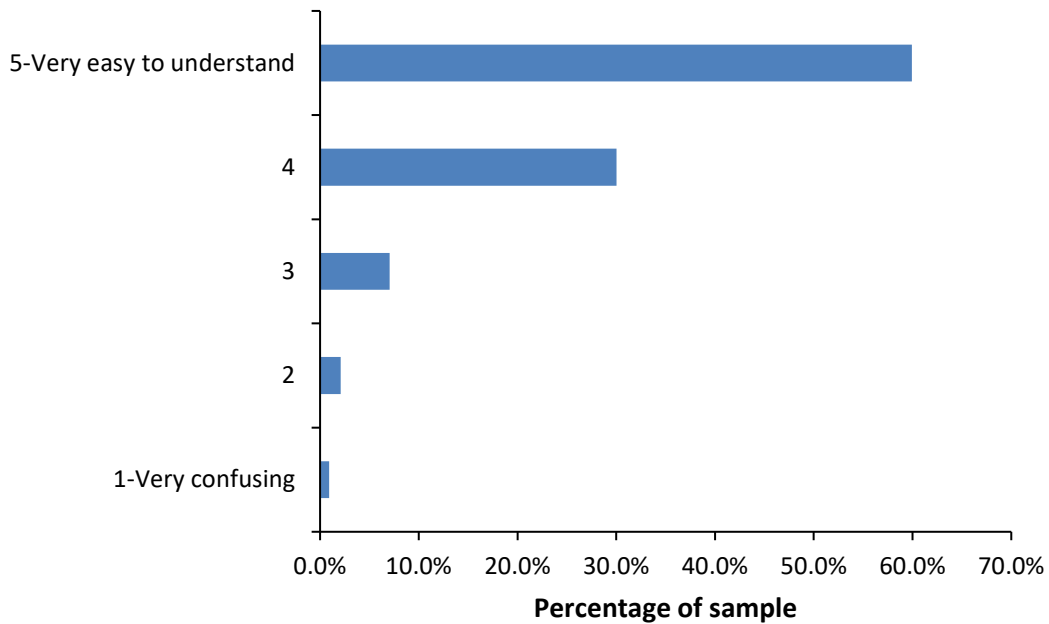
Figure 5. Percentage of Likert scale ratings on how easy anglers felt the New Mexico fishing rules and regulations were to understand.

**Question 6. Please provide suggestions on how to make the fishing rules and regulations easier to understand:**

This was a follow up question for anglers that indicated a rating of 1, 2, or 3 on Question 5. It was an open-ended question and respondent could provide any response. About 67.5% of participants provided a variety of suggestions to make fishing rules and regulations easier to understand, but most could be categorized into eight general themes (Table 3). "Presenting the rules better and more clarification" and "simplifying the rules" were the most suggested themes.

Table 3. Categorized suggestions to make New Mexico fishing rules and regulations easier to understand and percentage of frequency.

| Suggestion themes | Percentage |
|---|---|
| Present rules better and more clarification | 35.4% |
| Simplify rules | 25.0% |
| Better access to rule information | 8.3% |
| More posted signs | 6.3% |
| Combine license types and stamps | 4.2% |
| More enforcement | 2.1% |
| Less enforcement | 2.1% |
| Other | 16.7% |

**Question 7. Do you typically use the New Mexico Fishing Rules and Information Booklet (proclamation) to access information on fishing rules, bag limits, and seasons?**

Most (76.9%) of anglers indicated they typically use the New Mexico Fishing Rules and Information Booklet.

**Question 8. What version of the New Mexico Fishing Rules and Information Booklet do you use most of the time?**

This was a follow up question for anglers that indicated they typically use the New Mexico Rules and Information Booklet. Most (61.8%) anglers indicated they use the printed version of the booklet, and 38.2% of anglers indicated they use the electronic version from the New Mexico Department of Game and Fish's website.

