

# Enhancing R3 by Exploring New and Returning Anglers' Attitudes Toward Fishing



Study conducted for the  
Virginia Department of  
Wildlife Resources

2020

# **ENHANCING R3 BY EXPLORING NEW AND RETURNING ANGLERS' ATTITUDES TOWARD FISHING**

## **Responsive Management National Office**

Mark Damian Duda, Executive Director  
Martin Jones, Senior Research Associate  
Tom Beppler, Senior Research Associate  
Steven J. Bissell, Ph.D., Qualitative Research Associate  
Amanda Center, Research Associate  
Andrea Criscione, Senior Research Associate  
Patrick Doherty, Research Associate  
Gregory L. Hughes, P.E., Research Associate  
Caroline Gerken, Survey Center Manager  
Alison Lanier, Business Manager

130 Franklin Street  
Harrisonburg, VA 22801  
Phone: 540/432-1888  
E-mail: [mark@responsivemanagement.com](mailto:mark@responsivemanagement.com)  
[www.responsivemanagement.com](http://www.responsivemanagement.com)

## **Acknowledgments**

Responsive Management would like to thank Edward Herndon and Rene Valdez of the Virginia Department of Wildlife Resources for their input, support, and guidance on this project.

Responsive Management would also like to acknowledge the funding support provided by the Recreational Boating and Fishing Foundation.

## **EXECUTIVE SUMMARY**

This project was conducted for the Virginia Department of Wildlife Resources (hereinafter referred to as the Department) to explore new and returning anglers' attitudes toward fishing, with the ultimate goal of assisting the Department in its angler recruitment, retention, and reactivation (R3) efforts.

The project entailed focus groups of new and returning anglers and a survey of license holders that included new and returning anglers, based on their years of license purchase and fishing participation.

Focus groups entail an in-depth, structured discussion with participants about their opinions regarding various issues, in this case about fishing and reasons for starting to fish. These focus groups consisted of anglers who had fished in Virginia in 2019 or 2020.

Responsive Management also administered a scientific, closed online survey to anglers who had purchased a fishing license between July 1, 2019, and June 30, 2020, but were not in the records as having purchased a license in 2016, 2017, or 2018. Note that the survey was closed, meaning it was available only to those specifically invited to participate who were provided with a direct Uniform Resource Locator address for the survey. The survey could not be accessed through a general internet search.

## **MANY SEEMINGLY “NEW” AND “RETURNING” ANGLERS WERE NOT**

**One important finding is that the license database does not always identify true new or returning anglers.**

For the focus groups and survey, the Department provided a list of anglers that would seemingly be new or returning anglers because they had purchased a license in 2019-2020 but not (according to the records) in 2016 through 2018. In fact, most of these anglers did not meet the definition of new or returning anglers. In other words, the license database alone will not be able to identify a group of anglers exclusively new or returning.

Many anglers in the database (60%) had fished between 2016 and 2018 but did not have a record of holding a license in that time period. This 60% is a sum of those who had fished out of state (15% fished exclusively out of state) and those who had fished in state without a license (some legally, some illegally) (45%). The 45% of those who had fished consists of 28% who had gotten a license in Virginia for which the database had no record and 17% who had not gotten a license (note that some of these people were not required to get a license—for instance if they fished on their own land). Therefore, in the survey, 60% of license holders who were seemingly new or returning based on the license records were actually active anglers who had fished between 2016 and 2018. The implication is that the license database can be used to identify new and returning anglers for outreach, but much of that outreach will actually be going to active anglers.

## **COVID-19 CREATED A UNIQUE OPPORTUNITY FOR THE FISHING COMMUNITY**

**The Covid-19 pandemic increased participation in fishing, and the fishing community must take advantage of this “recruitment” to further stimulate interest and participation and retain these new and returning anglers. In particular, four groups should be targeted with outreach to retain them, as listed below.**

The Covid-19 pandemic and its consequent shutdown of business and schools spurred increased participation in fishing. Several types of people started or re-started fishing:

- Those who had never fished before and had little prior interest but who picked up the sport for the first time during the pandemic.
- Those who had not fished much or at all previously, but who had a latent interest (and in some cases had even purchased equipment that they had not used) and who picked up the sport either for the first time or again during the pandemic.
- Those who had fished previously, some quite extensively, but who were spurred on to fish much more avidly during the pandemic.
- Those who had fished previously, had dropped it for a while, but who picked it back up specifically to take children or go with their family during the pandemic.

**The groups above have different outreach needs and would need encouragement tailored to them.**

One-size-fits-all outreach might not work well with the disparate groups above. The types of outreach that each group would respond to is discussed in more detail below.

### **Outreach for those completely new to fishing, with or without latent interest:**

These anglers are still learning the basics. They still need information on how to fish and how to engage in various types of fishing, as well as basic species information. They often are intimidated by not knowing what to expect at different sites, which discourages them from branching out. Information letting them know what to expect at various sites would ameliorate this constraint. Many are still dependent on others to go fishing with and are reticent to go on their own. They would respond well to group fishing outreach (such as family-oriented events). Furthermore, they would respond well to simply being informed about the information sources available, such as Department electronic resources, and how to get that information.

### **Outreach for those returning to fishing on their own.**

These anglers, for the most part, already know fishing techniques, know the species in various waters, and sometimes know where to go. But they could use reminders on the types of species that they could catch to pique their interest, as well as places to go. This latter is important because fishing access may have changed in some areas since they previously were active in fishing. In a sense, rather than informational “how-to” outreach, they need pure advertising to remind them of types of fishing they could do or try. For instance, they might respond well to simply being informed of good opportunities, such as the shad run. They may need outreach regarding locations for fishing, either because access may have changed since they fished or because they are new to the area.

**Outreach to those returning to fishing because they took their children or went with family.** These anglers need outreach for family fishing events and locations. They need help and encouragement in the mentoring process. While they know the techniques, their companions may not.

**Outreach during the pandemic should emphasize the ability to socially distance that fishing offers.**

One of the prime advantages of fishing during the pandemic was that people could keep their distance from others. This even included those who fished with friends but who still wanted to stay distant from them.

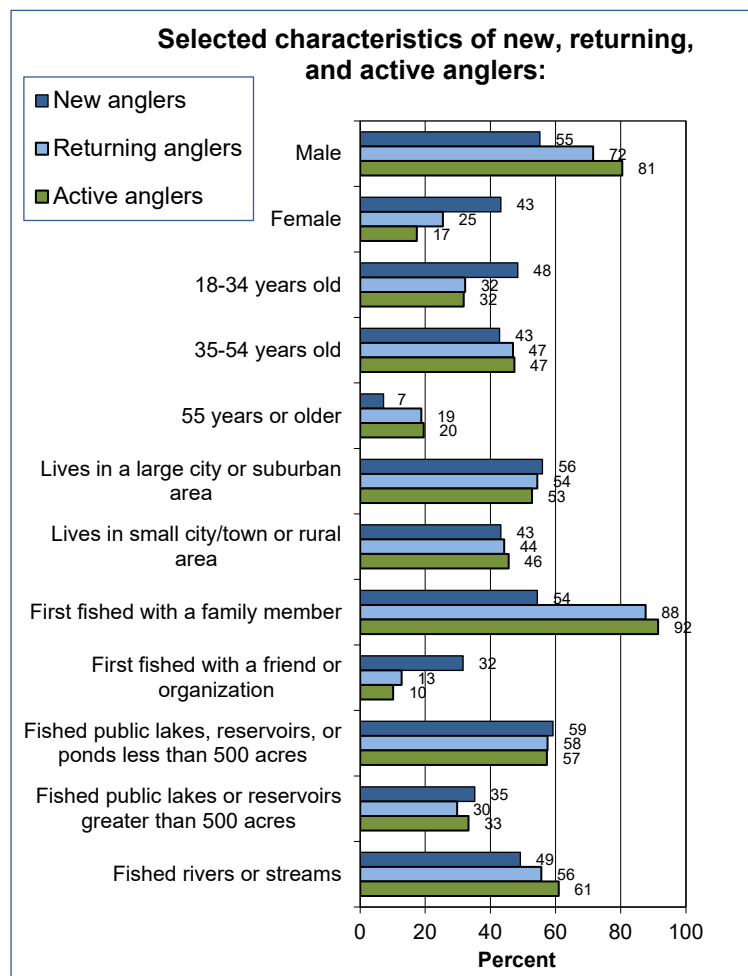
## CHARACTERISTICS OF NEW AND RETURNING ANGLERS

**New anglers are more female and younger than are active anglers.**

Among new anglers, the male/female split is more even (55% male, 43% female) than it is among active anglers (which are 81% male, 17% female). (Note that small percentages did not provide their gender or classified themselves as something other than male or female.) Additionally, 48% of new anglers are 18 to 34 years old, a much higher percentage than either returning or active anglers.

**More than half of new anglers reside in urban or suburban areas.**

In this characteristic, new anglers and returning anglers are about the same as active anglers, with just over half of them being urban or suburban. Nonetheless, it is worth noting that the majority of anglers are not rural, which is perhaps counterintuitive, since fishing is mostly perceived to be a rural activity.

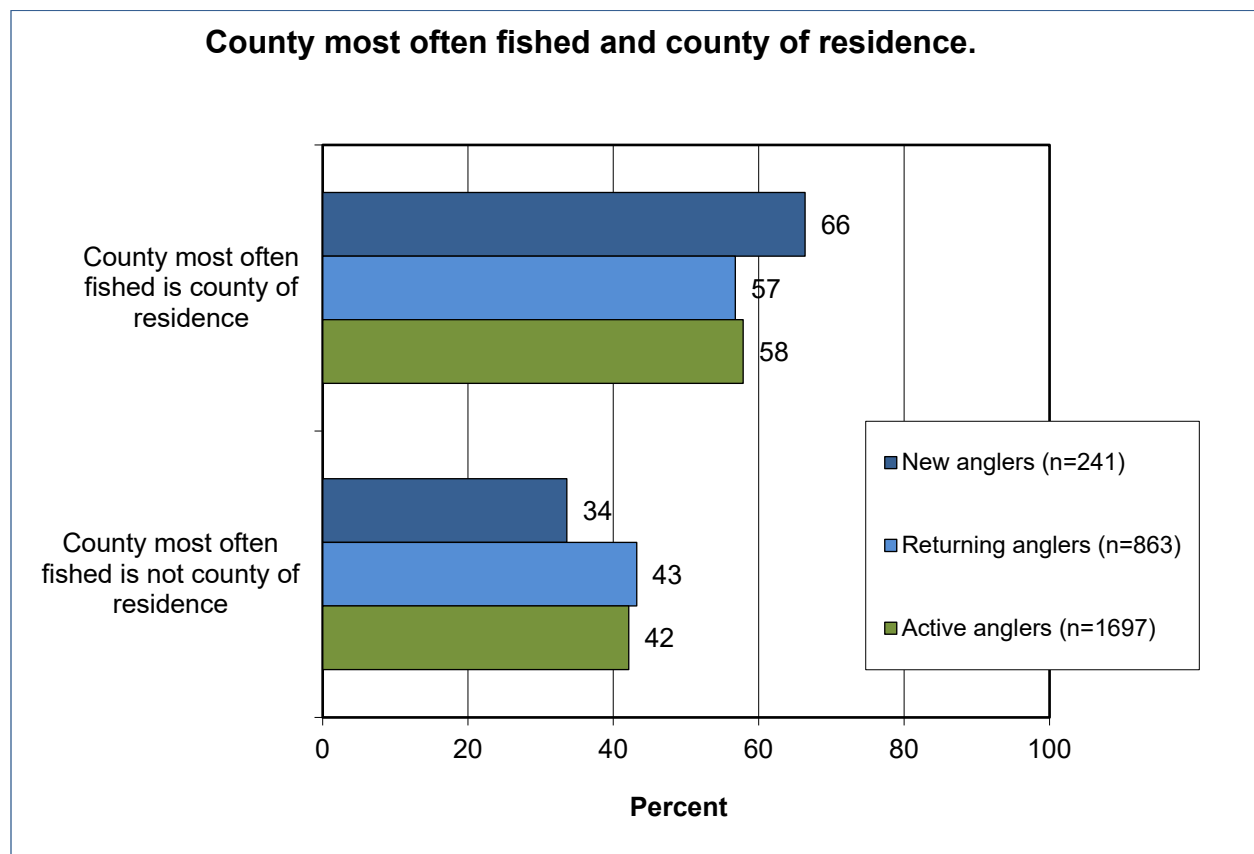


**New anglers are drastically different from returning or active anglers in initiation: new anglers are much more likely than those other groups to have first gone fishing with a friend or organization rather than with family.**

Introduction to angling in the recent year has involved more of a non-traditional path, with a markedly higher percentage of new anglers being introduced by friends. While family is still important among new anglers—slightly more than half were introduced within the family—friends play a more prominent role among new anglers.

**New anglers tend to fish in their county of residence more than do returning and active anglers. Although all three groups' most favored fishing counties are generally near the large cities (simply because so many anglers live in those counties), returning anglers' locations are a bit more rural than their counterparts' locations.**

New anglers tend to stay closer to home, compared to the other groups (as shown in the graph below). Previously, it was demonstrated that returning anglers are a bit more rural in their fishing, compared to both new and active anglers (see the maps in the survey results section on this topic). Nonetheless, across all three groups (new anglers, returning anglers, and active anglers), in general, urban areas are heavily represented as fishing locations.



## **THEMES FOR OUTREACH**

### **Relaxation and nature are both important as draws for new and returning anglers.**

Motivations centered on being able to relax and de-stress and being out in nature. Of the ten possible motivations asked about in the survey, relaxation and being close to nature had the highest ratings of importance—a mean rating of more than 8 on a 0 to 10 scale. These are the things to emphasize in outreach.

### **Camaraderie is an important aspect of fishing, particularly to new and returning anglers.**

Nearly all anglers start fishing with others, and camaraderie is often mentioned as being a reason that new anglers fish. For new anglers, the camaraderie includes *being mentored*. Fishing with family, and fishing with one's children in particular, was an important reason many returning anglers restarted fishing. For them, camaraderie includes *mentoring others*. In the survey, rating of the importance of being with family and friends was 7.9 for new anglers and 7.8 for returning anglers (on a 0 to 10 scale), the third highest ranked reason for both groups.

### **For some new and returning anglers, solitude is a positive aspect of fishing.**

Many anglers discussed being alone as a way to de-stress. They liked that they could get away from people and even get away from cell phone reception. One other note regarding solitude: some anglers will respond well to the idea of getting away from their family during the pandemic. There are those who had too much family time recently with the Covid-19 restrictions that often forced families together. The solitude aspect was more important to returning anglers than to new anglers, as new anglers are often still dependent on others.

### **Fortunately, fishing can provide both camaraderie and solitude.**

This may seem oxymoronic, but fishing can provide both of these things in the same trip. People love the social aspects of fishing—particularly being with their children—but they also like that fishing offers moments of solitude. Only a few anglers seek solitude exclusively; most want both the camaraderie at times and the chance to be alone at times. With shore/bank fishing in particular, a fishing trip can be quite social in getting to the river but then offer solitude once the anglers spread out at their location.

### **For some, being active and being healthy are important advantages that fishing offers. But generally this appeared to be less of a draw.**

Although not mentioned with the frequency of relaxation and nature as motivations, certainly many anglers responded well to the fact that fishing kept them active. It is not strenuous exercise (like jogging), but it is exercise nonetheless in that it keeps people active.

### **Food is certainly a draw for some anglers, but for none was it a major draw.**

Getting food is a positive for some anglers—many like the idea of getting fresh food to eat. But getting food seemed secondary to other motivations for fishing—getting fish to eat was the lowest ranked motivation in the survey of the ten possible motivations that were asked about. Furthermore, encouraging more fishing for food also requires informing anglers of what is safe to eat, as many who expressed interest in fishing were reticent to eat fish because of possible contamination.

**The challenge of fishing appealed to some new anglers, but again this was secondary to relaxation, nature, and camaraderie.**

The challenge of fishing is a double-edged sword of sorts. The challenge appealed to some, yet it was a disincentive to others (if fishing was too hard to master). It seemed that only a particular subset of new and returning anglers were into the challenge of it. Most of them seemed to shy away from things that were deemed to be too difficult. In the survey, fishing for the challenge was given middling ratings of importance (5.3 by new anglers, 5.7 by returning anglers), well below relaxation (ratings of more than 8.2 among both groups), being close to nature (ratings of 8.1 or higher), and to be with family and friends (ratings of 7.8 and higher). As such, emphasizing the challenge would be effective in outreach to more established anglers than to new and returning anglers. (Note that the rating was the importance as a reason for going fishing, on a scale of 0 to 10.)

**Getting trophy fish, while exciting, is generally not the major attraction of fishing.**

While anglers like catching big fish, doing so is not necessary for a good day of fishing. Catching a large fish was low down in the ranking of important motivations for fishing, and focus group participants indicated that it was behind other more important reasons for fishing. Trophy fishing and recognition of trophies (like VARP) may be more effective at stimulating avidity among existing anglers than stimulating a non-angler to become an angler.

**Although not a “theme” per se, knowledge of the types of fish that new and returning anglers are seeking can be used within thematic messages. Bass, catfish, and “anything that bites” are important to new and returning anglers.**

The top species among new and returning anglers are bass and catfish—these appear to be the types with the most appeal to these anglers. In the middle of the ranking are panfish and crappie. Trout is of lesser importance to new and returning anglers, compared to these other species.

An interesting finding concerns “anything that bites.” That is of more relative importance to new and returning anglers than to active anglers. The rate of fishing for “anything that bites” among new and returning anglers is nearly the highest of any species for these groups, while fishing for “anything that bites” is at a lower ranking among active anglers. Among new anglers, “anything that bites” (at 48%) is just 1 percentage point below the rate fishing for their top species (largemouth bass, at 49%), and among returning anglers, the rate fishing for “anything that bites” (54%) is just 3 percentage points below their top species (again, largemouth bass, at 57%). Meanwhile, among active anglers, “anything that bites” (51%) is 20 percentage points below their top species (largemouth bass, at 71%).

## **INFORMATION NEEDS AND SOURCES OF INFORMATION**

**New anglers “don’t know what they don’t know.”**

More than actual resources, the Department may want to focus on increasing awareness of available resources and providing recommendations for the best additional resources beyond the Department’s website. Communicating availability of information, as well as guidance, will be important for supporting new anglers.

**The Department website and other online sources appear to be underutilized by new anglers. They need to be more proactively directed to the Department resources.**

Considering the value of the online information available through the Department, a low percentage of new anglers (9%) used Department online sources (this compares to 16% of both returning and active anglers), and only 15% of new anglers used any Department-related source (this compares to 24% of both returning and active anglers who use any Department-related source).

A recent Virginia fishing license purchase by a staff member of Responsive Management highlights the lack of direction to Department resources. Although the confirmation email the staff member received included links to the Department website, the link was specifically to the regulations page. From this page, there are other links, but none, for instance, for information on where to fish—an information need expressed by many focus group participants. The links on the page did not clearly have anything for “where to fish”; the information on where to fish could be found only through more searching on the site. (In fact, there was access information on the link for Free Fishing Days and the link on What’s New; however, this is certainly not the intuitive place that one would look for access information.)

**The Department may consider putting more links to its own information on the confirmation email that license purchasers receive. For instance, access information is buried and not readily apparent in the webpage to which the email sends users. Some new anglers, and returning anglers to a lesser extent, appear to be overwhelmed by information on the internet, and this would be the place to provide them with Department links to clearly named pages.**

It is apparent that many anglers are left to their own searches for fishing information, including the many non-governmental sites available, and can be overloaded with information because of this. To ameliorate this overload, the Department should include a few more obvious links to information on its confirmation emails for license purchasers, and the links should be clearly named (for instance, “Where to Fish” or “Identifying Fish”) (see the following pages for more on this). The Department has good credibility, so anglers would be comfortable with the information provided by the Department; therefore, efforts should be made to keep anglers on the Department website rather than have them visiting other sites that may not be as reputable or that simply may not be specific to Virginia.

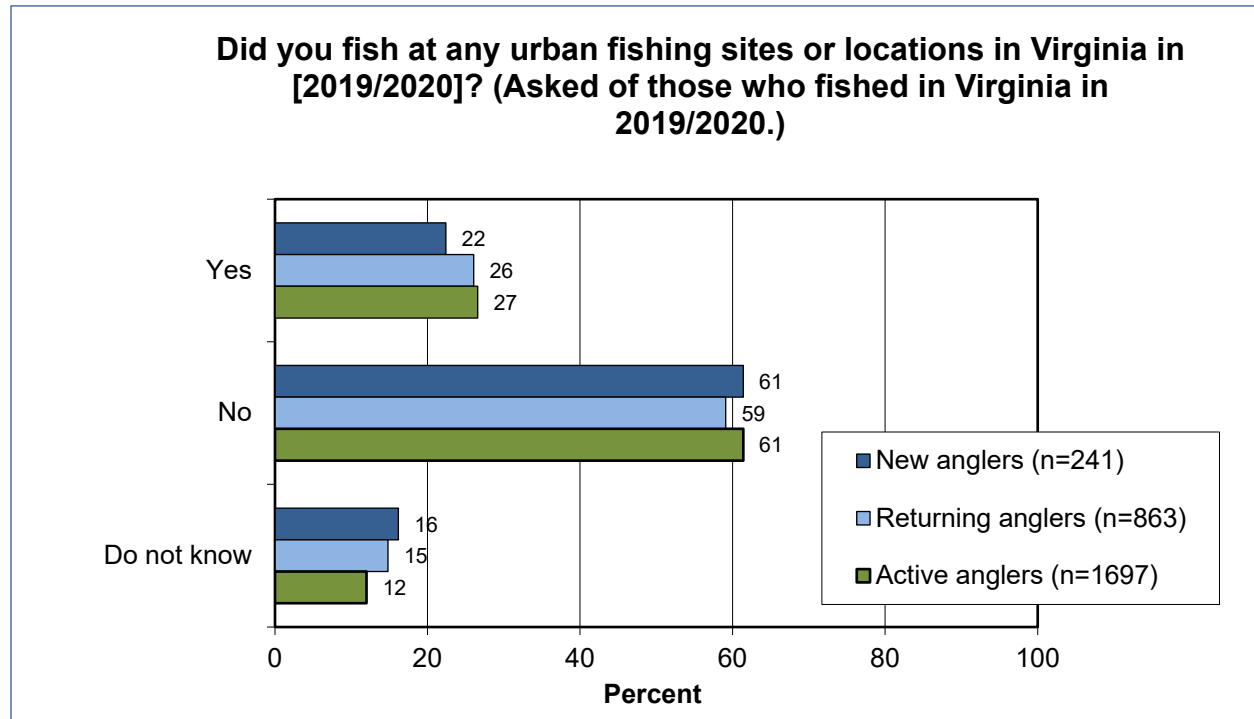
**New anglers would most like information on where to fish, identifying the fish they catch, and local or location-specific information.**

The focus group research suggested that these topics were of particular interest among new anglers. Other topics on which anglers want information were mentioned, including techniques and equipment use, but the most vigorous discussions were about where to fish and identifying fish.

## URBAN FISHING

### Urban fishing sites are popular, with about a quarter of anglers using them.

About a quarter of anglers who had fished in Virginia in 2019/2020 had fished in an urban fishing site in Virginia. The differences among groups is slight and may be more related to not knowing rather than actual participation at one of these sites.



**Convenience is an overriding reason that new and returning anglers use urban sites. They are willing to trade off the aesthetic aspects (solitude, being in nature) for this convenience. As long as these sites provide a positive experience, this convenience may win out many times.**

Anglers use urban fishing sites because they are close and convenient and because the anglers are familiar with the sites. They know where to go and what to expect at the sites.

### Most anglers talked positively about camaraderie at urban sites.

There is some camaraderie at urban sites because anglers interact with other anglers a bit more than they would at more backwoods sites.

**Stocking is a draw for urban sites. Anglers like that urban fishing sites are often stocked.** Stocking was appreciated by these urban anglers. One described the urban site as the complete package because of stocking—having a convenient place that also has a high chance of success.

**Criticism of urban fishing sites commonly included crowding, pollution, and litter.** A negative aspect of urban sites is that they are perceived to have too many other anglers, have waters that are not pristine, and have litter.

## **WOMEN ANGLERS**

**Among returning anglers, women are a little younger than their male counterparts.** Analyses show that, among new anglers, women and men are not consistently different. Among returning anglers, however, there is a more consistent pattern: women tend to be a little younger than men in this group.

**Women who are new or returning anglers are slightly more likely than men to be white.** Women anglers, both for the new and returning groups, have a higher percentage than men being white.

**Locationally, women are less often from large cities/urban areas, compared to men. Women new anglers are disproportionally from small cities or towns, and women returning anglers are disproportionally from rural areas.** Among new anglers, women are more likely than men to be from a small city or town, and women are less likely than men to be from a large city/urban area or suburban area. Among returning anglers, women are more likely than men to be from a rural area, and women are less likely than men to be from a suburban area.

**New anglers who are women are more likely to have been taken by spouses or boyfriends/girlfriends, compared to their male counterparts among new anglers.** Among new anglers, women are much less likely than men to have first been taken by friends *other than a boyfriend/girlfriend or spouse*. On the other hand, among new anglers, women are much more likely than men to have first been taken by their boyfriend/girlfriend or spouse. Differences are not as marked among returning anglers.

## **ACCESS**

**Among new anglers, as well as to returning anglers to a lesser extent, a disincentive to trying new fishing locations is their lack of knowledge about what to expect at the site. Outreach needs to inform these new anglers about the amenities available at various sites throughout Virginia.**

New anglers indicated that branching out in their participation was stymied to some extent by their not knowing about other sites, such as whether there is parking nearby, whether there is enough space to easily cast, and so forth.

This trepidation about not knowing the procedures to follow in a new situation helps drive the franchising of restaurants and hotels—people on the road go to fast food restaurants, in part, because they know exactly what is available, how to order, where to park, and so forth. If the fishing industry taps into this motivation, having similarities in sites may benefit—for instance if the anglers always knew that a Department-managed urban site was within a certain walking distance from public parking.

## TABLE OF CONTENTS

Introduction and Summary of Methodology.....	1
Focus Groups .....	1
Survey of Fishing License Holders.....	1
Additional Information About the Presentation of Survey Results in the Report.....	2
Focus Group Results.....	4
Covid-19 Was a Contributing Factor to Increased Fishing Participation .....	4
New and Returning Anglers Had Various Reasons for Fishing .....	9
New and Returning Anglers Were Introduced or Reintroduced to Fishing in Various Ways .....	15
Fishing Behavior and Participation Changes as New and Returning Anglers Gain Experience .....	16
Constraints to Fishing Participation.....	17
Most New and Returning Anglers Have an Interest in Expanding Their Fishing Activities.....	20
Many New Anglers Are Catch-and-Release Anglers, but There Is Interest Among Some to Keep and Eat the Fish That They Catch.....	24
Fishing for Food .....	25
Urban Fishing .....	27
Sources of Information .....	32
The Department as a Source of Information.....	35
Types of Information .....	39
Classes and Fishing Events.....	42
Survey Results .....	43
Data Used to Categorize Anglers.....	43
Aspects of Fishing: Typical Months, Days of Fishing, Species Fished, Locations, and Fishing Companions.....	51
Days of Fishing Participation .....	51
Months When Anglers Fished .....	53
Species Anglers Fished.....	54
Location of Fishing.....	57
Fishing Companions .....	64
Fishing Initiation.....	66
Motivations for Fishing and Reasons for Increasing Fishing Participation.....	72
Reasons for Fishing Without a License .....	78
Reasons for Getting a License but Not Fishing .....	79
Urban Fishing Participation .....	80
Women Anglers .....	84
Sources of Information About Fishing .....	92
Demographic Data .....	93
Major Findings and Recommendations .....	99
Many Seemingly “New” and “Returning” Anglers Were Not .....	99
Covid-19 Created a Unique Opportunity for the Fishing Community .....	99
Characteristics of New and Returning Anglers .....	101
Themes for Outreach .....	103
Information Needs and Sources of Information.....	105
Urban Fishing .....	108
Women Anglers .....	109
Access.....	110

## **TABLE OF CONTENTS (continued)**

Full Discussion of Methodology .....	111
Focus Groups .....	111
Composition of the Focus Groups .....	111
Discussion Guide and Moderator .....	111
Focus Group Facilities .....	112
Focus Group Participant Recruiting .....	112
Focus Group Analysis.....	112
Survey Of Anglers .....	113
Survey Sample .....	113
Questionnaire Design.....	113
Contact Procedures and Surveying Dates and Times .....	113
Survey Data Collection and Quality Control.....	116
Data Analysis.....	116
Sampling Errors .....	119
Appendix A: Focus Group Discussion Guides .....	120
Appendix B: Online Questionnaire.....	126
About Responsive Management .....	175

## **INTRODUCTION AND SUMMARY OF METHODOLOGY**

This project was conducted for the Virginia Department of Wildlife Resources (hereinafter referred to as the Department; this agency was formerly the Virginia Department of Game and Inland Fisheries) to explore new and returning anglers' attitudes toward fishing, with the ultimate goal of assisting the Department in its angler recruitment, retention, and reactivation (R3) efforts.

The project's objectives were to:

- Identify factors that aided in recruitment of new anglers and that influenced increases in fishing participation among new and returning anglers.
- Identify information and educational resources that new and returning anglers want or that would help overcome barriers.
- Identify motivations that lead new and returning anglers to choose or change fishing sites, and how these motivations change over time.
- Identify angler perceptions and experiences regarding urban fishing sites.

A summary of the methods is included below, which is necessary for an understanding of the results that are presented. A full discussion of the methods is included as the final chapter of this report.

Briefly, the project entailed focus groups of new and returning anglers and a survey of license holders that included new and returning anglers, based on their years of license purchase and fishing participation.

### **FOCUS GROUPS**

Focus groups entail an in-depth, structured discussion with participants about their opinions regarding various issues, in this case about fishing and reasons for starting to fish. Focus groups provide researchers with understanding and insights of the thought processes and the emotions of the participants in the group discussions. Focus groups allow for extensive open-ended responses to questions; probing, follow-up questions; group discussion; and observation of emotional responses to topics—aspects that cannot be measured in a quantitative survey.

These focus groups consisted of anglers who had fished in Virginia in 2019 or 2020. Four of the focus groups consisted of new anglers (had not fished anywhere prior to 2019), and one consisted of returning anglers (had not fished in 2016 through 2018 in Virginia but had done so in 2015 or earlier). Additionally, the new angler focus groups consisted of three regional focus groups (one with anglers from Region 1, one with anglers from Region 4, and one with anglers from Regions 2 or 3) and one all-women focus group. The focus groups were conducted online because of Covid-19 restrictions on face-to-face gatherings. The full methodology of the focus groups is included in the final chapter of this report, "Full Discussion of Methodology."

### **SURVEY OF FISHING LICENSE HOLDERS**

As part of this project, Responsive Management also administered a scientific, closed online survey to anglers who had purchased a fishing license between July 1, 2019, and June 30, 2020, but were not in the records as having purchased a license in 2016, 2017, or 2018. Use of these parameters ensured the best chance of locating respondents who fit the definitions to be considered new anglers or returning anglers—the focus of the study. Note that the survey was

closed, meaning it was available only to those specifically invited to participate who were provided with a direct Uniform Resource Locator address for the survey. The online software tracks the respondents so that only the recipient can take the survey, the email cannot be forwarded to another to take the survey, and the recipient can only take the survey once. Therefore, only those specially invited could take the survey, and the survey could not be accessed through a general internet search.

Responsive Management developed the survey questionnaire in coordination with the Department. A central data collection and survey center at the Responsive Management office allowed for rigorous quality control over the online data collection. Responsive Management maintains its own in-house survey and data gathering facilities. These facilities are staffed with data managers with experience administering online surveys on the subjects of fishing, fisheries management, and natural resources in general.

The analysis of data was performed using IBM SPSS Statistics as well as proprietary software developed by Responsive Management. The full methodology of the survey is included in the final chapter of this report, "Full Discussion of Methodology."

## **ADDITIONAL INFORMATION ABOUT THE PRESENTATION OF SURVEY RESULTS IN THE REPORT**

The focus group results show major points of summary followed by actual quotations that support the major point. The results are presented by theme rather than having each focus group be reported separately.

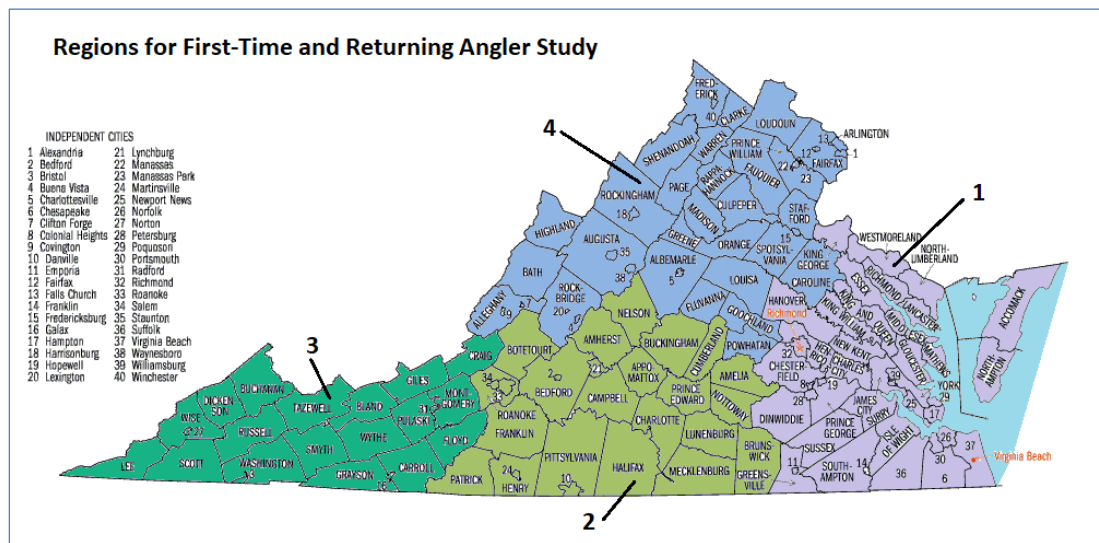
In examining the online survey results, it is important to be aware that the survey questionnaire included several types of questions:

- Open-ended questions are those in which no answer set is presented to the respondents; rather, they can respond with anything that comes to mind from the question. Their verbatim responses are recorded and later categorized.
- Closed-ended questions have an answer set from which to choose.
- Single or multiple response questions: Some questions allow only a single response, while other questions allow respondents to give more than one response or choose all that apply. Those that allow more than a single response are indicated on the graphs with the label, "Multiple Responses Allowed."
- Scaled questions: Many closed-ended questions (but not all) are in a scale, such as beginner-intermediate-advanced-expert.
- Series questions: Many questions are part of a series, and the results are primarily intended to be examined relative to the other questions in that series (although results of the questions individually can also be valuable). Typically, results of all questions in a series are shown together.

Some graphs show averages, both the mean and the median. The mean is simply the sum of all numbers divided by the number of respondents. Because outliers (extremely high or low numbers relative to most of the other responses) may skew the mean, the median is also shown. The median is the number at which half the sample is above and the other half is below. In other words, a median of 10 miles means that half the sample gave an answer of more than 10 miles and the other half gave an answer of less than 10 miles.

Most graphs show results rounded to the nearest integer; however, all data are stored in decimal format, and all calculations are performed on unrounded numbers. For this reason, some results may not sum to exactly 100% because of this rounding on the graphs. Additionally, rounding may cause apparent discrepancies of 1 percentage point between the graphs and the reported results of combined responses (e.g., when “very bad” and “bad” are summed to determine the total percentage in the “bad” side of the answer set).

Some results are presented regionally, based on the Department’s administrative regions, as shown in the map that follows. Additionally, a tabulation of the cities and counties that make up each region is included.



Region 1	Region 1 (cont.)	Region 2 (cont.)	Region 3 (cont.)	Region 4 (cont.)
Acomack County	Northumberland County	Danville City	Lee County	Fauquier County
Charles City County	Petersburg City	Franklin County	Montgomery County	Fluvanna County
Chesapeake City	Poquoson City	Halifax County	Norton City	Frederick County
Chesterfield County	Portsmouth City	Henry County	Pulaski County	Fredericksburg City
Colonial Heights City	Prince George County	Lunenburg County	Radford City	Goochland County
Dinwiddie County	Richmond City	Lynchburg City	Russell County	Greene County
Emporia City	Richmond County	Martinsville City	Scott County	Harrisonburg City
Essex County	Southampton County	Mecklenburg County	Smyth County	Highland County
Franklin City	Suffolk City	Nelson County	Tazewell County	Loudoun County
Gloucester County	Surry County	Nottoway County	Washington County	Louisa County
Greensville County	Sussex County	Patrick County	Wise County	Madison County
Hampton City	Virginia Beach City	Pittsylvania County	Wythe County	Manassas City
Hanover County	Westmoreland County	Prince Edward County		Manassas Park City
Henrico County	Williamsburg City	Roanoke County	<b>Region 4</b>	Orange County
Hopewell City	York County	Roanoke County	Albemarle County	Page County
Isle of Wight County		Salem City	Alexandria City	Powhatan County
James City	<b>Region 2</b>		Alleghany County	Prince William County
James City County	Amelia County	<b>Region 3</b>	Arlington County	Rappahannock County
King and Queen County	Amherst County	Bland County	Augusta County	Rockbridge County
King George County	Appomattox County	Bristol City	Bath County	Rockingham County
King William County	Bedford City	Buchanan County	Buena Vista City	Shenandoah County
Lancaster County	Bedford County	Carroll County	Caroline County	Spotsylvania County
Mathews County	Botetourt County	Craig County	Charlottesville City	Stafford County
Middlesex County	Brunswick County	Dickenson County	Clarke County	Staunton City
New Kent County	Buckingham County	Floyd County	Culpeper County	Warren County
Newport News City	Campbell County	Galax City	Fairfax City	Waynesboro City
Norfolk City	Charlotte County	Giles County	Fairfax County	Winchester City
Northampton County	Cumberland County	Grayson County	Falls Church City	

## FOCUS GROUP RESULTS

The focus group discussions centered around several themes, and the results are organized around those thematic areas. Findings from all of the individual focus groups (returning anglers and four groups of new anglers—region 1 anglers, region 2/3 anglers, region 4 anglers, and women anglers) are discussed together within each thematic section. Because the focus groups were conducted in October 2020, Covid-19 was a top-of-mind issue, and the results start with that thematic area.

### COVID-19 WAS A CONTRIBUTING FACTOR TO INCREASED FISHING PARTICIPATION

**Covid-19 provided the opportunity to fish—people simply had more time. In particular, fishing was a means of spending time with family or friends and was an acceptable and rewarding activity to do during the pandemic.**

Many focus group participants had more time because of Covid-19. Several focus group participants indicated that they started fishing to spend time with their spouse or significant other outside of the house. Other focus group participants said fishing was a way to get their kids or family off of electronics during the quarantine. One participant is a youth group leader and started taking his youth group fishing because they could no longer meet indoors.

*I went from being really busy on Saturday and Sunday as a musician in church, and all of a sudden I had nowhere to play on Saturday or Sunday. My boyfriend was into fishing, and he bought me a rod last summer. ... I found that I really liked it, really enjoyed it.*

—Region 1 Focus Group Participant

*[I was] trying to get the kids out of the house and off of the electronics. Get them more outdoor exercise.*

—Region 2/3 Focus Group Participant

*Yeah, so I started fishing because of the pandemic. It was nice to go out and get some fresh air, and have some bonding time with friends while still being socially distant. That's why I started fishing.*

—Region 4 Focus Group Participant

*Due to Covid, I needed a way to see the boys in my youth ministry program. We figured we couldn't necessarily bring them to church every week but we could take them out to fish. Gives them something to do, and we had access to private ponds.*

—Returning Angler Focus Group Participant

*Covid was a big reason for us. Earlier this year I had already lost two family members to it. I didn't want my kids going to places with a lot of people close. That's why we started fishing to begin with.*

—Region 2/3 Focus Group Participant

*For me, [going fishing] made everybody in the family happy. It gave everybody something to do, whether you are casting, or, like my youngest, throwing a rock. It just made everybody happy; it's a simple activity. It's social distancing. And it just brought happiness to us and our family.*

—New Women Angler Focus Group Participant

*I bought my Virginia fishing guidebook in, like, 2017. I did not start fishing until this year, and it was largely because of the pandemic and just having the extra cash from the stimulus. So I could spend a little bit more.*

—Region 4 Focus Group Participant

*I am in Chesapeake, Virginia, and I have been predominantly doing freshwater fishing on the Nansemond River and in Bennett's Creek Park. I started when everything closed down with Covid back in the spring.*

—Region 1 Focus Group Participant

*I go fishing with my friends and my boyfriend. Just to spend more time with friends and family, there is not much to do right now.*

—Region 2/3 Focus Group Participant

*I would say it [Covid] was probably almost 100% [of the reason I started fishing]. My son was interested in it, and it was easy getting one of his grandfathers to do it. With the pandemic, we needed something to do. We wanted to go outside. We were going stir crazy in the house. It definitely helped. It was a big deciding factor for me.*

—Region 1 Focus Group Participant

### **The Covid-19 recommendation for social distancing was a strong factor in anglers' decisions to start fishing or return to fishing.**

An ideal aspect of fishing as an activity during the pandemic was that it allowed for social distancing. Even with other participants at the fishing spots, anglers could keep their distance.

*Covid was a major thing: not much to do and it was easy to social distance.*

—Region 2/3 Focus Group Participant

*When Covid shut everything down,... I wanted to do something outside and away from people.*

—Region 1 Focus Group Participant

*We've also been able to bring friends into it. That's really cool 'cause you can still socially distance. You're outside with other families and other family's kids. So that's been really great.*

—New Women Angler Focus Group Participant

*Really just as a good socially distanced hobby that's outside.*

—Region 4 Focus Group Participant

*On top of getting outside, I think that it's an easy place to be alone, to be out in your own area with your family or by yourself. You don't feel crowded. I think that [fishing] was an easy thing to pick.*

—Region 1 Focus Group Participant

**Although Covid-19 provided the impetus for participation, for some anglers it was secondary to a simple desire to fish or, in some cases, a latent interest in fishing.**

While most of the focus group respondents did not consider Covid-19 to be the *primary* reason that they started fishing, many of them acknowledge that it was a contributing factor that gave them the opportunity, time, and motivation (and, in some cases money via the stimulus checks) to fish. Focus group respondents typically had an existing interest to try fishing, but Covid-19 offered them time to pursue their interest or provided the opportunity to try it.

*We were looking for things to do that didn't involve all the social activities that we thought we would do in March. We had aspirationally bought fishing poles a few years ago, and we never used [them]. We said this is a good time to pick up something like this.*

—New Women Angler Focus Group Participant

*I would have started to go fishing regardless of Covid or not. I went fishing more often because I have time and it is a good socially distant activity.*

—Region 2/3 Focus Group Participant

*It was something I had been thinking about doing for a while, but going with my buddies pushed me back into it a little more heavily.*

—Region 2/3 Focus Group Participant

*I have three small young boys, and it gave us something to do. But we were fishing prior to the epidemic; it just made it more of an everyday thing.*

—New Women Angler Focus Group Participant

*I was just looking for a new hobby to get outside a little bit more. I've done some stuff on the water already, and figured I might as well add fishing since I already have a lot of stuff like paddle boarding and getting out on the water. And I had a coworker that was interested, so it was a lot easier jumping in with someone else that was new and figuring it all out instead of being alone in that, so, I saw an opportunity to go for it.*

—Region 1 Focus Group Participant

*Covid gave me the last little nudge I needed to start to fish again. I probably would have started fishing anyways, but that kind of solidified me doing it again, when I did.*

—Region 2/3 Focus Group Participant

*It probably would have happened eventually. With the pandemic, well we may have been holding off buying the kayak, but with the pandemic, well, it was a good time to start a new hobby. We'd have eventually gotten to it, but the pandemic accelerated it.*

—New Women Angler Focus Group Participant

*I think that the pandemic helped. I mean I wanted to learn how to fish anyways, so even if there was no Covid I would've done it. I think Covid opened up more of an opportunity.*

—Region 1 Focus Group Participant

*So the main reason I started fishing is actually mostly because of the stimulus check. Kind of the means to invest into something a little more as a hobby.*

—Region 4 Focus Group Participant

**The end of the pandemic in the future is not considered a complete deterrent to fishing, although focus group participants acknowledged that the resolution of the pandemic may result in less frequent fishing participation.**

Most focus group participants feel strongly that they will continue fishing after the Covid-19 pandemic has passed and life has returned to “normal,” although some acknowledge that they may be unlikely to have the time to fish with the same frequency as they have been doing during the pandemic. A few indicated that the end of the pandemic would open up more fishing opportunities, including because crowding might go down.

*I definitely would still go fishing because I am more confident in it now. ... I already have the gear so why not.*

—Region 2/3 Focus Group Participant

*Until I catch that 15 pound bass, I ain't stopping, I don't think.*

—Region 1 Focus Group Participant

*We're gonna continue going. We enjoyed it. ... We did fall in love with it, and we like it a lot. We're excited to see what it's going to be like this winter and how long we're going to last out there; when will we have to run back into the car and warm up.*

—Region 1 Focus Group Participant

*Well, after the pandemic is over, I think I can see myself taking more local vacations that are focused around fishing. Like, perhaps a whole weekend of fishing, kayaking, and other outdoor activities, hiking.*

—Region 4 Focus Group Participant

*Well, I'm back to work full time, so [participation has] definitely fallen off a little bit. But, like I said, we still go on occasion. So I foresee it not being as crazy as when we first got addicted to it, but still going out maybe every few weekends.*

—New Women Angler Focus Group Participant

*My thought is, it's gonna be a hobby for life, and I will say with everything else we do, we're gonna make an effort to at least once a month ... to at least try to get there and fish.*

—Region 1 Focus Group Participant

*I definitely would be more open to chartering a boat. I've got a couple friends with boats. And doing more group things like that. Group trips, group fishing, post pandemic.*

—Region 4 Focus Group Participant

*It's found its place now in our activities. Life has already gotten a little bit busier as we said. It's made the opportunity to fish go down, but I don't think it's made the desire go down. ... Now that I gave it a shot, I want to keep going with it for sure.*

—Region 1 Focus Group Participant

*I would definitely go more places after Covid because I would be more comfortable going to more places that are crowded. Also being more comfortable being in a bigger group of friends going fishing.*

—Region 2/3 Focus Group Participant

**Running against the tide, for a few anglers, the Covid-19 pandemic actually decreased participation or decreased their enjoyment of fishing.**

While most anglers in the focus groups mentioned having more time because of the pandemic, there were a few who had less time for various reasons (children now being home, other family members being home). Some anglers lamented that their solitude was no longer possible because of the large numbers of people out fishing.

*For some reason with everybody being home, they've found my secluded fishing spots. So, it's gotten more crowded at the places where there were nobody before.*

—Region 4 Focus Group Participant

*Crowding, more people are fishing with Covid, we have to get out there at 5:30 to 6:00 to get a spot. That's for bank fishing, which is hard to come by in the Virginia Beach area. Definitely I think [crowding] is because of Covid.*

—Returning Angler Focus Group Participant

*I've had the same experience in Virginia Beach, we go to the spot near us, and we've had to go find other places. In general, you don't want to fish close to other people but with something like Covid you do not want to be near anyone, so that was the biggest challenge.*

—Returning Angler Focus Group Participant

*It is difficult because everyone is out fishing with Covid. It's even less room to go out or get anything.*

—Returning Angler Focus Group Participant

*I've actually seen an increase of people taking over the fishing spots [since the pandemic]. I have to go take my kayak out or just do it from my backyard.*

—Region 1 Focus Group Participant

## NEW AND RETURNING ANGLERS HAD VARIOUS REASONS FOR FISHING

### **Relaxation was an important reason for fishing.**

Many focus group participants were quick to describe fishing as relaxing and to say it was a primary reason that they participated in fishing.

*Just being outdoors hanging out has been the most relaxing part of the summer. You know the news has been bad and just everything being shut down. So being outside I don't care if I'm just counting fish, I'd do work half the day and then go out and fish the remainder while I waited for the wife and kids to get home. I'd catch one or two fish and just enjoy being out.*

—Returning Angler Focus Group Participant

*I wanted to be out in the mountains more.... It is gorgeous, and there is no phone service so no one can reach me.*

—Region 2/3 Focus Group Participant

*It's relaxing. It's addicting 'cause we'd wake up first thing in the morning, we'd float on the water. It's quiet and in nature. It gets kind of addicting 'cause it's such a calming thing.*

—New Women Angler Focus Group Participant

*It's a distraction from stress. You're just there and your mind is just looking at everything going on.*

—Region 1 Focus Group Participant

### **Being in nature was another important reason for fishing.**

Many comments related to being out in nature and enjoying the outdoors.

*Bonding with nature.... I haven't been fishing in 2 weeks, so I'm ready to get back out there.*

—Region 4 Focus Group Participant

*I think the reward is just getting out in nature. We have always liked fishing. It is good for stress to relax and get out in nature and see how many you can catch.*

—Returning Angler Focus Group Participant

*I ended up just sort of chilling, and out in nature waiting for fish to bite.*

—New Women Angler Focus Group Participant

*Well, it's a chance to relax outside..., enjoy the scenery. I could set up a lawn chair and sit there all day. It's really just easy, and it's a good chance to get out from my apartment.*

—Region 4 Focus Group Participant

*I like the idea of being calm. It calms me down. I like being near nature.*

—New Women Angler Focus Group Participant

*Even if I don't catch anything, I'm out there relaxing and just enjoying nature.*

—Region 4 Focus Group Participant

### **Many went fishing for camaraderie.**

A common theme was going fishing with others, including fishing with family. Many mentioned fishing with their children.

*Main reason is because of my son who wanted to learn how to fish. I figured we'd both learn at the same time. My brother-in-law is a fisherman guy; he is the one who taught us in the beginning.*

—Region 1 Focus Group Participant

*For me, going fishing with my family and my friends and my boyfriend, that's the primary reason why I go. I don't even recall a time in which I've gone alone. And I should try it. But for me, it's primarily a chance to kinda connect with the people in my life.*

—Region 4 Focus Group Participant

*My dad is a lifelong fly fisherman, so for me it was something he was already going out to do on his own a couple times a month or whatever. So I thought I'll just tag along. He already had a bunch of everything—rods, reels, flies, and all that stuff—so there was no cost of entry. I might as well try tagging along, and I ended up liking it.*

—New Women Angler Focus Group Participant

*My son was fishing at his buddy's pond. My son's 38, so he's not that young, but he invited me to go along once.*

—Region 1 Focus Group Participant

*It's kind of funny picking up this hobby so late in life. But I thought why not, my son's 15, and it's another way to bond with him and do things.*

—Region 1 Focus Group Participant

### **While camaraderie was important to some anglers, solitude was also important at times. Fishing was offering both—the camaraderie in getting to the sites, but also the ability to find solitude once out fishing.**

Many anglers mentioned being able to get away from others as an advantage of fishing. In some cases, getting away from family was a motivation for fishing.

*I wouldn't say [being with friends and family] is a primary reason. I do admit I kinda like it when I have company, but sometimes I just like to be by myself. Because it's my time, my personal time. So it's so nice to just have my time, my time with my friends, and then you just have your personal time.*

—Region 4 Focus Group Participant

*For me getting out on the river, there isn't a lot of cell service, it forces you to unplug. It's just you and the water and you're disconnected from all your responsibilities. ... It was just like a 2- to 4-hour period where I can be out in nature, very stress relieving.*

—Returning Angler Focus Group Participant

*I definitely prefer the rural because of being out in nature, and not hearing sounds. It's quiet, no people, so very relaxing.*

—New Women Angler Focus Group Participant

*Most of the time I've gone fishing I've been alone, but time wise it's probably 50/50. ... My wife will come out most of the time, too, but she's not getting up at like 5:00 in the morning to head out.*

—Region 4 Focus Group Participant

**Getting food was an important motivator for people to go fishing.**

Although generally not the primary reason for fishing, getting food is a benefit that many anglers enjoyed. (Note that a further section of the focus group findings specifically discusses fishing for food.)

*I like the idea of being in a cabin in the mountains for a week and just fishing, cooking what you catch. I haven't done it yet, but that's one of my bucket list things to do I guess.*

—Region 1 Focus Group Participant

*I started catching and cooking trout last year. So that's been pretty nice.*

—New Women Angler Focus Group Participant

*I hunt, and I like being able to provide my own meat; wanted to try the same with fishing.*

—Region 2/3 Focus Group Participant

*One of the most rewarding things for me is just being able to eat what I catch. I enjoy eating a lot of freshwater fish, catfish, crappie, panfish, sunfish, and trout I enjoy. If I go and catch a mess of fish and have them for dinner, that's what I enjoy.*

—Returning Angler Focus Group Participant

*I was actually surprised—I thought it wouldn't be much fun and kind of gross to filet it, but it was actually kind of fun to filet it. And it was rewarding to cook it.*

—New Women Angler Focus Group Participant

### **Health was an important reason for fishing.**

Many anglers fished in part for their health: several focus group participants explicitly stated that they fish for health reasons. Fishing provided a way for them to be active. And even fishing for relaxation was considered to contribute to mental health. In fact, one participant was told by multiple doctors that fishing would be good physical therapy for her disability, while yet another participant said he fishes specifically as therapy for his mental health. There was also further acknowledgment that fishing is a good physical or outdoor activity for those with physical limitations.

*I've been looking for alternatives for stress relief, and [needing to find] alone time for myself. ... I have a pond in my backyard. ... Mainly stress relief and dealing with anxiety.*  
—Region 1 Focus Group Participant

*I do enjoy the physical fitness aspect of it. It's a lot of good exercise. It puts me on my feet.*  
—New Women Angler Focus Group Participant

*I have a spinal fusion, so hiking is not really for me. But a relaxing sport where I can sit on a bank or a boat is the way to go.*  
—Returning Angler Focus Group Participant

*I like the exercise aspect of it.*  
—New Women Angler Focus Group Participant

*I started fishing because I'm disabled and it's good therapy for me. So that's the main reason why I started.*  
—Region 4 Focus Group Participant

*For me the recreation part is very important, moving my body. I'm not very competitive, not even with myself. I'm looking for some action, movement.*  
—New Women Angler Focus Group Participant

*So it was trying to find...things that were healthy, safe, and productive.*  
—Region 1 Focus Group Participant

### **Many enjoyed the challenge of, and the learning associated with, fishing.**

Quite a few focus group participants cited the challenge as something they particularly enjoyed about fishing. There was discussion about how they liked learning the new details about fishing; that they enjoyed learning to master the skills; that there is always something new to learn; and that it is challenging to try to figure out the different techniques, tricks, and secrets to fishing, including what bait to use and what type of hook to use and so forth.

*I like to try new stuff, and master new skills. At this point there is still a lot more for me to learn and figure out. That's the level of interest I am at right now.*  
—New Women Angler Focus Group Participant

*It definitely met my expectations, it was a learning experience.*  
—Region 2/3 Focus Group Participant

*It's challenging every time, and one of the reasons that I stuck with fishing is [to be] just constantly evaluating the environment and [knowing] how to react to different situations, [and to] figure out what the fish are biting on that particular day. So [it is] continuously challenging.*

—Region 4 Focus Group Participant

*For me, it was more like a competition with my fiancé. Most fish chew on a line, and that's what made it fun for me. It was a competition. And I won.*

—New Women Angler Focus Group Participant

*One of the most appealing things to me—it was really hard at first to get anything to bite. Then it was, let's try a different lure on it. Then it was learning how tie the string—or the line. Then it was watching the fish in the water. You see it follow and then it goes away. It's learning the behaviors of the fish—even learning how they pull differently. Oh that's got to be a worm out because it's pulling really hard.*

—Region 1 Focus Group Participant

*I also really enjoyed the research, learning how to fish and how to approach different bodies of water at different times of the year. [That] was just a totally new field for me, and I really enjoyed the process of learning, and I still am.*

—Region 4 Focus Group Participant

Moderator: Someone mentioned the challenge. How important is the challenge...to you?

*Very important, I loved the learning part.*

*I would agree, the challenge is important.*

—Region 2/3 Focus Group Participants

*[The challenge] is a huuuuge factor. That's like, it's this thing that you have to learn. People laugh at it being called a sport, but you kinda see how it is once you start doing it. There are all these techniques you have to learn. You don't just go out there and start doing it.*

—Region 4 Focus Group Participant

### **Some saw fishing as an inexpensive pursuit.**

Expense is relative, of course, but fishing was seen by some anglers to be inexpensive, particularly relative to some other activities such as golf.

*It's pretty cheap to get in as a beginner. You don't have to spend a ton of money to get a rod that works or a basic fishing kit. I've received a hand-me-down rod from my dad and then [gone] to Walmart to get a lot of the basic supplies.*

—Region 1 Focus Group Participant

*I agree it's inexpensive and easy to get into, but it opens up a world of opportunities.*

—Region 1 Focus Group Participant

**Catching large/trophy fish, although exciting, was not a reason or primary motivation for fishing among new anglers.**

Catching large/trophy fish is exciting and certainly contributes to the enjoyment of fishing for quite a few new and returning anglers. The Virginia Angler Recognition Program (referred to as VARP) was mentioned. Nonetheless, nearly all of the focus group participants also said that getting a trophy is not their primary reason for fishing: they would fish regardless of the ability or opportunity to catch a large, trophy fish.

*The second I saw that there's a citation [referring to VARP] for fish for every species, I was like, I don't care what species it is. I want one of these citations.*

—Region 4 Focus Group Participant

*We're always looking for the big fish. We don't always get it. It's not make-or-break. We're not upset if we don't get a big fish, but, yes, we want to catch a huge fish and make everybody happy. It would be super cool. But not make-or-break by any means.*

—New Women Angler Focus Group Participant

*When I got into it, it wasn't about a trophy. It was about getting different types and exploring new places like different lakes, streams, ponds to go fishing.*

—Region 2/3 Focus Group Participant

*That's not really a thing for me, trophy fish or anything. The first fish I caught was 3 inches long, and that was the coolest thing ever.*

—New Women Angler Focus Group Participant

*I mean, it's not a goal, but I wouldn't say no to catching a big fish.*

—Region 4 Focus Group Participant

## NEW AND RETURNING ANGLERS WERE INTRODUCED OR REINTRODUCED TO FISHING IN VARIOUS WAYS

### **Initiation (or re-introduction) into fishing occurred through myriad ways.**

One focus group participant mentioned the free fishing weekends. Others were mentored by friends who helped them learn how to fish, while another learned to fish at the same time as a friend—a companion learning activity.

*The free fishing weekend is what prompted me to go. I just wanted to learn and experience [fishing].*

—Region 2/3 Focus Group Participant

*We got kayaks, so it's just something to do while we're out in the kayaks, and I do mostly freshwater and Back Bay.*

—New Women Angler Focus Group Participant

*I had a hunting buddy that started taking me, I enjoyed it, so I started going fishing on my own.*

—Region 2/3 Focus Group Participant

*My husband talked me into it.*

—Region 2/3 Focus Group Participant

*I had an interest, but if someone hadn't provided all the gear and took me with them, I don't know if I ever would have gone.*

—Region 2/3 Focus Group Participant

*I started fishing because my boyfriend really likes to be outside.... But I also really like being around water because it's cooler. I started it to spend time with him, but then I really enjoyed it when I finally got to a river and got to wade in it. I really, really enjoy it now. So it's not even really about that relationship thing—it started like that—but now it's like I just want to be left alone.*

—Region 1 Focus Group Participant

*I started freshwater fishing this summer with my family. We went on a camping trip, and it was really fun.*

—New Women Angler Focus Group Participant

*Fishing since early this summer after Covid hit with a co-worker who also wanted to learn to fish. We've been fishing mostly saltwater in the Norfolk area, and the mouths of the Elizabeth and James Rivers, a little bit in reserves, nature parks, stuff like that.... Been fishing since May.*

—Region 1 Focus Group Participant

## FISHING BEHAVIOR AND PARTICIPATION CHANGES AS NEW AND RETURNING ANGLERS GAIN EXPERIENCE

**Changes include an expansion of locations of fishing, an increase in the types of fish sought, and use of a wider range of equipment. More experienced anglers start to mentor others.** After their initial participation (or their reintroduction to participation), new and returning anglers gain experience and confidence, and they expand their participation in a variety of ways.

*The gear, what you take with you has changed a lot. Small hooks don't get big fish. The bait has changed, looking at what types of fish you can get with different bait. The technique definitely. The poles changed as well. I went from a beginner rod into a spinner rod. It helps me cast further.*

—Region 2/3 Focus Group Participant

*When I first started, we needed to get out of the house, ...and it was more scattershot. After the first month, we tried to be more deliberate, understanding differences in casting and lures, getting into more of the technique, once we got the stir craziness out of our system.*

—New Women Angler Focus Group Participant

*I started by myself from square one. Now after a few months, I am showing friends, so my change is from knowing nothing to being comfortable; it's nice.*

—Region 2/3 Focus Group Participant

*My gear has changed as well, there are now fishing poles everywhere, car and house.*

—Region 2/3 Focus Group Participant

*When I first started, I'd cast out with a worm and just let it hang out, maybe move around a bit, and you catch what you catch. ... We used nightcrawlers for a while, and we caught a lot of stuff. ... Recently we have had some success with top water frogs, the weedless lures. Again it's learning patterns, and what fish bit on what lures. We have a lot of white perch that always nibbled the worms, if you're using worms. So getting away from the worms so we didn't catch these sort of nuisance fish. They don't need anything. They'll just hop on your line, and it's a waste. Gotta get rid of this one.*

—New Women Angler Focus Group Participant

## CONSTRAINTS TO FISHING PARTICIPATION

Varied constraints are discussed in this section. However, note that pollution/water quality issues as a constraint are discussed in the section titled, "Fishing for Food."

### **Lack of knowledge appears to be an important constraint to fishing participation and to trying new types of fishing.**

Focus group participants mentioned their lack of knowledge as a constraint to their participating more robustly as well as a constraint to their trying other fishing activities.

*[Discussing constraints to participating.] I wouldn't know what to expect when I got there. Am I gonna make a day trip, or is it gonna require a lot of hiking? Making an hour and a half drive to go check something out and not having any kind of clue as to what to expect. I'm sure once you do it a couple of times, then all places are kind of similar. But it's kind of hard to make that leap, that first jump.*

—Region 4 Focus Group Participant

*It's such a new thing, and then you start adding rules and regulations, and when you should go and when you shouldn't, and whose property you can [be on].... It turns me off from fishing except for the two spots I've already gone to.*

—Region 1 Focus Group Participant

*And definitely in that time, the investment that you're talking about driving somewhere, not knowing what to expect. Sometimes it pays off and sometimes you get out there and you kinda feel like you just spent your entire day driving with not a lot of fishing to get done.*

—Region 4 Focus Group Participant

### **Cost is also a constraint to trying other fishing activities and equipment.**

Some other fishing activities are perceived (and may actually be) relatively expensive, compared to the fishing anglers are currently doing.

*If I could afford it, definitely yes [I would try new things].*

—Region 1 Focus Group Participant

*Money has been the largest obstacle to trying a ton of different species of fish.*

—Returning Angler Focus Group Participant

Moderator: What would you need to be able to try those activities?

*More money.*

*Definitely more money.*

—Region 1 Focus Group Participants

*Definitely want to try fishing from a boat; don't have the money to right now though.*

—Region 2/3 Focus Group Participant

*I think [my biggest constraint] is more of the money that is keeping me from doing a lot of the things that I want to, being that I am the one that is on disability. I want to experience so much more. But it would have to be a gradual savings each month just to be able to do what I want to do. So right now I just [go] within an hour and a half from where I'm at and go fishing the places that I do know.*

—Region 4 Focus Group Participant

**A primary frustration with fishing was that fishing regulations were felt to be overwhelming.**

Participants were aware that there are different regulations for different species and different locations, but they felt that it is too much information to try to remember for each spot. They felt that it is hard to find location-specific information on regulations, especially while in the field while fishing.

*I don't know a lot about the regulations either. A lot of times I'm in an area without service, so how am I supposed to know if I want to keep a fish, what the regulations are?*

—Region 2/3 Focus Group Participant

*In Roanoke City, it was very confusing in the beginning in March to figure out where I can fish. There are special regulation trout in certain areas in the city that are not clearly defined. There are certain areas where upstream is fine but downstream is a special trout area. I guess there are signs on the river but it doesn't state if you can fish for bass in the trout areas. I found someone and they explained it to me, but right out front it was very confusing where I could fish and where I couldn't without a trout license. ... It was very confusing.*

—Returning Angler Focus Group Participant

*With YouTube, you don't know where those people are from half the time. So they may be speaking to laws that apply to them, where they are, not necessarily here. And from the places I have actually gone sometimes, the verbiage is kind of confusing at times. I don't know if my eyes get strained.*

—Region 1 Focus Group Participant

*It's really confusing when it comes to wildlife regulations in Virginia because you don't know if you're in a trout stream, if you can fish for other species. Well you know you can't but do you need a trout stamp? Or is the area closed now because you're in an area that plans on stocking trout but you're after smallmouth, unfortunately you can't fish in that stream. There's no true guideline out there unless you select all when you buy a license and I don't think any of us can afford that. I think the problem with the Department of Wildlife Resources is we need to streamline or consolidate resources for those types of areas. You can get in trouble without trying to get in trouble, they're out there thinking it's legal—and then you still get the ticket.*

—Returning Angler Focus Group Participant

**Access was a constraint among new and returning anglers (just as it is often an important constraint among established anglers).**

Several focus group participants mentioned problems with finding places to fish.

*I had difficulty finding a good place to go fishing. There would either be no fish or too many people. I think that was my biggest challenge, and I didn't expect it to be so hard.*

—Region 2/3 Focus Group Participant

*There are places we couldn't really access. We have a list of a couple places that will be the first when we have access to them.*

—New Women Angler Focus Group Participant

*Some of the boat ramps need maintenance.*

—Region 2/3 Focus Group Participant

*I wish they would open up more spots to fish, more access. Sometimes I look at an area and it's like if they put a dock right there like in Stumpy Lake, people could fish that area. ... Unless you have a boat, there's less access as bank and dock fishing goes. It seems like everywhere you can have a boat, they block off that area.*

—Returning Angler Focus Group Participant

**Litter and pollution were dislikes about fishing.**

Several focus group participants talked about litter and pollution as things that took away from their enjoyment. (Note that more about water quality and pollution is included in the section, "Fishing for Food.")

*The biggest downside is pollution and litter. There are a lot of places just covered in sandwich wrappers and cups.*

—Returning Angler Focus Group Participant

*The litter, the litter is bad.*

—Region 2/3 Focus Group Participant

## **MOST NEW AND RETURNING ANGLERS HAVE AN INTEREST IN EXPANDING THEIR FISHING ACTIVITIES**

**Fishing in the ocean and fishing from a boat (in the ocean as well as in smaller waterbodies, including freshwater rivers and lakes) were popular activities that remained untried but were of interest.**

When asked about new or additional fishing activities that they would like to try, the most common responses from focus group participants were fishing from a boat, saltwater or deep sea fishing, and fishing in the ocean from piers and the shore.

*I want to fish in the ocean, because there are bigger fish, and it would be nice to go to the beach and switch up the environment.*

—Region 2/3 Focus Group Participant

*For me, saltwater fishing, I would like to try that, but I don't know much about it. You know some of the species like flounder or tuna fishing sounds really exciting. It's just a matter of knowing where to go. It's totally different than going to your backyard and catching a catfish. Doing that would be something new to try. I would need time and money because I would have to travel 4 hours to the nearest saltwater area.*

—Returning Angler Focus Group Participant

*Yes, I really love kayaking so to combine that with fishing would be the next big step definitely. It's also just a little more pleasant than walking around on some of the banks.*

—New Women Angler Focus Group Participant

*I would like to experiment more on saltwater fishing, but I am usually trying to run away from work.*

—Region 1 Focus Group Participant

*Now that I've had a taste of saltwater fishing,...I would like to try deep sea fishing. I want to go after the bigger species like the marlins and tuna and stuff like that. I think that would be a lot of fun. I would need a bigger boat to do that. I would also have to bring along someone more experienced, if anything for safety. We are in the works of getting a bigger boat. My dad has a friend that does offshore fishing, we talked about once we get a boat he'll come and show us.*

—Returning Angler Focus Group Participant

### **Fly fishing piqued many anglers' interest.**

Also with much interest expressed for it was fly fishing, which was enhanced for some because trout waters were outside of the current realm.

*I want to try fly fishing. I've never done that but it looks interesting.*

—New Women Angler Focus Group Participant

*I think it would be cool to put on the waders and do fly fishing, go to the trout streams more.*

—Region 1 Focus Group Participant

*I have never been fly fishing, my dad has and makes his own flies and stuff. I've never gone but I've always wanted to, just haven't gotten around to it.*

—Returning Angler Focus Group Participant

**Anglers also wanted to expand to new (to them) species, and various types of fish were mentioned.**

Anglers mentioned wanting to try fishing for various species that were new to them and that sometimes required fishing equipment that they had not used.

*I've been going to the Outer Banks since the early '80s. I've always seen guys starfishing. I'd like to try that. I think that would be kind of cool to do.*

—Region 1 Focus Group Participant

*I want to catch a musky, I hear they are fun and challenging.*

—Region 2/3 Focus Group Participant

*Rock bass: what I can get? Something different, something interesting. A shark would be kinda cool, but it's a little different.*

—Region 4 Focus Group Participant

*Whenever we go to Fort Monroe to walk around, we see the guys in waders heading out to that little island, and I'm like "Why are they in there? What are they catching?" So that's kind of interesting.*

—Region 1 Focus Group Participant

*[Reacting to another focus group participant's suggestion of fishing for snakehead.]  
Yeah, I've heard snakehead are great, but I have no idea how to catch them.*

—Region 4 Focus Group Participant

*I'm excited to fish the shad run in the Potomac next spring. I've heard a lot about that, and I just missed it. I guess it was in April this year, something like that. I'm really looking forward to that, and I may even take some time off of work to get a couple of solid days in.*

—Region 4 Focus Group Participant

**Some anglers wanted to try new types of equipment and/or different lures and bait.**

While some anglers mentioned specific types of equipment (for instance, one wanted to go bowfishing), others simply wanted to try new equipment and types of fishing but were not specific regarding what those would be. The attraction was simply that they try something new.

*So, I currently have only experimented with worms. I'd like to use minnows and other live bait. I've even heard candy. So, we'll just see.*

—Region 4 Focus Group Participant

*So I started that way this year with little rooster tail lures and fly tails on a spin rod and then just started learning now. It was the same for trout but then I started with smallmouth bass and then largemouth bass. Using worms and senkos and different lures. I started learning more about fishing but the setting is the same, just on a river in some state.*

—Returning Angler Focus Group Participant

**Some anglers mentioned the excitement of going to a different part of the state (as well as out of state) and trying different waters.**

The attraction of different waters, which sometimes require different skill sets and different equipment, was expressed in the focus groups. The fun of traveling to a different location was also mentioned.

*I would like to find some better places in Fredericksburg along the Rappahannock.*

—Region 4 Focus Group Participant

*Also trying different locations. Growing up in Wisconsin, and my husband's from New York, there's a lot of good fishing up there. Now that we do it as a hobby, it would be fun when we go visit family to try out the places that we grew up in and see if there's different kinds of fishing. We can have fun up there, too.*

—New Women Angler Focus Group Participant

*I'd like to make some multiple day trips to go out to more rural areas.*

—Region 4 Focus Group Participant

**And some anglers mentioned any combination of the above.**

*I agree with wanting to go to the western part of the state for trout, and also get on a big boat. I have no idea what's out in the middle of the Potomac, but I'm sure it's some big fish, and I wanna get them.*

—Region 4 Focus Group Participant

*[We want to try] different kinds of fish we can catch and different places to do that. ... Catching different species, and the big fish, and exploring different areas. Not just Virginia but elsewhere, too.*

—New Women Angler Focus Group Participant

*I tend to fish from the shore, so a big change would be to actually go on a boat and to go out, maybe into the middle of the lake, and start fishing from there. Also I'd like to experiment with different types of bait.*

*Fly fishing would be interesting, it seems like a mystery to me. Also fishing from a boat seems more convenient. I am close to Smith Mountain Lake. I would like to try trolling. Trolling for striped bass or stripers. It is popular in that area. I've ate them before, but I want to try catching one.*

—Region 2/3 Focus Group Participant

*I [would like to try] different types of fish. I'm doing more trout fishing this year than last year. Just like trying different lures and things too, and different places. Just more exploring this year.*

—Returning Angler Focus Group Participant

*I definitely would like to try saltwater, but I would really love to try tuna fishing. I don't know why. Big game fish.*

—Region 1 Focus Group Participant

**Many indicated that they would likely need an experienced mentor or hired guide for boat or deep sea fishing.**

Anglers expressed the need to have an experienced mentor or hired guide for boat or deep sea fishing. This type of fishing was deemed to be difficult to undertake on one's own.

*[I would need to be] with someone who has already had the experience. Boats seem very intimidating. ... Being with someone experienced with it, someone that's not like they've done it a few times, but is seriously experienced, would make me feel more likely to do that.*

—Region 1 Focus Group Participant

*I feel like for boat or saltwater, you would need to know someone. I wouldn't do it by myself; I need someone regardless of experience because we could figure it out together. I need someone with me while I go fishing.*

—Region 2/3 Focus Group Participant

*This [a discussion among two other focus group participants about which boats are required to be registered] is why I want somebody experienced who knows what they are doing. There are so many rules. It's just a turn-off.*

—Region 1 Focus Group Participant

**Lack of knowledge was a constraint to anglers' explorations of new types of fishing.**

Quite a few anglers also indicated at several different times during the discussions that the unknowns are what keep them from branching out.

*I would probably not try anything on my own. I would need someone experienced. I've never even been on a boat.*

—Region 2/3 Focus Group Participant

*It's definitely a learning experience, and I still have a lot to learn. I don't feel confident going by myself and using the right types of lures and baits.*

—Region 2/3 Focus Group Participant

*I had a lot of issues with the basics like tying knots. It ended up being more complicated than I expected.*

—Region 2/3 Focus Group Participant

## **MANY NEW ANGLERS ARE CATCH-AND-RELEASE ANGLERS, BUT THERE IS INTEREST AMONG SOME TO KEEP AND EAT THE FISH THAT THEY CATCH**

**New anglers appear to be comfortable with catch-and-release fishing, although getting one's own food is an appealing aspect.**

While a few anglers catch fish to eat, most new anglers in the focus groups only participate in catch-and-release fishing. Nonetheless, several expressed interested in catching fish to eat.

*Most of the time, my family eats plant-based, but we felt like catching the fish, not for eating, hoping you're not damaging it too much, put it back, but it felt like a little bit of connection with nature as well, and a little bit of respect.*

—Region 1 Focus Group Participant

*We don't eat anything we catch on the James River; it is all catch-and-release.*

—Region 2/3 Focus Group Participant

*We've only done catch-and-release so far. But one day I would like to catch and eat a fish. But I'm not seeing that any time soon.*

—New Women Angler Focus Group Participant

*I've never gotten to experience that part yet [the eating of fish] because we all let them go. I don't really know why we always let them go because I really like trout a lot, but we always let them go. I don't know if that would be motivation for me, personally, because it's a little violent for me I guess.*

—Region 1 Focus Group Participant

*We catch-and-release, mostly because a lot of the places we go to, you can't keep. The reservoir here in Ashburn is catch-and-release only. There's some signs in Potomac—Goose Creek—that warn against eating too much of the fish. So we just don't at all.*

—Returning Angler Focus Group Participant

## FISHING FOR FOOD

### **An appeal of fishing for food is that the fish is fresh.**

Many focus group participants talked about eating their catch and that being able to do so is a strong appeal of fishing.

*So I have actually caught one fish, killed it, cleaned it, and cooked it on the spot—probably within 10 minutes of getting it out of the water. I only did that because I had the opportunity available. ... I had an outdoor grill literally right next to me.... So we cleaned it right there on the boat and then cooked it on the grill with some seasoning and stuff like that.*

—Region 1 Focus Group Participant

*Started fishing because I'm a pescatarian—so I wanted to learn to kill my own food.*

[Note: A pescatarian does not eat meat but eats fish with an otherwise vegetarian diet.]

—Region 2/3 Focus Group Participant

### **A primary concern about fishing for food is the safety of eating fish. Additionally, for those with interest in eating fish, lack of knowledge appears to be an important constraint to catching/keeping fish to eat.**

Many expressed interest in eating the fish that they catch, but many focus group participants worried about the safety of eating fish. They expressed their concern about the safety of eating fish, particularly fish caught in more urban areas. Many indicated having trouble knowing which fish are safe to eat, as well as how much is safe to eat. Their awareness of fish consumption advisories combined with their inability to determine if the advisories applied to the location in which they were fishing was mentioned as a cause for concern or apprehension.

*[Eating fish] was my initial thought..., but [I would need to] go out of my way to a body of water which I would consider viable for eating the fish. But I would die eating the fish from this backyard. I've seen what some of the neighbors throw in the water. I don't know how anything lives in that water. It's fun to fish anyway.*

—Region 1 Focus Group Participant

*We eat everything unless we catch it in the James River. We eat crappie and trout.*

—Region 2/3 Focus Group Participant

*[Whether we eat the fish] would probably depend on where we get the fish from. Just not from around where we live. It's very urban around here, but if we were somewhere else and caught a trout, say in Robinson River in Culpeper, then absolutely, we definitely would plan on cooking it up. But on a daily basis, where we fish, probably not.*

—New Women Angler Focus Group Participant

*Anything else would mean, I gotta sit down and Google up if I can actually eat it.*

—Region 1 Focus Group Participant

*Sometimes I just want to know if I catch a certain type of fish, can I keep it? If I eat it, is it safe? Will I die?*

—Region 1 Focus Group Participant

**Some anglers lack the knowledge of how to process and prepare fish.**

One constraint to keeping fish to eat appears to be lack of knowledge about how to process and prepare the fish.

*I would say that, if I wanted to learn how to gut a fish and harvest the meat and all that kind of thing, I would definitely rely on another person to walk me through that. I use YouTube videos almost exclusively to learn different techniques, but that's the sort of thing I definitely would wanna be walked through in person.*

—Region 4 Focus Group Participant

*I remember camp as a kid, we had to scale it and learn to clean it. ... I learned the process, but I don't know how much I remember. I could overcome it, one of my goals is to relearn. I need to catch something big enough to make dinner too.*

—Region 2/3 Focus Group Participant

*I would really like to try to catch something and eat once I get a little more confident. [What I need is] learning how to clean a fish to cook.*

—Region 4 Focus Group Participant

## URBAN FISHING

**Urban fishing sites are used and appreciated by many new anglers. A strong draw is that they are close and convenient.**

Many use urban fishing sites because they are close and convenient, and anglers are familiar with the sites. Anglers who use these sites indicated that they feel that they know where to go and what to expect at the sites.

*I fish in a lot of urban environments. So I work in downtown Newport News, and I can fish off a pier there on my way home. I live in downtown Norfolk, so I can fish under the overpass of the freeway here.*

—Region 1 Focus Group Participant

*Access is great [at urban sites]. There is lots of access. Other sites you may have to walk 20-30 minutes or walk through underbrush. [Urban sites are] much more convenient.*

—Region 2/3 Focus Group Participant

*I've been to four of the urban waters in my area: two in the Richmond area and two in the Hampton Roads area. They're pretty good actually. For being packed into the middle of the city, there's some really good fishing opportunities. I caught a big common carp out of one of them, and I wasn't expecting [that], so that was really exciting.*

—New Women Angler Focus Group Participant

*It's a tradeoff to rural places: rural is nice because you're out in the middle of nowhere, [but] it's nice to drive 2 minutes down the road for some fishing before the sun goes down after work. If I went to New River, it would take me 20 minutes to go out there and fish that.*

—Returning Angler Focus Group Participant

*The one I've been going to in Norfolk is actually next to a skatepark. ... So, I go there. It's right on the Elizabeth River, and it has a little wooden pier. I can just go there and cast out. ... It's convenient for me. I can even walk to it from my apartment if I want to. That's been the best thing about it for me. It's not an inconvenience to go out fishing. I don't have to load up my car and drive, I can almost go right here.*

—Region 1 Focus Group Participant

*It's just, closer. Four Mile Run is 2 miles down the street. The Potomac is like a 5-minute drive. A rural site is: I gotta plan out an actual trip to go there and try to have a backup if fishing isn't any good.*

—Region 4 Focus Group Participant

*It's just the convenience. One is 5 minutes from my house and one's like 15.*

—Region 1 Focus Group Participant

*It's mostly convenience for me. I can pick a few places between here and my work...either going out in the morning and on my way home in the early afternoons. They're just the most convenient places for me to get out to the country. The woods would be too much of a drive for me to do on a daily basis. Just any given day after work, if the weather's good, and I have the poles in the car, it's no effort to take a 5-minute detour and park downtown somewhere.*

—Region 1 Focus Group Participant

**A few participants mentioned that urban fishing sites offer the opportunity to meet other anglers and benefit from their guidance and tips.**

There is some camaraderie at urban sites because anglers interact with other anglers a bit more than they would at more backwoods sites.

*[Regarding urban sites.] I mean, something that I noticed is that you meet some of the friendliest people when you're out fishing. They're always willing to help you. If you lose a hook and don't have an extra one, they're always willing to help you out. No matter where you are, there's always someone willing to talk.*

—Region 4 Focus Group Participant

*[Urban sites allow me] to find...local people who are willing to help new people learn how to do things, almost like a mentorship. Someone close by who would help me.... I know there are safety issues...but to have a way to hook up with those people because maybe my schedule doesn't always line up with my boyfriend. And so I could use a little bit more help and guidance.*

—Region 1 Focus Group Participant

*I've gone to a bunch of different places, and I have not had the same consistent luck catching fish anywhere else besides the urban places close to me. And that might be a function of I've just learned that water very well from the guys that are there that kinda showed me what to do. But it's the only place I can go and just know that I'm gonna catch something.*

—Region 4 Focus Group Participant

**Participants like that urban fishing sites are often stocked.**

Stocking was appreciated by these urban anglers. They like to have some success.

*I know they post the schedule for stocking.... If you go a few days after, it goes well, but it quickly gets fished out.*

—Region 2/3 Focus Group Participant

*I think it's pretty convenient. When they stock around here, I think they stock with the channel catfish during the spring/summer season and trout in the winter time. I think it provides us with extra opportunities to catch nice fish.*

—New Women Angler Focus Group Participant

*I would add that they're stocked. My first time out fishing, if I didn't catch crazy big catfish, I probably wouldn't still be fishing. If there's nothing in there to catch, then I'm not going. I've been able to have relatively good luck every time I go.*

—Region 4 Focus Group Participant

*I would say having them stocked kind of makes it, it's really sort of a package deal. You just pull up, get your rod out of the trunk, walk a hundred yards, and you're there. It's just very, very convenient.*

—Region 4 Focus Group Participant

*The trout stocking is a big draw for me to the urban waters, and the fact I caught that 8-pound carp. It was the biggest fish I ever caught. That urban place in Hampton, too, was a really big draw. I think I really do prefer the urban waters.*

—New Women Angler Focus Group Participant

**Although urban fishing sites clearly have benefits, many who use them still say they would prefer to fish in rural areas.**

Most commonly, lack of time or desire to travel and lack of knowledge of where to go or what may be at other spots prevents participants from actually fishing in rural areas over urban sites. But certainly they feel that more remote sites might offer a more aesthetically pleasing experience than the urban sites.

*Well Shields Lake, don't get me wrong, I like Byrd Park..., it's not the atmosphere I'd wanna go to and fish. ... When I think of fishing, I think of really being out in nature surrounded by wood and beauty and so forth.*

—Region 1 Focus Group Participant

*Definitely rural [is preferred], it's way better. It boils down to the amount of pollution and toxins in the water and on the bank.*

—Region 2/3 Focus Group Participant

*For me, convenience is the only reason I do it. I'd rather drive 3 hours to go fishing in the wooded mountains than be here in the downtown area. But it's just not worth it to do that once a week, especially if you go and catch nothing. It's a bit disappointing. The risk to reward is much more favorable if you do it 5 minutes away.*

—Region 1 Focus Group Participant

**Criticism of urban fishing sites commonly included crowding, pollution, and litter, and many anglers in the focus groups said that urban fishing sites could be improved.**

In line with some anglers' desires to fish in more remote areas is that the urban sites often have too many other anglers, have waters that are not pristine, and have litter. Despite using these urban sites, anglers expressed their desire that the sites be improved and better maintained.

Moderator: What did you like least about your experiences fishing the urban sites?

*The litter.*

*They're crowded. Going in some places, you find a lot of random hooks in places and have to be careful.*

*They are crowded. You try to get on a boat to escape the crowds, and you are dealing with other people's waits and the traffic.*

*Fishing in the summer you definitely have to be on the lookout for other people.*

*Casting is not always easy.*

—Region 2/3 Focus Group Participants

*I have never once seen a Game Warden at the James River. ... Now people are leaving a lot of stuff behind, so we can't take our boats out anymore. They take kids out there, and it is incredibly dangerous. They need to monitor urban areas more.*

—Region 2/3 Focus Group Participant

**Concern was expressed about the health/safety of consuming fish caught at urban fishing sites.**

The pollution and compromised water quality that may disproportionately affect urban sites make anglers concerned about being able to eat the fish from these urban sites.

*I'm going to potentially try to eat what I catch. So I get on Google Earth and look at how much structures, like houses, are around the place, because if my neighbors are going to be dumping whatever in the water, I don't want to be eating fish that have a weird diet. You are what you eat. I definitely do a bit of Google Earthing. Even though I'm in the city, I try to look for bodies of water that have little to no housing or structures where people might walk by and toss trash.*

—Region 1 Focus Group Participant

*I fished on the Roanoke River too, once or twice. I guess they [have] contaminant advisories, so we couldn't eat our catch. It drove me away from those areas.*

—Region 2/3 Focus Group Participant

**Access was an issue at some urban fishing sites.**

Again, the sites are appreciated because they provide close opportunities for some anglers. Nonetheless, access issues were mentioned, which included not being able to actually get to the sites easily as well as not having room to cast once at the fishing location.

*Uh, too an extent, yeah, on the urban side. There's so few spots. There's trees in the way in some spots.*

*—Region 4 Focus Group Participant*

*One in Chesapeake and one in Hampton—there's a lot of trees around the banks there. ... I guess that's the one thing, especially as a new angler. I am more confident in my cast now, but for new anglers just starting out, that could be a deterrent.*

*—New Women Angler Focus Group Participant*

## SOURCES OF INFORMATION

**Overall, new and returning anglers think that there is plenty of fishing information available, but they are unsure of where it is or how to find it.**

If the information cannot be accessed, the effect is the same as if there were no information at all. Indeed, when the moderator asked new and returning anglers how to get them information and what information they need, responses sometimes included the insight that “You don’t know what you don’t know.”

*Get that information out there so it’s easier for a beginner to be successful. They’re reading all this stuff online...and all the jargon, and the very specific kinds of lures. I don’t know what any of that is. I will spend 21 minutes Googling just to understand the terms they’re using. It gets harder and harder the deeper you go.*

—Region 1 Focus Group Participant

*I would just like to learn more resources aside from this one app and the DWR website. Where else do I go for this information?*

—Region 2/3 Focus Group Participant

**Focus group participants get a lot of their fishing information by Googling and visiting YouTube.**

Many anglers rely on general search engines to find information because they do not know the specific sites to go to for information. YouTube is one site that they do know and visit for information on fishing.

*Well, I tend to just Google. And I look at reviews and pictures to get a sense of what the layout is.*

—Region 4 Focus Group Participant

Moderator: Do any of you use YouTube?

*That’s where I learned to line a pole and all kinds of things.*

*I do, and I feel embarrassed because, when I got my spinner pole, I didn’t know how to put it together or cast it. I had to find service so I could look up a video on YouTube. How was I supposed to know? It didn’t come with instructions.*

*I have used it to look up knots and leaders, because I couldn’t find leaders at the time. How to use a jig, which I didn’t know. ... So I couldn’t figure it out, and I used YouTube.*

*I use YouTube. There is a channel called, “meat eater.” They have a lot of good resources on YouTube. If you’re into cooking, they have a lot of good recipes online, so that’s something I’ve looked at. I haven’t found any good podcasts yet.*

—Region 2/3 Focus Group Participants

*I actually went into a wormhole on YouTube, and I stumbled across a bunch of fishing videos. And I thought, “Hey, this looks simple enough to start.” So I went out and got myself the equipment after a few months, and it’s been a blast ever since.*

—New Women Angler Focus Group Participant

**Fishbrain is a popular app for fishing information.**

One of the specific information sites that does have some traction is Fishbrain, mentioned by several focus group participants.

*I use an app called Fishbrain. It helps [you] to know what fish are in the water, and if you click on a popular location, it'll show you. The only drawback is it doesn't show what is private property.*

—Region 2/3 Focus Group Participant

*I've downloaded Fishbrain, and you see all these different catches and you...look up the map and you're just trying to scout it out. ... It's a good app to use, though, I will admit that.*

—Region 4 Focus Group Participant

**Another source anglers like is word-of-mouth—the advice of other anglers. They talked of meeting other anglers while fishing and learning from them.**

Although search engines and other electronic sources are popular, word-of-mouth still is an important source of information among anglers.

*Access to knowledgeable people. I know for hunting, they have the hunter safety class, and I met people there to go hunting with. I don't know if there is an equivalent for fishing, but having knowing where to go and what to do and having someone experienced in the community would be helpful.*

—Region 2/3 Focus Group Participant

*I talked to a guy that was fishing nearby me, and he was fly fishing, and he was showing me all the different ways. And it just seemed so interesting to me. Just to watch the technique of it, it just caught my mind, and I'm like, "I have to try this." It seems so cool in so many different ways.*

—Region 4 Focus Group Participant

*When I tried saltwater fishing, there were a lot of people that were friendly and willing to help. Much nicer than freshwater places.*

—Region 2/3 Focus Group Participant

*I'd have to say friends, family. I get advice from a lot of people about which baits to use.*

—Region 4 Focus Group Participant

*The most that I've learned come from speaking to people and getting local knowledge about this specific body of water that I'm in or something like that. That's the most valuable thing.*

—Region 4 Focus Group Participant

**Recreational Boating and Fishing Foundation (RBFF) was not mentioned as a resource.**

Just as there was a lack of awareness of Department resources, no focus group participant specifically mentioned RBFF resources for fishing or as a portal to information for fishing.

**New anglers “don’t know what they don’t know.”**

This comment (paraphrased) was made during multiple focus groups and was met with agreement and support. New anglers are saying that they cannot fully articulate what information and resources they need because they do not know what they are missing as they are not yet aware of it. Just as many are unaware of the many Department resources, they are also unaware of what else they might need to help support or enhance their fishing participation.

*It can get overwhelming. When I get into a thing, I tend to dive right into the deep end and try to research and learn as much as I possibly can, and even then I feel like there’s so much I don’t know about this. I’ll check out book after book at the library, and I’ll go online. It’s like one step forward, two steps back sometimes, in understanding things past the basics. ’Cause it gets so nitpicky sometimes, and that can get really overwhelming.*

—Region 1 Focus Group Participant

*I was interested, but it’s hard because you don’t know where to look for the information on where to go or what tools to use. It is much harder to learn by yourself.*

—Region 2/3 Focus Group Participant

*[On information that would be needed.] Probably some different topics we don’t even know about.*

—Region 2/3 Focus Group Participant

## THE DEPARTMENT AS A SOURCE OF INFORMATION

**The Department provides useful information and resources, but many have not used them or are not aware of them.**

Unless the Department shows up in a search using a general search engine, some anglers will not be aware of the existence of this valuable resource.

*I agree, it may exist, but I don't know.*

—Returning Angler Focus Group Participant

*But when I bought the license, it didn't tell me anywhere that I can recall that specifically said, "We have an app for our licenses," where there is information on what ponds we stock with what, stuff like that. It seems like the best place to pinpoint information is where you're buying the license. "Here's where you can find what information."*

—New Women Angler Focus Group Participant

*That website [note: the angler was actually referencing an app] mentioned earlier had a ton of useful info. Had I found this on day one, and all this information, that would have made it so much easier to jump in. It's such a great website [app] but I just had no way to find it. Making it more visible by perhaps putting it right on the site where you apply for a license? Perhaps make it so that everyone who applies for a license in Virginia has to go to that website. Putting it right there with it would make it more visible.*

—Region 1 Focus Group Participant

*[Focus group participant answering a question from another participant about whether the resource exists.]*

*There's a DWR website. Is there a tab that says "resources"?*

*There is, and it has videos and resources.*

—New Women Angler Focus Group Participants

*In New York, when you get your license, you get a pamphlet with all the rules and regulations. In Virginia, you don't get a pamphlet, you have to Google search everything. It's kind of a pain when you're new to fishing in the state. ... It would be better if there was a pamphlet or book I could open on the shore or in a boat with the pictures and species and what the limits are for that fish. We just don't get that.*

—Returning Angler Focus Group Participant

*I didn't even know there was an app you could keep your fishing license on. ... So it's smart that they have the app, but I didn't know about that. It could have been easily displayed somewhere. It seems there are a lot of good resources but more obvious access to the existing sources. If someone's buying a license, there's a captive audience for resources.*

—New Women Angler Focus Group Participant

**Those who have used the Department’s fishing regulations guide are very happy with it and find it useful, but most are not even aware it exists.**

A few participants said that they had received a printed fishing guide when they had purchased their license, and they are very complimentary of its utility. Most said that they did not receive the guide and said that it would have been very much used and appreciated had they received it.

*[It would help] if you’d give a handbook with a list of rules, and things like that. It’s complicated. You think you just want to go out and fish, but [then you] learn...that you can’t use certain hooks in certain places.*

—Region 1 Focus Group Participant

**Those who have used the Department website and apps say that they are useful and helpful.**

Although many focus group participants were not aware of these resources, those who had used the Department website’s fishing section say it is easy to use and navigate and that the information is very useful. Those who had used the app also appreciated it. However, once again, few had used these Department resources.

*One thing about the website, I’ll say for a government website, it is surprisingly good. It’s sleek and fast and looks decent. It looks modern. It’s functional. Things are easy to find, and it has...some of the most inclusive gender options I’ve ever seen on a government website.*

—Region 4 Focus Group Participant

*There’s a good PDF in the DWR.VA.gov [site]. There’s a tab that says, “freshwater fishing and boating in Virginia,” that has all your rules. It has what lakes you can use motors on and which ones you can’t, the different species in each lake. It actually has...if you’re out fishing, and you find one you don’t know what it is, it actually has pictures of the fish and the names of the fish so you can look and see what it is. That’s a really good...website.*

—Region 1 Focus Group Participant

*I use the VA DWR app. I downloaded that right when I got my license ’cause that way you can have your license right in there. I have actually used it a lot ...because we didn’t know what a lot of the species were. I would look it up. I’d be like, “I think it’s that.” And I usually end up being right ’cause I could find it with pictures on the app.*

—New Women Angler Focus Group Participant

*I’d just like to comment that I found the Virginia website extremely useful. They’ve got a map where they mark all the different trout rivers and everything like that. And so I stare at Google Maps constantly trying to plan trips that I’ll never make. So that’s been fun.*

—Region 4 Focus Group Participant

**Some participants have watched the Department's fishing videos and Instagram posts and have found them very helpful.**

This is a resource of which many focus group participants were unaware. The participants who were aware of it found this resource to be useful.

*You can actually watch people doing it, and get more of a grasp for it. I like to read, but I think that's easier when it comes to things like fishing. It's easier just to see it being done.*

—Region 1 Focus Group Participant

*One thing I found helpful and fun is the Department's Instagram. I found fishing spots through there that I didn't know about. I watch videos with the fishing outreach guy, and it's videos of them fishing, and I watch and think I want to go fishing now. I think they're doing a good job with that.*

—Returning Angler Focus Group Participant

**Several participants found Department fishing maps to be useful, although comments include that the maps could be easier to navigate while in the field.**

Maps remain a useful resource, although anglers seek improvements in them.

*It isn't very user friendly because it only shows the streams, but not how to get there or if it is surrounded by public or private land.*

—Region 2/3 Focus Group Participant

*There is a lot of information, but it is still lacking in a lot of ways. It doesn't give you proper directions. I never go alone because there are no signs that distinguish private property.*

—Region 2/3 Focus Group Participant

*I think there's a GIS map, but it can be a bit hard to use. It didn't have all the filters I was looking for. I couldn't view it the way I wanted. It seemed like there was incomplete information on fishing, fees, types of access. The app itself is good but could be improved a bit.*

—New Women Angler Focus Group Participant

*It would be nice too with a map feature not only to know what are trout streams and what aren't on the same interface. You can look at the trout stocking schedule, but it's only listed by name of what county it's in and the body of water. If you could click on the stream and figure out is it Class A or B being stocked. So multiple levels of information.*

—Returning Angler Focus Group Participant

**Suggestions were made and supported during group discussions that the Department should have a place with all the informational resources a new angler needs.**

One suggestion included having a portal on the Department website that links to a variety of useful fishing information and resources; another suggestion was sending all license purchasers an email with links to various resources. Focus group participants generally seemed unaware of the Department website's comprehensive fishing section.