**Question 9. Please share your opinion(s) about the New Mexico Fishing Rules and Information Booklet:**

This was another follow up question for anglers that indicated they typically use the New Mexico Fishing Rules and Information Booklet and was asked to get understanding of angler's opinions on the effectiveness of the booklet. This was a multiple-choice question and anglers were allowed to choose multiple answers. It appears most anglers felt the booklet provides enough information and is easy to understand (Figure 6).
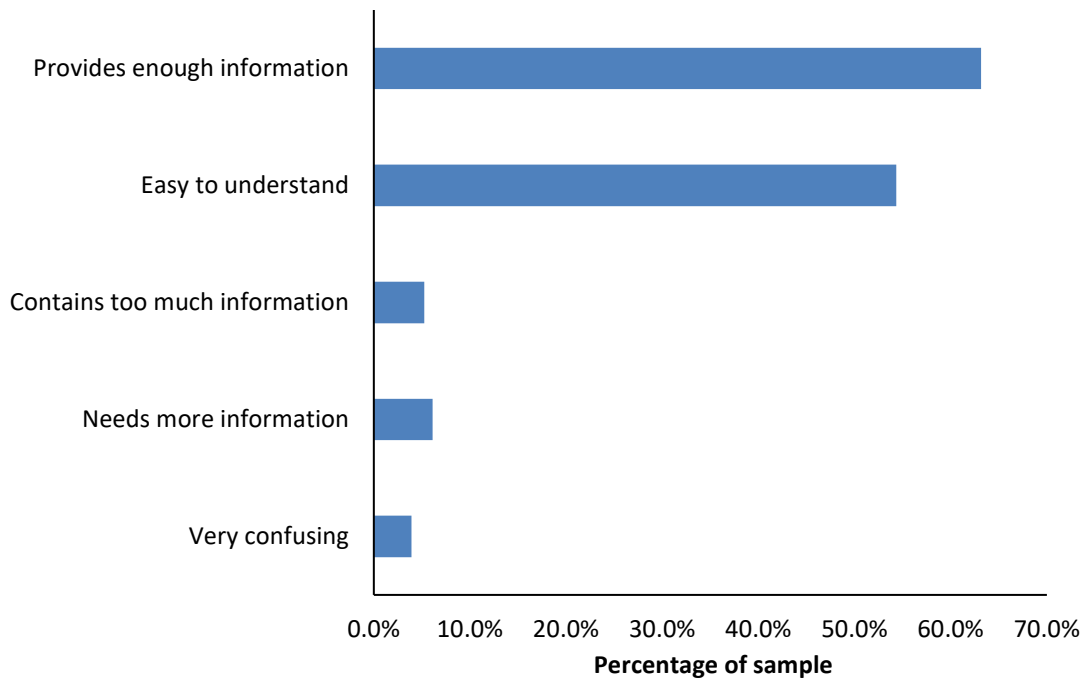


Figure 6. Anglers opinions on the New Mexico Rules and Information Booklet. Percentages do not sum 100% since this was a multiple response question.

**Question 10. Please provide suggestions on how to make the New Mexico Fishing Rules and Information Booklet better:**

This was another follow up question for anglers that indicated they typically use the New Mexico Fishing Rules and Information Booklet and asked to gather suggestion for the Department to consider for improving the booklet. Less than half of the anglers provided suggestions. Various suggestions were provided, but most of the suggestions could be categorized into eleven different

themes (Table 4). Surprisingly the largest percentage of anglers (40.1%) stated the booklet was "fine as is".

Table 4. Categorized suggestions to make the New Mexico Fishing Rules and Information Booklet better and percentage of frequency.

| Suggestion themes | Percentage |
|---|---|
| Fine as is | 40.1% |
| More clarification/simplify language | 12.3% |
| Reduce volume | 7.5% |
| Make availability/distribution better | 6.2% |
| Better map needed | 4.4% |
| Make rules portion standout better | 4.4% |
| Better general format needed | 4.0% |
| More information needed/increase volume | 4.0% |
| Format by waters or region | 2.6% |
| Increase font size | 1.8% |
| Other | 11.9% |

**Question 11. Where do you typically access information on New Mexico fishing rules, bag limits, and seasons most of the time?**

This was a follow up question for anglers indicating they do not typically use the New Mexico Fishing Rules and Information Booklet and was asked to determine other sources anglers are using to acquire information on fishing rules and regulations. "Fishing information websites" was the source indicated the most by anglers followed by "previous knowledge and experience" (Figure 7).
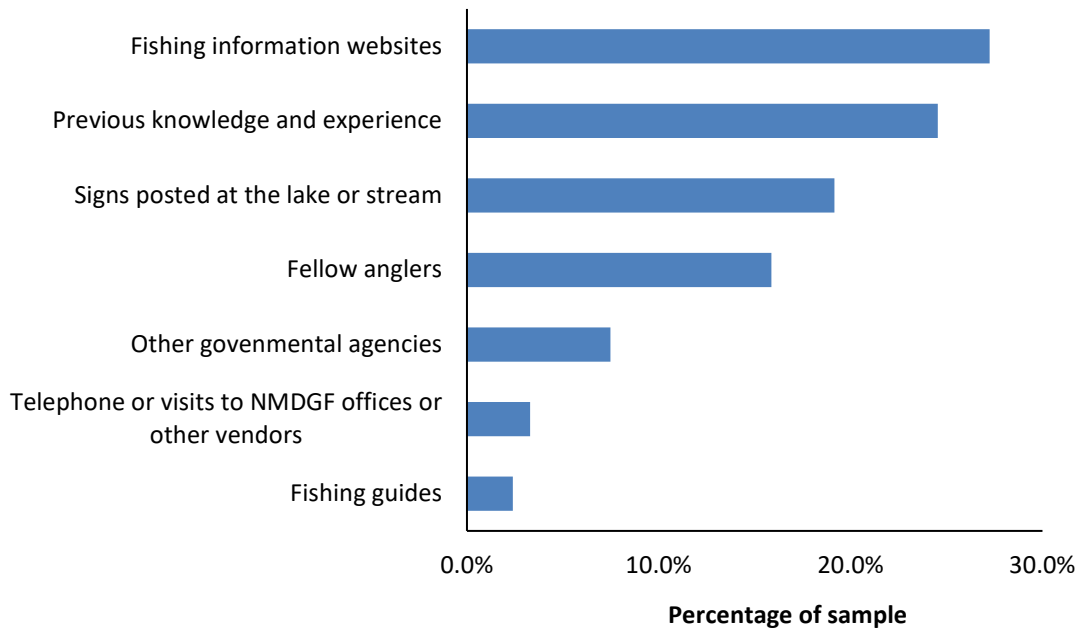
Figure 7. Sources, other than the New Mexico Rules and Information Booklet, anglers are accessing information on fishing rules and regulations by percentage of frequency.