*If there was something that, honest to goodness, the State ran, and there was a nice tutorial on how to set a hook, how to bring in the fish once you got it, it would be very helpful. Even a legal 101.*

—Region 1 Focus Group Participant

**In short, the issue does not seem to be that there is a lack of Department resources to support new and returning anglers but rather that there is a lack of awareness that the sources exist.**

Those who have not used Department resources were intrigued to hear about them from others and would very much like to use the resources. Those who have used them are mostly pleased with them and find them helpful. It was clear that there are more participants who have not used Department resources than who have used them. The challenge appears to be increasing the awareness among new and returning anglers of the availability of the resources.

*But if the Virginia Department of Wildlife put out official information on places about what fish are there or if it is public land. That would be helpful. [Discussing information that the Department currently provides.]*

## TYPES OF INFORMATION

**Overall, new anglers would most like information on where to fish, identifying the fish they catch, and local or location-specific information. Nonetheless, other topics were mentioned.**

The focus group discussions on the types of information generally came down to these three primary topic areas, which are discussed individually in more detail below. Other topics were mentioned, but at less frequency than remarks about these three primary topics.

**Most focus group participants expressed strong interest in information on places to fish.**

Many participants said that they would like to fish at different sites and locations but said that they (1) do not know where to go, and (2) often do not try new places because they do not know what to expect when they get there, such as where to park, how far they will need to walk, where they can best access the water, what species are there, etc. Therefore, when they say they would like more information on where to fish, they are actually looking for more information than simply “where to go.” They would like specific information about what to expect when they arrive.

*Places to fish, locations that are safe. I usually have a friend take me, but I would like to start doing things on my own. I need to look up more resources online.*

—Region 2/3 Focus Group Participant

*More information on places to go fishing. ... We just moved and have no clue. We're just kinda looking around.*

—New Women Angler Focus Group Participant

*Directions are huge, no one gives you an address. You can't just put in 'the Roanoke River.' Trying to figure out how to get to these place—I don't know how I would have gotten there without my boyfriend showing me.... It is like a pull-off on the side of the road, and you can go fishing in that 10-foot area, but on either side it is private property. It is hard to figure all that out.*

—Region 2/3 Focus Group Participant

*[Lack of knowledge of where to go] is why I don't go fishing more often. I want to explore new places, but I don't know where to go.*

—Region 2/3 Focus Group Participant

*There needs to be more information, because you really don't know where to go. Can't be on someone's private property; someone will call the law on you.*

—Region 2/3 Focus Group Participant

**Many focus group participants expressed strong interest in a source that would better help them identify the fish that they catch as well as learn the habits of individual species.**

Because they are new to fishing, participants feel that they need a lot of help in determining the species they are catching and/or fishing for in the area. Some have used the Fishbrain app to try to identify the fish they catch, but they feel that the app is not always accurate, so they feel like there should be a better resource for doing so. Those who have used the Department digest or website say that it is difficult to identify fish because you need to actually have an idea of what you are looking for—how to go about identifying fish. One suggestion was to have a visual guide or resource in which the angler can click on a picture of the fish rather than having to click on the species name to then see if the picture matches.

*[Discussing information needs.] And here's what these fish are and what they look like. That first fish I caught, I just called it a catfish, 'cause to me it was a catfish. But apparently it's an argument: like it's a bull catfish or it's a flathead or something.*

—Region 4 Focus Group Participant

*More information about the fish, and the kind of fish mannerisms—what do they like to do?*

—New Women Angler Focus Group Participant

*Half the fish I caught, I have no idea what they are.*

—Region 4 Focus Group Participant

**Many focus group participants expressed strong interest in local and location-specific information.**

Participants are aware that different fishing locations have different species and different regulations and restrictions, as well as some fish behavior that is specific to the site, but they are often unsure about what those are for different locations. They would like to have a resource that is specific to certain locations and areas. A suggestion was made in two separate groups to have plaques or postings at the site (or to have an app in which you could click where you are on the map) with information about the site's resident species and regulations.

*That's a great idea...to have Virginia sponsor videos that address issues specific to Virginia; for example I know there's the magazine, guide, that has all the fishing regulations, rules, and so forth.*

—Region 1 Focus Group Participant

*Information on places, about what fish are there, or if it is public land. That would be helpful.*

—Region 2/3 Focus Group Participant

*I haven't found a lot of Virginia-specific resources. There are general sites or things from the federal government, but you have to extrapolate on that. Like, hopefully trout fishing is trout fishing regardless of state.*

—Region 2/3 Focus Group Participant

*For us, part of it is trying to figure out where to fish. Being new to fishing in Virginia, we spent a lot of time looking at maps and driving around looking for access points.*

*—Returning Angler Focus Group Participant*

**Other topics on which anglers want information were mentioned, including techniques and equipment use.**

Among the topics were water quality, what types of fish are in specific waters, and regulatory issues. People also wanted information that explained how to do various fishing activities.

*[I would want] information on what's in the water and how clean the water is.*

*—Region 2/3 Focus Group Participant*

*Probably more information on lures. I usually use night crawlers so I'm not really familiar with lures.*

*—New Women Angler Focus Group Participant*

*[I would want information on] how to tie different knots, what hooks to use, the weights you use on your line.*

*—Region 2/3 Focus Group Participant*

*More information on how to actually handle the fish once you've caught it, how to do it humanely. We don't really know anybody who fishes, so we don't have anybody we can actually ask.*

*—New Women Angler Focus Group Participant*

## CLASSES AND FISHING EVENTS

### **Several participants expressed interest in fishing classes for adults.**

Similar to youth classes and events, fishing classes for adults would ideally cover basics on how to fish, as well as offer some additional information, such as which baits to use for what and when, which lures and hooks to use, etc.

*Especially with...being an older adult rather than being 5 or 7 or whatever. It would be nice to have an adult class, to at least learn different things. Like different fishing...or different techniques or whatever.*

—Region 4 Focus Group Participant

*I definitely would've signed up for a fishing class at, like, a county park. And I looked it up, and pretty much everything they offer is for kids.*

—Region 4 Focus Group Participant

### **Several participants expressed interest in more fishing events for adults.**

Again, similar to what is done for youth, some participants would like fishing events expressly geared for adults. Those who are interested in more fishing events for adults said it would be nice if the events had experts or experienced mentors who would attend the event and help novice adult anglers.

*Adult fishing alternatives would be great.*

—Region 4 Focus Group Participant

### **Mentored events were mentioned.**

There was a desire that events allow for learning and be geared for beginners.

*Yeah some sort of event with mentors would be good.*

—Region 2/3 Focus Group Participant

*Some sort of group event specifically for beginners would be good. Tournaments are more for trophy fishers, it would be nice to have something directed at beginners.*

—Region 2/3 Focus Group Participant

## SURVEY RESULTS

The discussion of results starts with the data used to categorize the anglers for further analysis, and then the discussion looks at characteristics of anglers and their participation in 2019 or 2020, as these basic questions are used for crosstabulating and analyzing the rest of the results. Subsequent chapter sections look at initiation into fishing and motivations for fishing, among other topics.

### DATA USED TO CATEGORIZE ANGLERS

The sample consisted of fishing license holders in 2019 or 2020 who had not previously had a license in the license records database. This purchasing pattern could be indicative of a new angler, although there could be (and were) other anglers with those same purchasing patterns in the database who were not true new anglers. Several questions in the survey allowed researchers to categorize all the anglers in this database to definitively identify true new anglers.

In all, four categories of anglers were identified. Note that all of them purchased a license between July 1, 2019, and June 30, 2020:

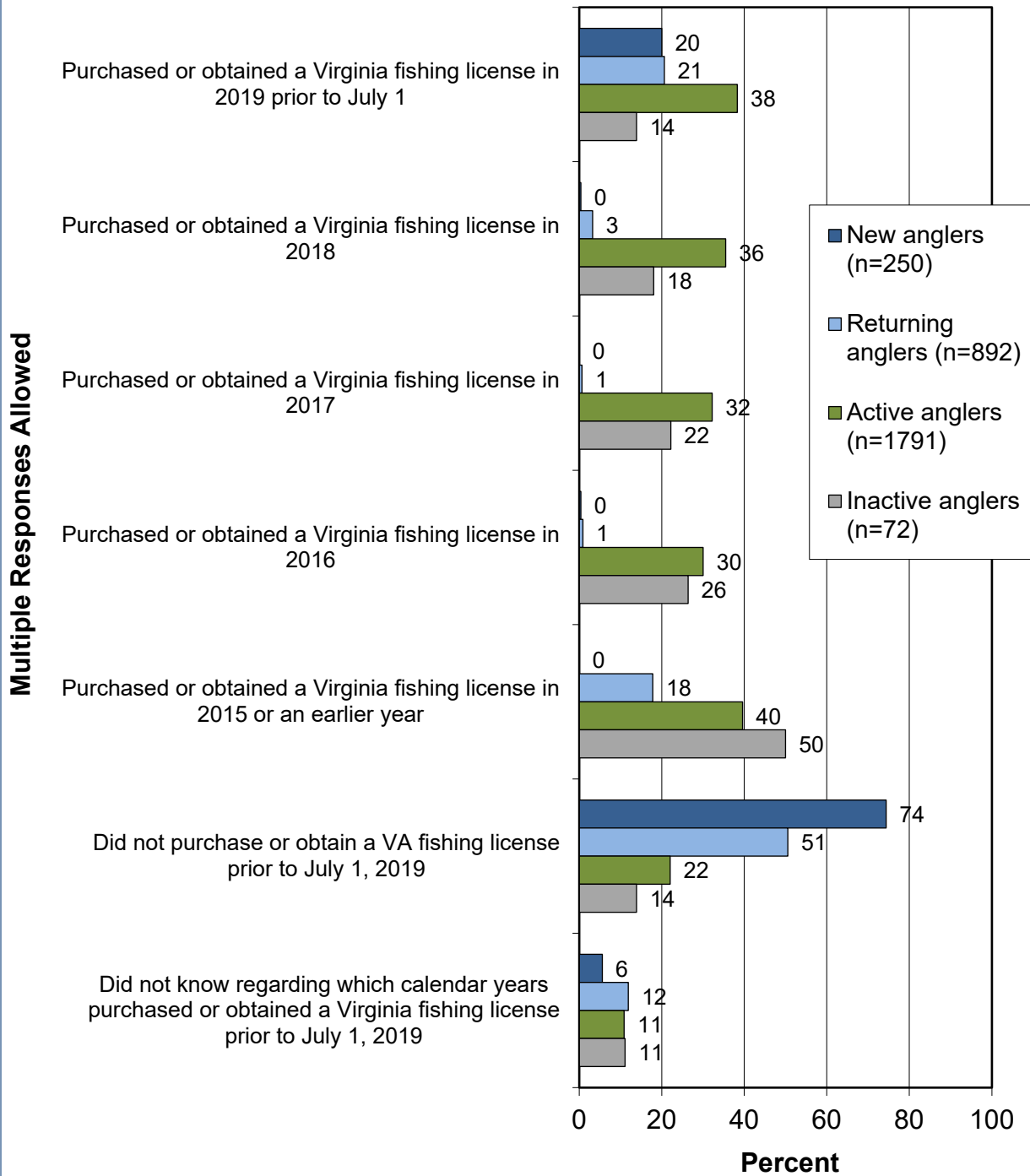
- New anglers: these are true first-time anglers who fished for the first time in 2019 or 2020.
- Returning anglers: these are anglers who fished in 2019 or 2020, had not fished in or outside of Virginia in 2016 through 2018, but had fished in or outside of Virginia in 2015 or earlier (sometimes much earlier).
- Active anglers: these are anglers who fished in 2019 or 2020 but also had fished inside or outside of Virginia in 2016 through 2018. In some cases, they had fished in Virginia and had purchased a license in 2016 through 2018 but were not in the database for those years. In other cases, they had fished in 2016 through 2018 in Virginia but had not purchased a license (not all fishing requires a license in Virginia; in other cases, they may have fished and *should* have purchased a license but had not). Lastly, in some cases they fished in 2019 or 2020 in Virginia and had fished in 2016 through 2018 in another state.
- Inactive anglers: these are respondents who did not fish in 2019 or 2020, although some had fished previous to 2015 and some had not.

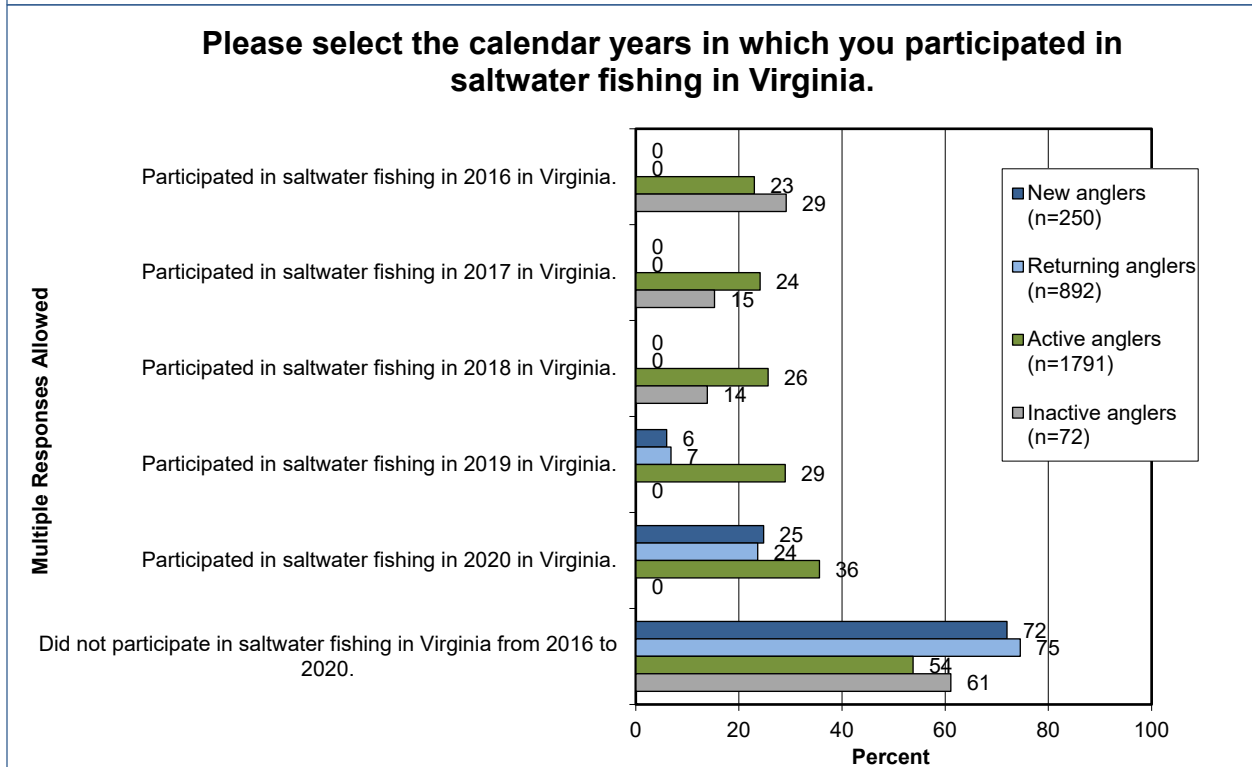
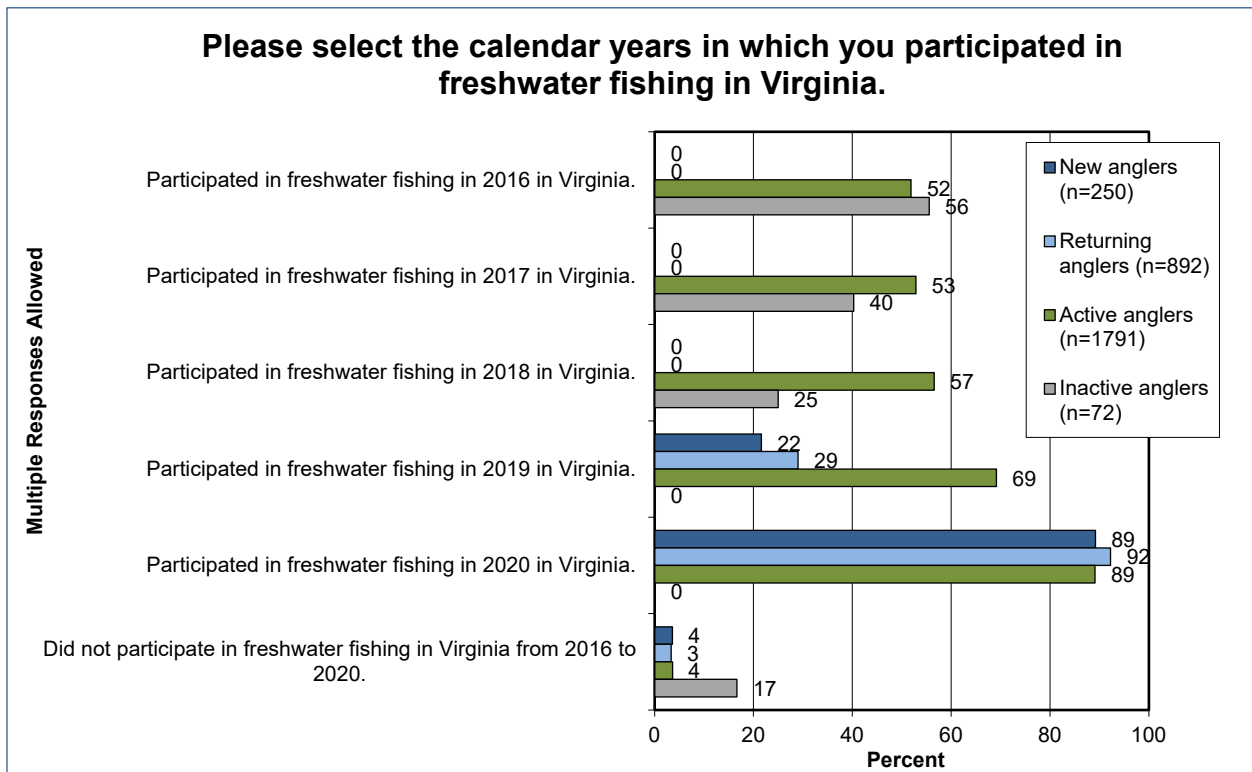
Obviously, for the purposes of this project, the first two of these groups are of the most interest. Nonetheless, all the survey participants were categorized into the above categories, and some graphs show all the categories.

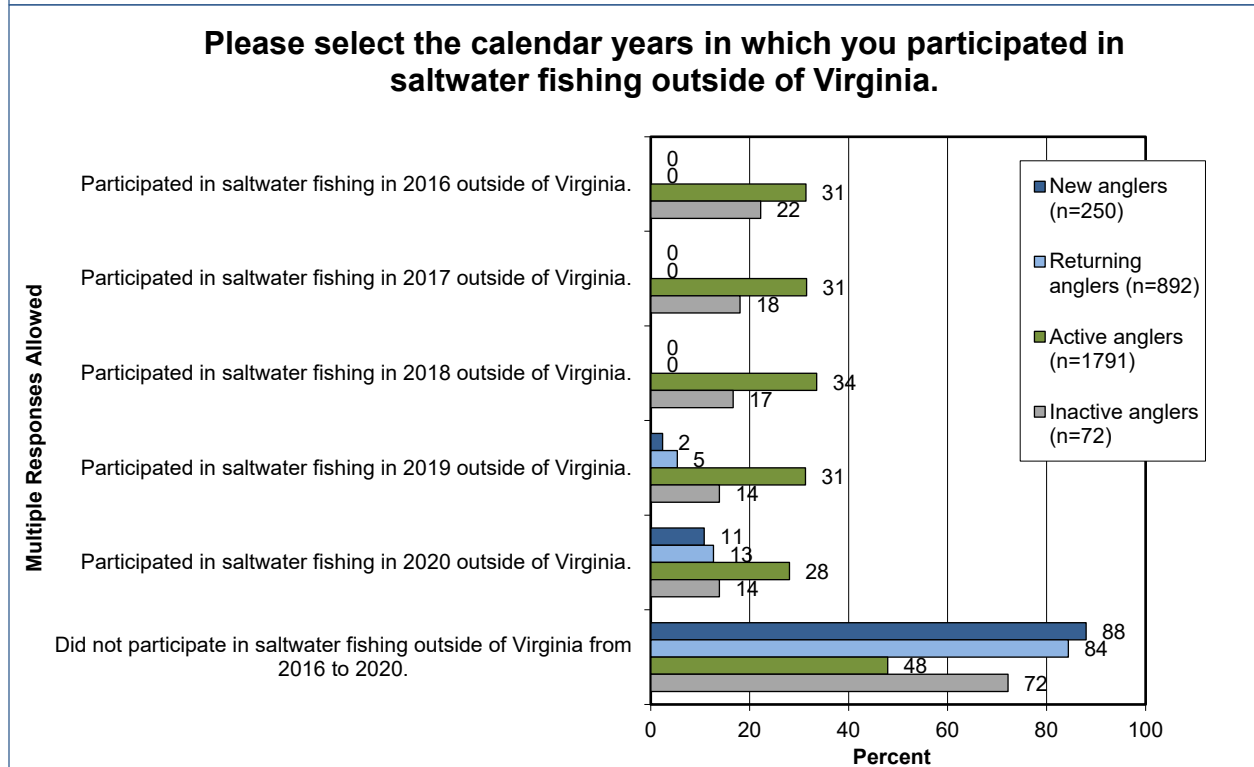
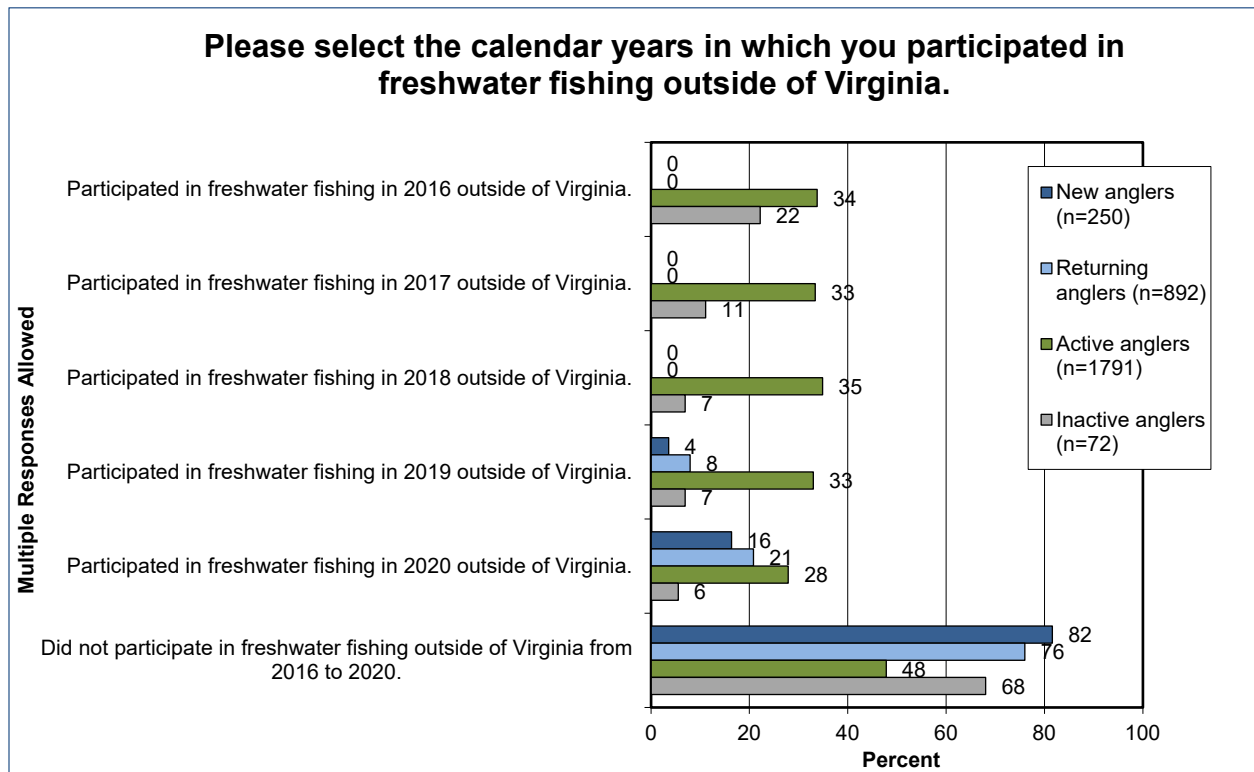
Note that the sample of active anglers in the survey is not the same as would be a sample of active anglers pulled from a license database for a single year based only on the definition of active anglers (fishing in 2019-2020 as well as between 2016 and 2018). The active anglers in this survey consists of those who, for whatever reason, *were not in the license database for 2016 through 2018* despite being an active angler. Nonetheless, although active anglers in this survey cannot be considered a “pure” sample of active anglers, comparisons of these active anglers to the other groups in this report are still useful.

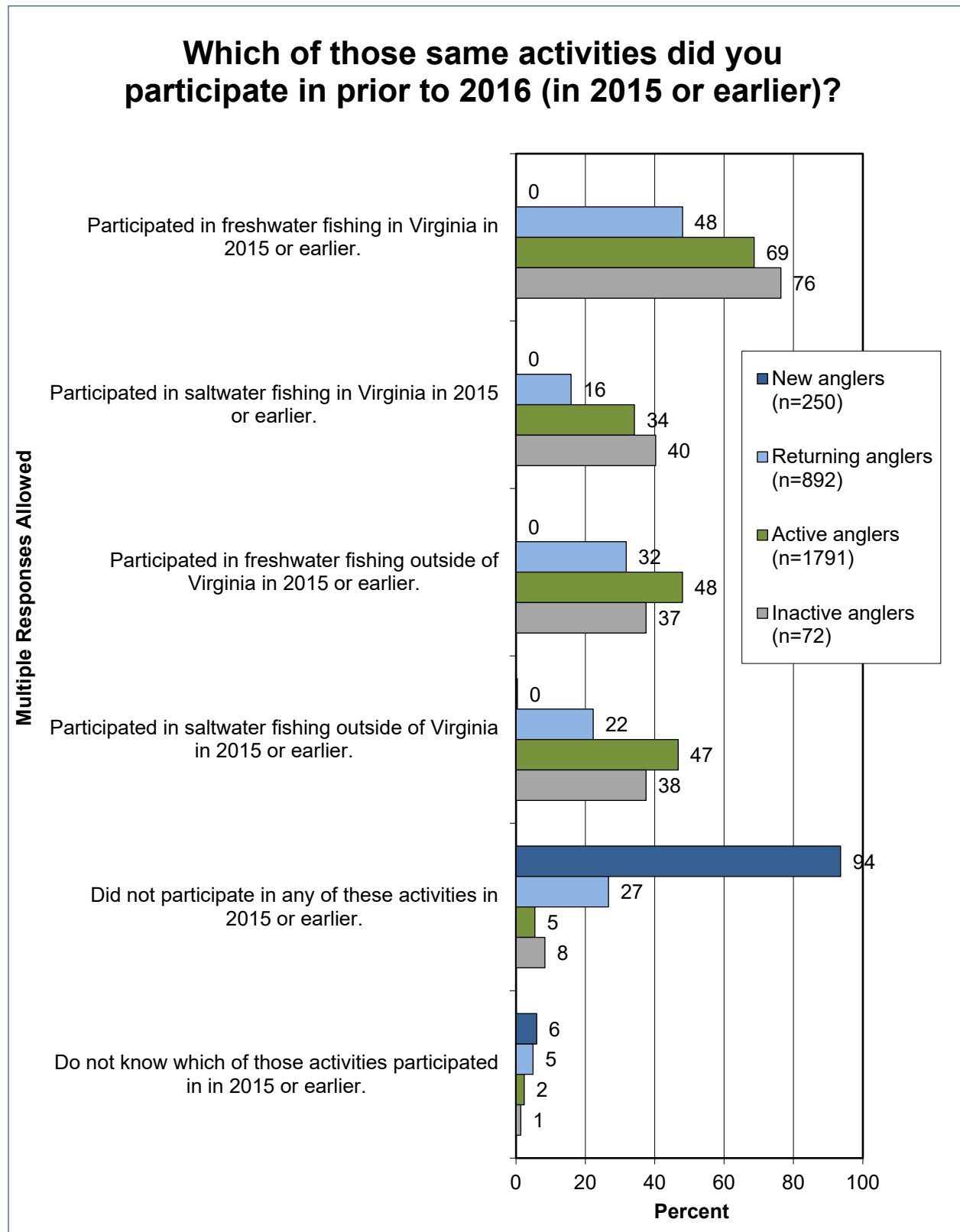
The first graph on the next page shows years of license purchase. This graph is then followed by all the other graphs that define the groups.

### In which of the following calendar years did you purchase or obtain a Virginia fishing license prior to July 1, 2019?





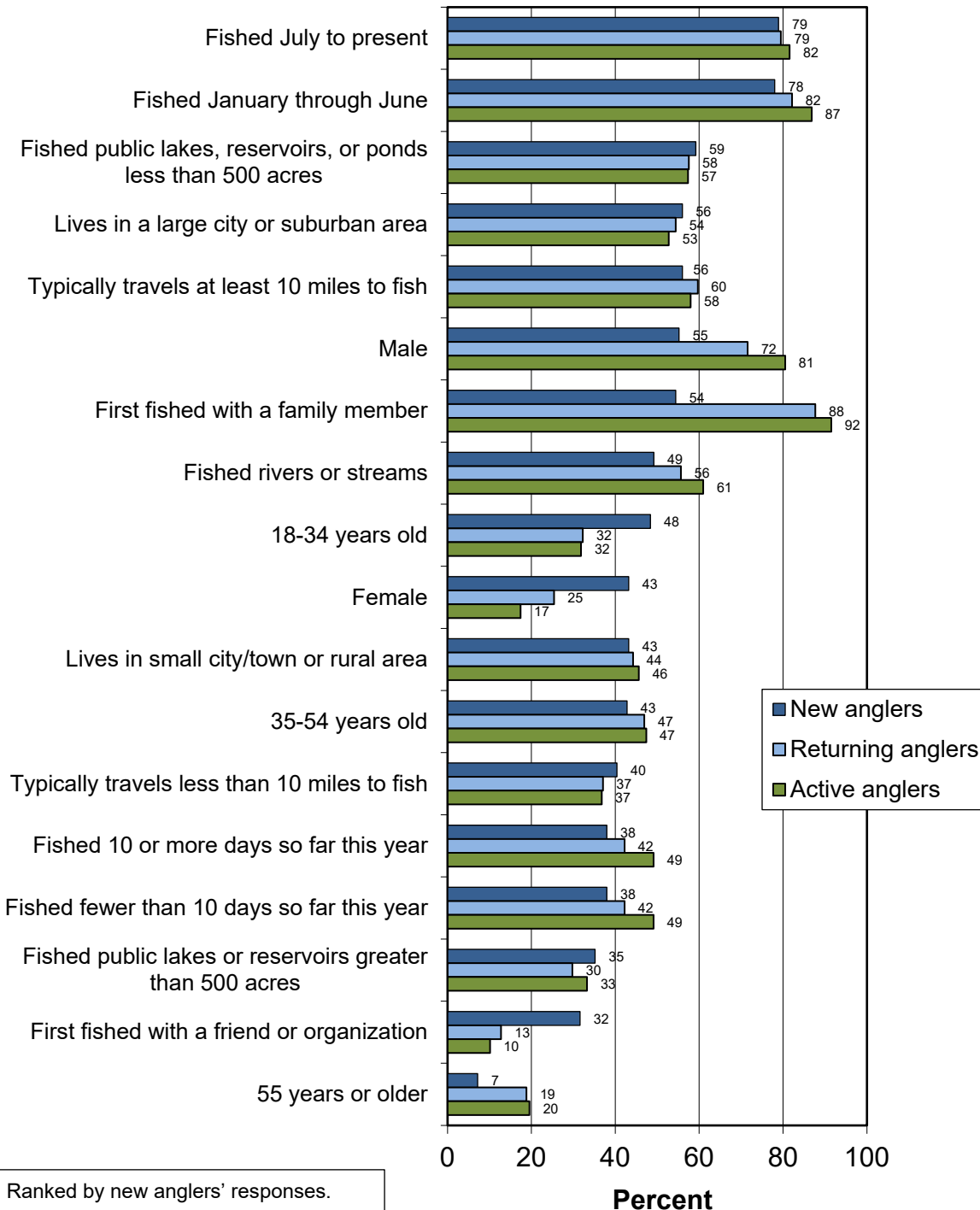




Once these categorizations were made, analyses were run to examine multiple characteristics of these groups on a single graph, as shown on the following page. The graph shows that new anglers, relative to returning anglers and active anglers, are more likely to be female and to be 18

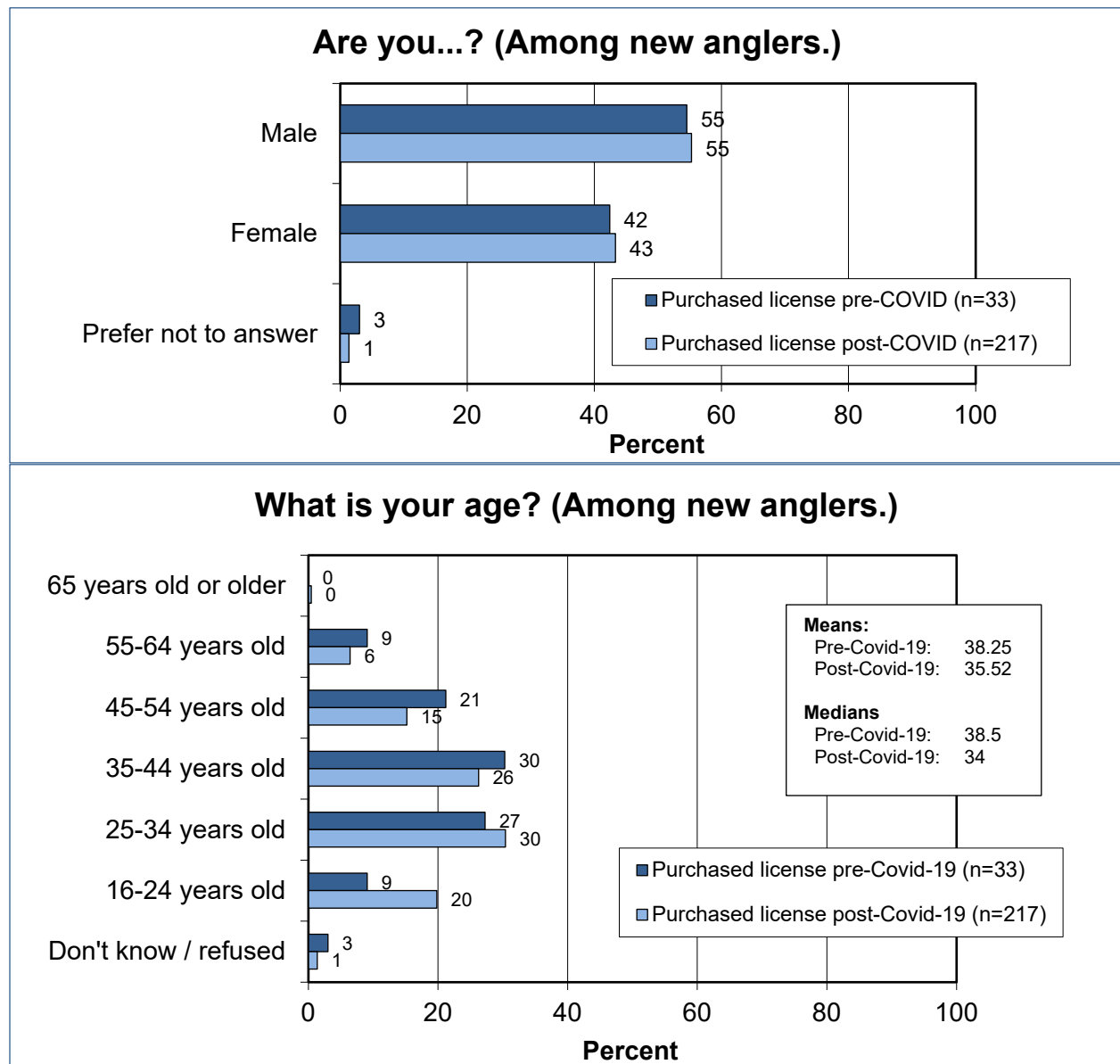
to 34 years old. New anglers are also more likely, compared to the other groups, to have first fished with a friend or organization. On the other hand, new anglers are *less* likely than their counterparts to have first fished with a family member.

### Selected characteristics of new, returning, and active anglers:

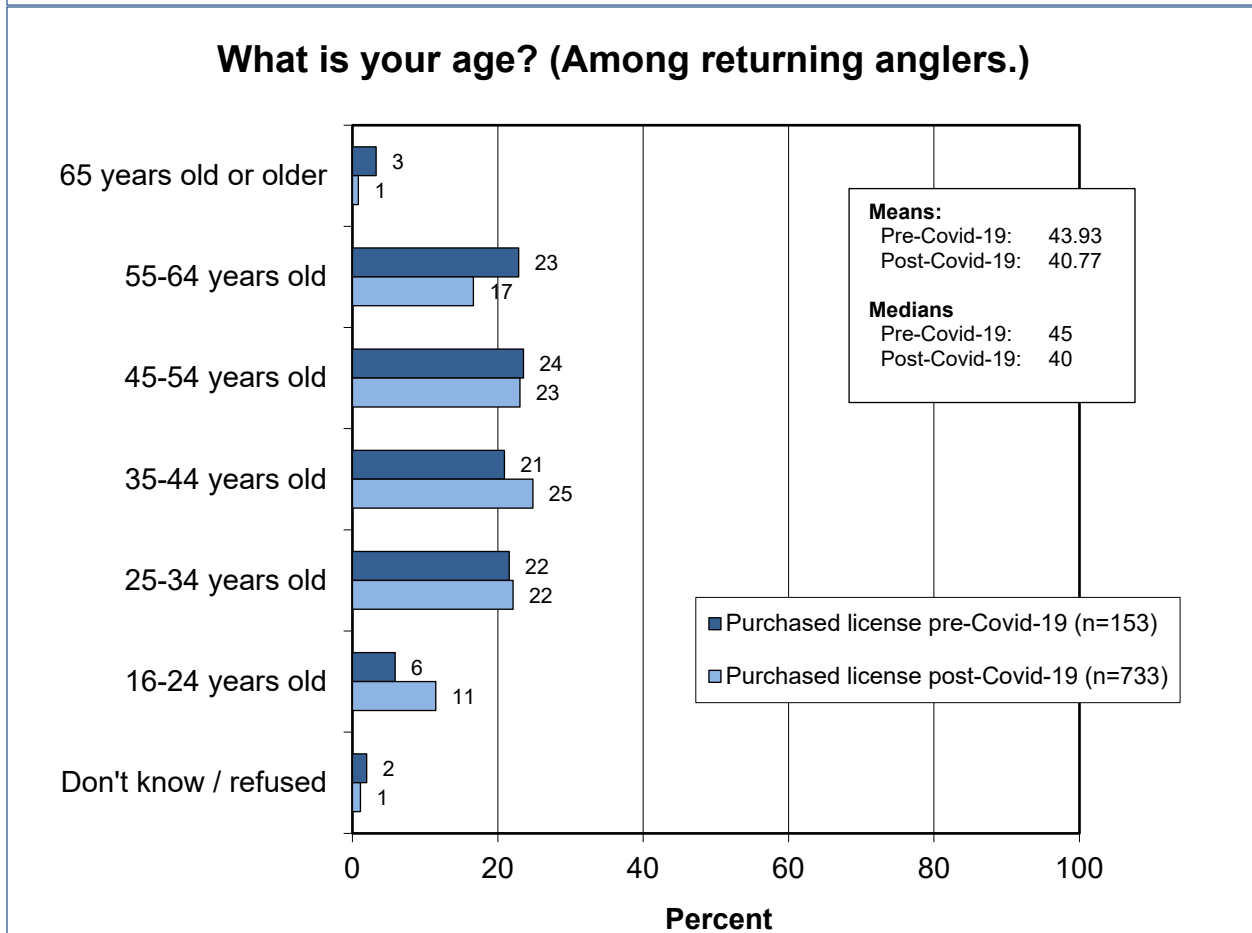
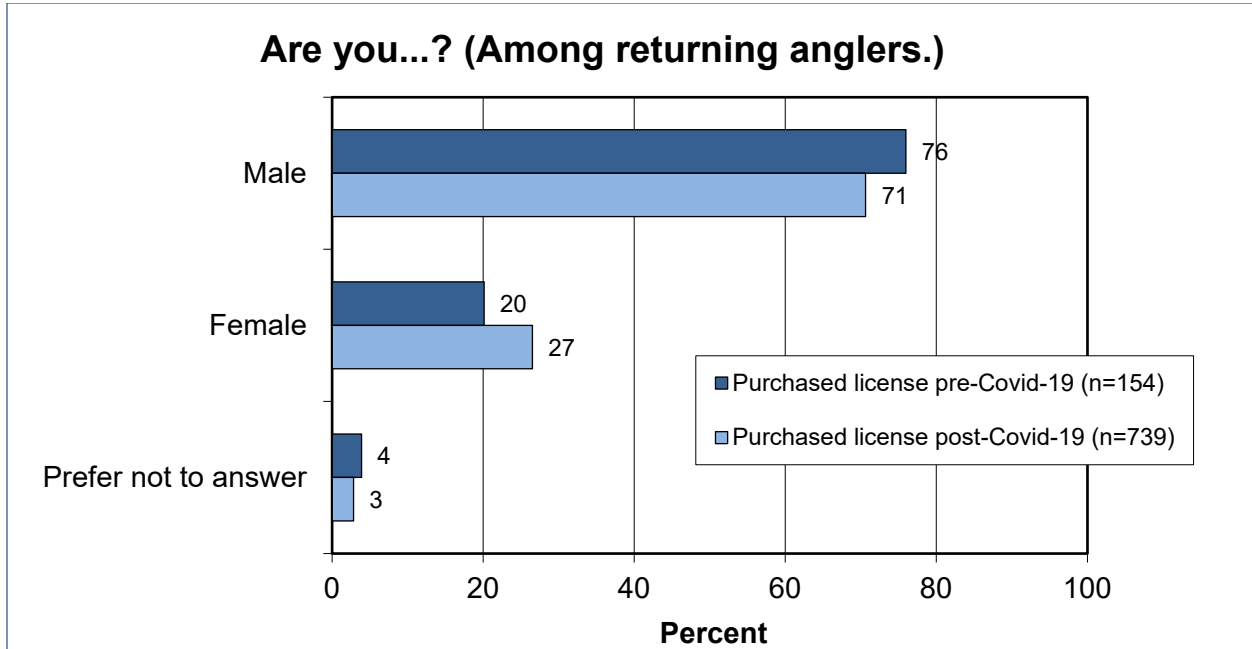


Based on these basic questions about license purchasing and the information about date of license purchase in the database, a comparison was made of anglers who purchased their license in 2020 before the Covid-19 pandemic started to drastically affect Virginia and anglers who purchased after that time. March 15 was chosen as the date because many businesses changed their work procedures at that time, with closures and drastic changes following rapidly after that date in Virginia (the Commonwealth of Virginia began a state of emergency on March 13, with most state schools closing by March 16). The conjecture was that people who had purchased licenses after that date might be different than those who had purchased prior to that date. Note that fishing license purchasing is seasonal, with many people purchasing closer to the warmer months when they more often go fishing, and this timeline coincides with the date that Covid-19 struck. This should be kept in mind when reviewing these results.

There is almost no difference in gender among pre- and post-Covid-19 purchasers (among new anglers). The ages of post-Covid-19 purchasers are generally younger than those of pre-Covid-19 purchasers (again, among new anglers).



This same analysis was conducted among returning anglers. Post-Covid-19 purchasers (among returning anglers) were more likely to be female than were pre-Covid-19 purchasers. Post-Covid-19 purchasers (again, among returning anglers) were younger overall than pre-Covid-19 purchasers.

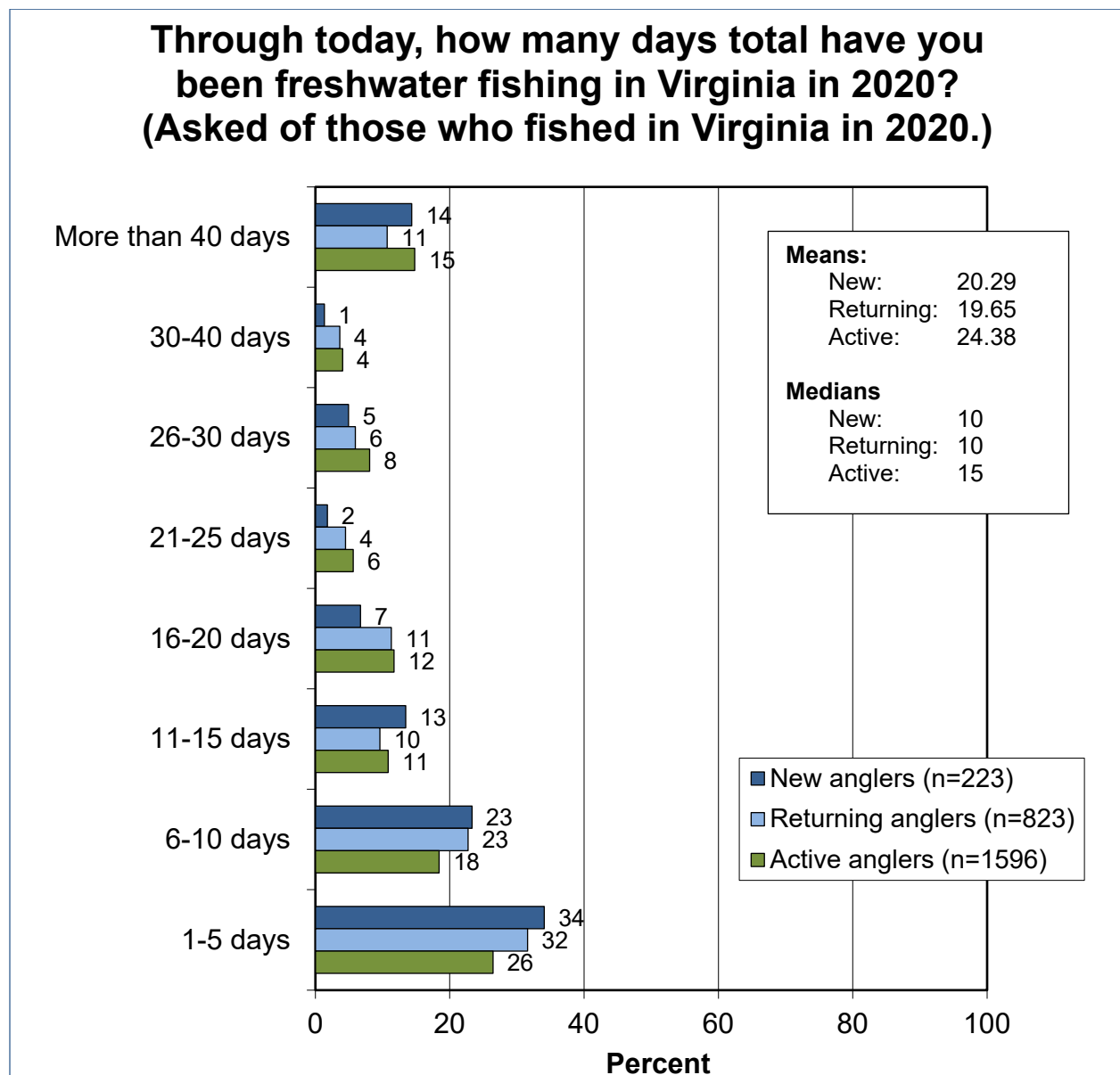


## ASPECTS OF FISHING: TYPICAL MONTHS, DAYS OF FISHING, SPECIES FISHED, LOCATIONS, AND FISHING COMPANIONS

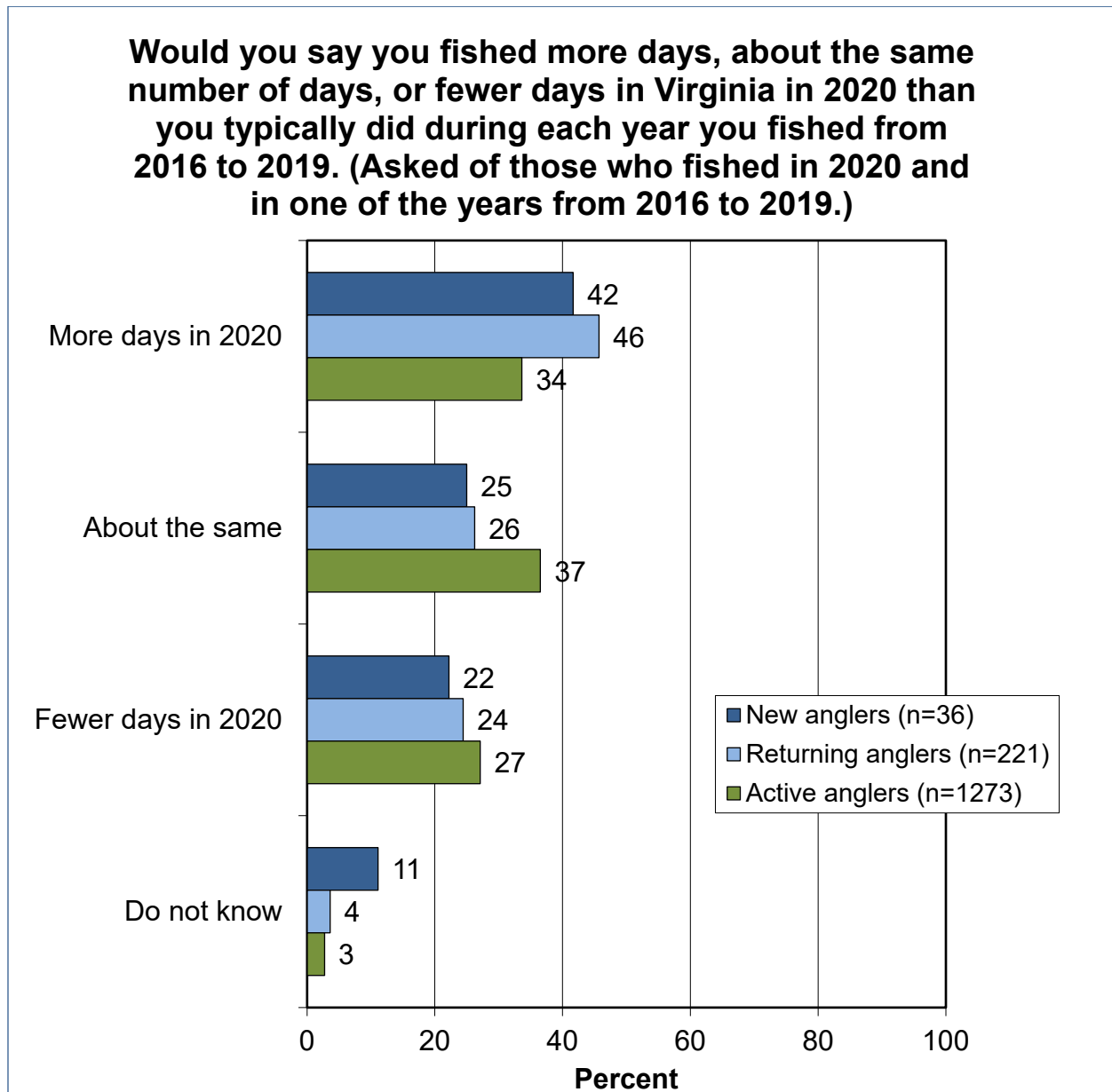
This section has several sub-sections: days of fishing, typical months when anglers fish, their species sought, their locations of fishing, and their fishing companions. Note that many of these results are used in crosstabulations and further analyses.

### DAYS OF FISHING PARTICIPATION

The days of fishing in 2020 are presented in the graph below. Active anglers fished slightly more days (a mean of 24.38 days) than did new (20.29 days) or returning anglers (19.65 days). Note that some very avid anglers brought the means up markedly higher than the medians, which are 10 days for new and returning anglers and 15 days for active anglers.

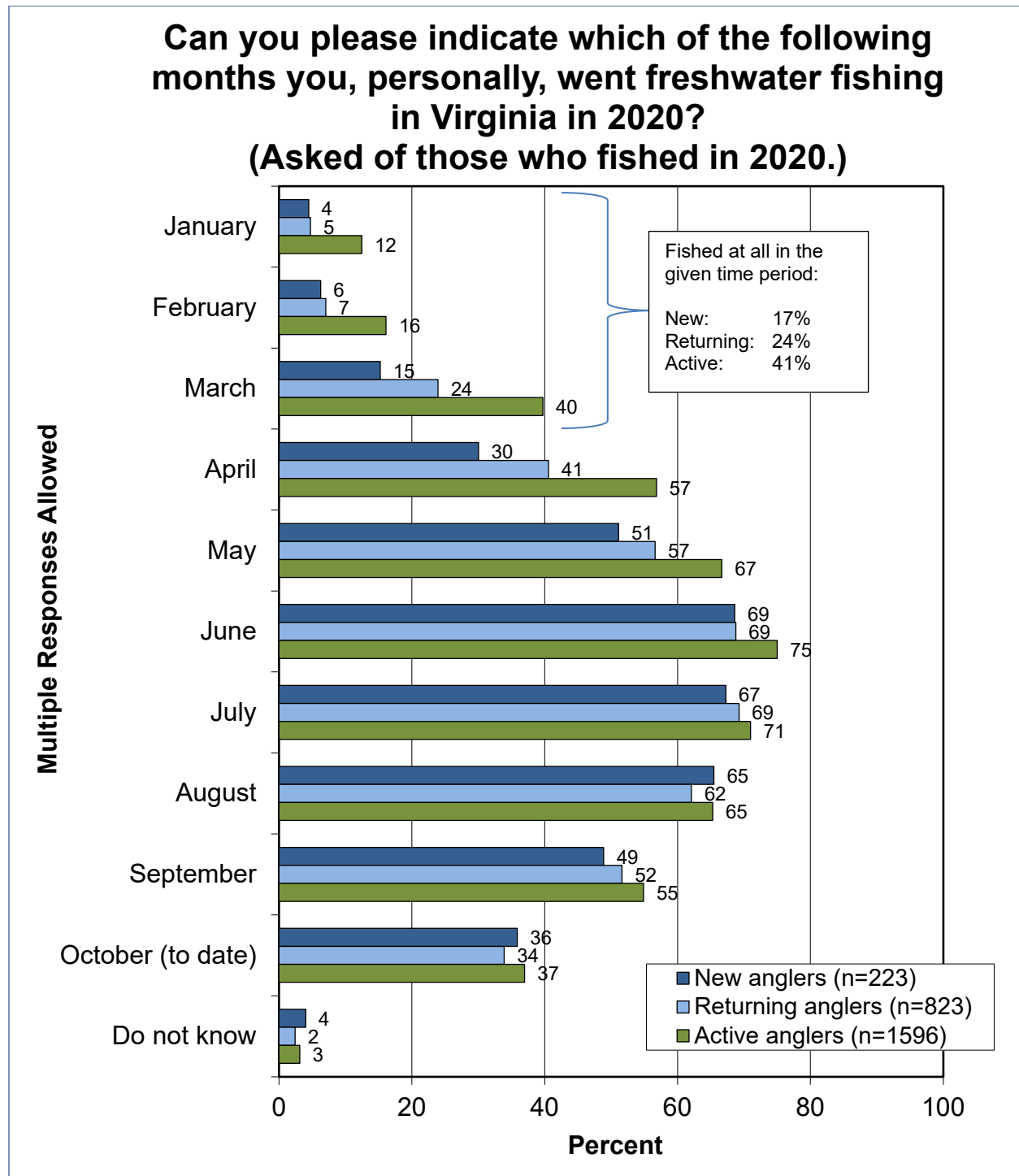


Anglers compared their fishing in 2020 with previous years (among those who fished in 2020 and in another year from 2016 to 2019). For new and returning anglers, the most common response is that they fished more days in 2020 compared to previous years—a markedly higher percentage relative to active anglers. On the other hand, active anglers' most common response is that they fished about the same. Note that new anglers, to receive this question, had to fish in 2020 and 2019, as they would not have fished, by definition, in 2016 through 2018. (A subsequent section, *Motivations for Fishing and Reasons for Increasing Fishing Participation*, includes data on reasons that anglers had fished more days.)



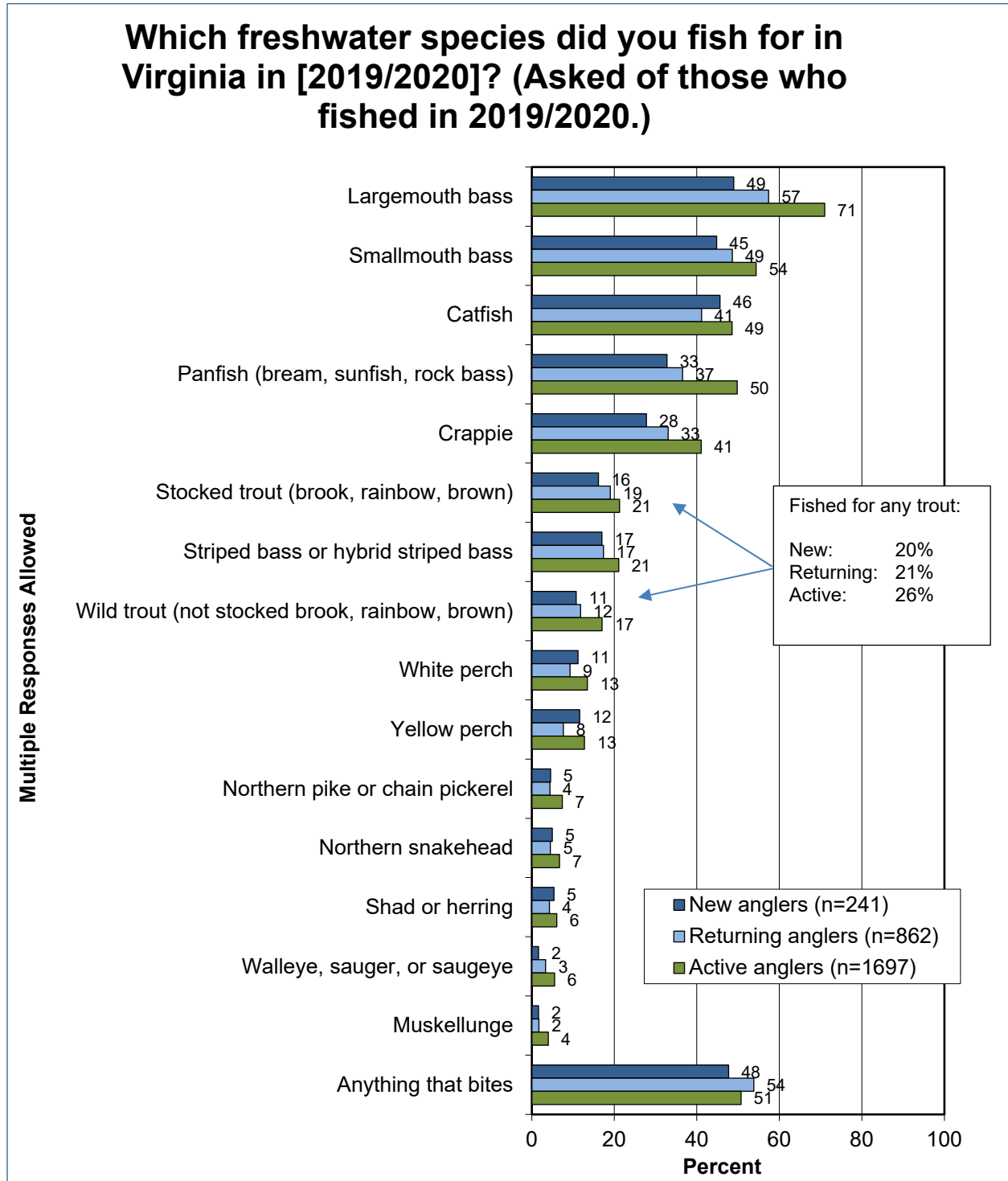
### MONTHS WHEN ANGLERS FISHED

For all groups of anglers, June and July were the most popular months to fish in 2020 (as of the date of the survey). Of interest is that active anglers fished markedly more than did new and returning anglers in the winter months of January through March, as well as in April. In looking at the time period January through March, 41% of active anglers had fished, compared to only 17% of new anglers and 24% of returning anglers (some of whom had not yet purchased their license at this time). Also of interest is that nearly everyone who fished in January or February also fished in March.

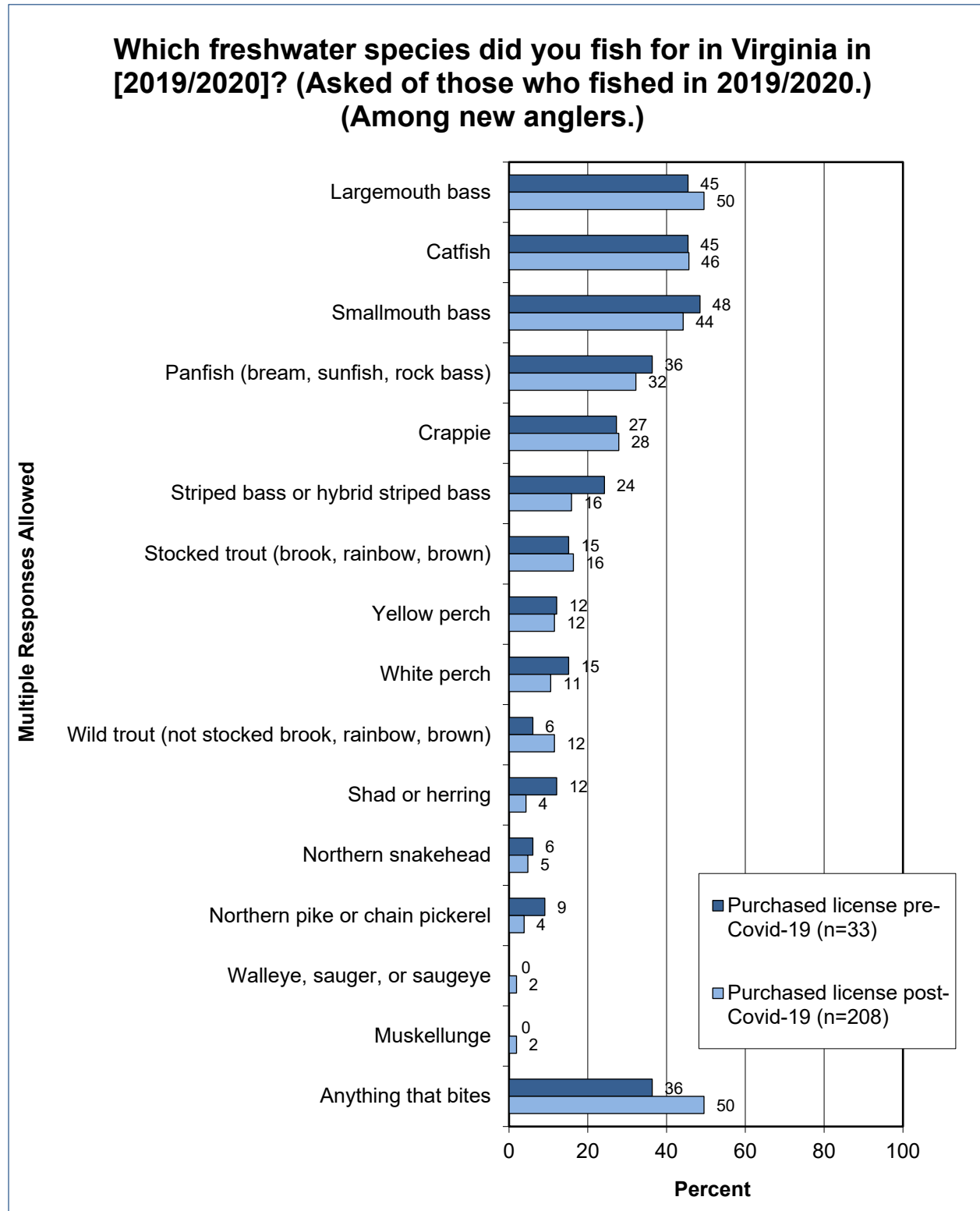


### SPECIES ANGLERS FISHED

The survey also explored the species fished in 2019/2020. The top species are generally the same for each of the groups: largemouth and smallmouth bass, catfish, panfish, crappie, and trout (when stocked and wild are combined—this is not simply a sum because many anglers fished for both). Active anglers have a greater percentage who fished for most species, while the groups are about the same in the percentage who fish for anything that bites.

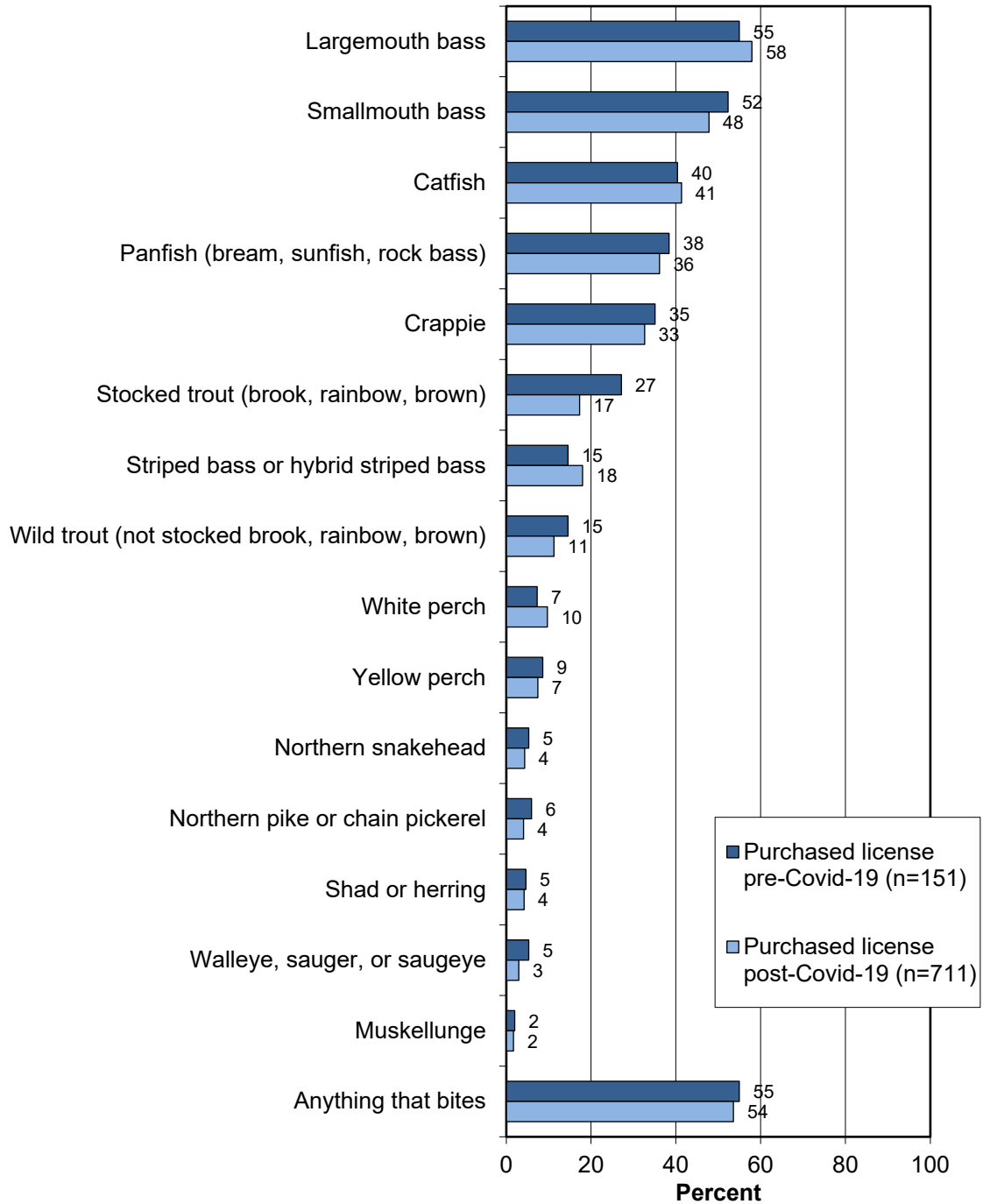


The aforementioned analysis by date of purchase shows that post-Covid-19 purchasers among new anglers are more likely than their counterparts to say that they fished for *anything that bites* or to fish for trout. On the other hand, this same analysis by date of license purchase among returning anglers (on the next page) found the pre-Covid-19 purchasers to more often go for trout than their post-Covid-19 counterparts.



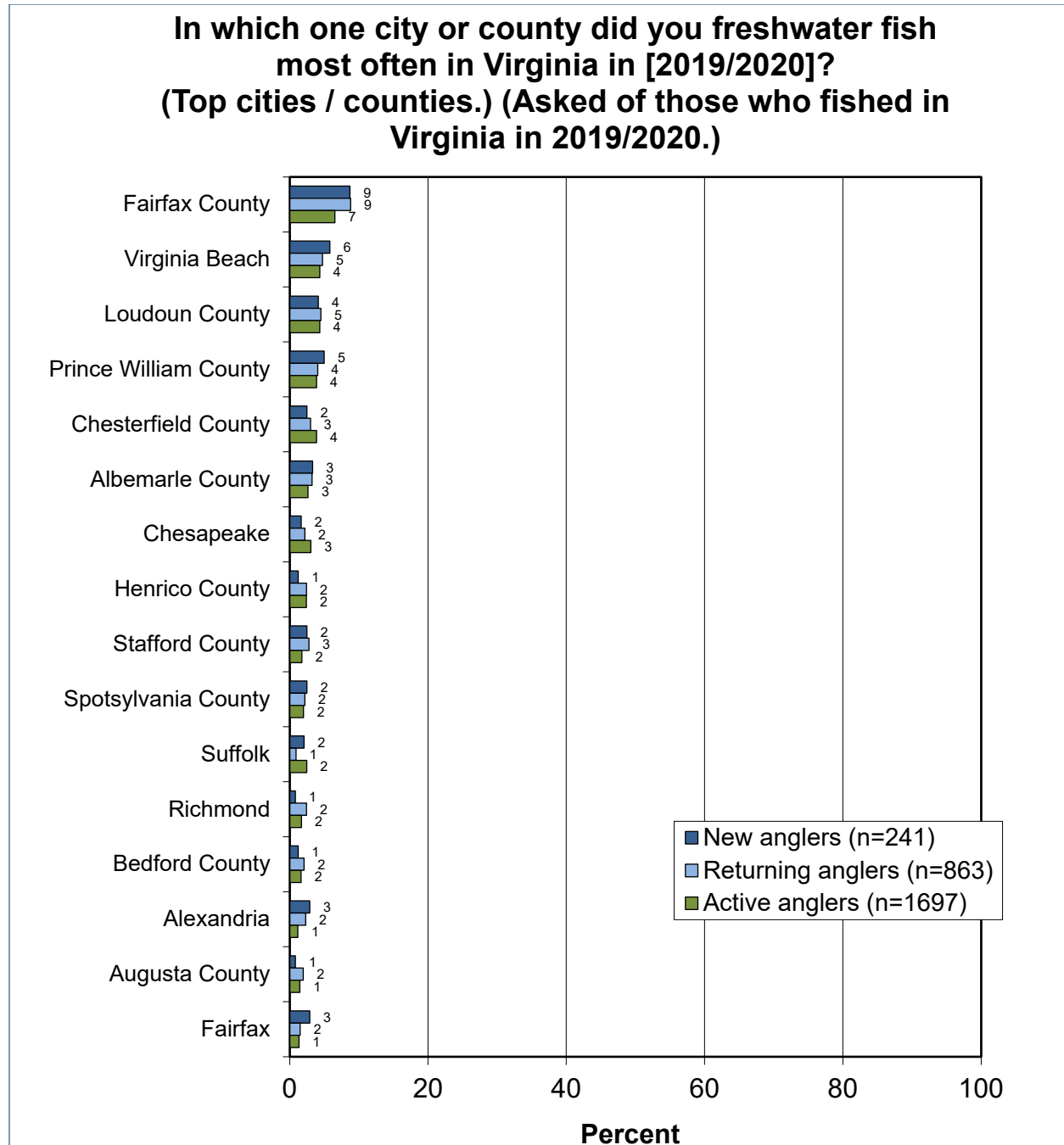
**Which freshwater species did you fish for in Virginia in [2019/2020]? (Asked of those who fished in 2019/2020.) (Among returning anglers.)**

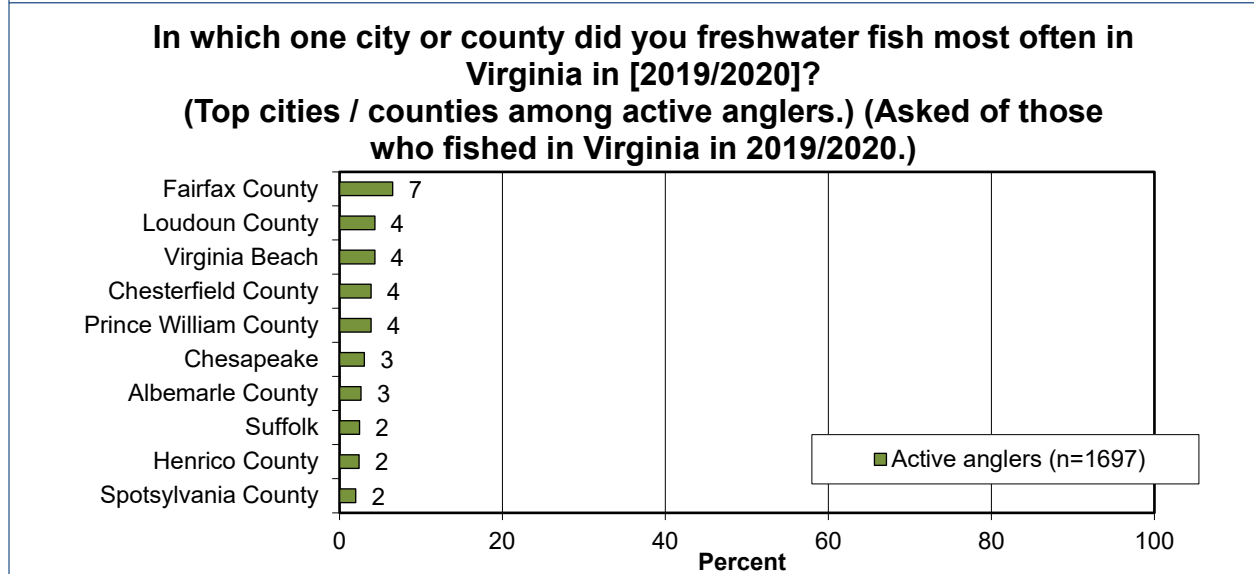
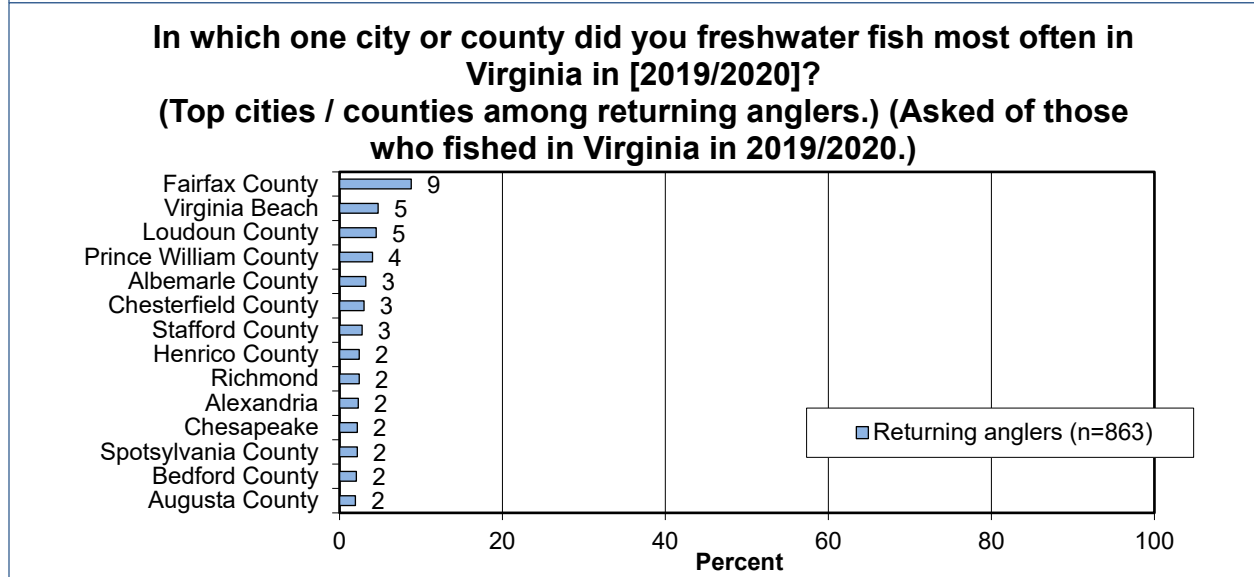
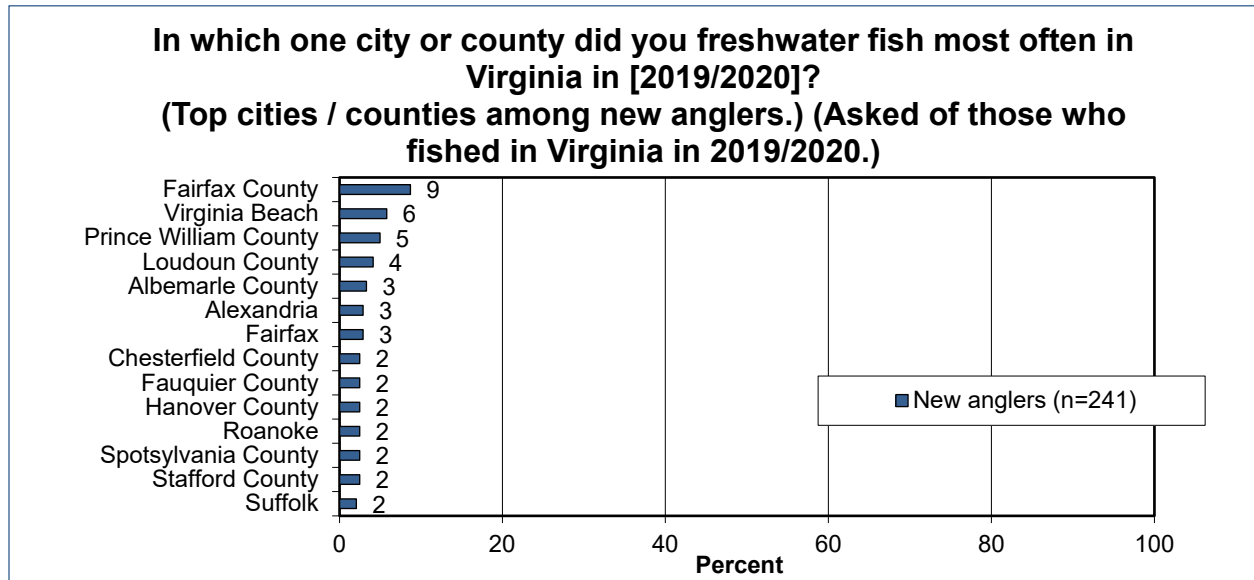
Multiple Responses Allowed

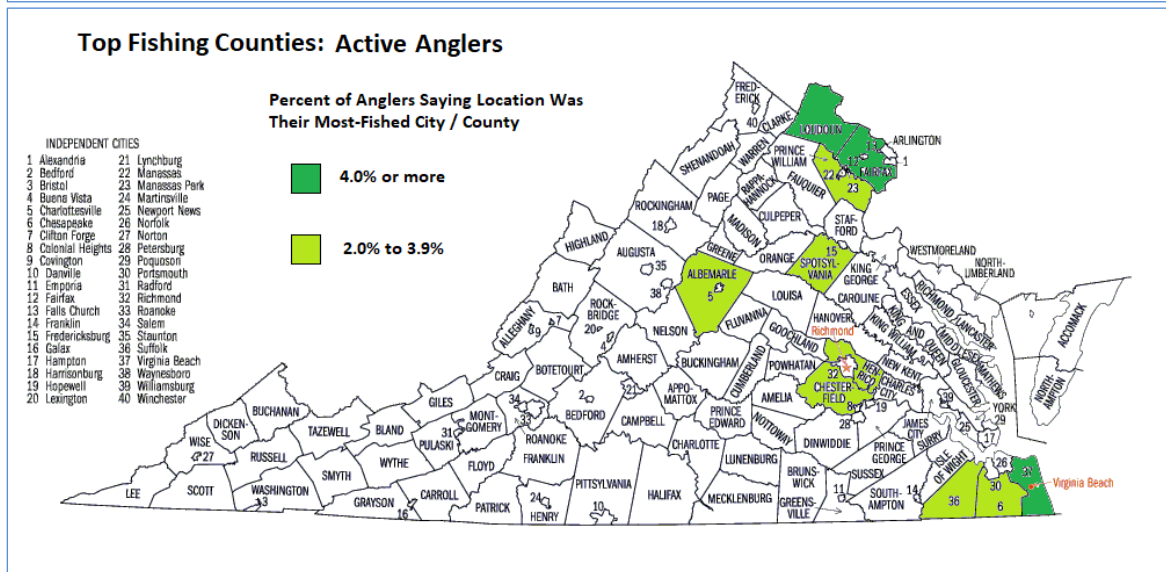
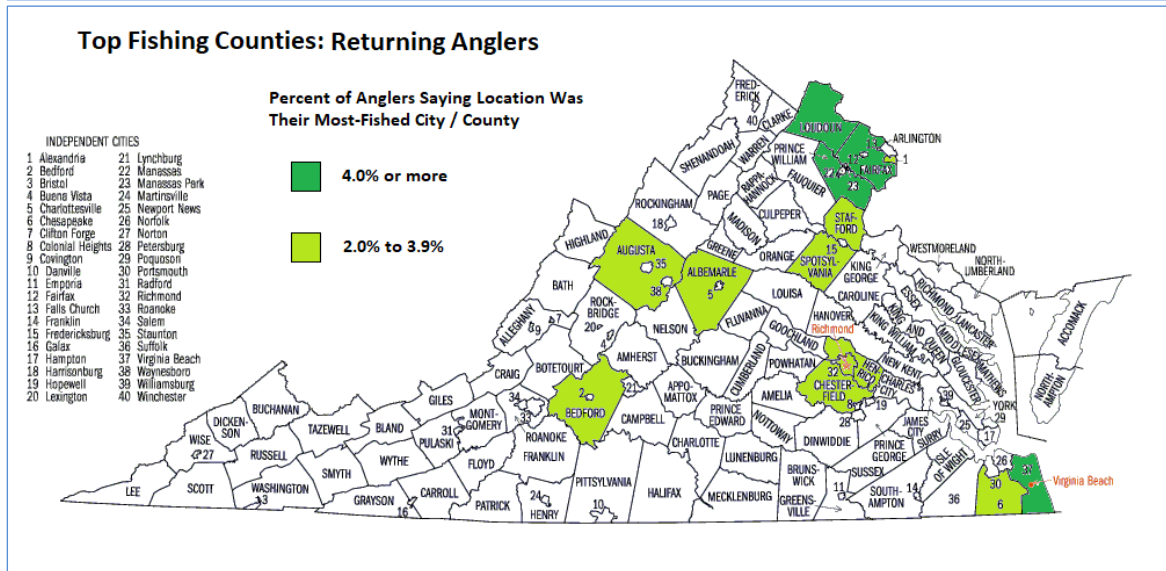
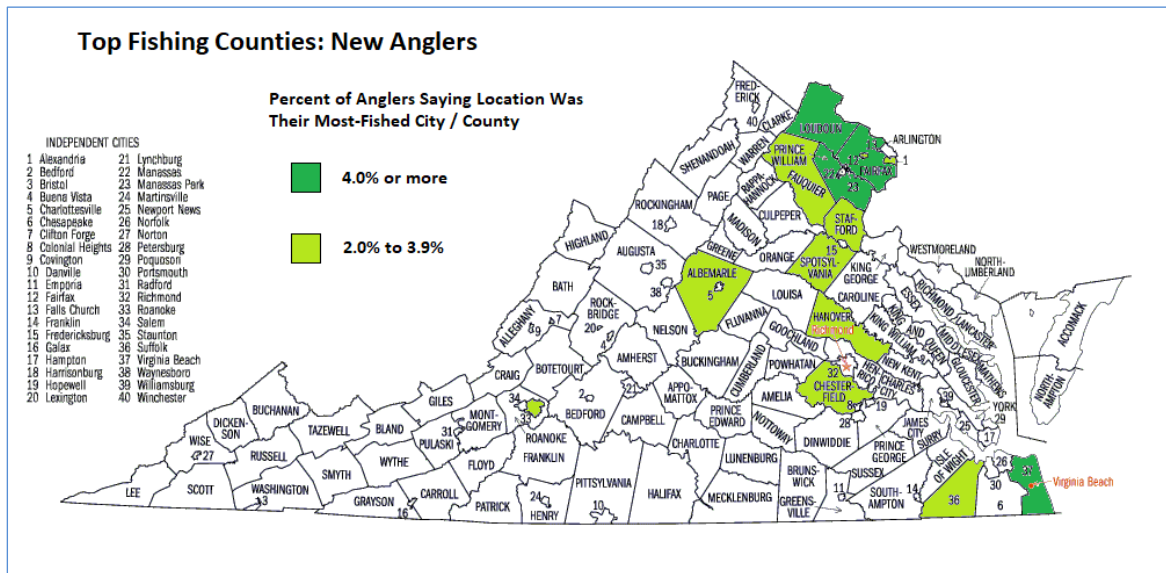


### LOCATION OF FISHING

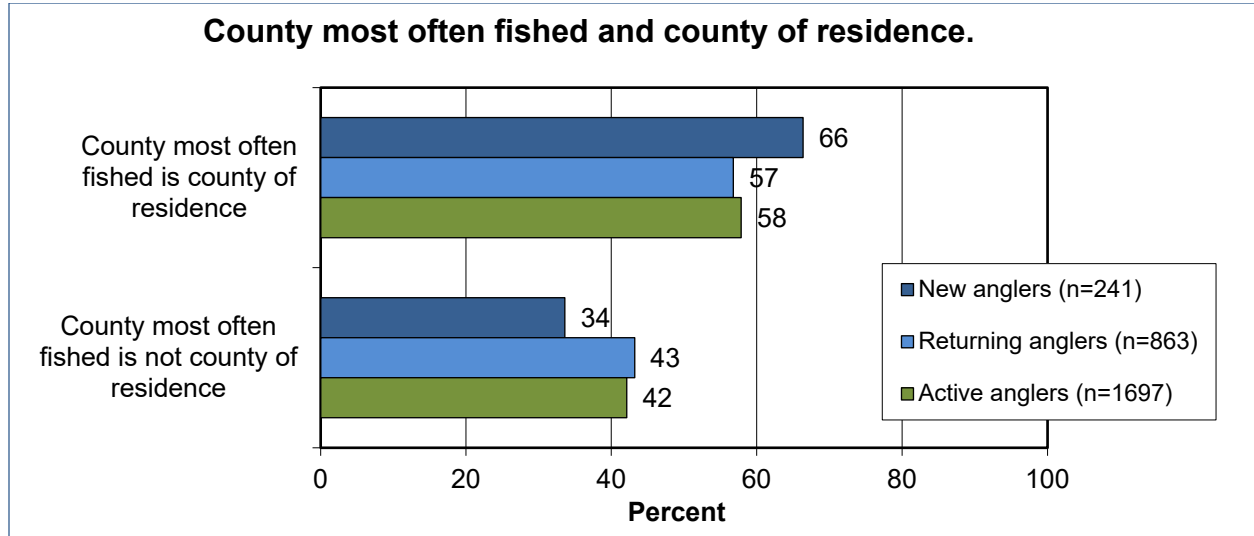
The survey asked anglers to name the city or county in which they freshwater fished the most in 2019/2020. In general, new anglers' cities/counties are all located near large urban centers (the Washington area, the Norfolk area, Richmond, Charlottesville, and Roanoke). Meanwhile, returning anglers are a bit more rural in their fishing. While cities are still represented, this group's fishing locations also include Bedford and Augusta Counties, which are more rural. Finally, active anglers are fishing in urban areas similar to new anglers. Across all three groups, in general, urban areas are heavily represented. Following the graph below are graphs of each group separately and maps showing the top cities/counties for each group.



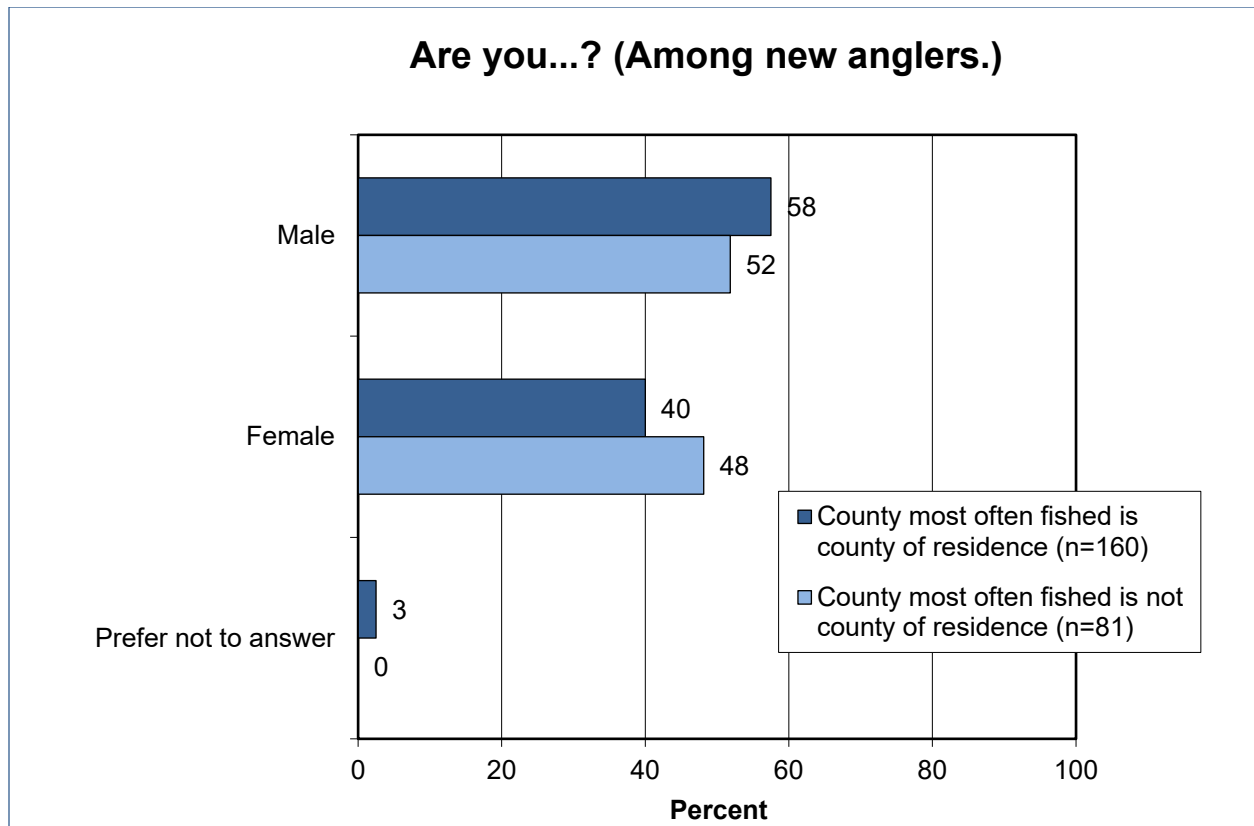


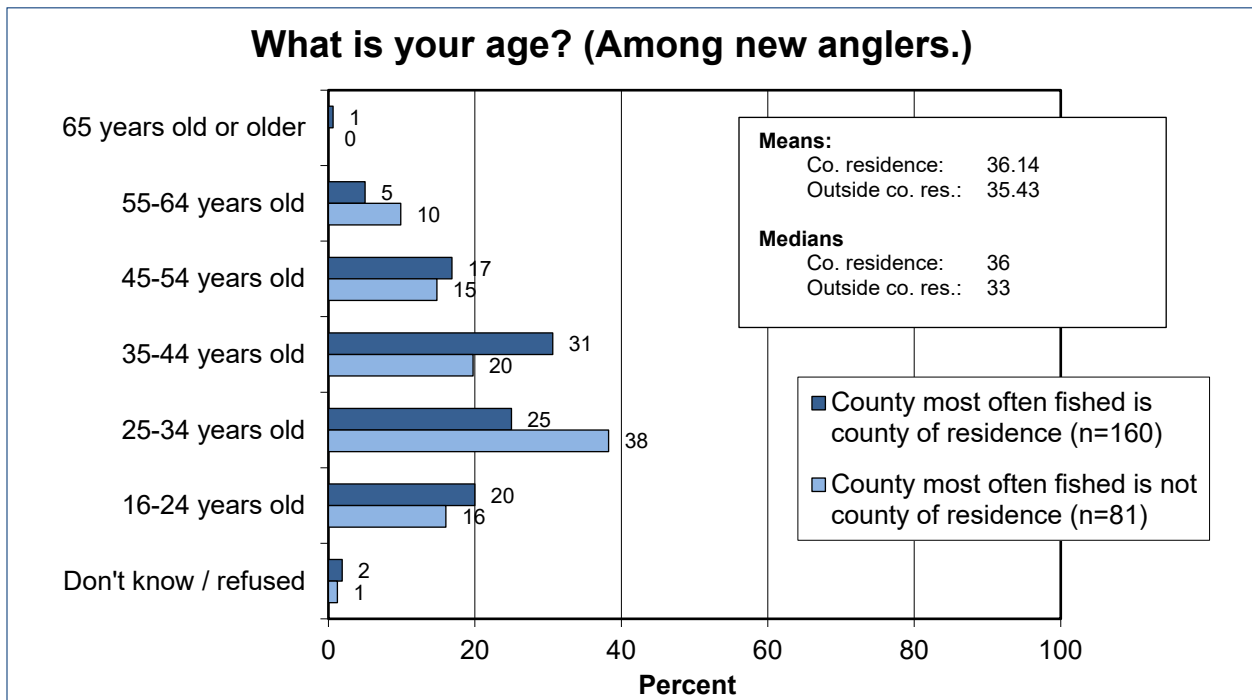


One analysis looked at the county most fished compared to county of residence. Anglers were categorized as those who mostly fished in their county of residence versus those who mostly fished outside their county of residence. Returning and active anglers are more likely than new anglers to mostly fish outside their county of residence.

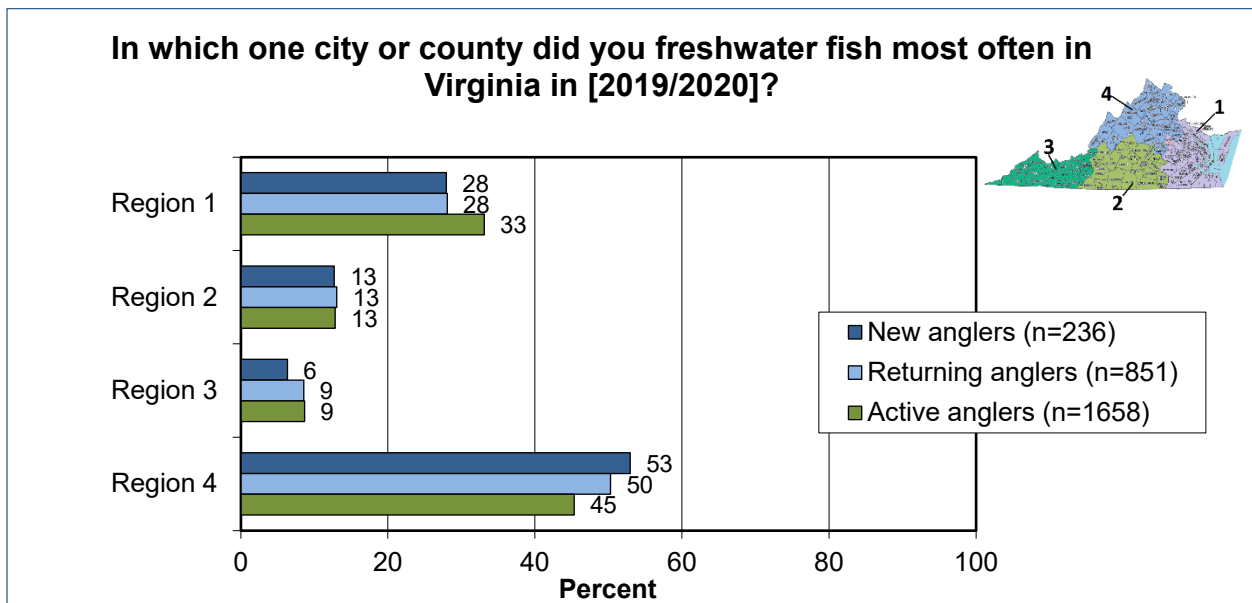


Further analysis along these lines found that new anglers mostly fishing in a non-residence county are more likely to be female and young than are those mostly fishing in their county of residence, as shown in the two graphs that follow.