**Question 12. 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 (49.5%) indicated they preferred to fish for "cold water" species such as trout and salmon. About 38.4% 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 8). When combining anglers that indicated they preferred to fish for "cold water" species and "both" it appears that 87.9% of anglers fish for cold water species compared to 50.5% for warm water species. These percentages are near identical to previous license years.
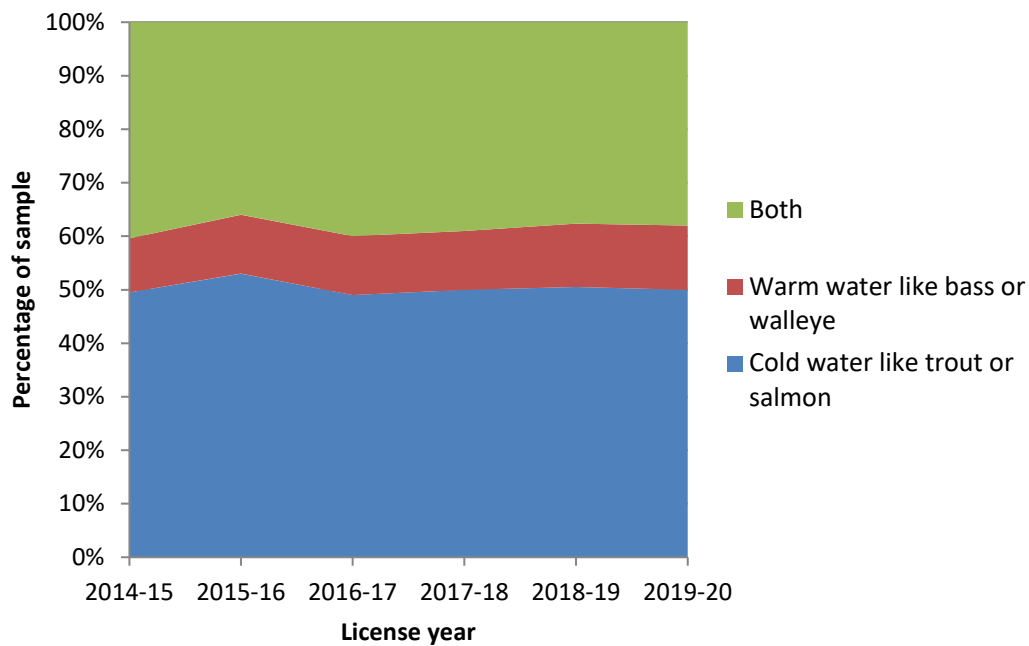
Figure 8. Fishing preference to fish for "cold water", "warm water", or "both" species of surveyed anglers during from the 2014-15 to 2019-20 license years. Note: data from web-based surveys.

**Question 13. 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 5). The increasing trend of anglers that indicated they prefer fishing for Gila trout continued in 2019-20 (Figure 9). Overall the other percentages and order of preference were similar to past surveys.

Table 5. Cold water species in order of preference by anglers during the 2018-19 license year.

| Species | Percent preferred* |
|---|---|
| Rainbow trout | 88.7% |
| Brown trout | 67.0% |
| Cutthroat trout | 36.7% |
| Brook trout | 21.2% |
| Lake trout | 19.3% |
| Kokanee salmon | 16.0% |
| Gila trout | 9.4% |

*Percentages do not sum 100% since this is a multiple response question
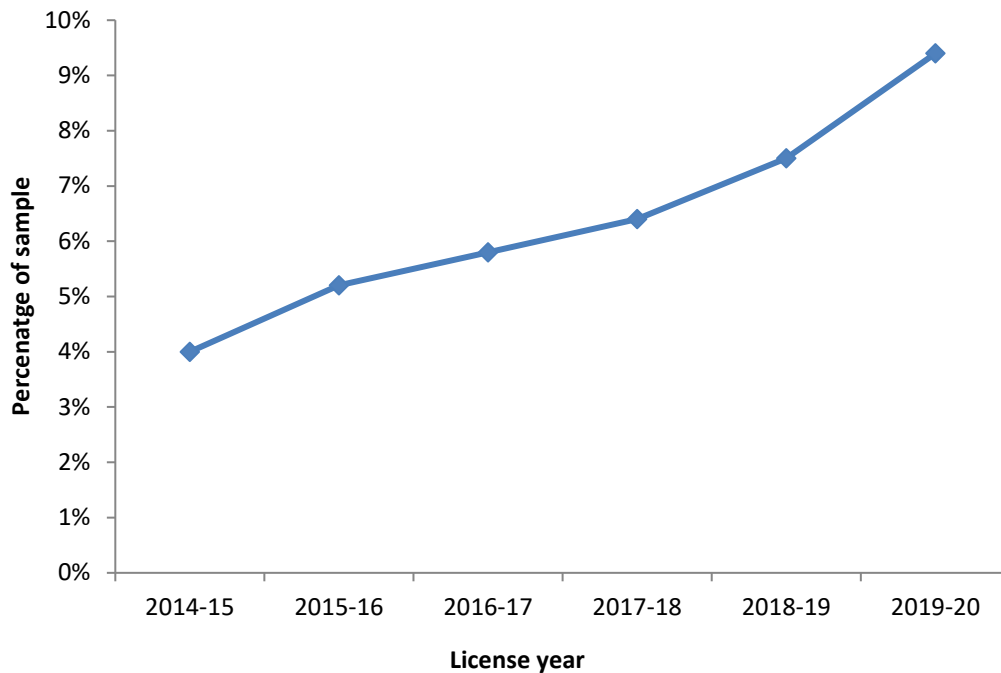
Figure 9.  Percentage of anglers indicating preference for Gila trout from the 2014-15 to 2019-20 license years.