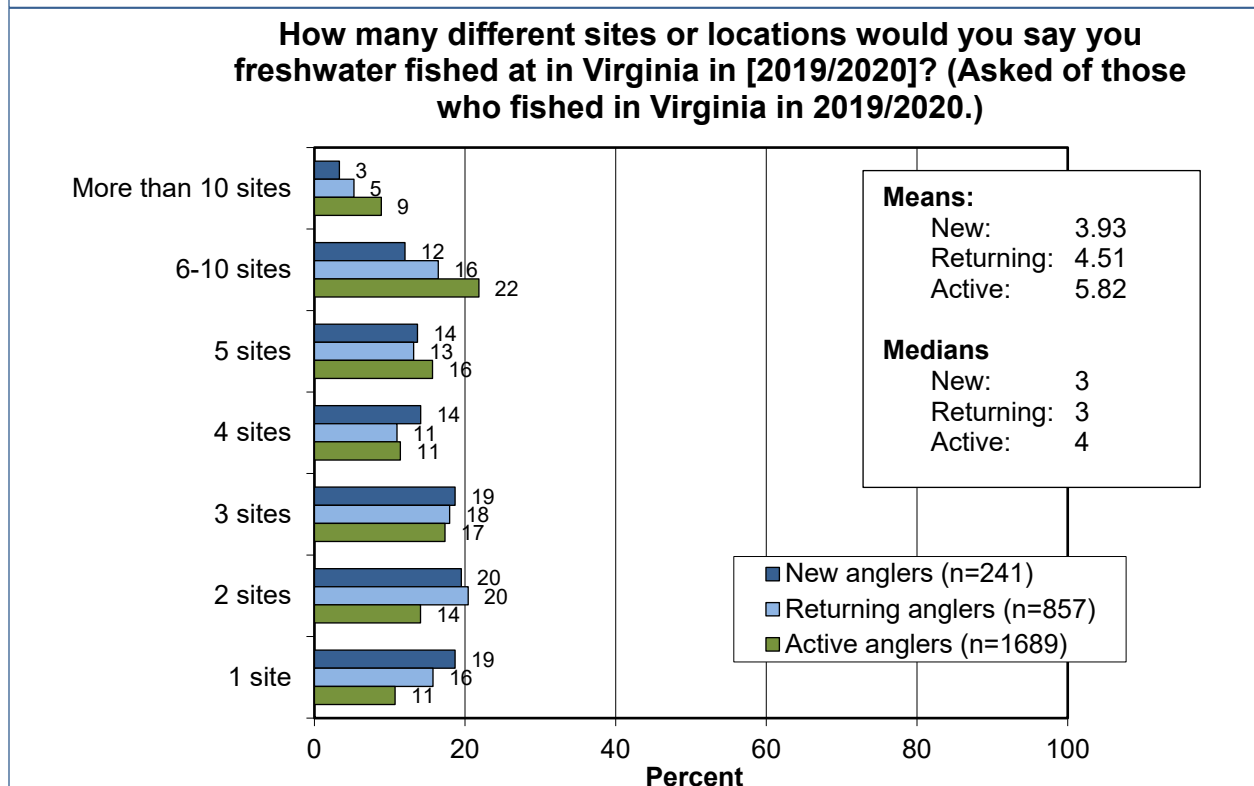
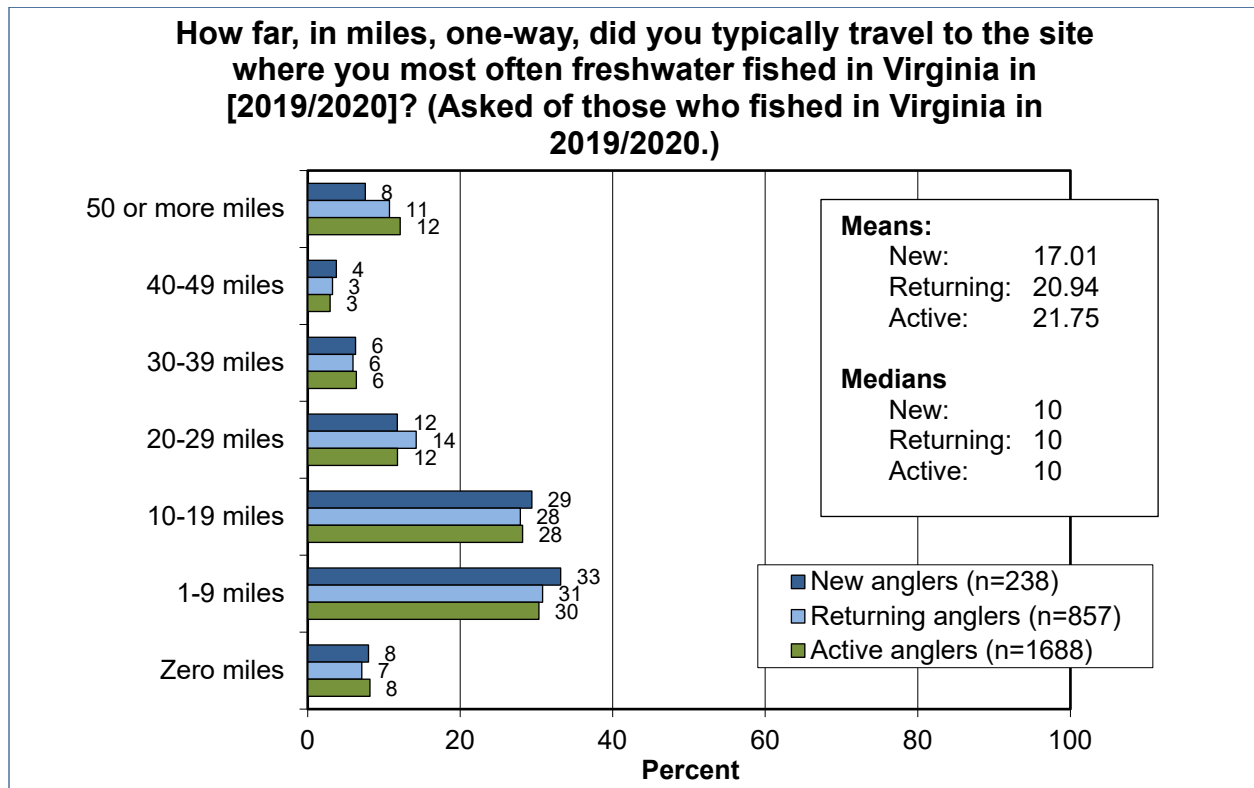


Using the data from the cities/counties most often fished, an analysis was made of the region most often fished, as shown below. New anglers are fishing disproportionately in Region 4, which encompasses the Washington, D.C., metropolitan area. Active anglers are fishing in Region 1, which includes an area of Virginia known as the Tidewater.

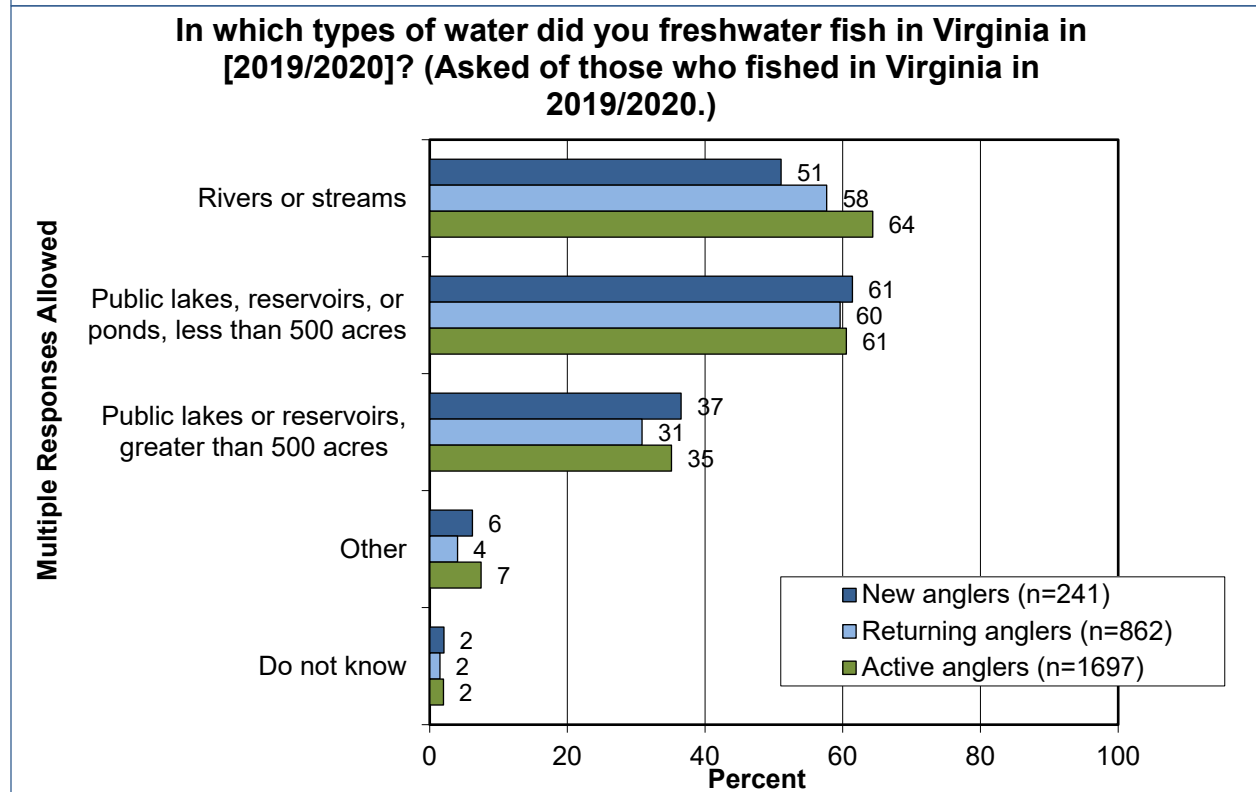
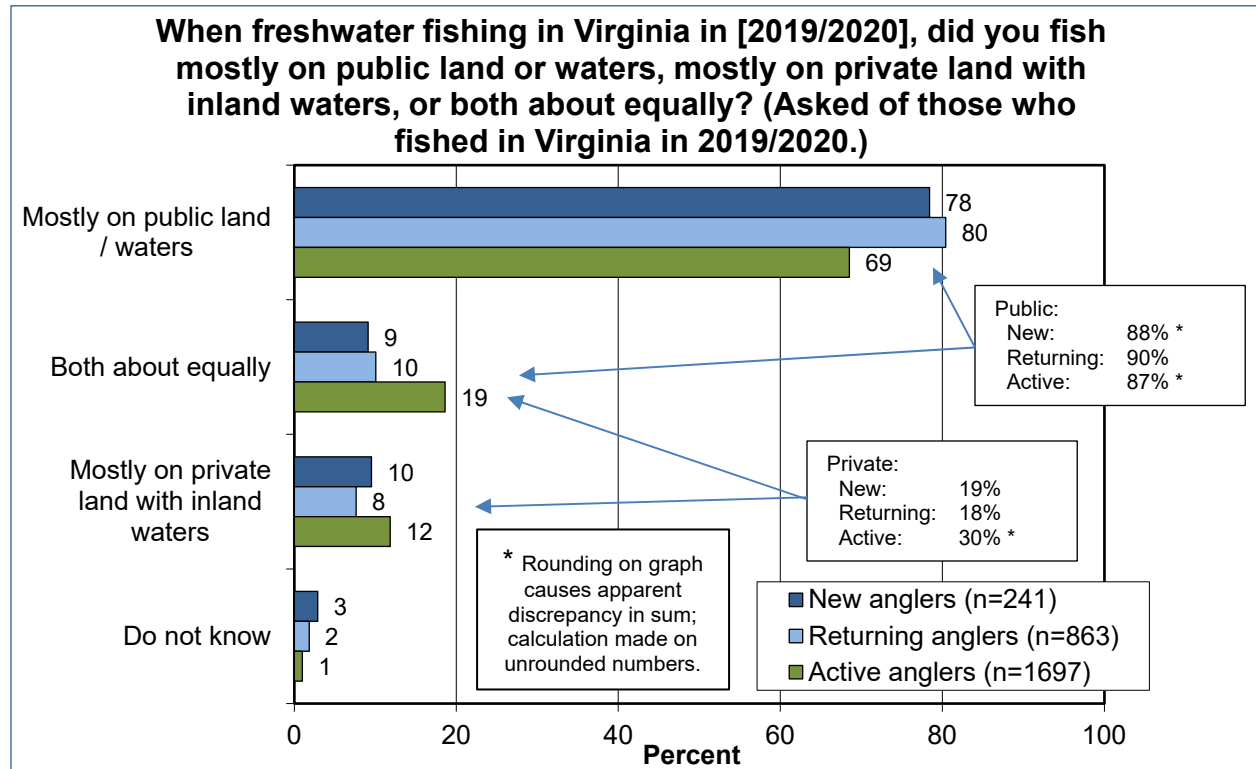


Another aspect of fishing location is the distance that people traveled to fish in Virginia in 2019/2020. As demonstrated by the medians, anglers, regardless of grouping, typically travel about 10 miles to fish. However, some anglers travel much farther, which pushes the means up, and active anglers have a slightly greater mean distance than do returning and new anglers (the latter having the shortest mean typical distance).

Also shown are the number of sites at which anglers fished in 2019/2020. Typically, as demonstrated by the medians, anglers visited three or four sites. Again, active anglers have a greater mean.

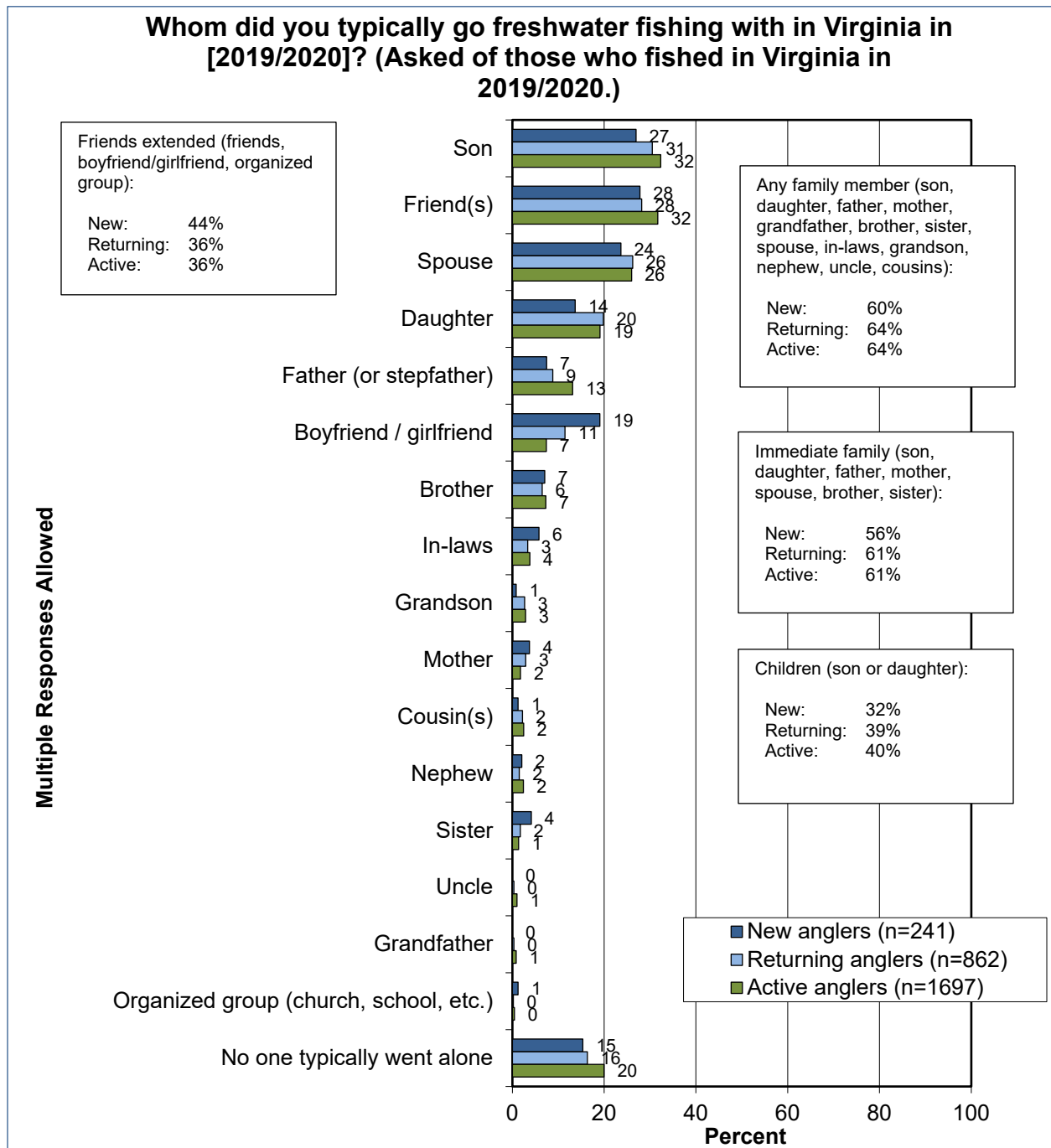


Public waters predominate as locations for fishing in Virginia among new and returning anglers, with 88% and 90%, respectively, using public waters mostly or at least equally to private waters, as shown in the graph that follows. While active anglers also are generally fishing in public waters, they have the highest percentage of the three groups using private waters mostly or at least equally with public waters (30%, compared to no more than 19% among the other groups).

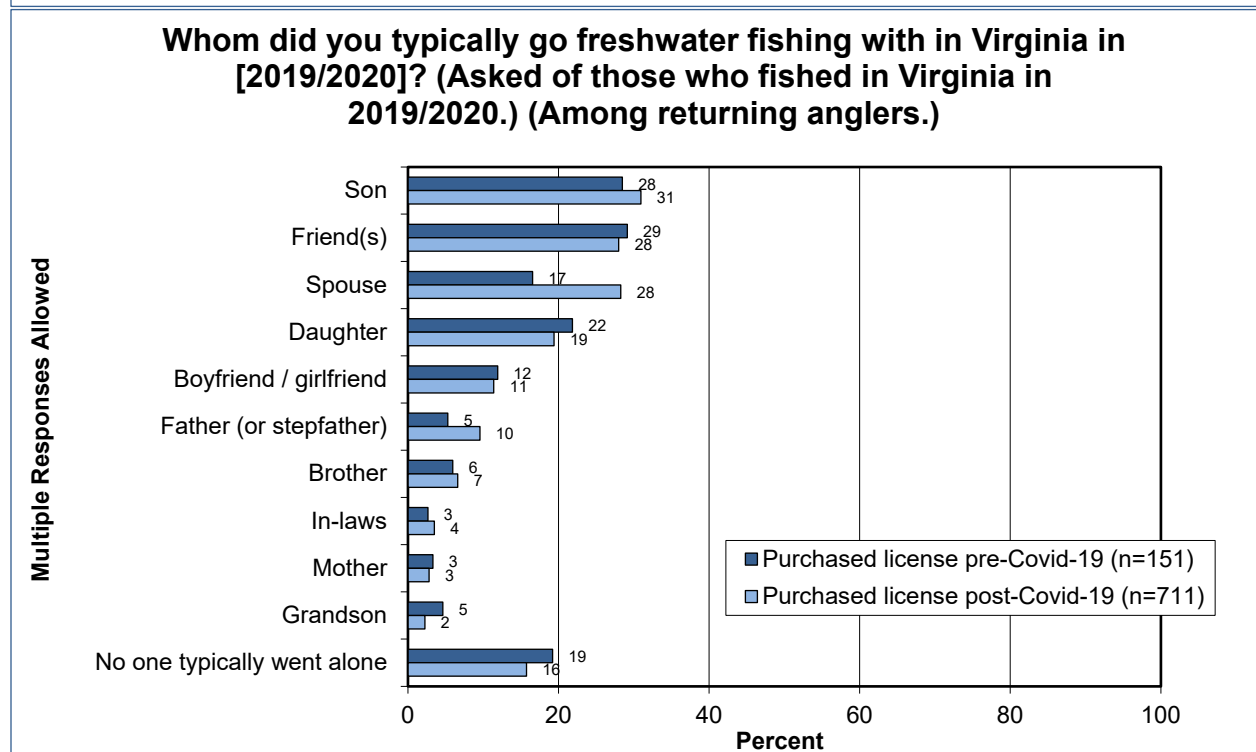
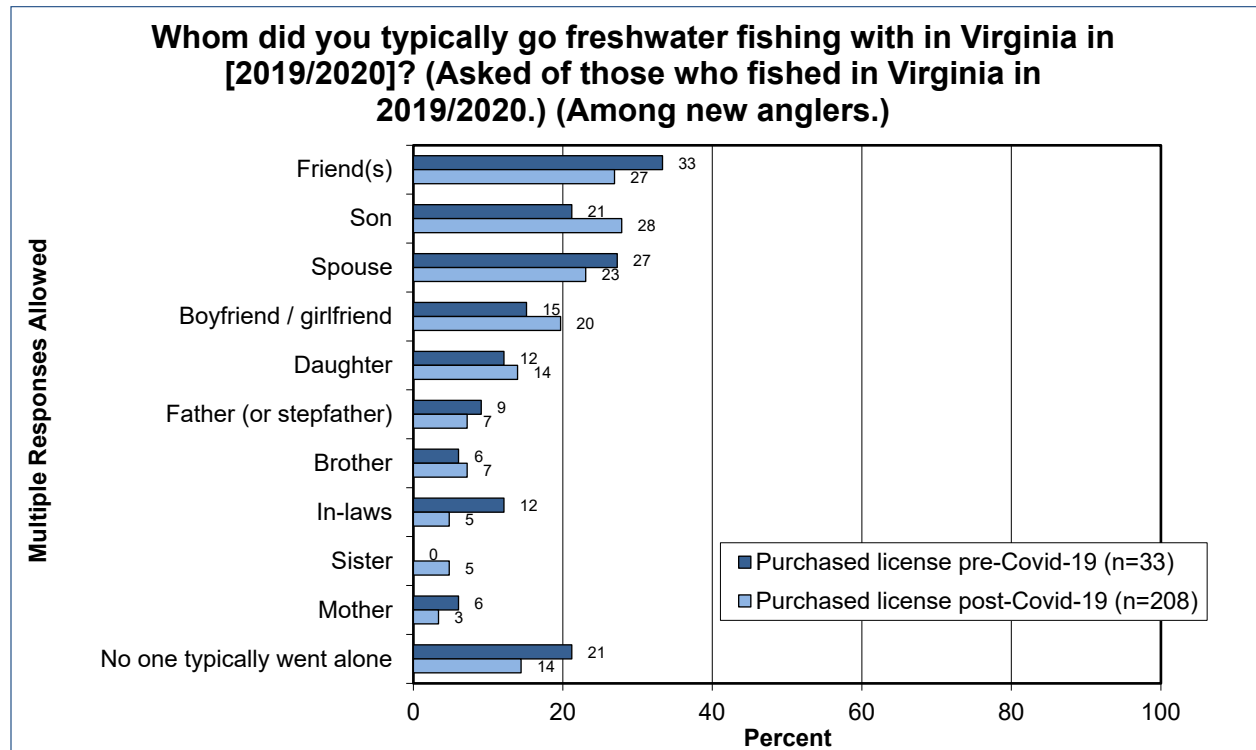


### FISHING COMPANIONS

Family members were the most popular fishing companions: when all family members are considered together, majorities in all three groups go fishing with family (60% of new anglers, 64% of returning anglers, and 64% of active anglers). Furthermore, 56% of new anglers, 61% of returning anglers, and 61% of active anglers go fishing with their immediate family (son, daughter, father, mother, spouse, brother, sister). Nonetheless, friends remain important, particularly among new anglers, with more than a quarter of new and returning anglers going with friends, and 44% of new anglers going with the extended category of friends that includes boyfriend/girlfriend and organized groups as well as friends. (These figures are not sums, as anglers chose all those that applied, and many had multiple responses.)

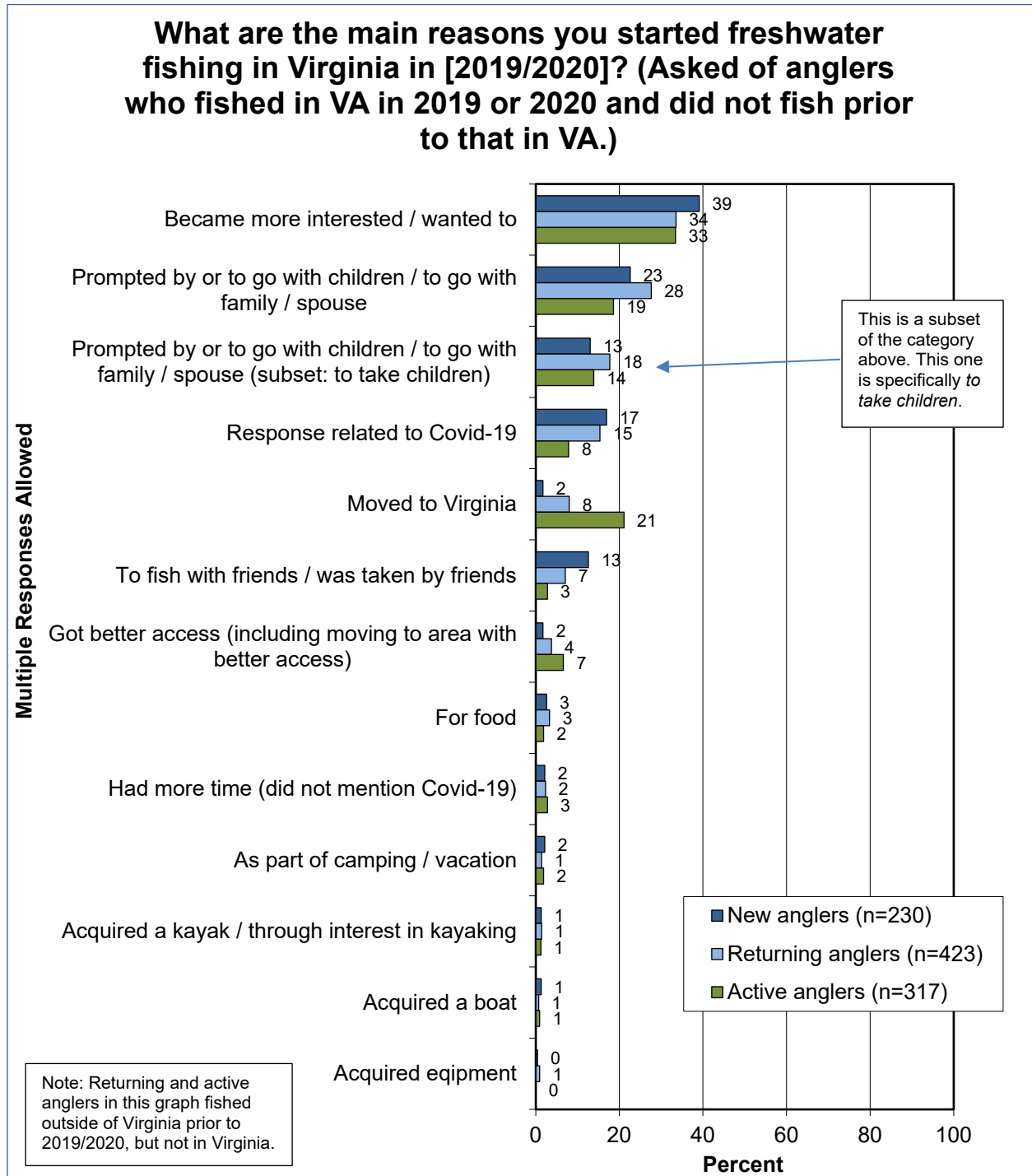


The crosstabulation among new and returning anglers based on date of license purchase was run on this question. For legibility, only the top responses are shown on each of these. In the analysis of new anglers, the post-Covid-19 purchasers have higher rates going with immediate family members (see son, daughter, brother, and sister), but these differences are slight. Among returning anglers, this analysis shows higher rates of going with immediate family members among the post-Covid-19 purchasers (see son, spouse, father, and brother).

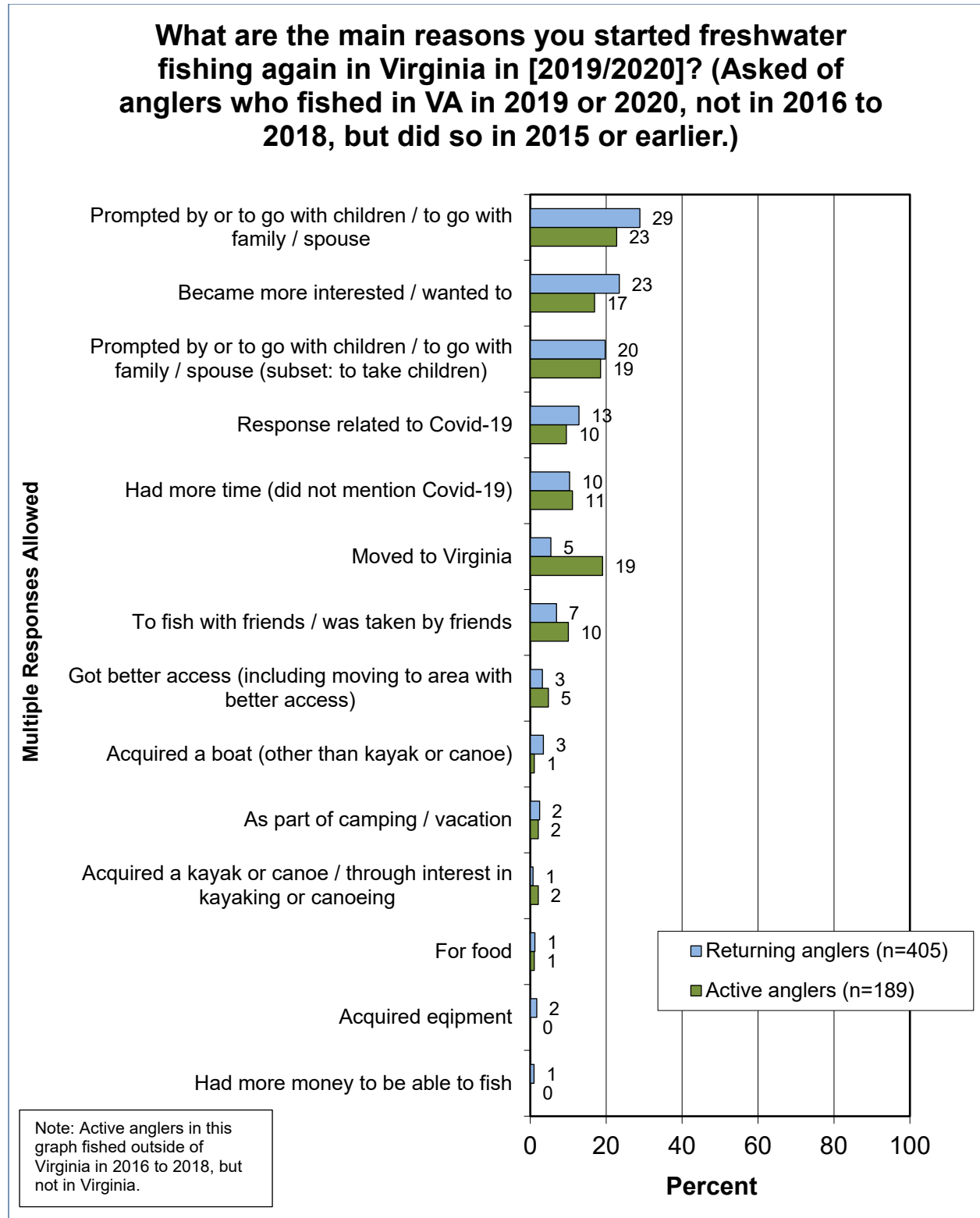


## FISHING INITIATION

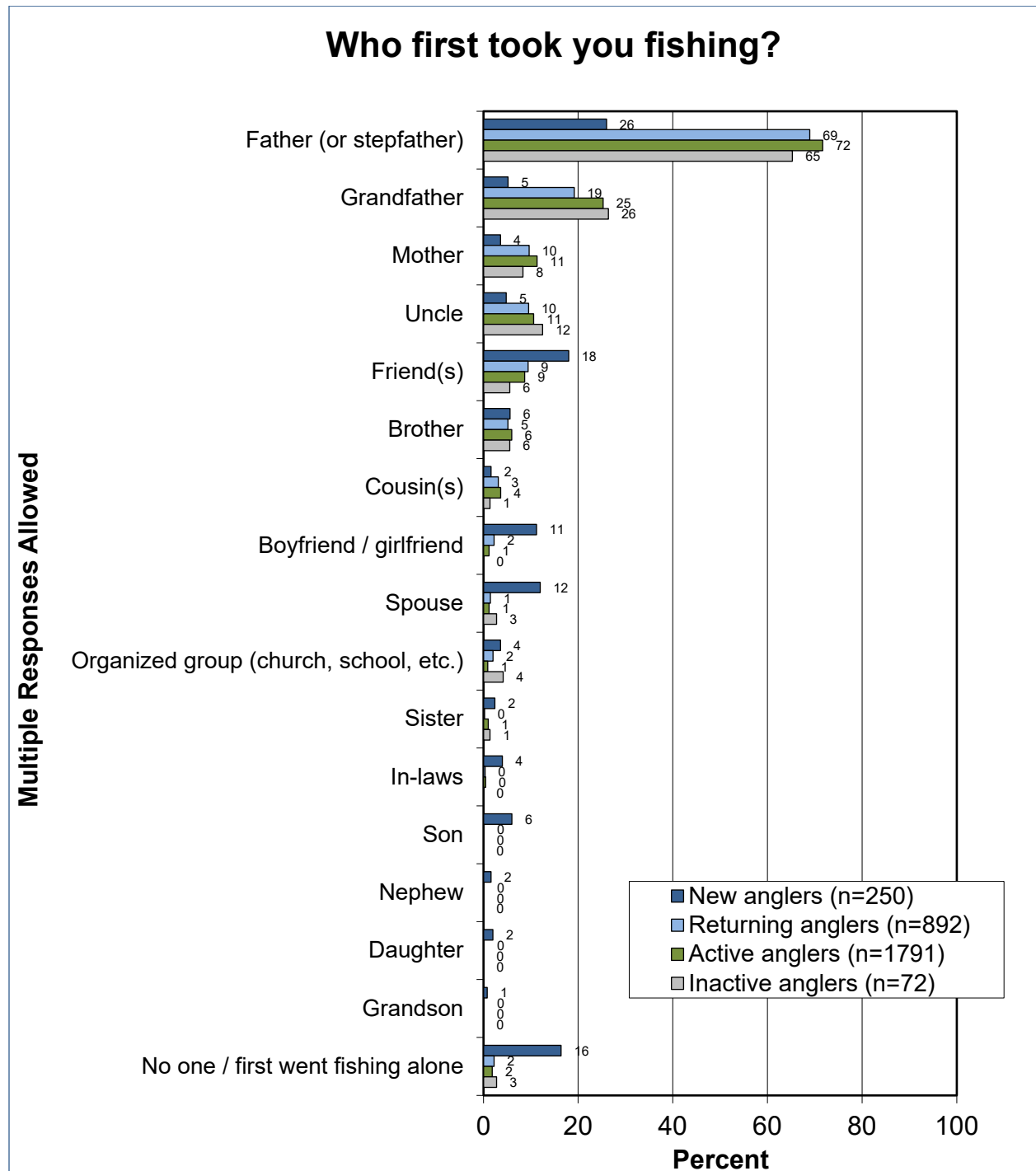
An open-ended question explored reasons for starting to fish in Virginia, and respondents as a whole most commonly gave an answer related to a simple increase in interest for non-specific reasons (the top response). Being prompted by others to go, particularly their children, is the next most popular response among new and returning anglers. Covid-19 also played a role. (Note that some of the general responses about becoming more interested *could* be related to Covid-19, but the respondent did not specifically mention it.) Also of interest is the high percentage of active anglers who started fishing in 2019/2020 because they had just moved to Virginia.



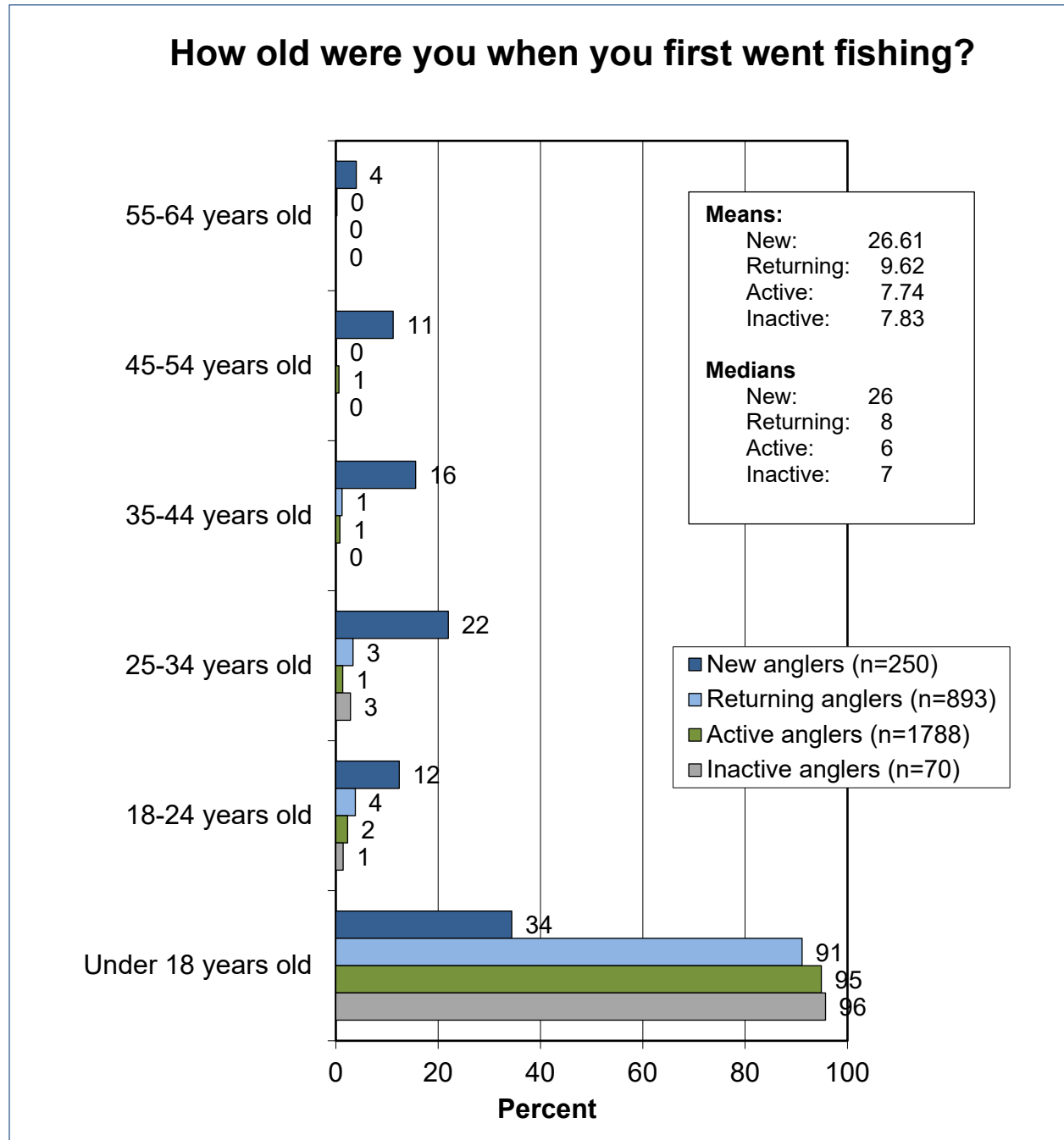
Reasons for returning to fish, among those who fished in Virginia in 2019 or 2020 but had previously fished in Virginia many years previous, include being prompted by family (including the subset of specifically doing so to teach children), becoming more interested in fishing again, a reason related to Covid-19, and having more time not necessarily related to Covid-19.



By far, the most common person to initiate a newcomer into fishing is the newcomer’s father or stepfather. In fact, the largest percentage of returning, active, and inactive anglers were first taken by their fathers (from 65% to 72% of these anglers). However, among new anglers, father is still the most popular response, but it is far less than a majority, with only 26% of new anglers being first taken by their fathers. This is a marked difference between new anglers and the other groups. Also of note is the relatively high percentage of new anglers—nearly a quarter—being first taken by spouses or their boyfriends or girlfriends. Finally, new anglers have a higher percentage than the other groups being first taken by friends.

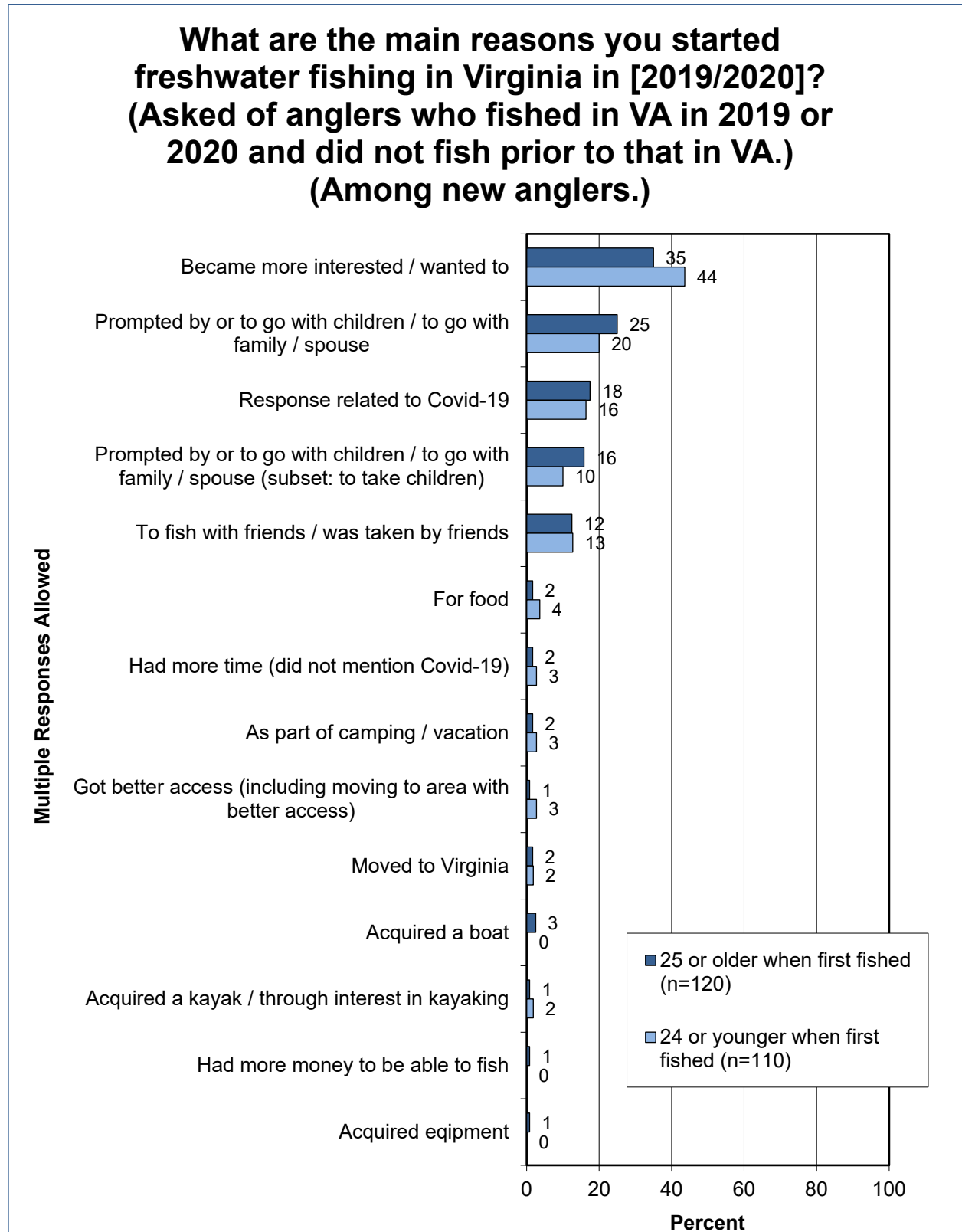


The ages of fishing initiation are generally young: from 91% to 96% of returning, active, and inactive anglers first went fishing when they were children (prior to the age of 18). However, nearly two thirds of new anglers (66%) first went fishing as adults (18 years old or older). The mean and median ages of initiation are markedly higher among new anglers—these new anglers typically started in their 20s (the mean is 26.61 years, and the median is 26).

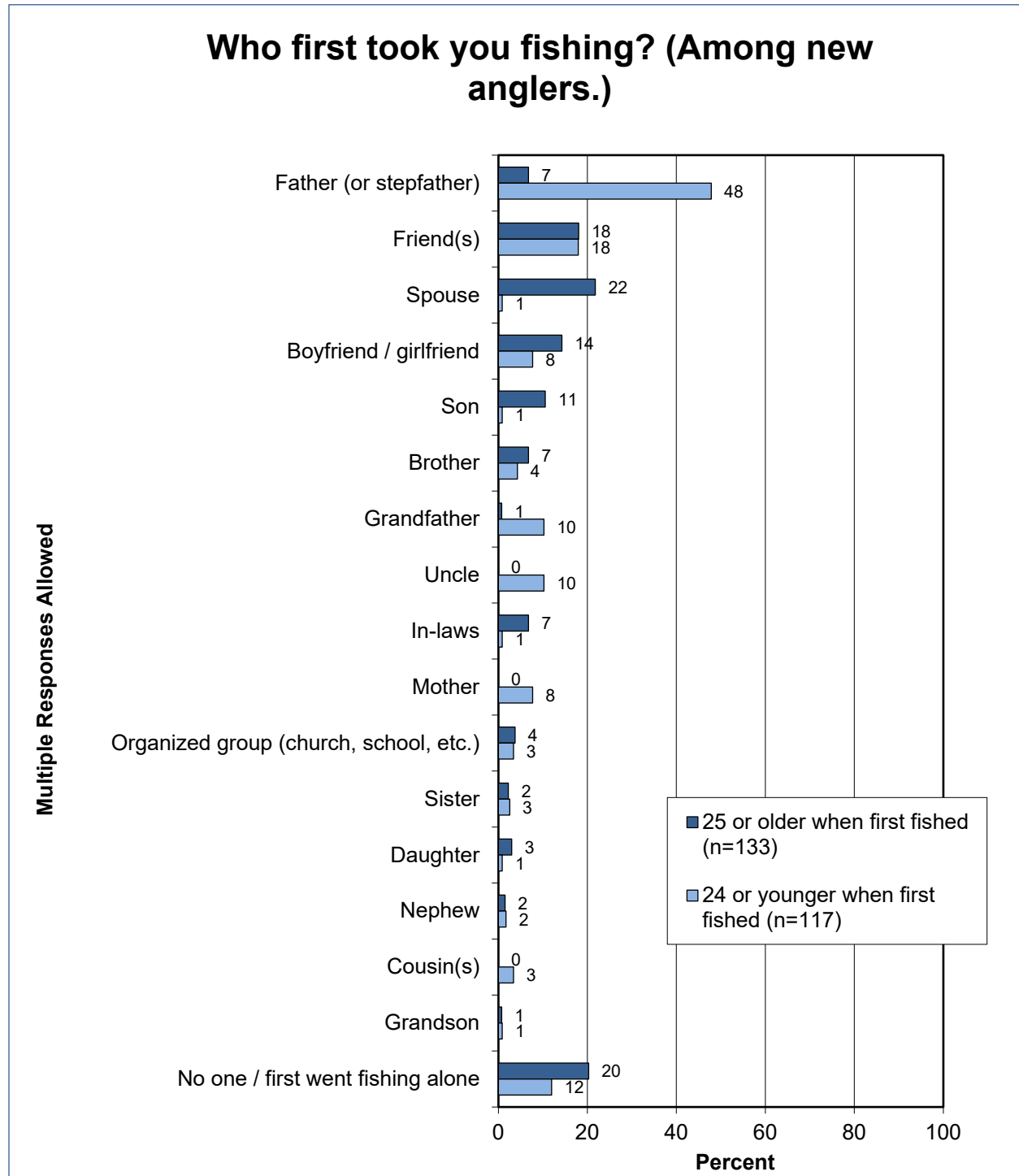


This question allowed for further analyses to be run. New anglers were divided into those who started fishing at 25 years of age or older and those who started at 24 years of age or younger, and then they were compared on two questions in this section (this breakdown is also used on crosstabulations of other questions in subsequent sections of this chapter). The first crosstabulation in this section shows reasons for starting to fish. Anglers who started at an older

age are much more likely than those who started when younger to have started because they were prompted by family members, particularly children.

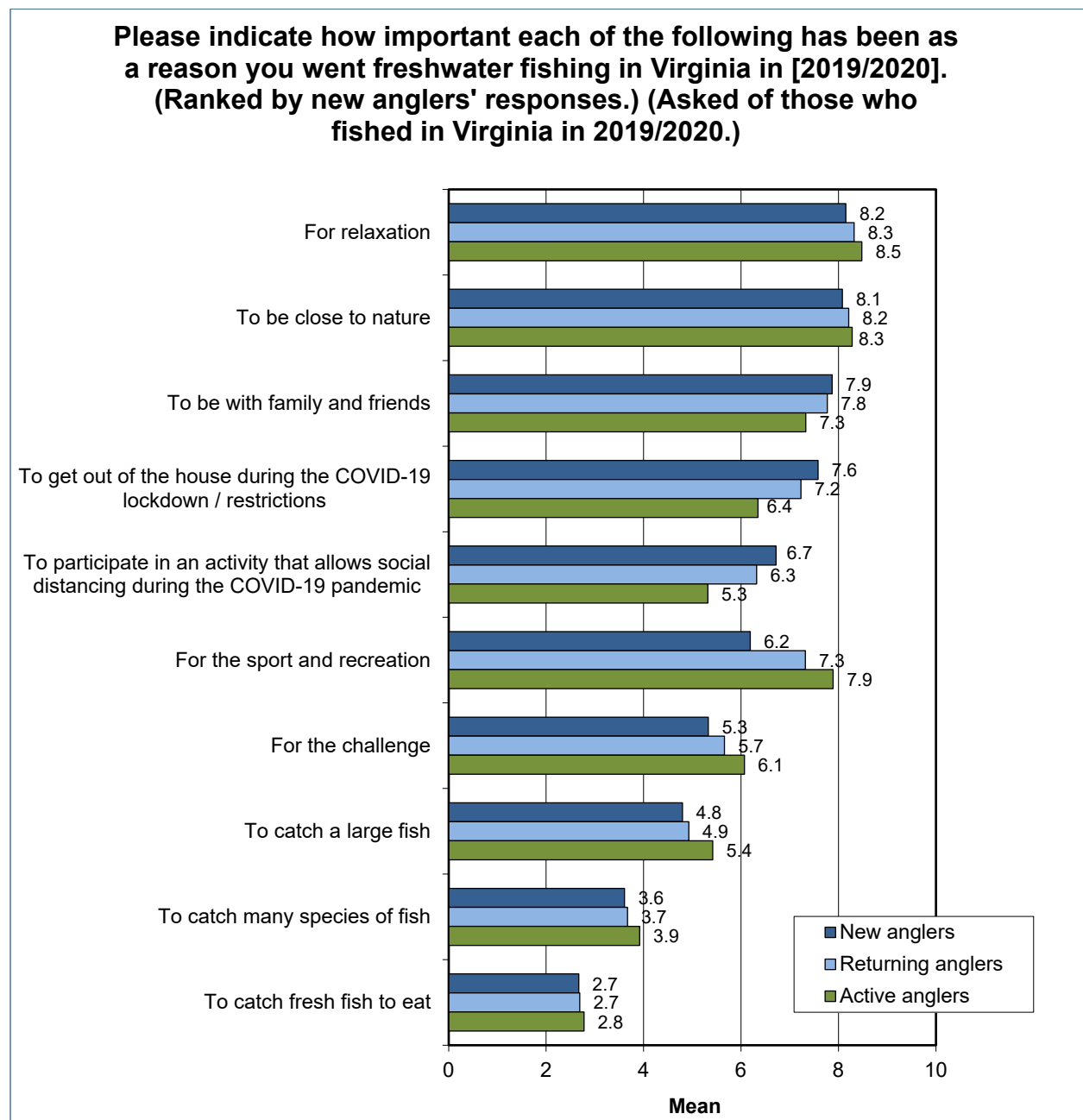


This same crosstabulation variable among new anglers also looked at responses regarding who first took them fishing. New anglers who started at an older age are much more likely to have first been taken by a spouse, boyfriend/girlfriend, or in-laws, as well as a son. Meanwhile, new anglers who started at a younger age are much more likely to have first been taken by their fathers, grandfathers, uncles, or mothers.

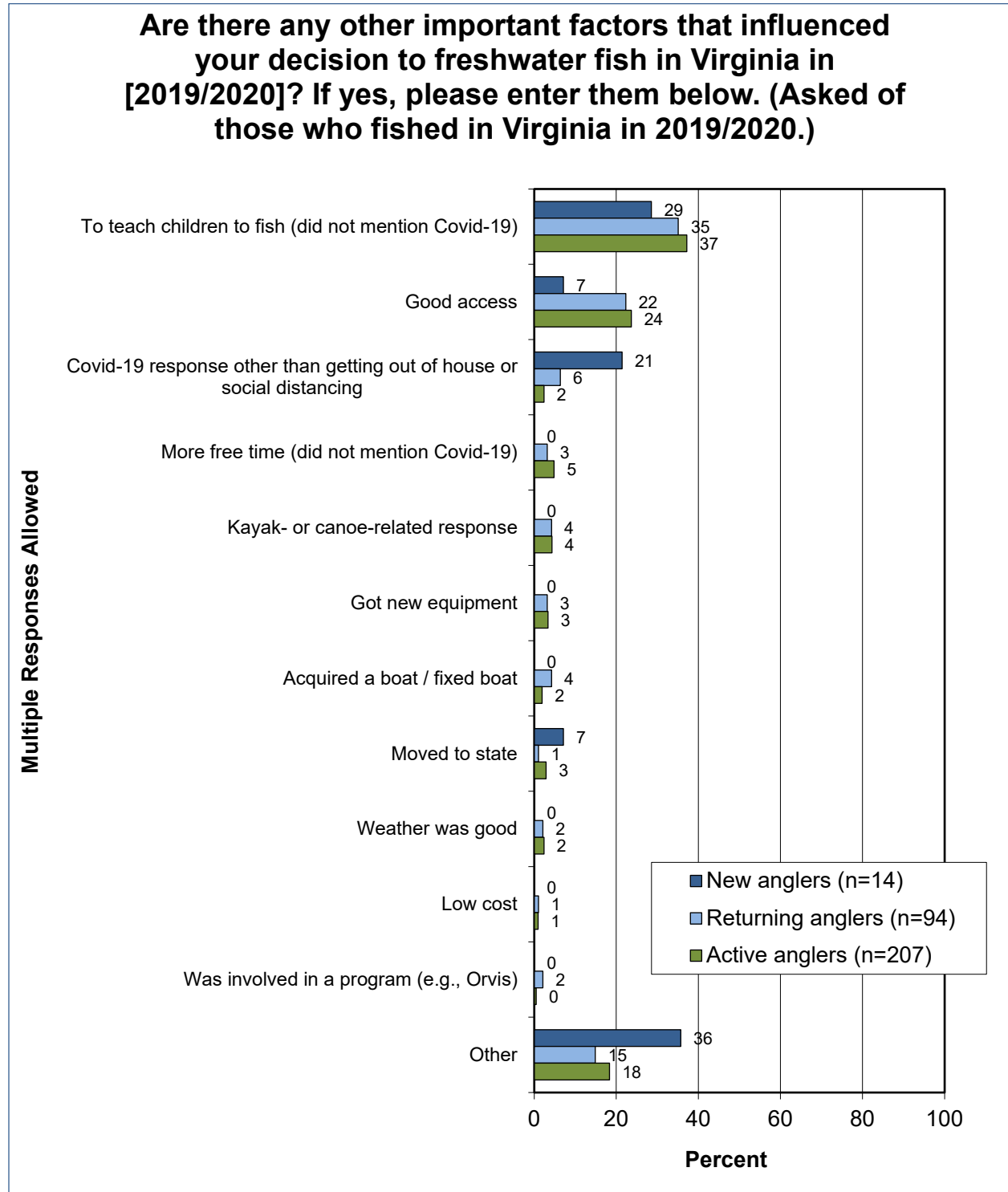


## MOTIVATIONS FOR FISHING AND REASONS FOR INCREASING FISHING PARTICIPATION

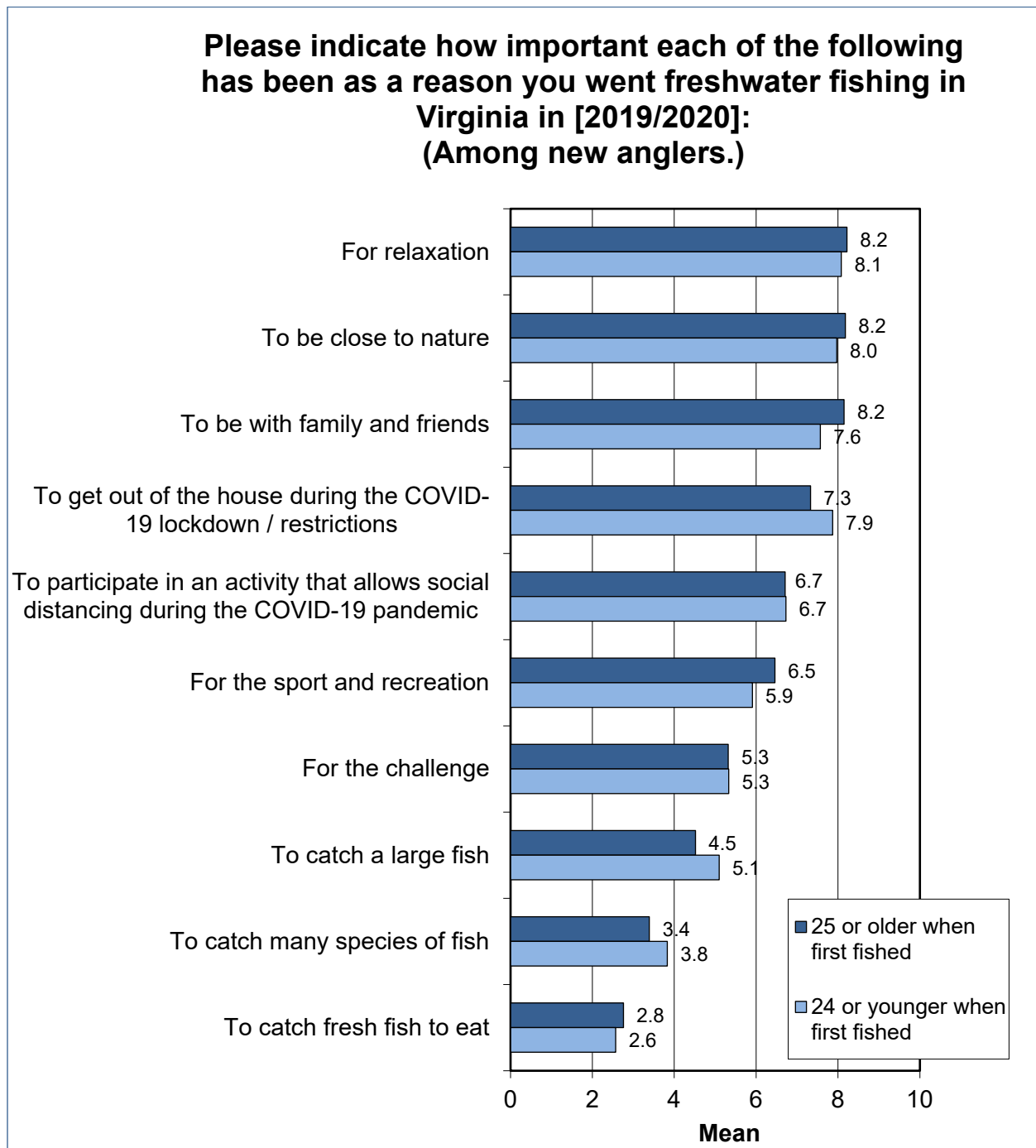
The survey explored motivations for fishing in several ways. The first way that this report looks at this topic is the series of questions in which anglers rated the importance of various factors in their decision to fish in Virginia in 2019/2020. Ten possible factors were presented to anglers, as shown below, ranked by new anglers' responses. *For relaxation* and *to be close to nature* are the top responses among all three groups. *Family and friends* is next among new and returning anglers, but fishing for the *sport or recreation* was the next among active anglers. These data suggest that new and returning anglers are more likely than active anglers to want to fish to be with family or friends or for either Covid-19 reason. Meanwhile, active anglers are more likely to fish for sporting and challenge reasons than are new and returning anglers.



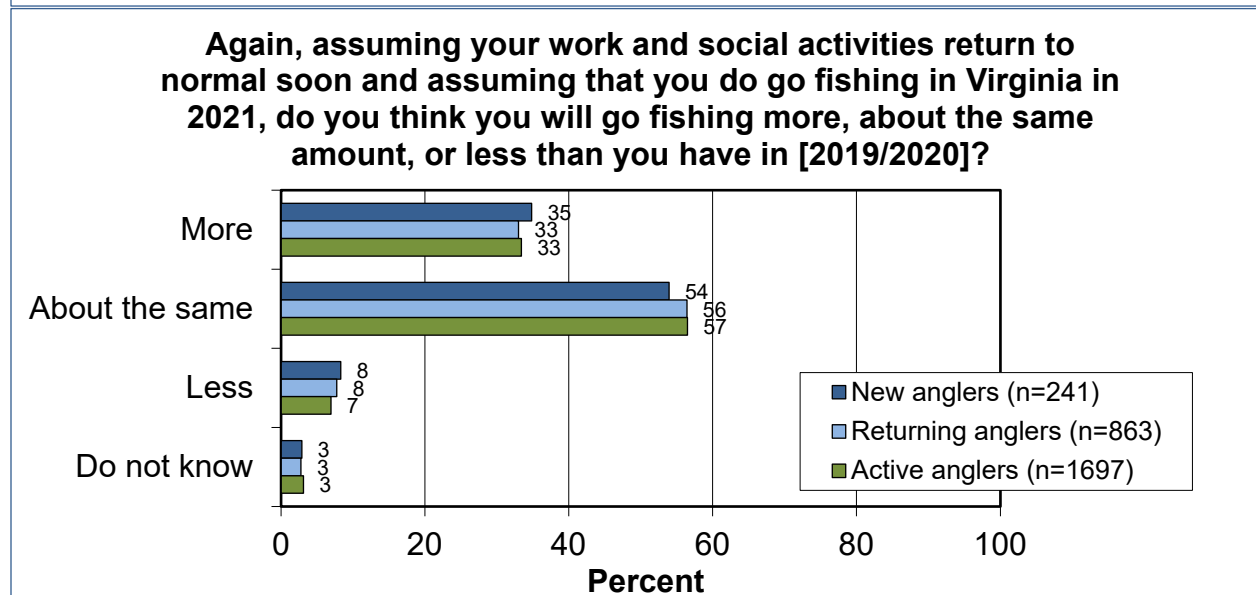
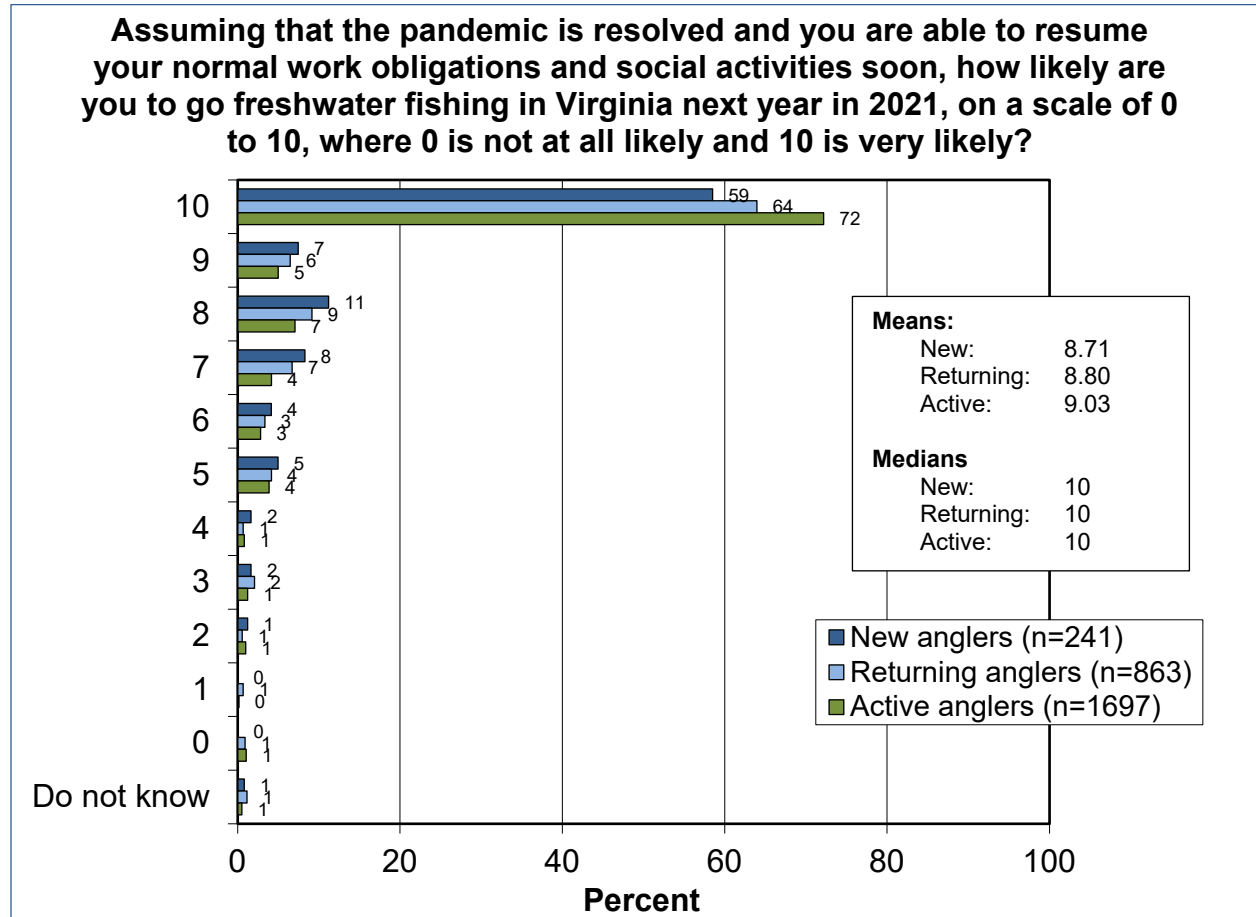
An open-ended follow-up question asked about any other factors not previously covered. Among the more common factors are to teach children (in this categorization, some of the responses about teaching children may be related to Covid-19, but the respondent in these cases did not specifically mention Covid-19) and because the anglers had obtained or had found good access. Of note is that many who indicated having more time unrelated to Covid-19 had more time because they had retired.



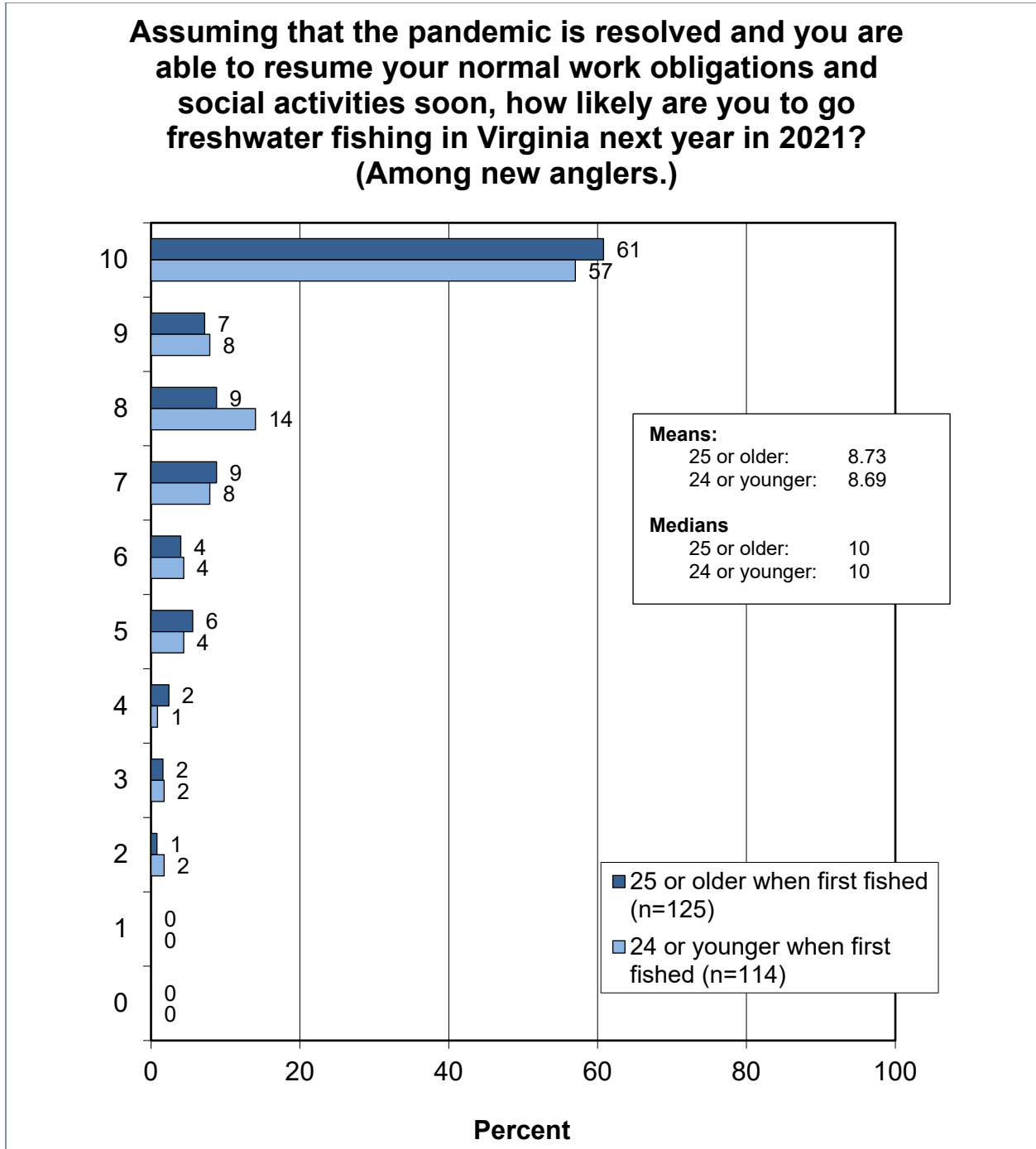
The series of questions about factors was crosstabulated by age when first fished among only the new anglers, dividing them up as before by those who started fishing when 25 years old or older versus those who started when 24 years old or younger. Those new anglers starting at an older age have a higher mean rating of fishing *to be with family and friends* and *for the sport or recreation*. On the other hand, those new anglers starting at a younger age have a higher mean rating of fishing *to get out of the house during the Covid-19 pandemic, to catch a large fish, and to catch many species of fish*.



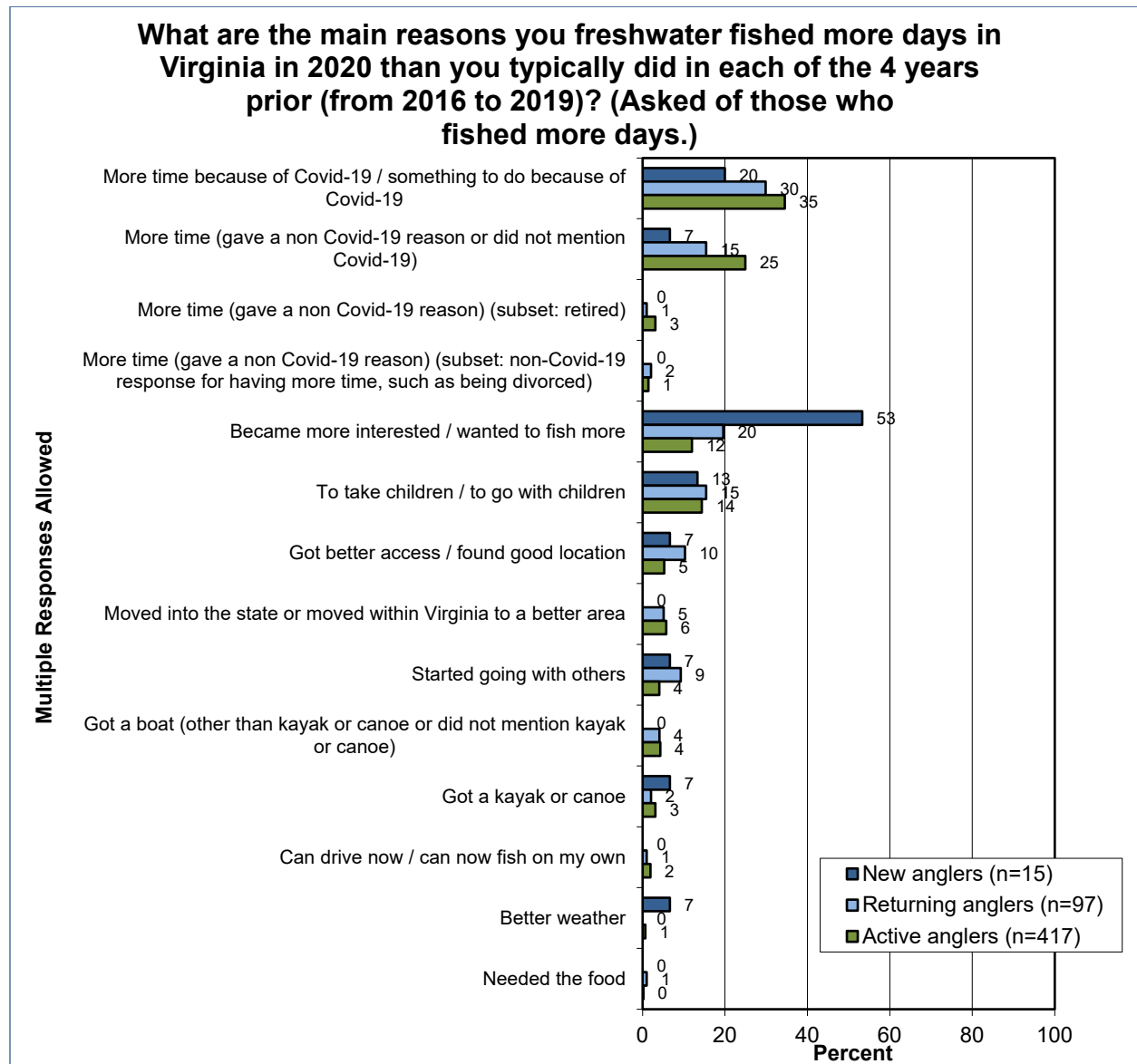
Anglers rated their likelihood of going fishing in 2021, using a 0 to 10 scale where 0 is not at all likely and 10 is very likely. The majority of each group appear to intend to go fishing, rating their likelihood at the top, with active anglers the most likely to give a top rating of 10. The mean rating is slightly higher among active anglers, compared to new or returning anglers. Although most think they will fish about the same amount, the percentage thinking that they will fish more exceed the percentage who think that they will fish less in 2021 for all three groups.



The new angler crosstabulation by the age of initiation was run on likelihood to go fishing in 2021. There is little substantive difference between the two groups (new anglers who started fishing at an older age versus new anglers who started at a younger age). The question used a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely.



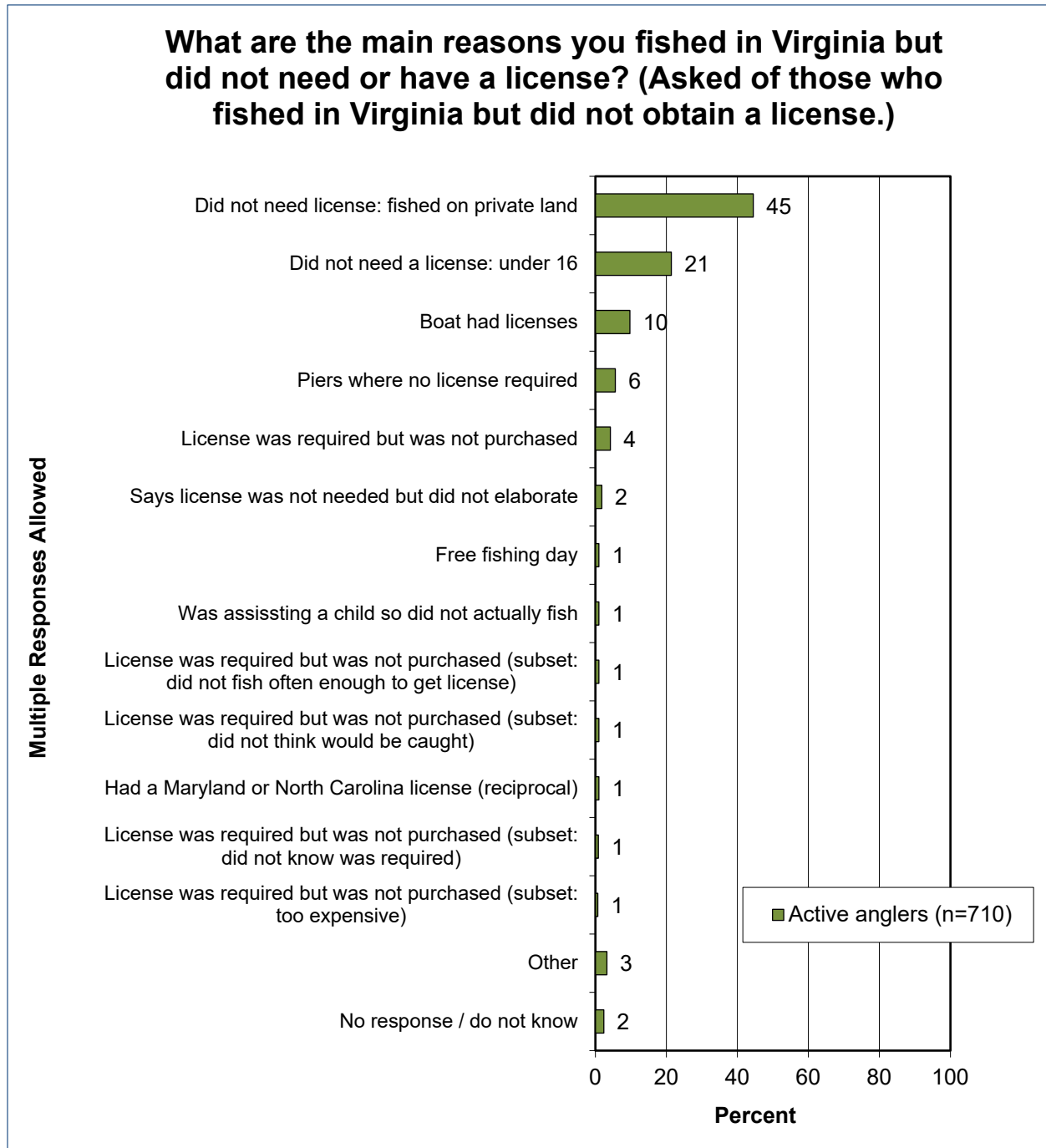
The survey had previously asked anglers to indicate the number of days that they had fished in 2020 and then to say if they had fished for more days or fewer days in 2020 compared to previous years (as shown in a previous section of the chapter). Those who had fished for more days were asked in an open-ended follow-up question to give their reasons for fishing more. The top reason was having more time related to Covid-19. However, having more time unrelated to Covid-19 also was an important reason (including being retired or divorced, as shown in subsets of the “more time” response). New anglers also indicated simply being more interested. Taking children is also an important reason.



Related to this section of the report regarding motivations for fishing were previously shown graphs in the section of the report, *Fishing Initiation*. These graphs showed the importance of being prompted to go fishing by family—including specifically to take children fishing—as a reason for fishing. Also of importance was having more time. In the past year, more time was sometimes provided by Covid-19 restrictions. Nonetheless, many people in the survey had more time to fish unrelated to the pandemic, such as because they had retired.

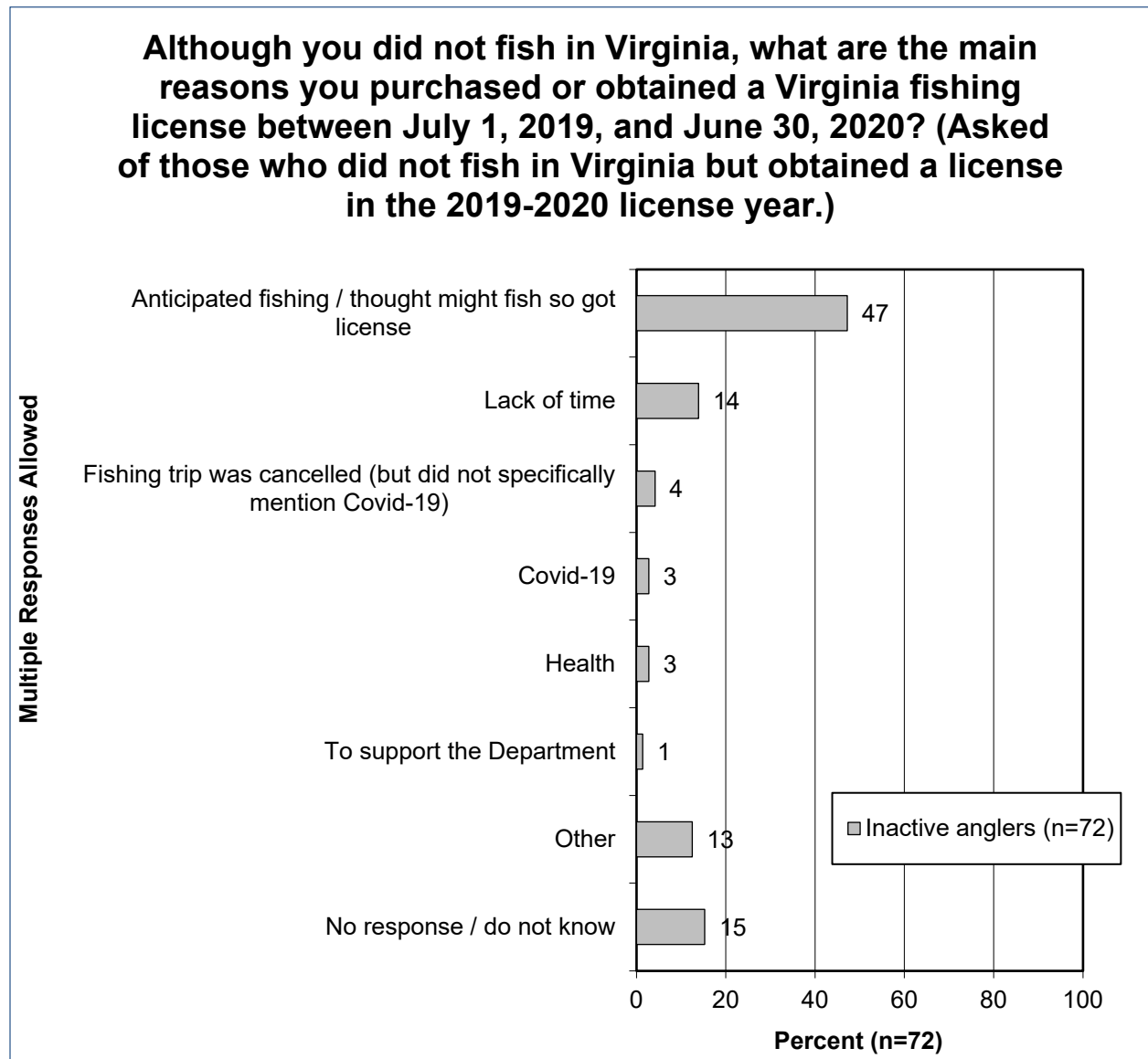
## REASONS FOR FISHING WITHOUT A LICENSE

Only active anglers had enough in the sample who had fished in Virginia but had not bought a license in a particular year for results to be shown. For the most part, their fishing was legal (e.g., they fished on their own land, they were not yet 16 years old, the charter boat had a boat license for all to fish). However, a small percentage (4%) simply fished illegally, with some of them saying that they did not think that they would be caught.



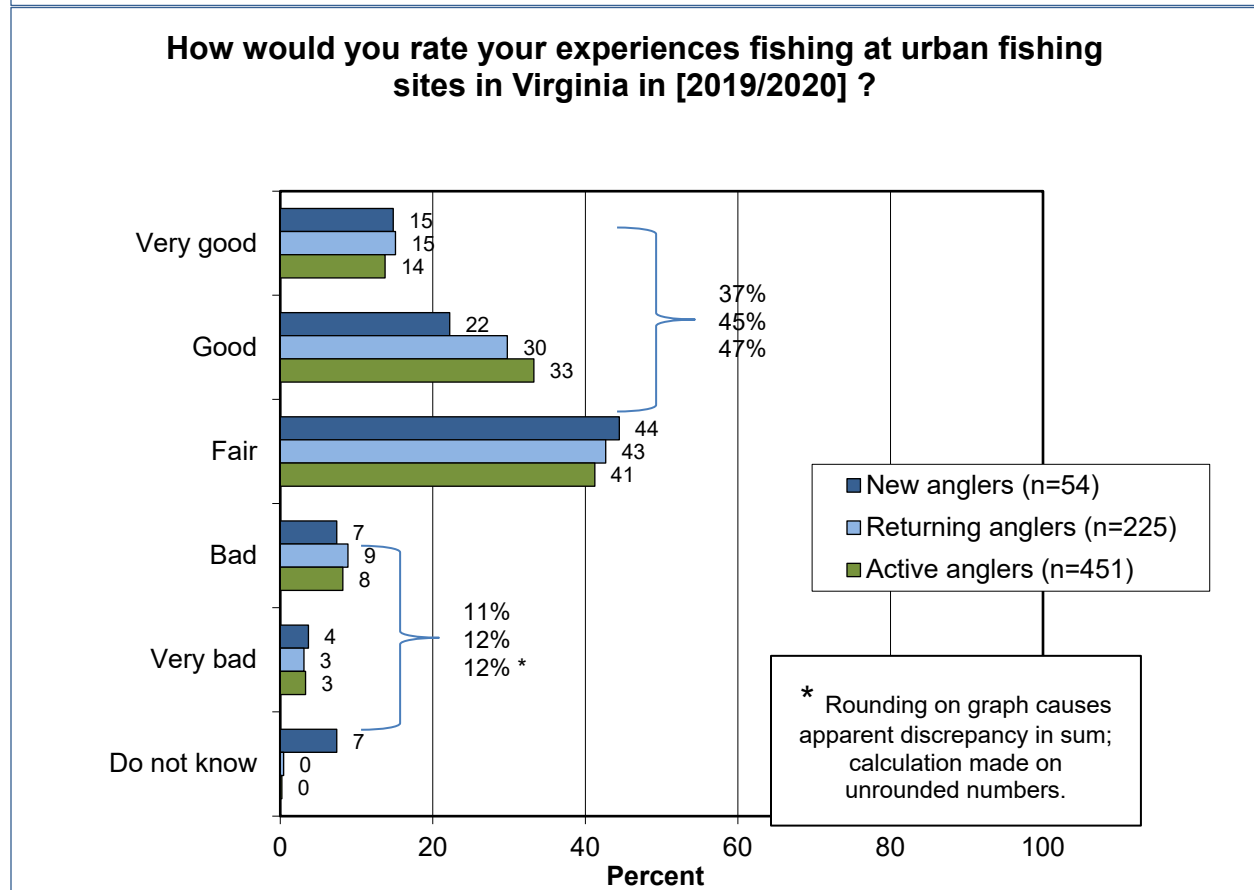
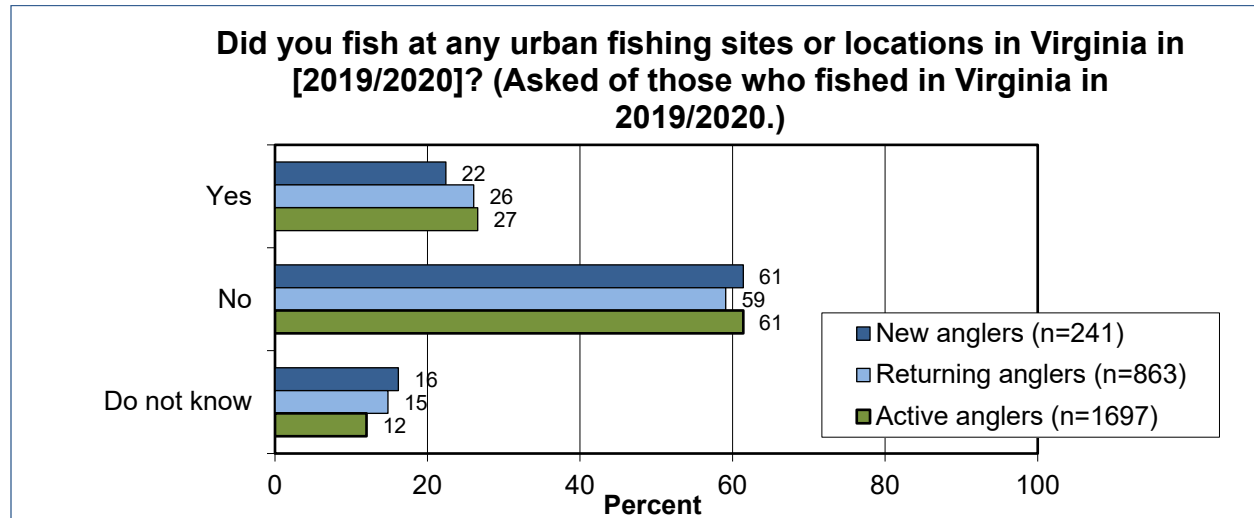
## REASONS FOR GETTING A LICENSE BUT NOT FISHING

An open-ended question asked inactive anglers why they had purchased a license but had not fished. Many of them bought the license simply in case they wanted to go fishing later—to have it if the opportunity arose to go fishing. There were also some who had planned to go fishing but did not have the time. Finally, some had their fishing trip cancelled, and some had plans interrupted by Covid-19. Note that many whose fishing trips were cancelled may have been affected by Covid-19 but did not mention it in their open-ended response.

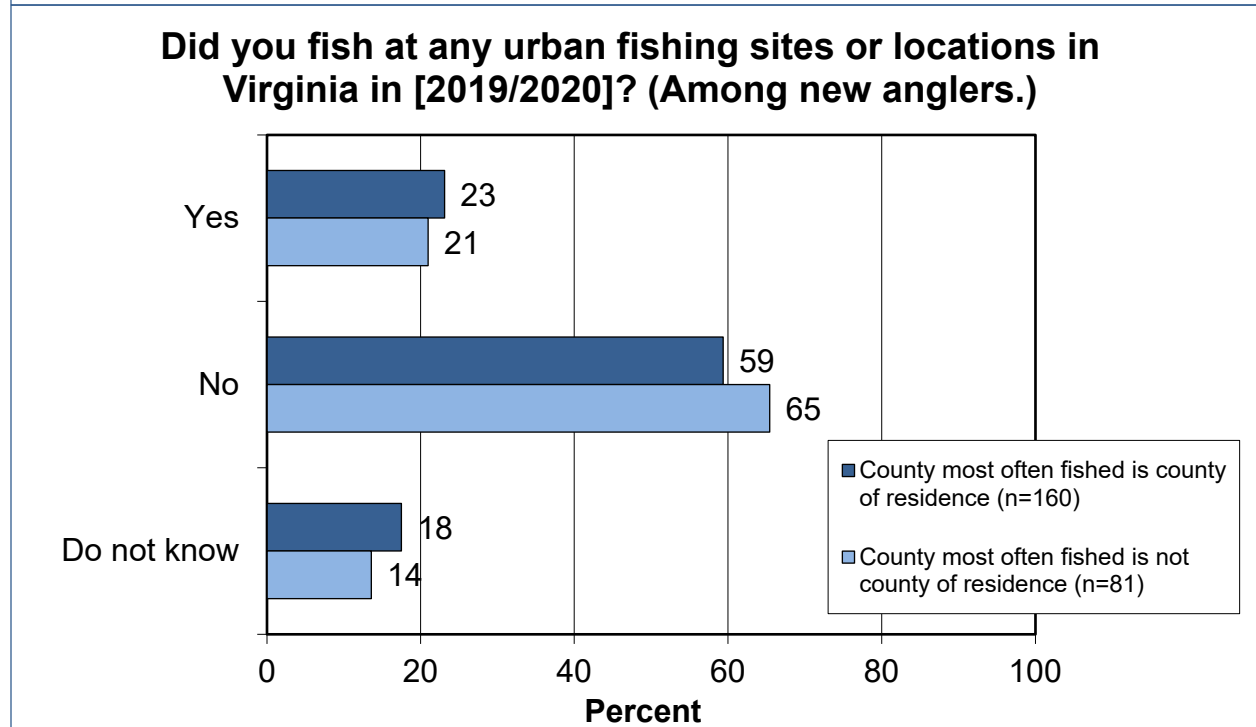
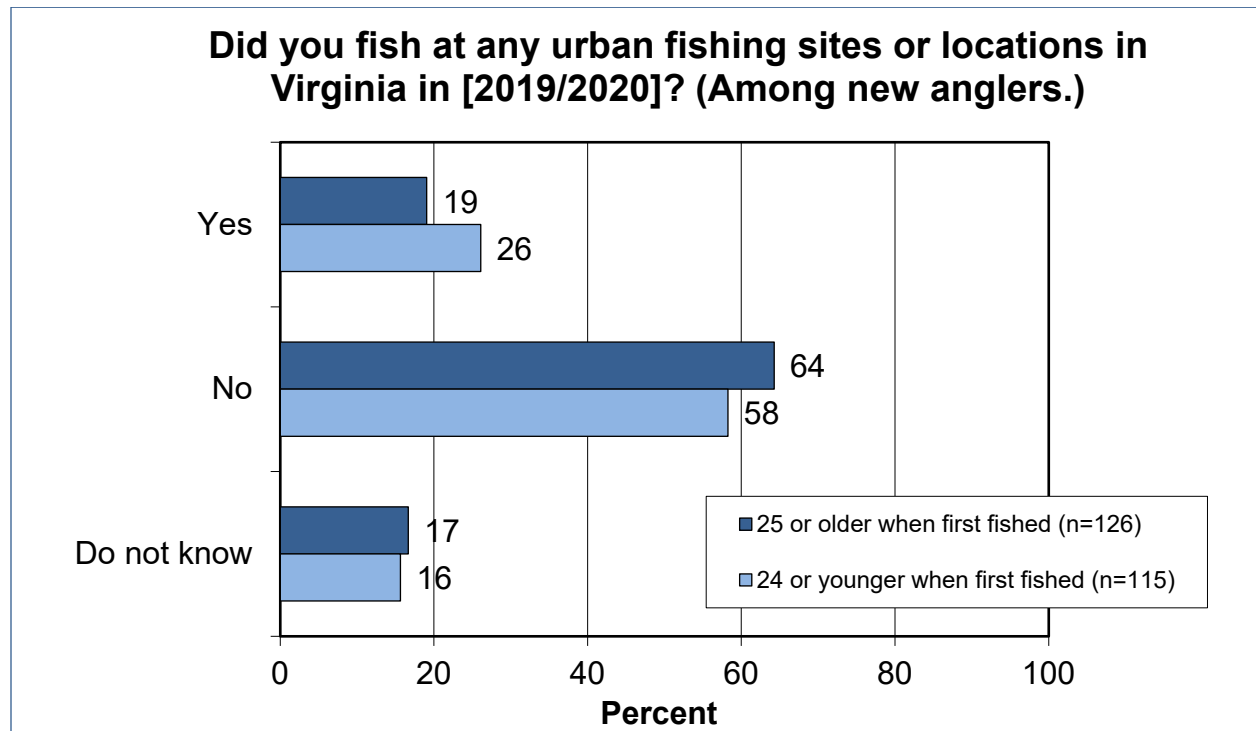


## URBAN FISHING PARTICIPATION

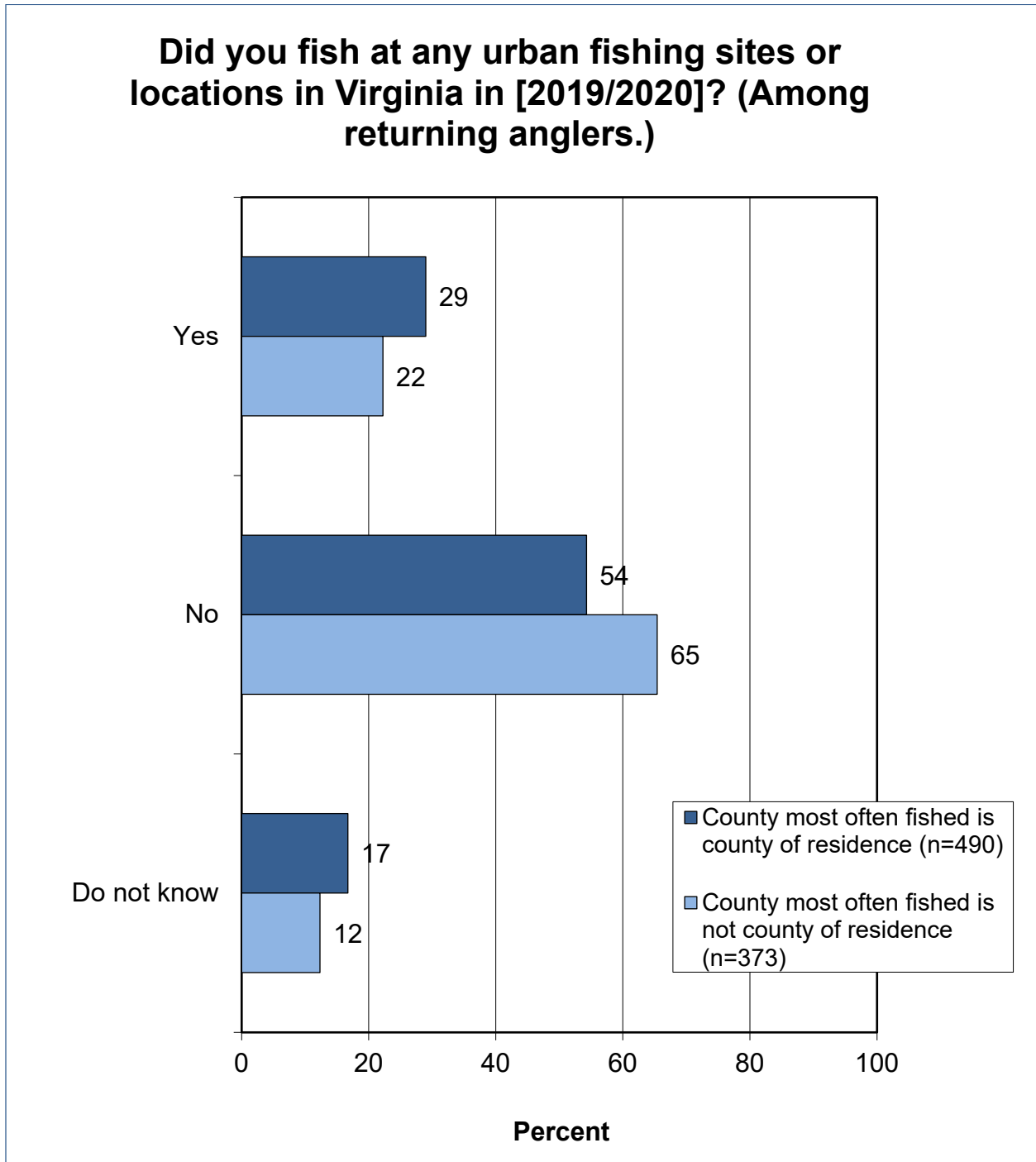
About a quarter of anglers who had fished in Virginia in 2019/2020 had fished in an urban fishing site in Virginia. The differences among groups is slight and may be more related to not knowing rather than actual participation at one of these sites. Ratings of the fishing experiences at these urban sites is more positive than negative, but the most common response is that these urban sites provided *fair* fishing experiences. Nonetheless, for all three groups, *very good* and *good* ratings (37% among new anglers and 45% or more among the other groups) far exceeded *bad* and *very bad* ratings (from 11% to 12% among the three groups).