**Question 14. 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 (55.7%) was higher than those indicating they chose their fishing location where they expect to catch stocked fish (44.3%).  The percentage of anglers that indicated they chose their fishing location where they expect to catch wild fish increased slightly from previous years in 2019-20 license year (Figure 10).
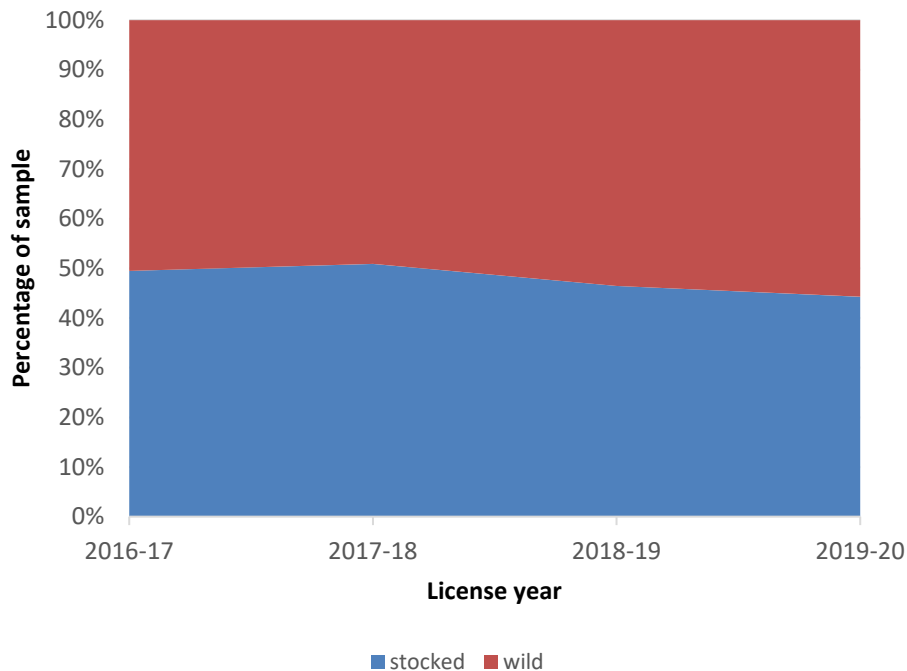
Figure 10. Percentage of cold water anglers that indicated they chose their fishing location where they expect to catch wild fish versus stocked fish from the 2016-17 to 2019-20 license years. Note: data from web-based surveys.

**Question 15. 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 catfish, walleye, and smallmouth bass. Yellow perch and spotted bass continue to be the least popular warm water species (Table 6).

Table 6. Warm water species in order of preference by anglers during the 2019-20 license year.

| Species | Percent preferred[*] |
|---|---|
| Largemouth bass | 54.5% |
| Catfish | 38.0% |
| Walleye | 34.9% |
| Smallmouth bass | 34.9% |
| Crappie | 23.5% |
| White bass | 21.7% |
| Northern pike | 15.0% |
| Striped bass | 13.7% |
| Tiger muskie | 11.9% |
| Bluegill/sunfish | 9.3% |
| Spotted bass | 8.3% |
| Yellow perch | 5.7% |

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

**Question 16.  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 (64.2%) anglers indicated they prefer to release most of the fish they catch.  This is similar to the 2018-19 survey results, but a there's an increasing trend of anglers that release most of the fish they catch since the 2008-09 license year (Figure 11).
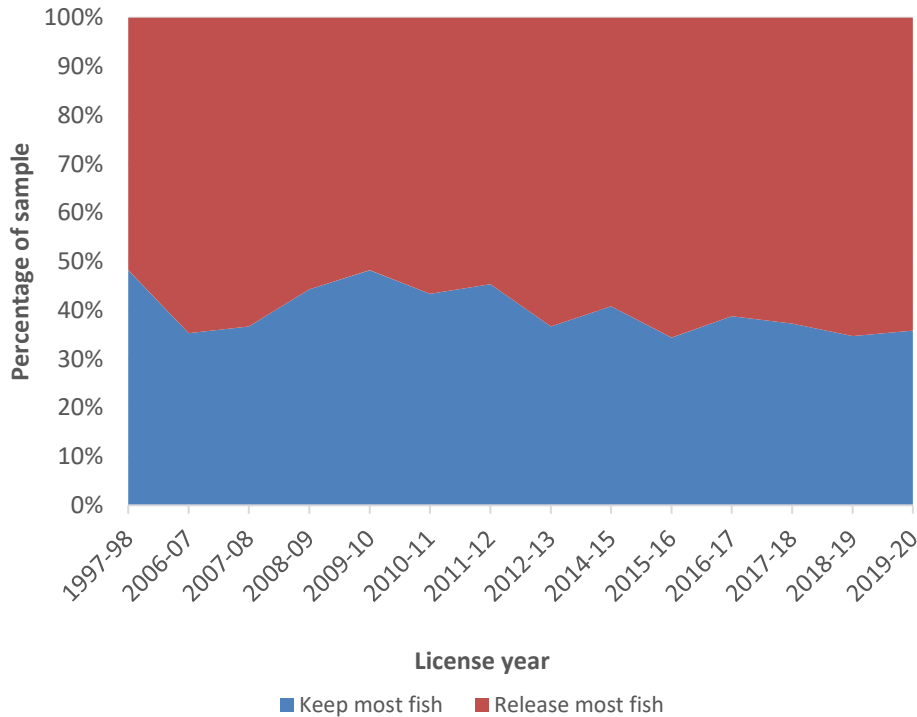