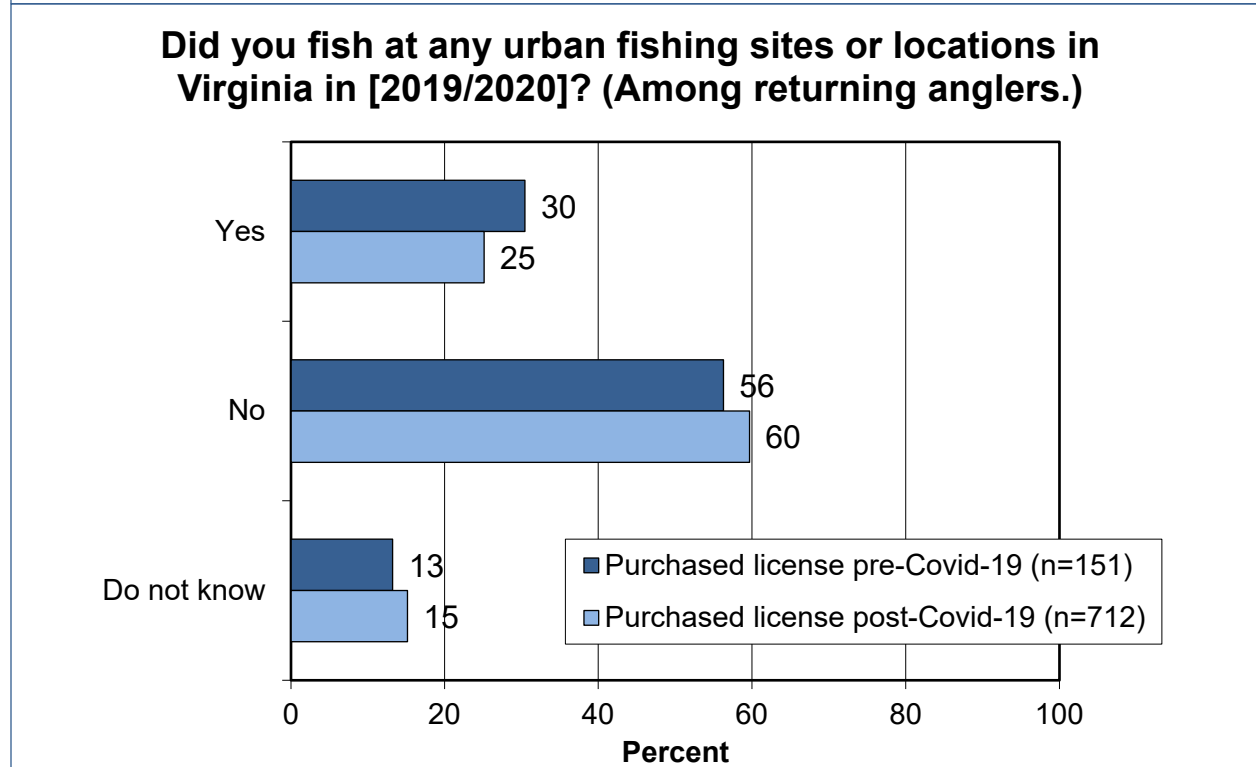
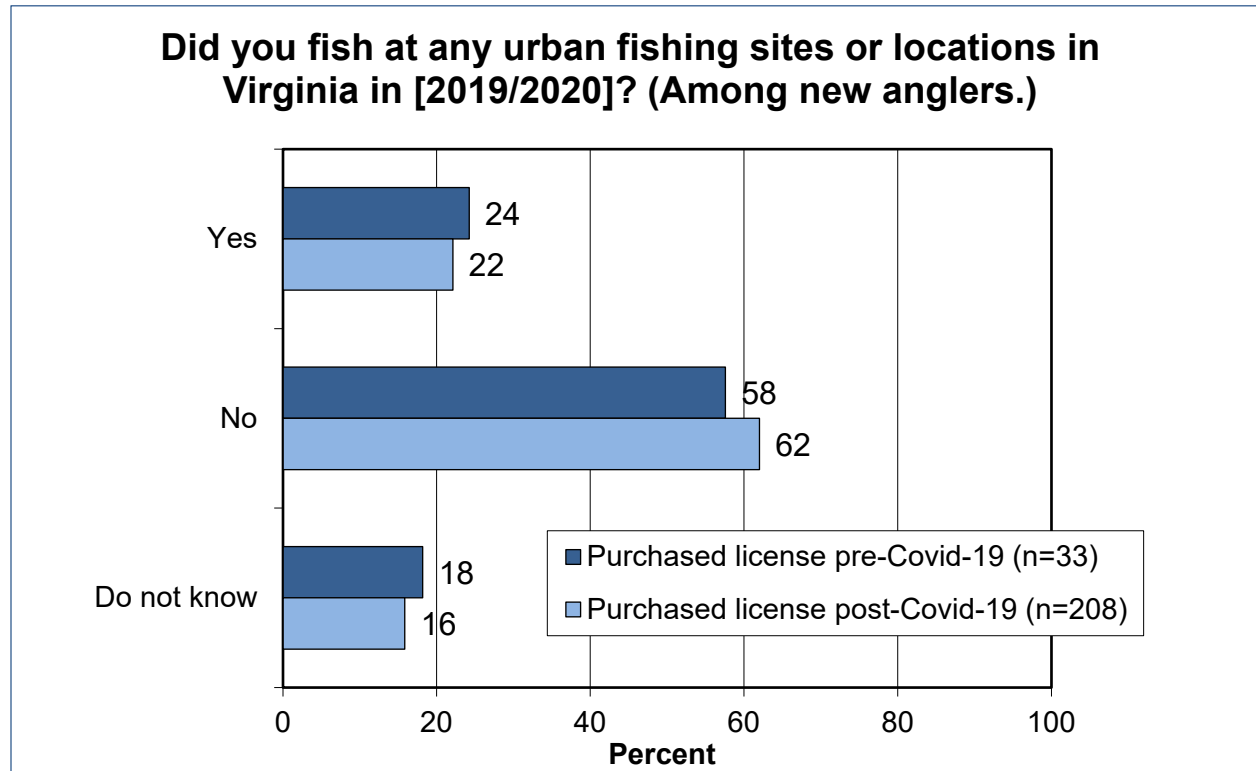
The crosstabulation among new anglers by the age of initiation was run on urban fishing. It found that new anglers who started fishing at a younger age are somewhat more likely to have fished at urban fishing sites or locations, compared to new anglers who started at an older age. In other words, younger anglers getting into fishing are using the convenience of urban sites. Another crosstabulation shows that those new anglers mostly fishing outside their county of residence are more likely to indicate that they have not fished in an urban site—those who are traveling (or can feasibly travel) are going to more rural locations. This highlights the convenience of urban sites.



Returning anglers who mostly fish in their county of residence more often fish in urban sites than do returning anglers who mostly fish outside their county of residence.



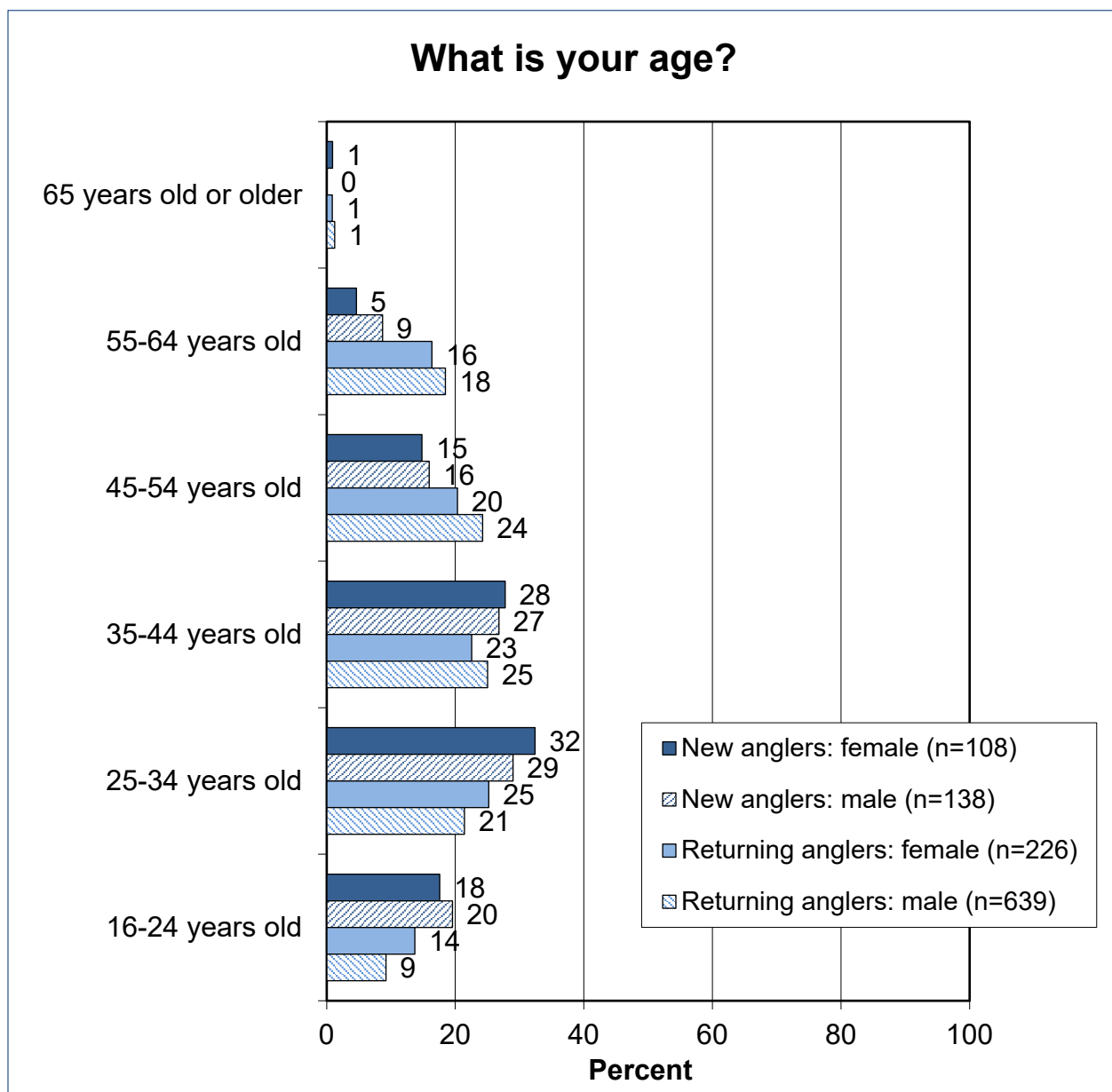
The crosstabulations on date of license purchase that were previously run on some questions in the survey were also run on urban fishing participation. This analysis was run on both new anglers and returning anglers. There was almost no difference in the two groups among new anglers. Among returning anglers, pre-Covid-19 purchasers were a little more likely to fish urban sites, compared to post-Covid-19 purchasers.



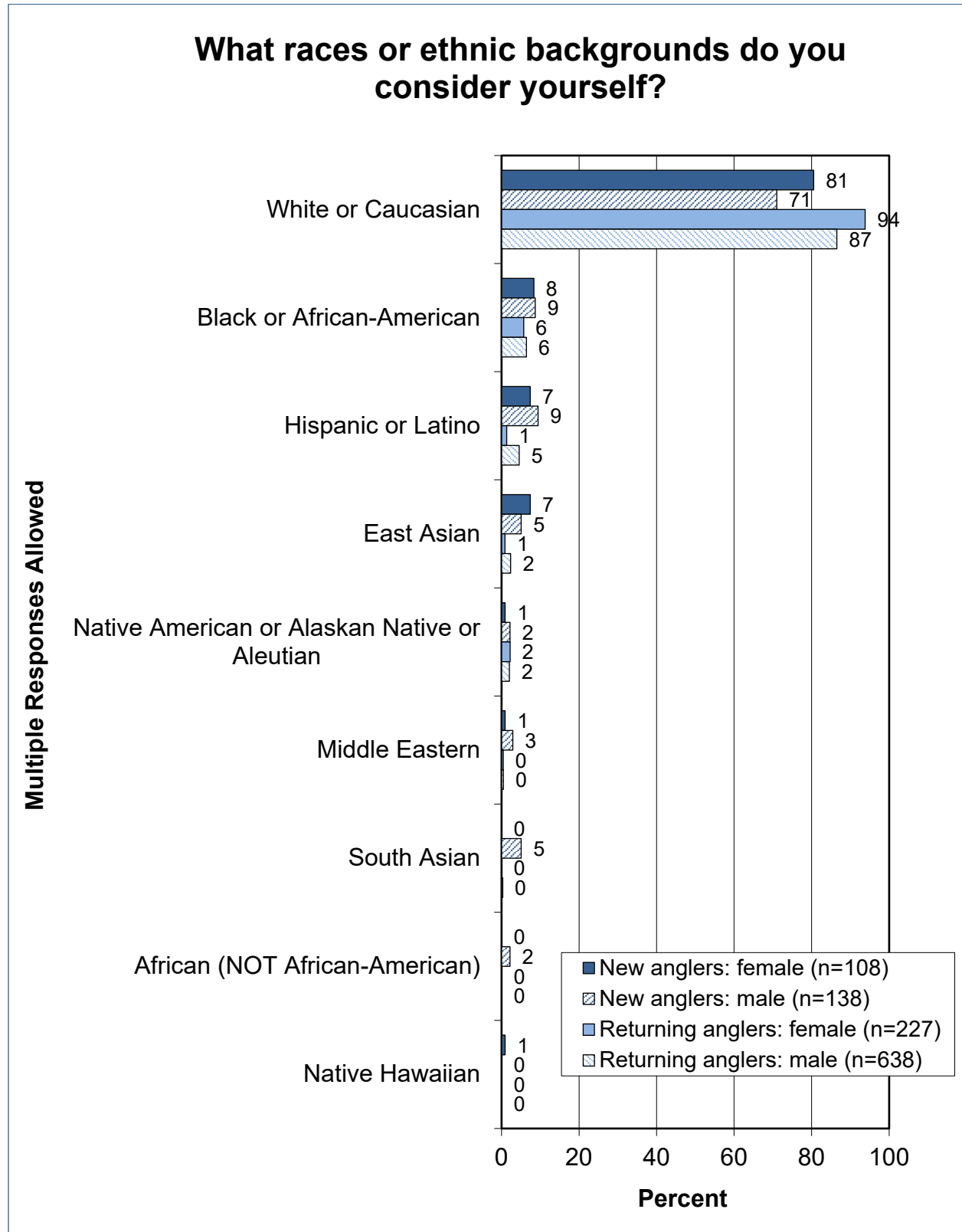
## WOMEN ANGLERS

Analyses were run on the data to examine new and returning anglers who are women. In the graphs, women are represented with solid bars, and men are represented with patterned bars. In several graphs, only the top responses are shown for better clarity.

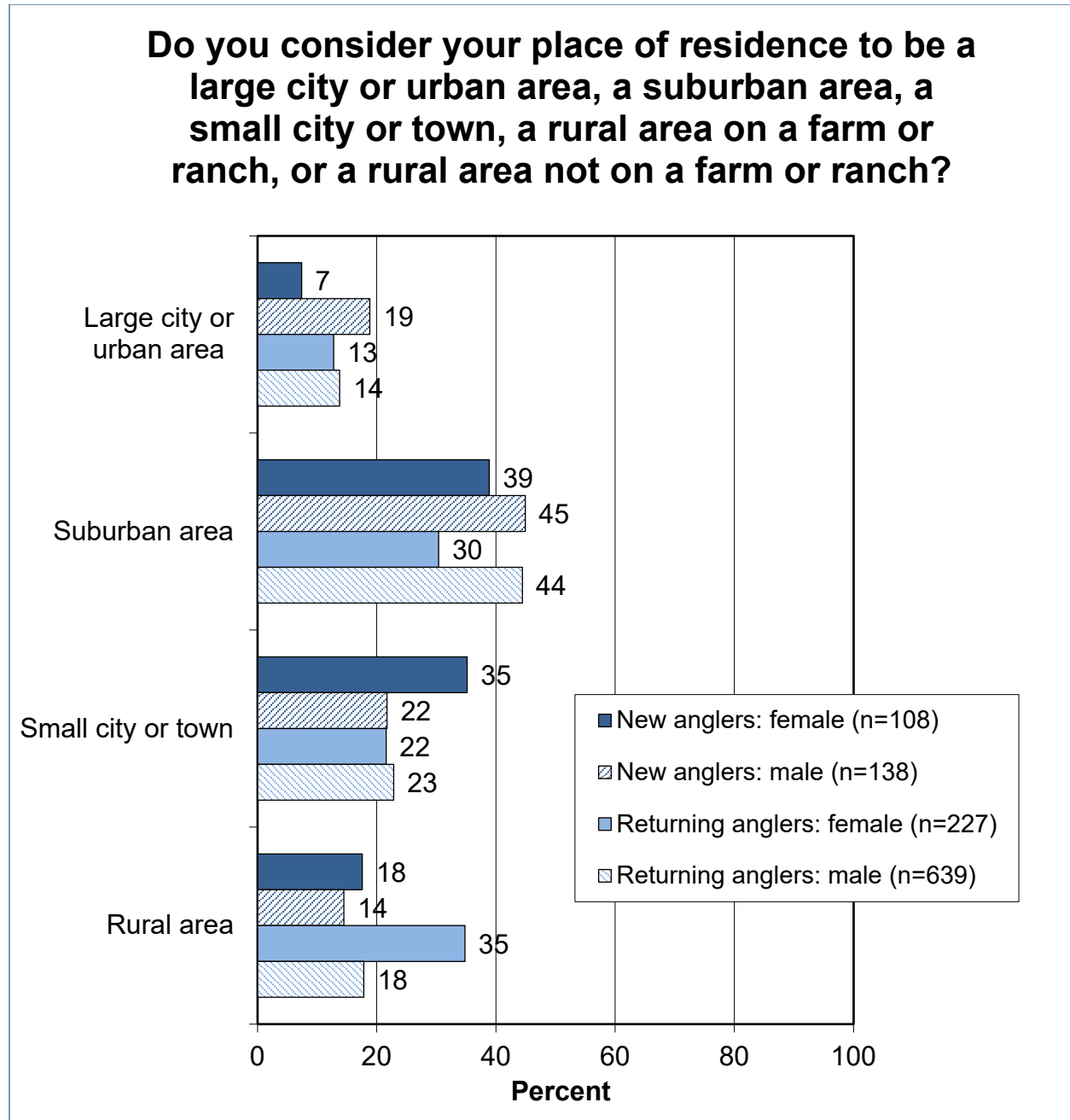
These analyses show that, among new anglers, women and men are not consistently different (in other words, women have a lower percentage compared to men being 16 to 24 years old and 45 to 64, but a higher percentage being 25 to 44 years old and 65 and above). Among returning anglers, however, there is a more consistent pattern: in the two younger age groups, women returning anglers have a higher percentage, while in the four age groups above that women returning anglers have a lower percentage. In short, among returning anglers, women tend to be a little younger than men in this group.



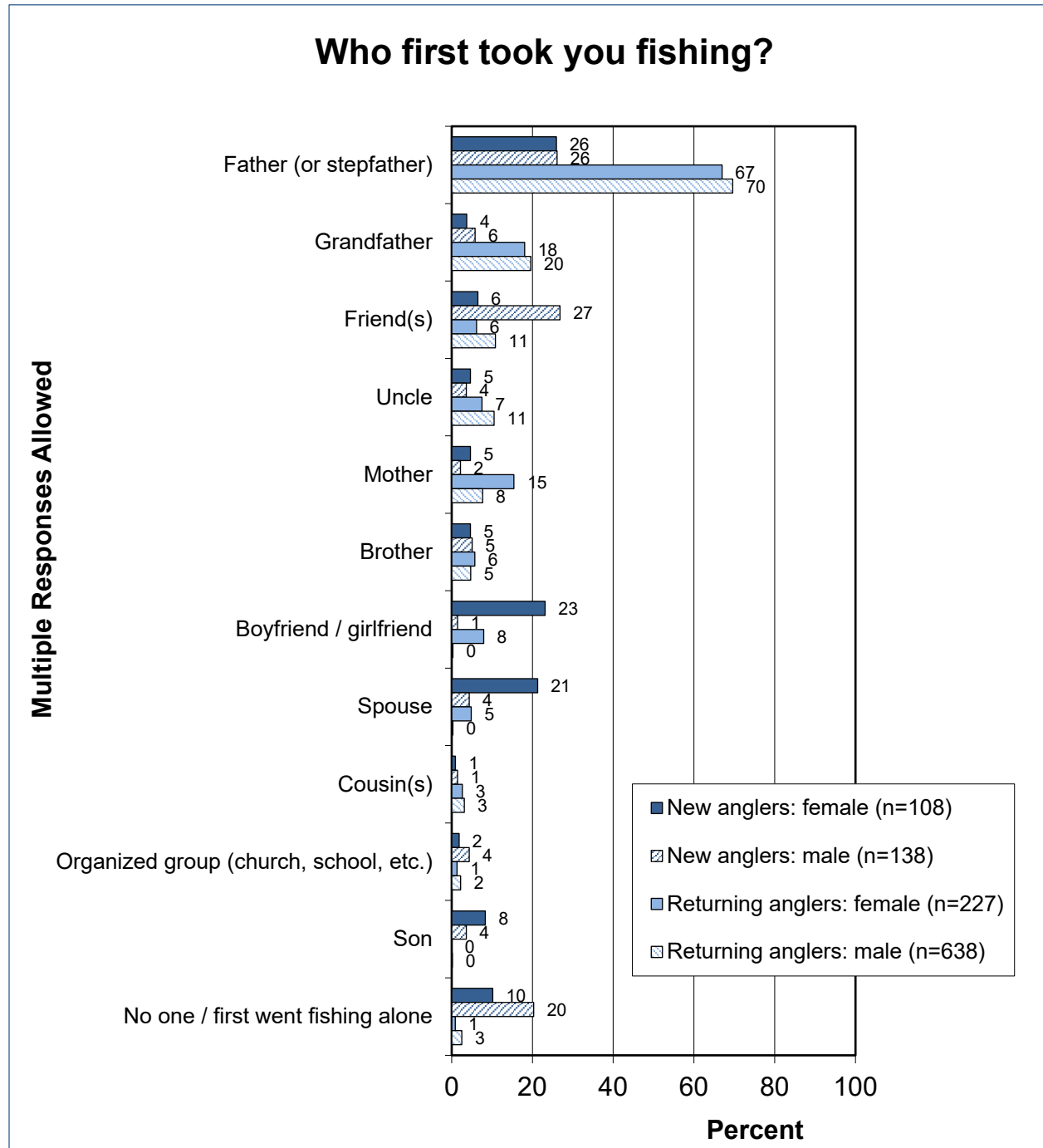
Women anglers, both for the new and returning groups, have a higher percentage than men being white.



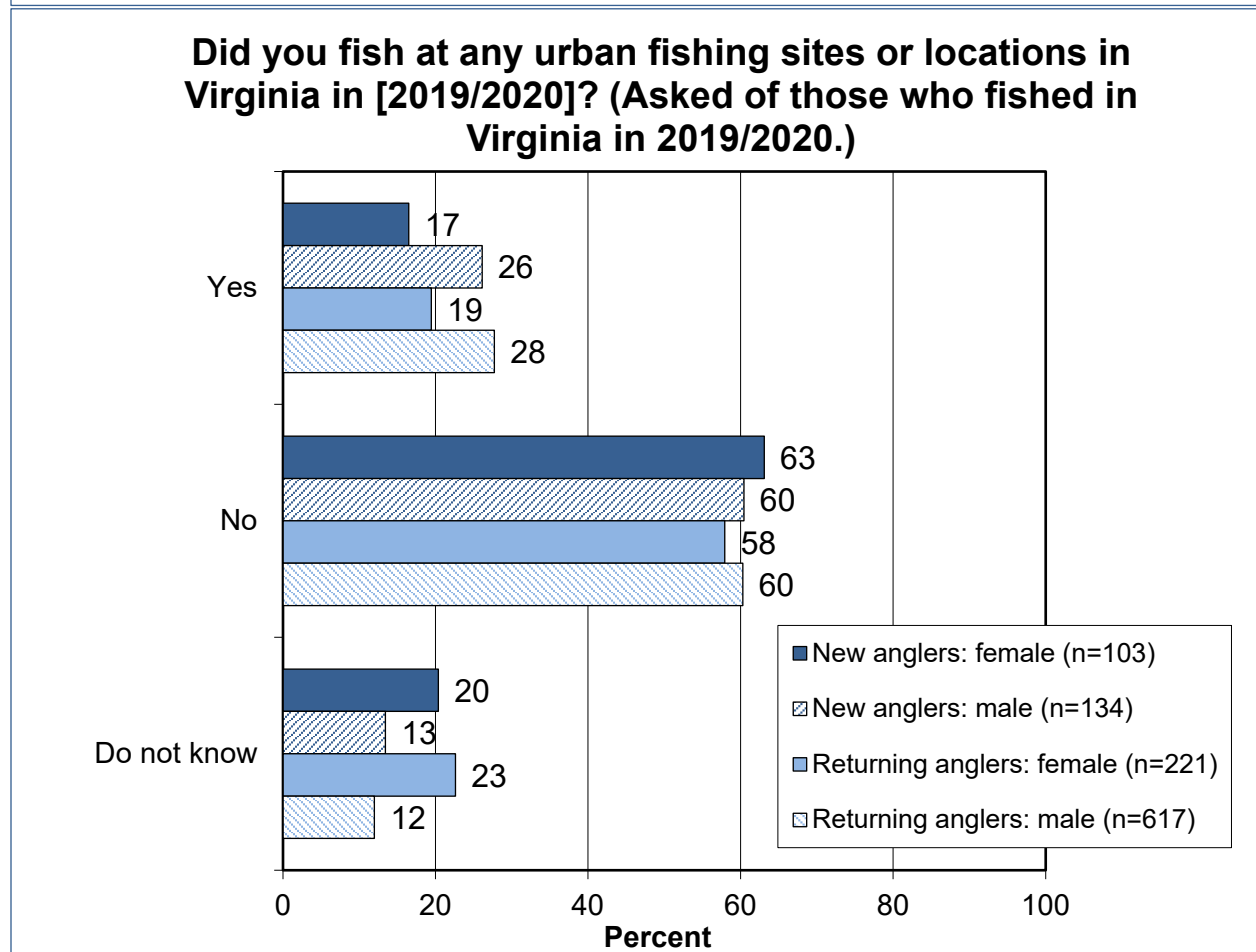
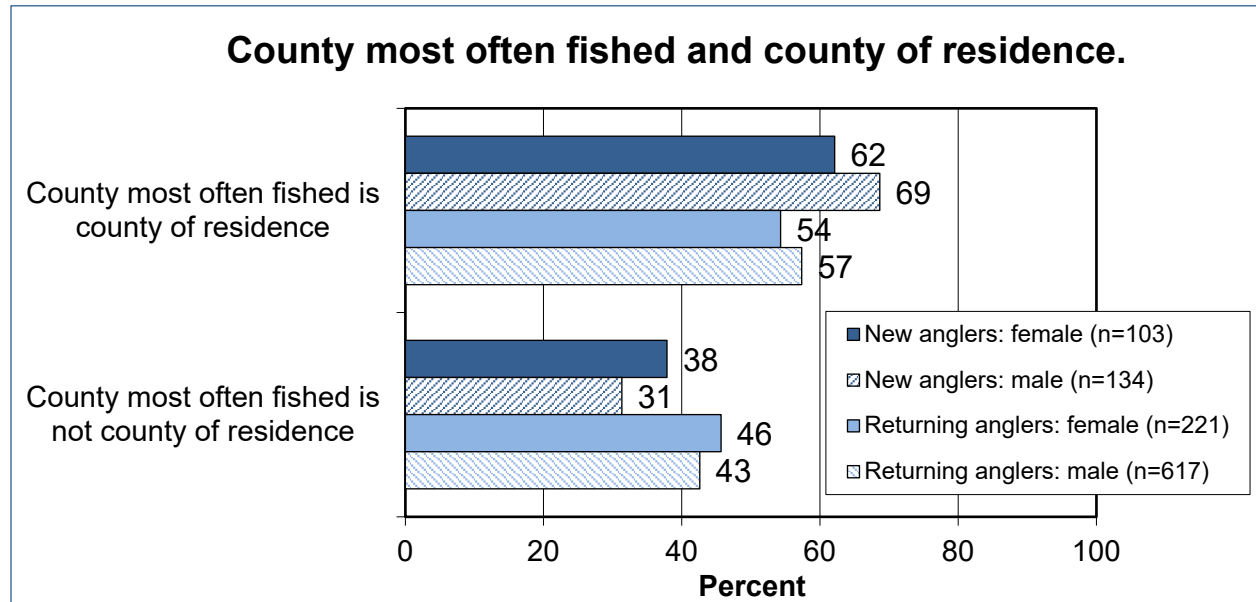
Among new anglers, women are more likely than men to be from a small city or town, and women are less likely than men to be from a large city/urban area or suburban area. Among returning anglers, women are more likely than men to be from a rural area, and women are less likely than men to be from a suburban area.



The analysis by gender among new and returning anglers found a marked difference among new anglers in their initiation. Among new anglers, women are much less likely than men to have first been taken by friends *other than a boyfriend/girlfriend or spouse*. On the other hand, among new anglers, women are much more likely than men to have first been taken by their boyfriend/girlfriend or spouse. Differences are not as marked among returning anglers.



Women anglers are more likely than men, among new and returning anglers, to go fishing most often outside of their county of residence. For women, the fishing trip is more likely to be a trip rather than a quick outing to a local spot. It may also be that women tend to go to urban fishing sites at a lower rate than men; however, the large “don’t know” on this question may complicate the analysis on that question.

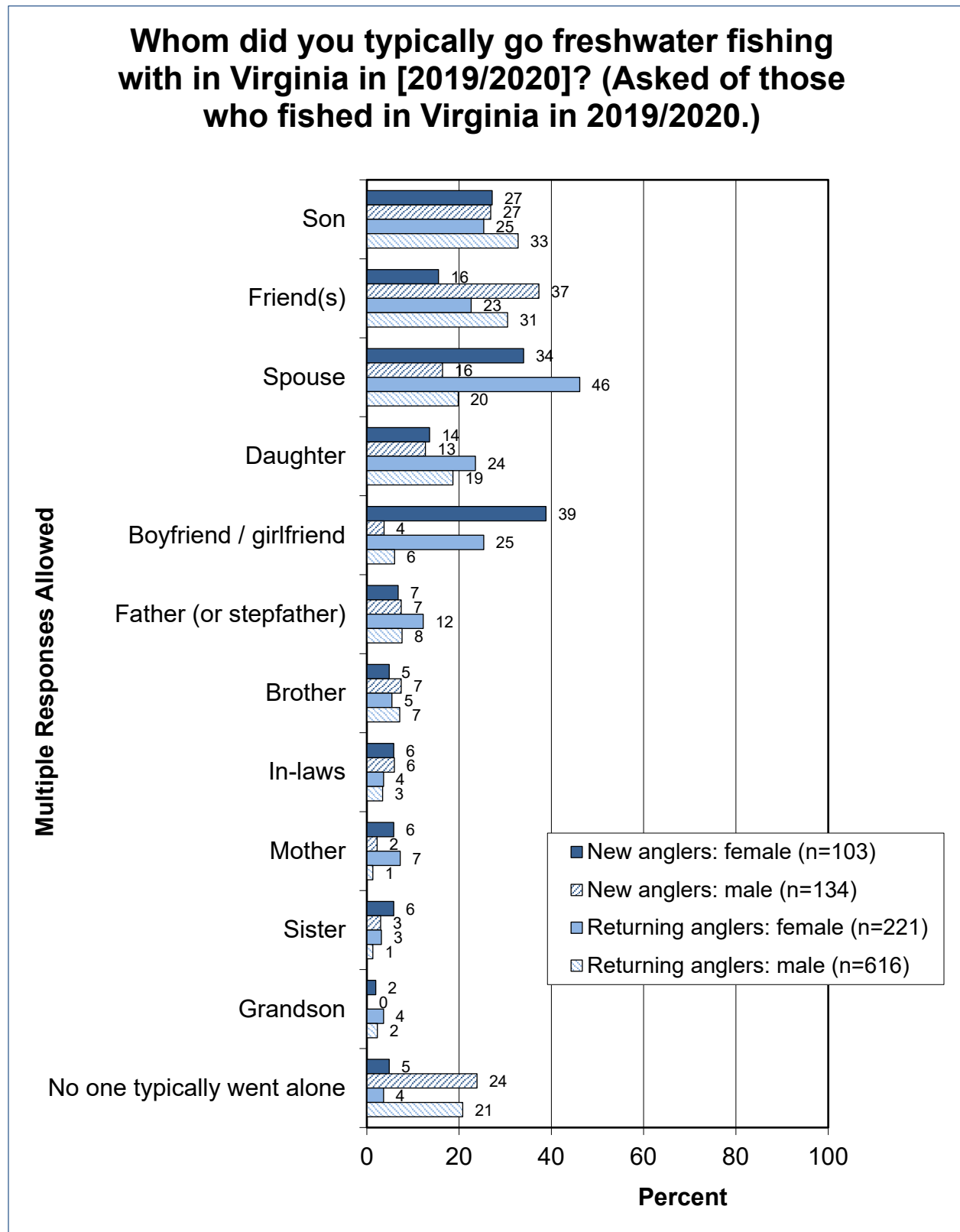


Among new and returning anglers, women give higher ratings, relative to men, of the importance of fishing to be with family and friends, to get out of the house during Covid-19 restrictions, and to participate in a social distancing activity during Covid-19. Men, on the other hand, give higher ratings for fishing for the sport/recreation, for the challenge, and to catch large fish or many species of fish.

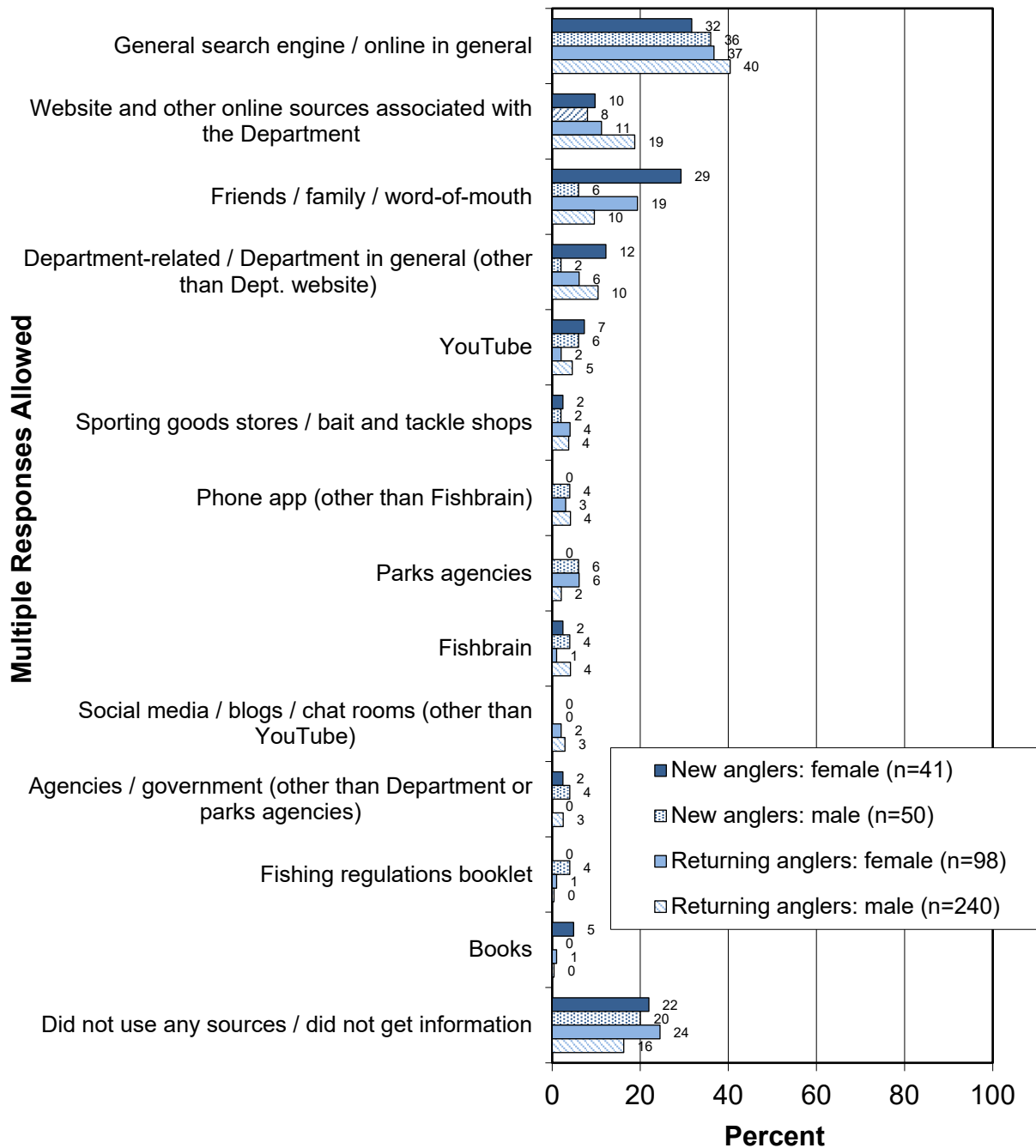
	To be with family and friends	To get out of the house during the Covid-19 lockdown / restrictions	To be close to nature	For relaxation	To participate in an activity that allows social distancing during the Covid-19 pandemic	For the sport and recreation	For the challenge	To catch a large fish	To catch many species of fish	To catch fresh fish to eat
New anglers: female	8.8	8.1	8.0	7.7	7.1	5.4	4.7	4.1	3.2	2.5
New anglers: male	7.1	7.1	8.1	8.5	6.4	6.8	5.8	5.3	4.0	2.8
Returning anglers: female	8.8	8.0	8.5	8.2	7.4	6.5	4.9	4.2	2.8	2.7
Returning anglers: male	7.4	6.9	8.1	8.4	6.0	7.6	6.0	5.3	4.0	2.7

The final two graphs in this section starting on the following page show that women anglers tend to go with their spouse or boyfriend/girlfriend more often than men anglers do. Men, on the other hand, compared to women tend to go with friends or go alone more often.

Regarding sources of information about fishing, women anglers, compared to men, tend to get their information more often from family/friends/word-of-mouth.

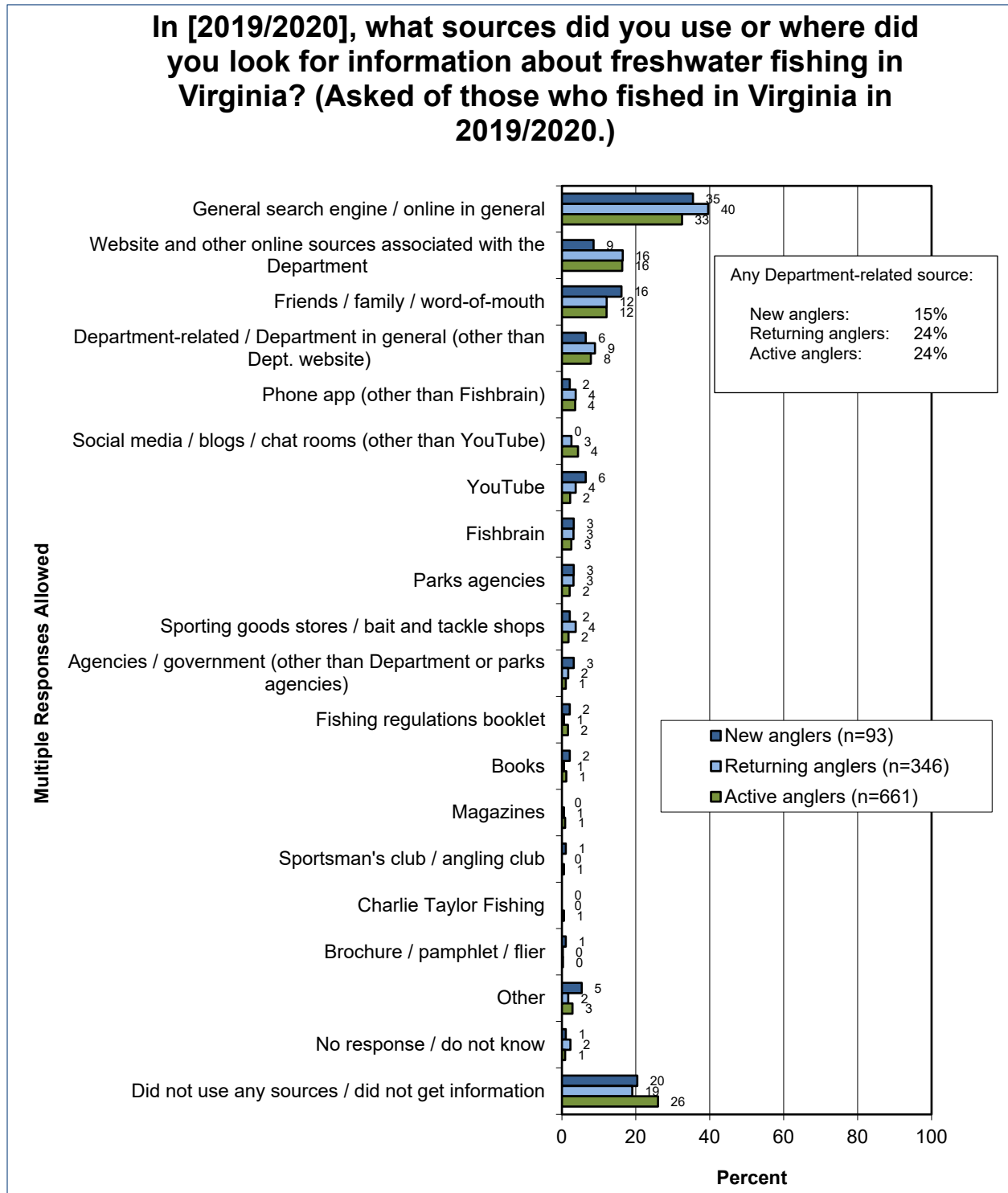


### In [2019/2020], what sources did you use or where did you look for information about freshwater fishing in Virginia? (Asked of those who fished in Virginia in 2019/2020.)



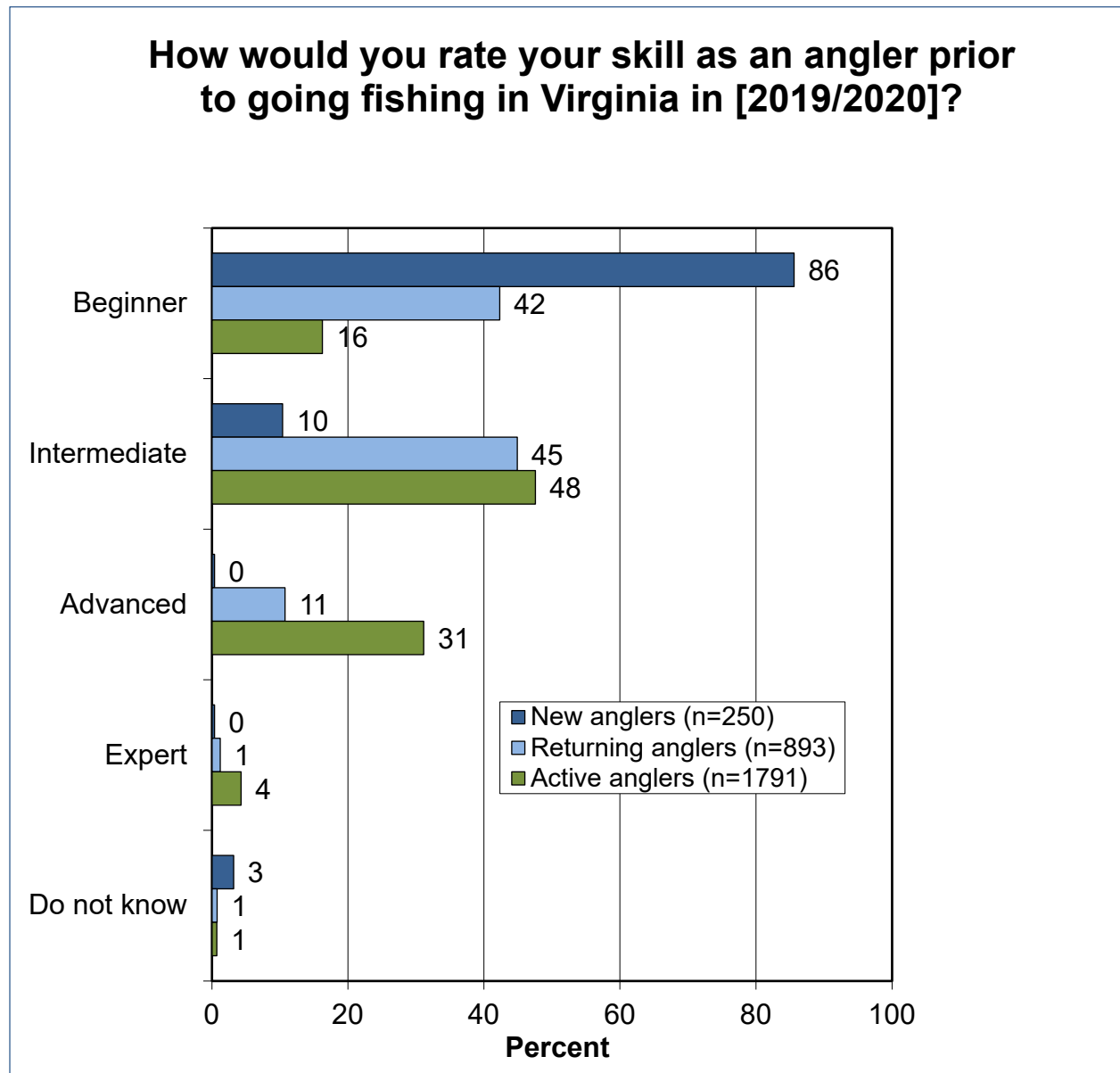
## SOURCES OF INFORMATION ABOUT FISHING

Sources of information about freshwater fishing are shown in the graph below, with the three leading sources being search engines in general, the Department’s online sources, and friends/family/word-of-mouth. One difference in the three groups is that new anglers, compared to returning and active anglers, are a little less likely to go to Department website or other online Department sources (e.g., the Department’s Facebook page).