Figure 11.  Percentage of anglers that indicated they keep most of the fish they catch versus release most of the fish they catch from 1997-98 to 2019-20 license years.

**Question 17.  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 (64.2%) anglers indicated they chose their fishing location based on where they will "catch lots of fish" (Figure 12).  This is similar to past surveys with only a slight increase in the percentage of anglers that indicated they chose their fishing location based on where they will "catch lots of fish" compared to last year's survey.
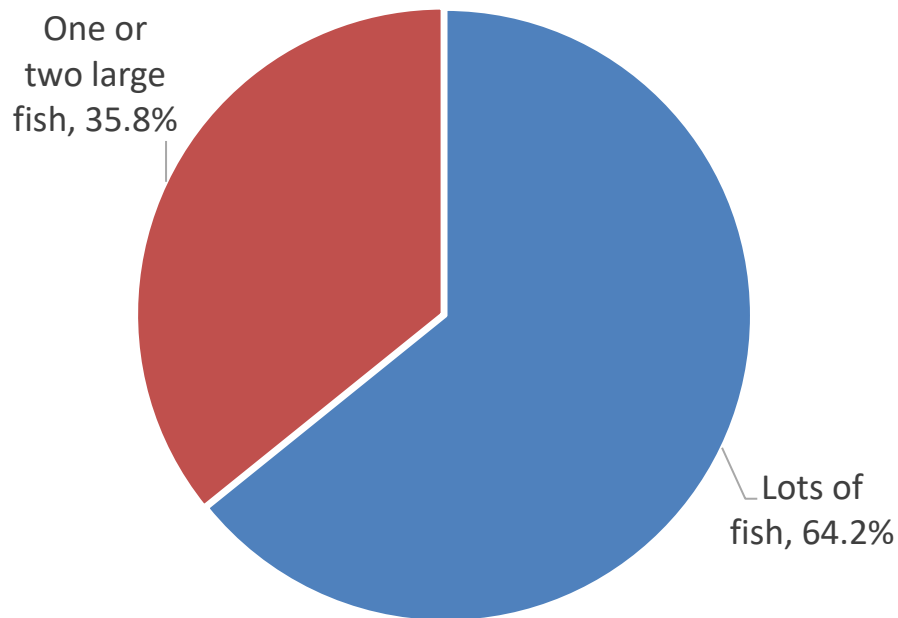
Figure 12. Fishing location preference by anglers based upon "catching lots of fish" or "catching one or two large fish" during 2019-20 license year.

**Question 18. What type of tackle do you use most of the time while fishing?**
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 (65.0%) indicated they use spin fishing tackle compared to fly fishing tackle. About 33.3% of the anglers indicated they use bait while spin fishing which suggest most anglers use artificial flies or lures while fishing.

**Question 19. Do you use live bait when fishing?**
Most (65.4%) anglers indicated they do not use live bait when fishing, and this was similar to past years' surveys.

**Question 20. What types of live bait do you use when fishing?**
This was a follow up question to Question 19 for the 34.6% 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 (Figure 13).
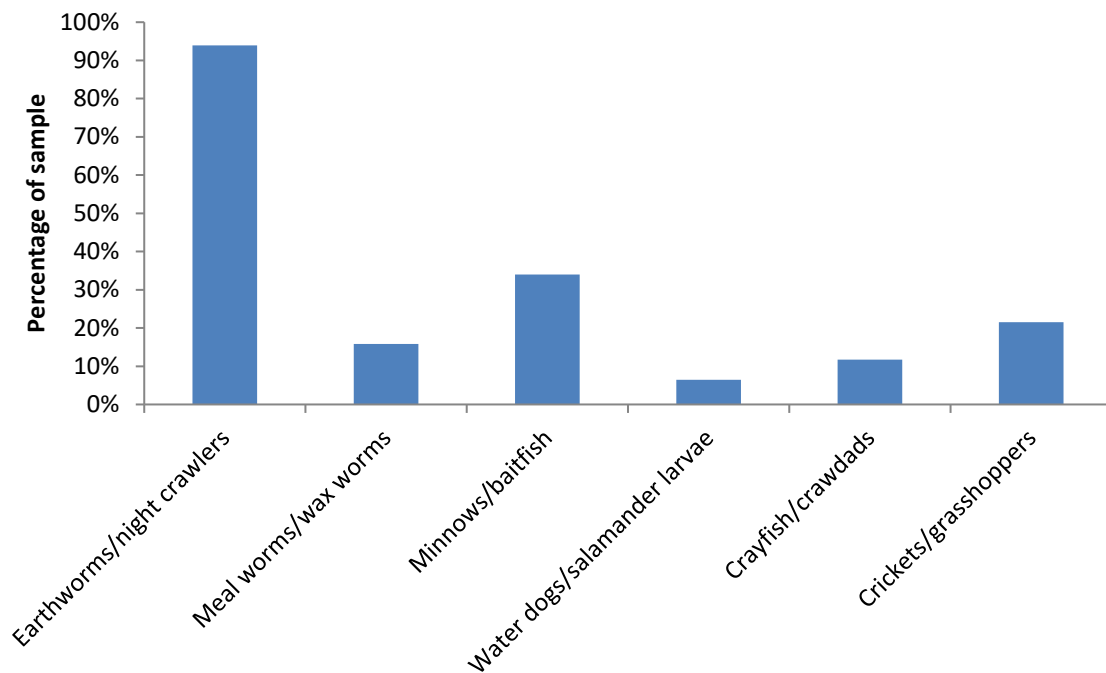
Figure 13. Types and percentage of live bait used by anglers during the 2019-20 license year. Note: percentages do not equal 100% since this is a multiple response question.

**Question 21. 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 (55.8%) according to anglers surveyed. The Mimbres and Gila/San Francisco river drainages continued to receive the least amount of live bait use (Table 7). There were slight differences from the 2018-19 license year but overall changes were not significant.

Table 7. Live bait use by major river drainage and order of use by anglers during the 2019-20 license year in order of usage.

| Major River Drainage | Percent preferred[*] |
|---|---|
| Rio Grande | 55.8% |
| Pecos | 24.2% |
| Canadian | 21.1% |
| San Juan | 16.6% |
| Gila and San Francisco | 10.6% |
| Mimbres | 3.8% |

*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 8).

Table 8. Types of live bait and percentage[*] of reported use by anglers in major river drainages during the 2019-20 license year.

| Bait type | Rio Grande | Pecos | Gila and San Francisco | Canadian | San Juan | Mimbres |
|---|---|---|---|---|---|---|
| Earthworms/Night crawlers | 51.7% | 23.8% | 10.2% | 18.9% | 15.8% | 3.8% |
| Meal worms/wax worms | 9.4% | 3.8% | 3.4% | 1.5% | 3.8% | 0.4% |
| Minnows/baitfish | 18.9% | 6.8% | 2.3% | 8.7% | 4.2% | 0.4% |
| Water dogs/salamander larvae | 4.2% | 1.5% | 0.0% | 0.8% | 1.5% | 0.8% |
| Crayfish/crawdads | 6.8% | 2.3% | 1.1% | 3.8% | 1.5% | 0.8% |
| Crickets/grasshoppers | 12.1% | 6.8% | 3.4% | 3.8% | 3.8% | 0.8% |

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

Questions 22 to 26 were related to demographics and were optional to answer by survey participants.

**Question 22.  What is your gender?**
Most of the survey participants were male, representing 86.6% of the sample (Figure 14).  Based on 2019-20 license purchasing data about 24.4% of fishing license buyers were female.  Female license buyers seem to be under represented in this survey since only 11.9% of respondents identify themselves as female.
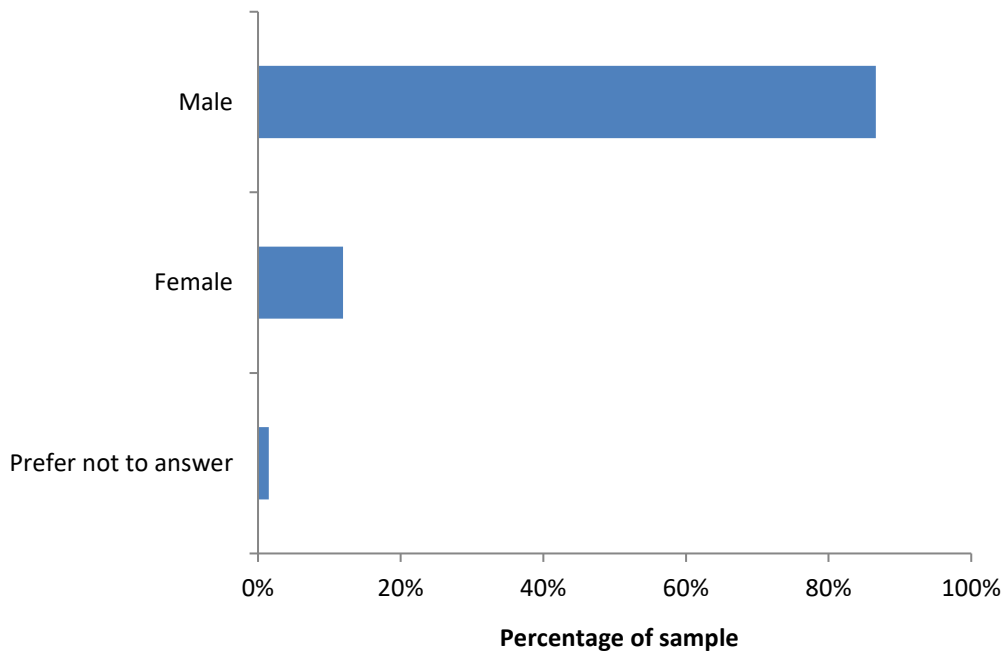


Figure 14.  Gender of survey participants by percentage.

**Question 23.  What is your age category?**
The largest age category was 65 years or older, representing 30.6% of the sample, followed by age category 50 to 64 years (Figure 15).
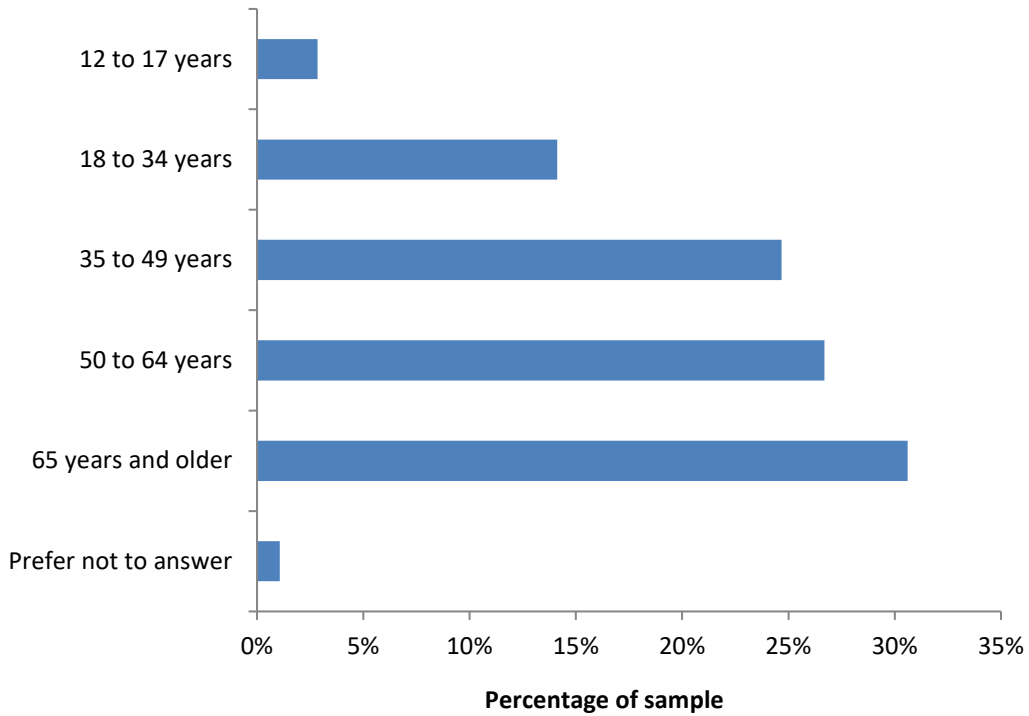
Figure 15.  Age categories of survey participants by percentage.

**Question 24.  Do you consider yourself to be:**
Most of the participants consider themselves Anglo/Caucasian representing about 60.0% of the sample (Figure 16).
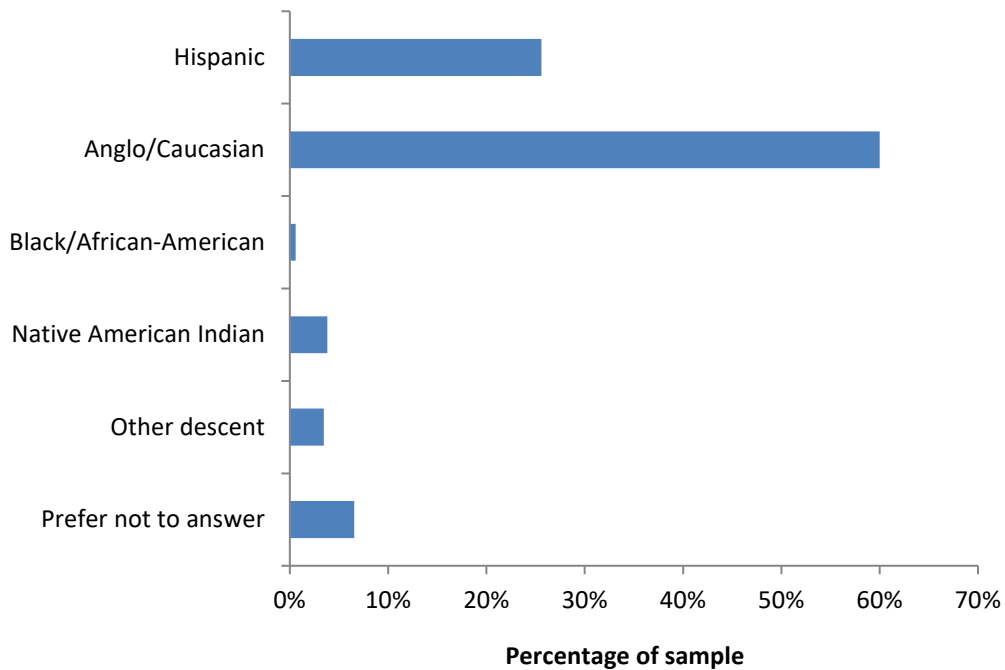


Figure 16.  Ethnicity of survey participants by percentage.

**Question 25.  What is the highest level of education you have had the opportunity to complete?**
The two largest percentage of participant indicated completing "some college/associates degree/vocational certificate" and "graduate work or degree".  Participants that indicated "some high school" was the smallest percentage (Figure 17).
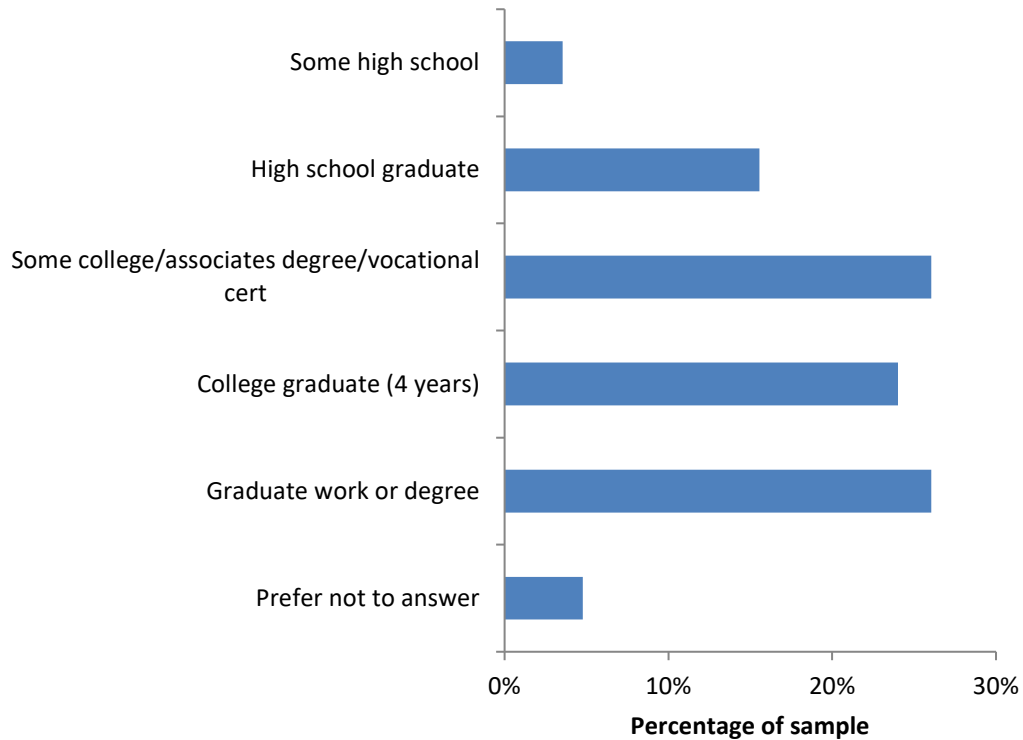


Figure 17.  Highest education level of survey participants by percentage.

**Question 26.  What is the zip code of your residence?**
Almost all (93.9%) survey participants provided a zip code of their residence.  Survey participants represented 334 different zip codes and 29 different states.  One hundred thirty zip codes were represented from New Mexico.  Most non-resident survey participants were located in the neighboring states surrounding New Mexico (Figure 18).
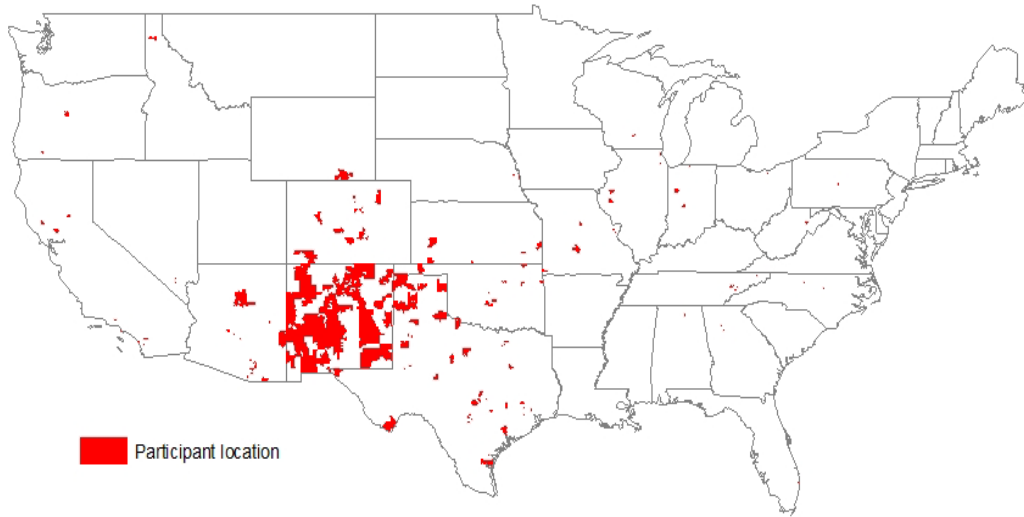
Figure 18. Location of survey participants based upon zip code. Note, there was one participant represented Alaska not displayed on the map due to scale.