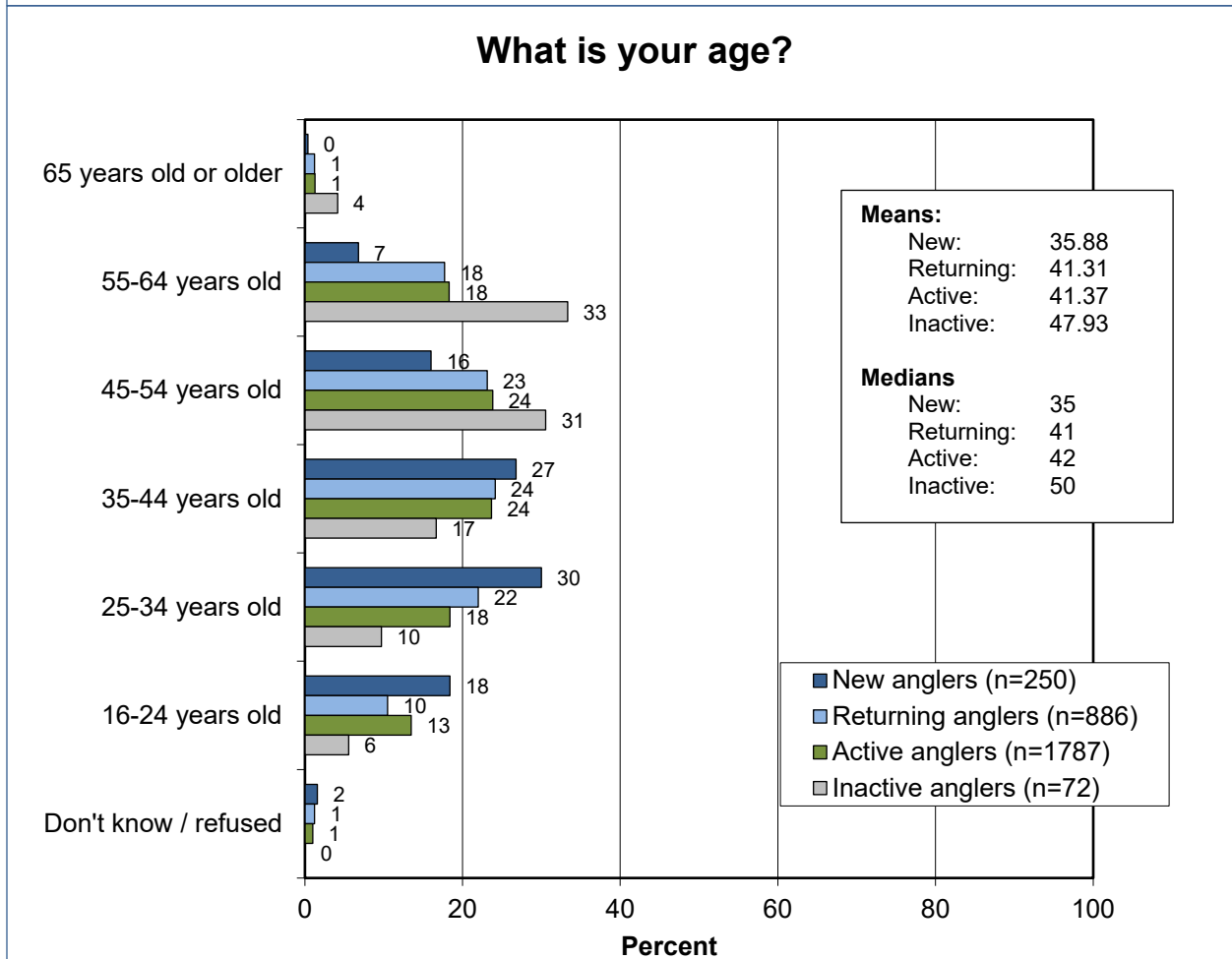
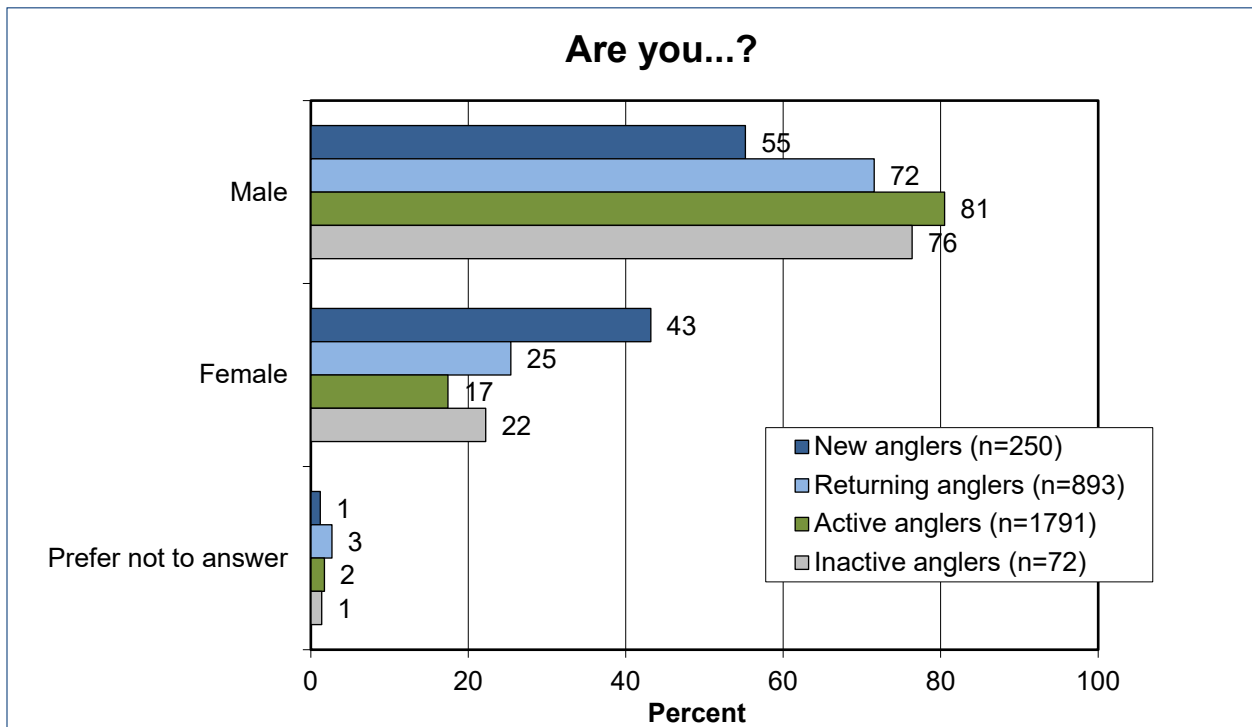


## DEMOGRAPHIC DATA

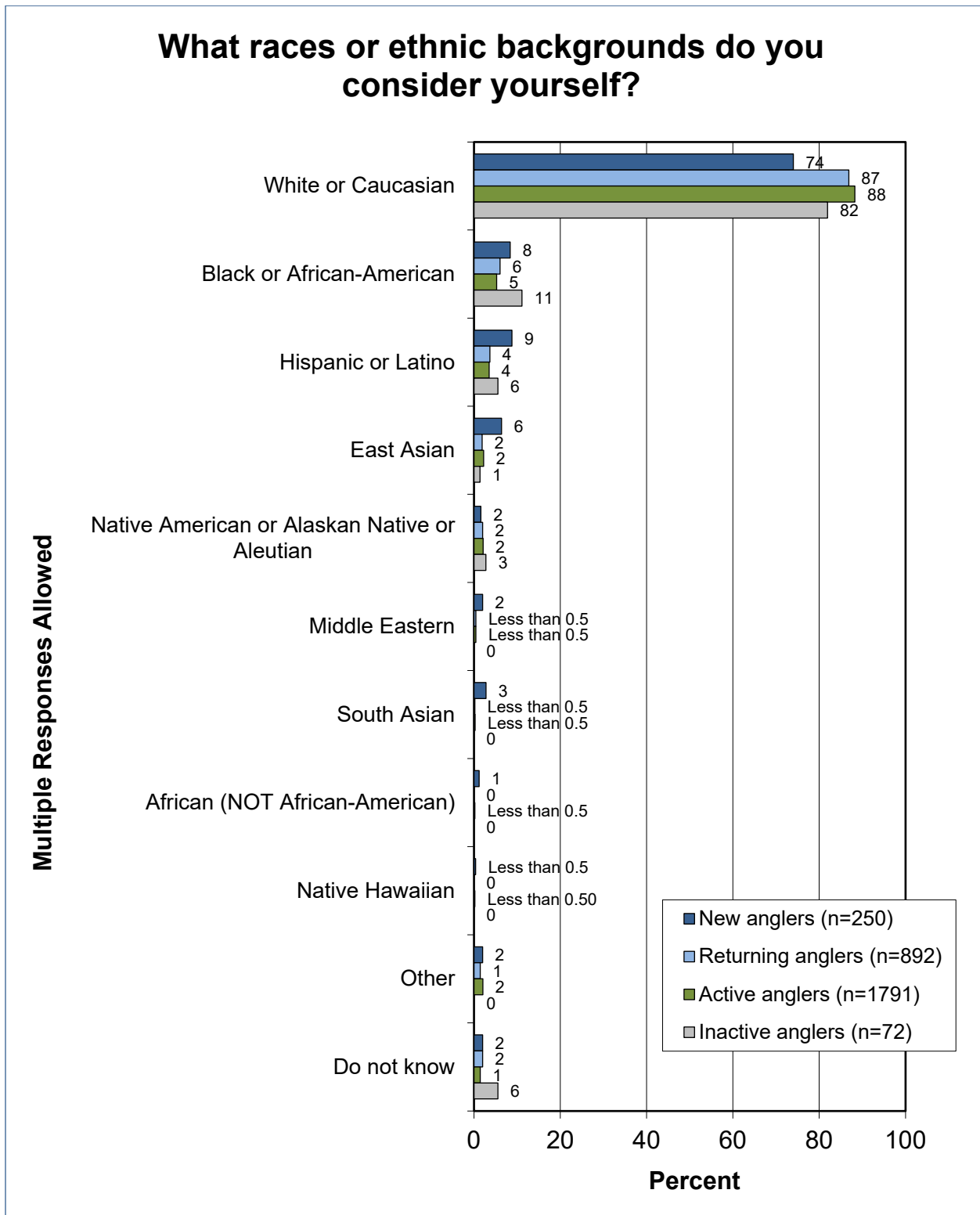
The survey gathered demographic data primarily for crosstabulations and further analysis. The survey also asked anglers to rate their skill level as one of their basic angler characteristics. The results show that new anglers overwhelmingly think of themselves as beginner anglers. Interestingly, returning anglers are about evenly split between considering themselves beginner or intermediate anglers (with a low percentage saying that they are advanced). Active anglers are more likely to consider themselves intermediate anglers than advanced anglers.



Other characteristics are as shown in the following graphs. New anglers are more likely to be female than are the other angler groups: 43% of new anglers are women, compared to no more than 25% of any other group. New anglers are, in general, younger than returning, active, and inactive anglers. The median age of new anglers is 35 years, compared to median ages of the other groups that are 41 years or greater.



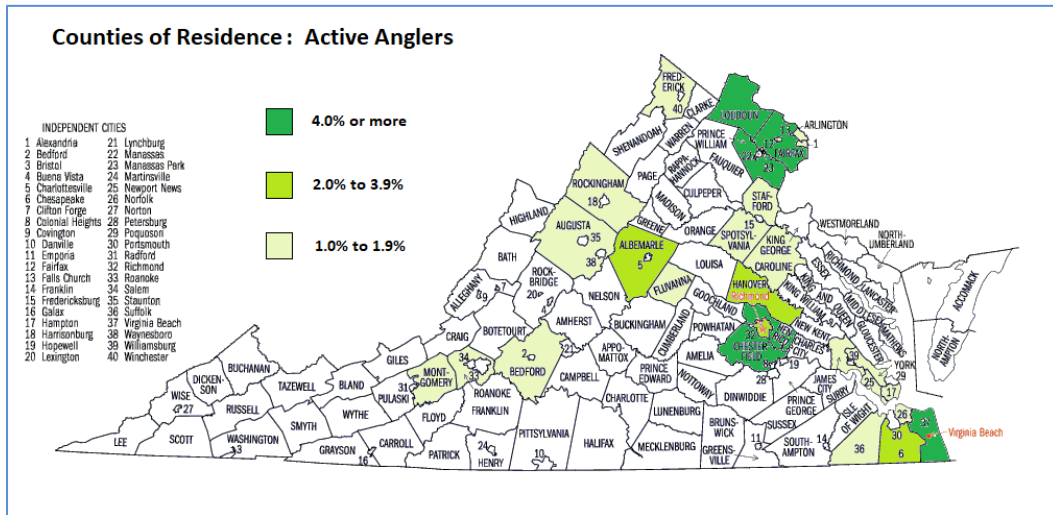
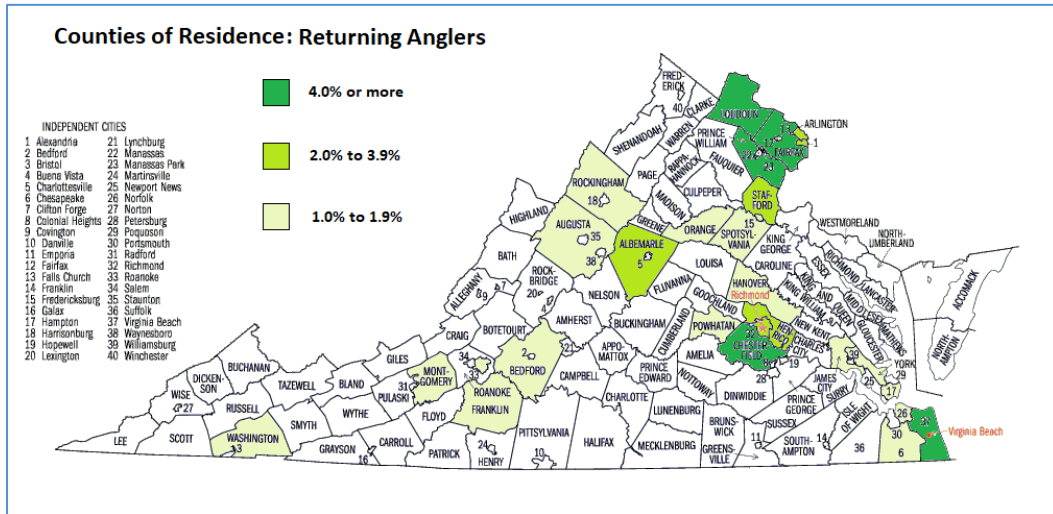
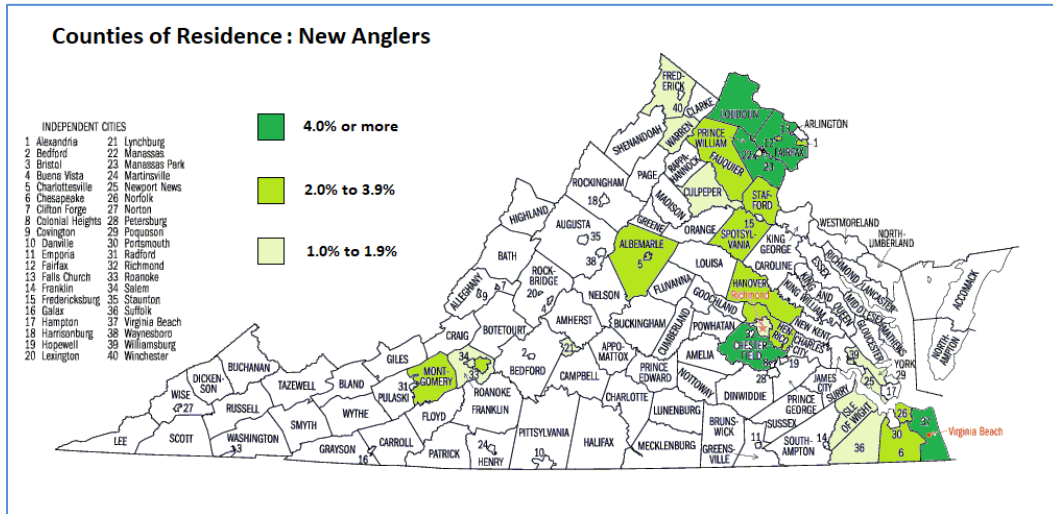
New anglers are more likely to be non-white, compared to the other angler groups. On the other hand, the most white group is active anglers (88% are white), closely followed by returning anglers (87% white).



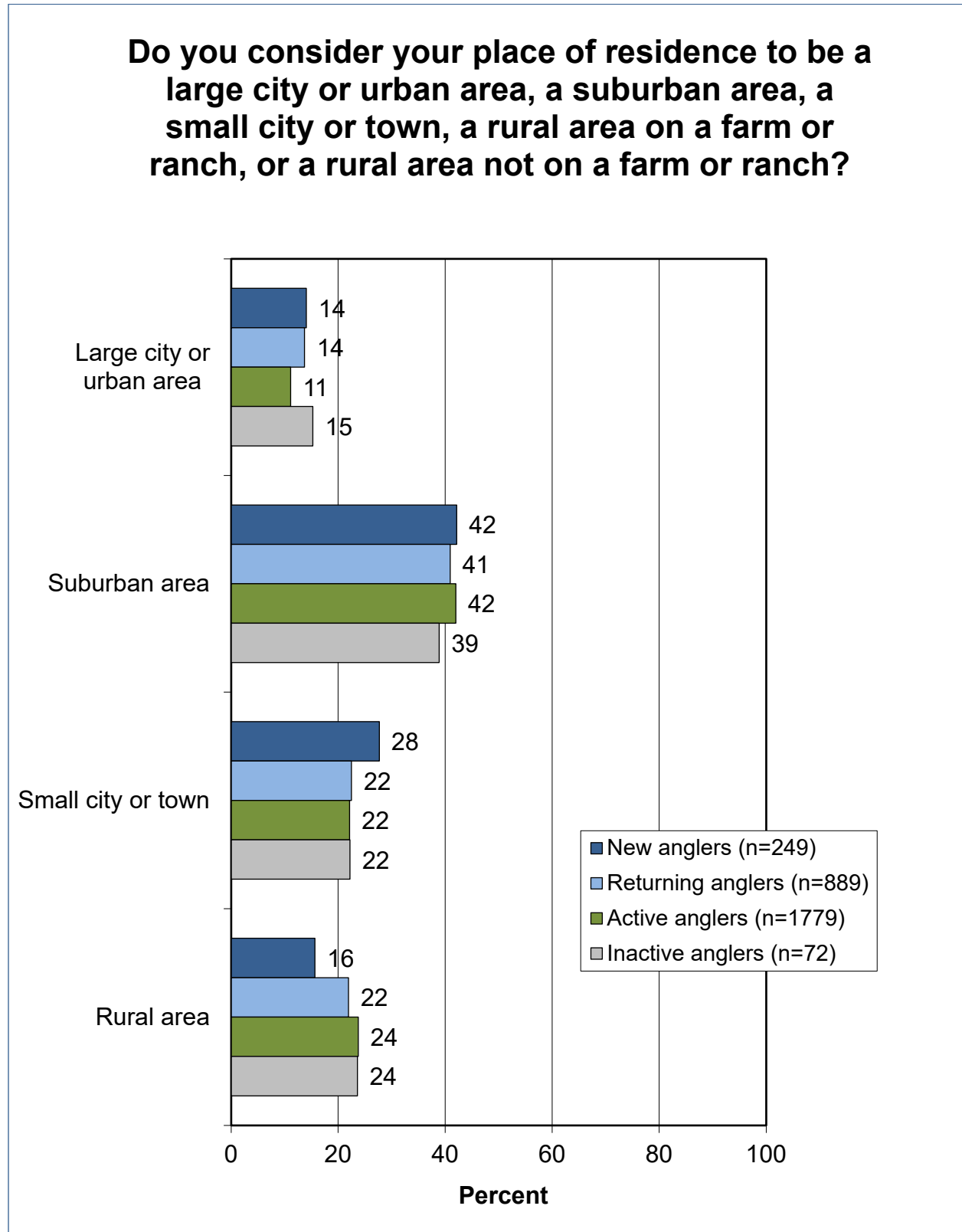
Counties of residence of anglers are shown in the tabulation on the following page.

County of Residence									
	New anglers (n=250)	Returning anglers (n=890)	Active anglers (n=1790)	Inactive anglers (n=72)		New anglers (n=250)	Returning anglers (n=890)	Active anglers (n=1790)	Inactive anglers (n=72)
Accomack County	0.0	0.0	0.3	0.0	Lee County	0.0	0.2	0.2	2.8
Albemarle County	2.0	2.2	2.6	1.4	Lexington	0.0	0.2	0.0	0.0
Alexandria	2.8	3.3	1.7	0.0	Loudoun County	4.4	4.9	4.9	1.4
Alleghany County	0.0	0.1	0.2	0.0	Louisa County	0.0	0.2	0.6	0.0
Amelia County	0.0	0.1	0.2	0.0	Lunenburg County	0.0	0.2	0.2	0.0
Amherst County	0.4	0.4	0.2	0.0	Lynchburg	1.2	0.7	0.8	0.0
Appomattox County	0.0	0.3	0.1	0.0	Madison County	0.0	0.0	0.1	0.0
Arlington County	0.4	2.5	1.6	0.0	Manassas	1.2	0.9	0.8	0.0
Augusta County	0.4	1.8	1.3	0.0	Manassas Park	0.4	0.0	0.1	0.0
Bath County	0.0	0.0	0.1	0.0	Martinsville	0.0	0.1	0.0	1.4
Bedford County	0.8	1.1	1.1	1.4	Mathews County	0.0	0.0	0.3	0.0
Bland County	0.0	0.1	0.1	0.0	Mecklenburg County	0.0	0.3	0.3	2.8
Botetourt County	0.0	0.3	0.6	0.0	Middlesex County	0.0	0.0	0.2	0.0
Bristol	0.0	0.1	0.2	0.0	Montgomery County	2.4	1.9	1.8	1.4
Brunswick County	0.0	0.2	0.2	0.0	Nelson County	0.0	0.2	0.4	1.4
Buchanan County	0.8	0.1	0.1	0.0	New Kent County	0.8	0.3	0.3	0.0
Buckingham County	0.4	0.3	0.6	1.4	Newport News	1.6	0.9	1.4	1.4
Buena Vista	0.8	0.1	0.0	0.0	Norfolk	2.4	1.5	1.8	1.4
Campbell County	0.8	0.7	0.5	1.4	Northampton County	0.0	0.1	0.2	0.0
Caroline County	0.4	0.4	1.0	0.0	Northumberland County	0.0	0.3	0.3	0.0
Carroll County	0.4	0.2	0.1	0.0	Norton	0.0	0.1	0.1	0.0
Charles City County	0.0	0.1	0.0	0.0	Nottoway County	0.0	0.3	0.2	0.0
Charlotte County	0.0	0.0	0.1	1.4	Orange County	0.8	1.7	0.6	1.4
Charlottesville	2.0	0.7	0.9	0.0	Page County	0.0	0.2	0.1	0.0
Chesapeake	2.8	1.9	3.7	1.4	Patrick County	0.0	0.1	0.2	0.0
Chesterfield County	4.0	4.0	5.3	4.2	Petersburg	0.0	0.1	0.1	0.0
Clarke County	0.0	0.2	0.3	0.0	Pittsylvania County	0.4	0.4	0.6	1.4
Colonial Heights	0.0	0.3	0.3	1.4	Poquoson	0.0	0.1	0.1	0.0
Covington	0.0	0.0	0.1	0.0	Portsmouth	0.4	0.7	0.7	0.0
Culpeper County	1.6	0.6	0.7	0.0	Powhatan County	0.8	1.0	0.8	1.4
Cumberland County	0.4	0.1	0.1	0.0	Prince Edward County	0.4	0.0	0.1	0.0
Danville	0.4	0.3	0.2	0.0	Prince George County	0.0	0.9	0.4	1.4
Dickenson County	0.0	0.1	0.3	1.4	Prince William County	5.6	4.4	4.3	5.6
Dinwiddie County	0.0	0.2	0.3	0.0	Pulaski County	0.0	0.6	0.5	0.0
Essex County	0.0	0.2	0.2	0.0	Radford	0.4	0.4	0.3	1.4
Fairfax	2.8	1.2	1.7	0.0	Rappahannock County	0.0	0.1	0.1	0.0
Fairfax County	10.8	9.7	7.5	8.3	Richmond	1.6	2.7	2.0	1.4
Falls Church	0.4	0.4	0.3	1.4	Richmond County	0.0	0.1	0.3	0.0
Fauquier County	2.4	0.8	0.7	0.0	Roanoke	2.4	1.0	0.7	1.4
Floyd County	0.4	0.1	0.3	0.0	Roanoke County	1.2	0.9	1.2	1.4
Fluvanna County	0.4	0.3	1.2	0.0	Rockbridge County	0.4	0.9	0.1	0.0
Franklin	0.4	0.0	0.1	1.4	Rockingham County	0.8	1.6	1.1	0.0
Franklin County	0.4	1.0	0.3	0.0	Russell County	0.4	0.3	0.3	0.0
Frederick County	1.2	0.8	1.1	1.4	Salem	1.2	0.1	0.3	0.0
Fredericksburg	0.4	1.2	0.4	2.8	Scott County	0.4	0.2	0.2	1.4
Galax	0.0	0.0	0.1	0.0	Shenandoah County	0.4	0.7	0.5	0.0
Giles County	0.0	0.4	0.4	1.4	Smyth County	0.0	0.3	0.2	0.0
Gloucester County	0.0	0.6	0.7	1.4	Southampton County	0.0	0.1	0.2	0.0
Goochland County	0.0	0.6	0.5	0.0	Spotsylvania County	2.8	1.7	1.7	2.8
Grayson County	0.0	0.0	0.2	1.4	Stafford County	3.2	2.7	1.4	0.0
Greene County	0.0	0.0	0.3	0.0	Staunton	0.4	0.6	0.2	0.0
Greensville County	0.0	0.0	0.1	1.4	Suffolk	1.6	0.6	1.5	4.2
Halifax County	0.4	0.2	0.4	0.0	Surry County	0.0	0.1	0.1	0.0
Hampton	0.4	1.2	1.2	1.4	Sussex County	0.4	0.1	0.2	0.0
Hanover County	2.8	1.6	2.3	1.4	Tazewell County	0.4	0.3	0.4	0.0
Harrisonburg	0.0	0.1	0.3	1.4	Virginia Beach	4.8	4.3	4.7	6.9
Henrico County	2.4	3.5	4.4	8.3	Warren County	1.2	0.4	0.6	0.0
Henry County	0.4	0.6	0.6	0.0	Washington County	0.8	1.3	0.9	0.0
Hopewell	0.0	0.0	0.4	0.0	Waynesboro	0.4	0.2	0.4	0.0
Isle of Wight County	1.2	0.4	0.8	0.0	Westmoreland County	0.4	0.1	0.2	0.0
James City County	0.4	1.3	1.3	1.4	Williamsburg	1.2	0.2	0.4	0.0
King and Queen County	0.0	0.0	0.1	0.0	Winchester	0.0	0.1	0.3	0.0
King George County	0.0	0.6	0.5	0.0	Wise County	0.0	0.2	0.3	0.0
King William County	0.0	0.3	0.5	0.0	Wythe County	0.0	0.7	0.6	0.0
Lancaster County	0.0	0.1	0.0	0.0	York County	1.2	1.2	1.2	2.8

Mapping the top counties of residence of new, returning, and active anglers shows some slight differences in the groups. For all three groups, the top counties correspond with the most populous counties near the three largest urban centers: Washington, Richmond, and Norfolk-Hampton-Virginia Beach. Beyond urban areas, new anglers do not have as many rural counties as returning anglers and active anglers.



New anglers tend to be less rural than returning, active, or inactive anglers. The two rural categories in the question were combined in the graph.



## MAJOR FINDINGS AND RECOMMENDATIONS

The findings here represent a synthesis of the focus group findings and the survey findings. Both types of research provided valuable information—the first providing in-depth qualitative findings, and the second providing quantitative findings to give the qualitative findings context. These findings and recommendations are presented thematically, starting with a finding about the database itself.

### MANY SEEMINGLY “NEW” AND “RETURNING” ANGLERS WERE NOT

**One important finding is that the license database does not always identify true new or returning anglers.**

For the focus groups and survey, the Department provided a list of anglers that would seemingly be new or returning anglers because they had purchased a license in 2019-2020 but not (according to the records) in 2016 through 2018. In fact, most of these anglers did not meet the definition of new or returning anglers. In other words, the license database alone will not be able to identify a group of anglers exclusively new or returning.

Many anglers in the database (60%) had fished between 2016 and 2018 but did not have a record of holding a license in that time period. This 60% is a sum of those who had fished out of state (15% fished exclusively out of state) and those who had fished in state without a license (some legally, some illegally) (45%). The 45% of those who had fished consists of 28% who had gotten a license in Virginia for which the database had no record and 17% who had not gotten a license. Therefore, in the survey, 60% of license holders who were seemingly new or returning based on the license records were actually active anglers who had fished between 2016 and 2018. The implication is that the license database can be used to identify new and returning anglers for outreach, but much of that outreach will actually be going to active anglers.

### COVID-19 CREATED A UNIQUE OPPORTUNITY FOR THE FISHING COMMUNITY

**The Covid-19 pandemic increased participation in fishing, and the fishing community must take advantage of this “recruitment” to further stimulate interest and participation and retain these new and returning anglers. In particular, four groups should be targeted with outreach to retain them, as listed below.**

The Covid-19 pandemic and its consequent shutdown of business and schools spurred increased participation in fishing. Several types of people started or re-started fishing:

- Those who had never fished before and had little prior interest but who picked up the sport for the first time during the pandemic.
- Those who had not fished much or at all previously, but who had a latent interest (and in some cases had even purchased equipment that they had not used) and who picked up the sport either for the first time or again during the pandemic.
- Those who had fished previously, some quite extensively, but who were spurred on to fish much more avidly during the pandemic.
- Those who had fished previously, had dropped it for a while, but who picked it back up specifically to take children or go with their family during the pandemic.

**The groups above have different outreach needs and would need encouragement tailored to them.**

One-size-fits-all outreach might not work well with the disparate groups above. The types of outreach that each group would respond to is discussed in more detail below.

**Outreach for those completely new to fishing, with or without latent interest:**

These anglers are still learning the basics. They still need information on how to fish and how to engage in various types of fishing, as well as basic species information. They often are intimidated by not knowing what to expect at different sites, which discourages them from branching out. Information letting them know what to expect at various sites would ameliorate this constraint. Many are still dependent on others to go fishing with and are reticent to go on their own. They would respond well to group fishing outreach (such as family-oriented events). Furthermore, they would respond well to simply being informed about the information sources available, such as Department electronic resources, and how to get that information.

**Outreach for those returning to fishing on their own.**

These anglers, for the most part, already know fishing techniques, know the species in various waters, and sometimes know where to go. But they could use reminders on the types of species that they could catch to pique their interest, as well as places to go. This latter is important because fishing access may have changed in some areas since they previously were active in fishing. In a sense, rather than informational “how-to” outreach, they need pure advertising to remind them of types of fishing they could do or try. For instance, they might respond well to simply being informed of good opportunities, such as the shad run. They may need outreach regarding locations for fishing, either because access may have changed since they fished or because they are new to the area.

**Outreach to those returning to fishing because they took their children or went with family.**

These anglers need outreach for family fishing events and locations. They need help and encouragement in the mentoring process. While they know the techniques, their companions may not.

**Outreach during the pandemic should emphasize the ability to socially distance that fishing offers.**

One of the prime advantages of fishing during the pandemic was that people could keep their distance from others. This even included those who fished with friends but who still wanted to stay distant from them.

**Outreach after the pandemic is important to retain these new and returning anglers.**

The outreach should continue after the pandemic, which is a critical time to keep these anglers engaged. The increased participation among a somewhat captive audience needs to be continued.

**The increased participation during the pandemic should have highlighted where access and crowding may be a problem.**

Use the information gained about attendance at various sites this past summer to be able to better address access issues. If there were access problems at any sites, they would have manifested themselves during this busy fishing time.

**It is worth noting the extent to which Covid-19 may have contributed to fishing participation.**

One of the analyses run in the survey was based on date of purchase, with license purchasers for the 2019-2020 season being categorized as pre-Covid-19 purchasers or post-Covid-19 purchasers. One important finding of this analysis was that a huge portion of the new anglers and a substantial portion of returning anglers in the survey had purchased their 2019-2020 license after March 15, 2020—after the Covid-19 pandemic became severe: 87% of new anglers and 83% of returning anglers made their license purchases after March 15. Some of this purchasing pattern is seasonal—more people think about fishing when the weather warms in the spring—but certainly some of this pattern can be attributed to the spur that Covid-19 gave to fishing participation.

**CHARACTERISTICS OF NEW AND RETURNING ANGLERS**

One aspect of this project entailed identifying new and returning anglers and describing the typical new and returning anglers so that outreach could be tailored to them. This section looks at the characteristics of these anglers.

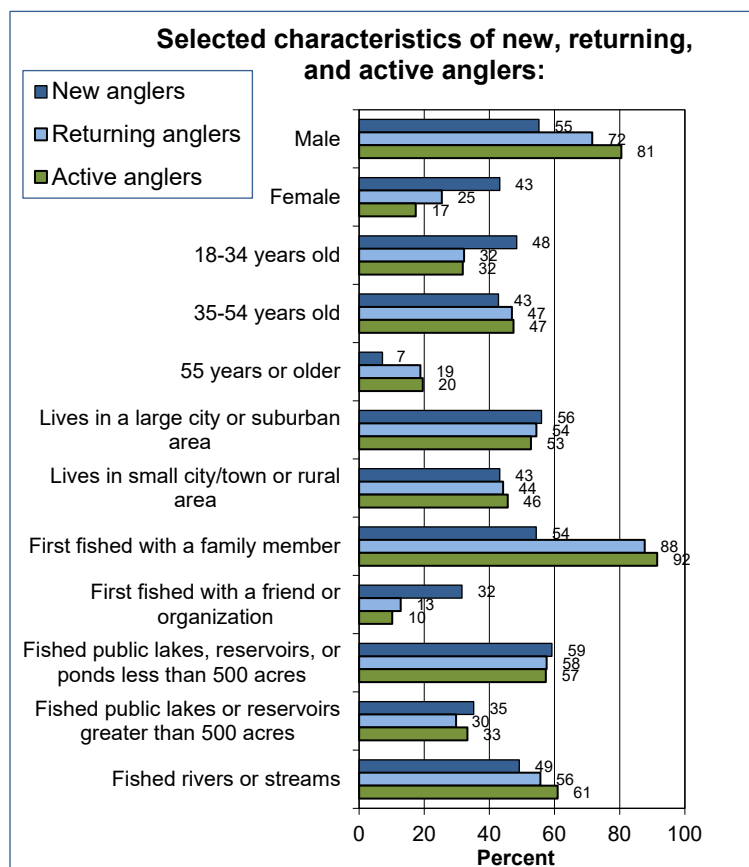
It is important to note again that, as indicated above, many of the seemingly new or returning anglers, based on information in the database, were not actually new or returning anglers. Most often, they were active anglers who, for whatever reason, had not bought a license in the time period or were not in the database as having bought a license. This section looks at true new and returning anglers.

**New anglers are more female and younger than are active anglers.**

Among new anglers, the male/female split is more even (55% male, 43% female) than it is among active anglers (which are 81% male, 17% female). (Note that small percentages did not provide their gender or classified themselves as something other than male or female.) Additionally, 48% of new anglers are 18 to 34 years old, a much higher percentage than either returning or active anglers.

**More than half of new anglers reside in urban or suburban areas.**

In this characteristic, new anglers and returning anglers are about the same as active anglers, with just over half of them being urban or suburban. Nonetheless, it is worth noting that the majority of anglers are not rural, which is perhaps counterintuitive, since fishing is mostly perceived to be a rural activity.



**New anglers are drastically different from returning or active anglers in initiation: new anglers are much more likely than those other groups to have first gone fishing with a friend or organization rather than with family.**

As the graph on the preceding page shows, introduction to angling in the recent year has involved more of a non-traditional path, with a markedly higher percentage of new anglers being introduced by friends. While family is still important among new anglers—slightly more than half were introduced within the family—friends play a more prominent role among new anglers.

**New anglers are not greatly different than their counterparts regarding types of water that they fish in, outside of just slightly less fishing in rivers or streams.**

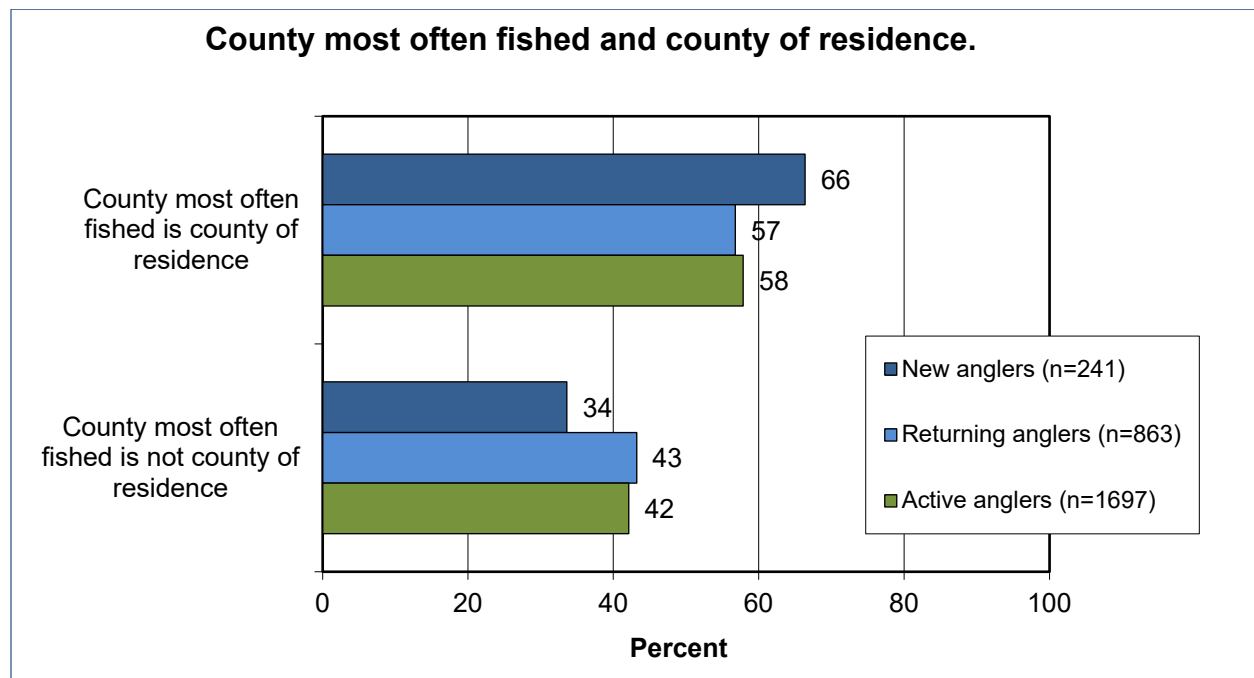
Rates of fishing in lakes, reservoirs, and ponds is about the same among the three groups. Active anglers are just slightly more likely to fish in rivers or streams than are new anglers.

**Returning anglers are only slightly more female than are active anglers, while their age structure and other characteristics almost completely match those of active anglers.**

The proportion of females among returning anglers (25%) is greater than that of active anglers (17%), but the difference is not as marked as the comparison of new and active anglers. In other characteristics, returning anglers are much like active anglers.

**New anglers tend to fish in their county of residence more than do returning and active anglers. Although all three groups' most favored fishing counties are generally near the large cities (simply because so many anglers live in those counties), returning anglers' locations are a bit more rural than their counterparts' locations.**

New anglers tend to stay closer to home, compared to the other groups (as shown in the graph below). Previously, it was demonstrated that returning anglers are a bit more rural in their fishing, compared to both new and active anglers (see the maps in the survey results section on this topic). Nonetheless, across all three groups (new anglers, returning anglers, and active anglers), in general, urban areas are heavily represented as fishing locations.



## THEMES FOR OUTREACH

### **Relaxation and nature are both important as draws for new and returning anglers.**

Motivations centered on being able to relax and de-stress and being out in nature. Of the ten possible motivations asked about in the survey, relaxation and being close to nature had the highest ratings of importance—a mean rating of more than 8 on a 0 to 10 scale. These are the things to emphasize in outreach.

### **Camaraderie is an important aspect of fishing, particularly to new and returning anglers.**

Nearly all anglers start fishing with others, and camaraderie is often mentioned as being a reason that new anglers fish. For new anglers, the camaraderie includes *being mentored*. Fishing with family, and fishing with one's children in particular, was an important reason many returning anglers restarted fishing. For them, camaraderie includes *mentoring others*. In the survey, rating of the importance of being with family and friends was 7.9 for new anglers and 7.8 for returning anglers (on a 0 to 10 scale), the third highest ranked reason for both groups.

### **For some new and returning anglers, solitude is a positive aspect of fishing.**

Many anglers discussed being alone as a way to de-stress. They liked that they could get away from people and even get away from cell phone reception. One other note regarding solitude: some anglers will respond well to the idea of getting away from their family during the pandemic. There are those who had too much family time recently with the Covid-19 restrictions that often forced families together. The solitude aspect was more important to returning anglers than to new anglers, as new anglers are often still dependent on others.

### **Fortunately, fishing can provide both camaraderie and solitude.**

This may seem oxymoronic, but fishing can provide both of these things in the same trip. People love the social aspects of fishing—particularly being with their children—but they also like that fishing offers moments of solitude. Only a few anglers seek solitude exclusively; most want both the camaraderie at times and the chance to be alone at times. With shore/bank fishing in particular, a fishing trip can be quite social in getting to the river but then offer solitude once the anglers spread out at their location.

### **For some, being active and being healthy are important advantages that fishing offers. But generally this appeared to be less of a draw.**

Although not mentioned with the frequency of relaxation and nature as motivations, certainly many anglers responded well to the fact that fishing kept them active. It is not strenuous exercise (like jogging), but it is exercise nonetheless in that it keeps people active.

### **Food is certainly a draw for some anglers, but for none was it a major draw.**

Getting food is a positive for some anglers—many like the idea of getting fresh food to eat. But getting food seemed secondary to other motivations for fishing—getting fish to eat was the lowest ranked motivation in the survey of the ten possible motivations that were asked about. Furthermore, encouraging more fishing for food also requires informing anglers of what is safe to eat, as many who expressed interest in fishing were reticent to eat fish because of possible contamination.

**The challenge of fishing appealed to some new anglers, but again this was secondary to relaxation, nature, and camaraderie.**

The challenge of fishing is a double-edged sword of sorts. The challenge appealed to some, yet it was a disincentive to others (if fishing was too hard to master). It seemed that only a particular subset of new and returning anglers were into the challenge of it. Most of them seemed to shy away from things that were deemed to be too difficult. In the survey, fishing for the challenge was given middling ratings of importance (5.3 by new anglers, 5.7 by returning anglers), well below relaxation (ratings of more than 8.2 among both groups), being close to nature (ratings of 8.1 or higher), and to be with family and friends (ratings of 7.8 and higher). As such, emphasizing the challenge would be effective in outreach to more established anglers than to new and returning anglers. (Note that the rating was the importance as a reason for going fishing, on a scale of 0 to 10.)

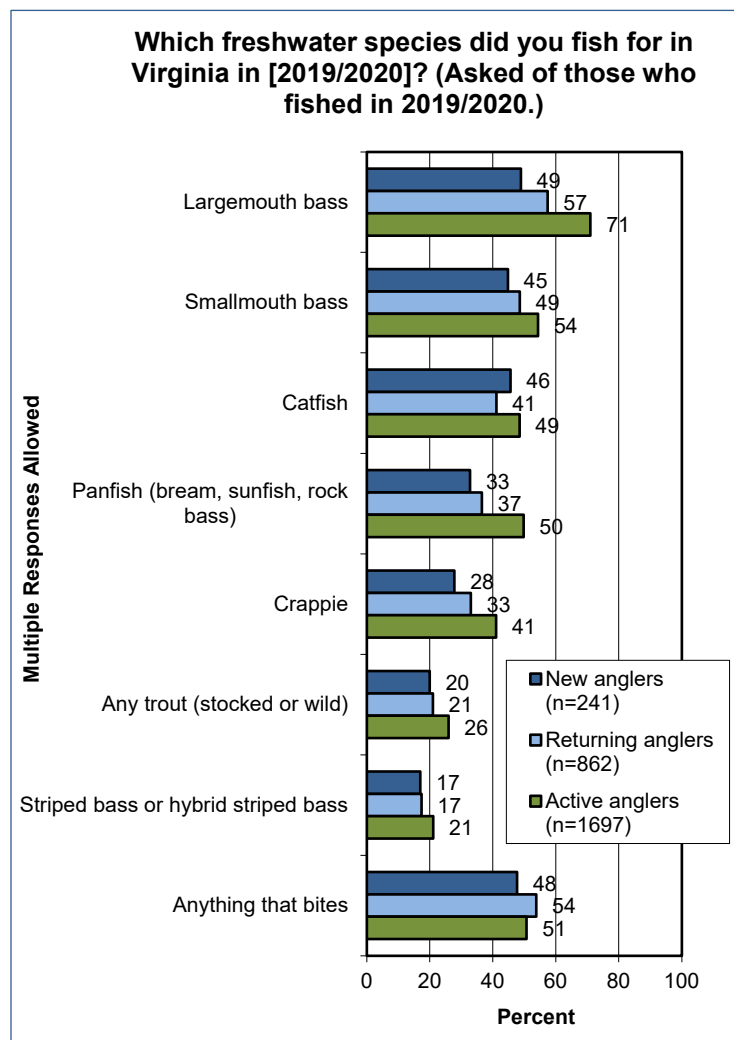
**Getting trophy fish, while exciting, is generally not the major attraction of fishing.**

While anglers like catching big fish, doing so is not necessary for a good day of fishing. Catching a large fish was low down in the ranking of important motivations for fishing, and focus group participants indicated that it was behind other more important reasons for fishing. Trophy fishing and recognition of trophies (like VARP) may be more effective at stimulating avidity among existing anglers than stimulating a non-angler to become an angler.

**Although not a “theme” per se, knowledge of the types of fish that new and returning anglers are seeking can be used within thematic messages. Bass, catfish, and “anything that bites” are important to new and returning anglers.**

The top species among new and returning anglers are bass and catfish—these appear to be the types with the most appeal to these anglers. In the middle of the ranking are panfish and crappie. Trout is of lesser importance to new and returning anglers, compared to these other species.

An interesting finding concerns “anything that bites.” That is of more relative importance to new and returning anglers than to active anglers. The rate of fishing for “anything that bites” among new and returning anglers is nearly the highest of any species for these groups, while fishing for “anything that bites” is at a lower ranking among active anglers. Among new anglers, “anything that bites (at 48%) is just 1 percentage



point below the rate fishing for their top species (largemouth bass, at 49%), and among returning anglers, the rate fishing for “anything that bites” (54%) is just 3 percentage points below their top species (again, largemouth bass, at 57%). Meanwhile, among active anglers, “anything that bites” (51%) is 20 percentage points below their top species (largemouth bass, at 71%).

## **INFORMATION NEEDS AND SOURCES OF INFORMATION**

### **New anglers “don’t know what they don’t know.”**

More than actual resources, the Department may want to focus on increasing awareness of available resources and providing recommendations for the best additional resources beyond the Department’s website. Communicating availability of information, as well as guidance, will be important for supporting new anglers.

### **The Department website and other online sources appear to be underutilized by new anglers. They need to be more proactively directed to the Department resources.**

Considering the value of the online information available through the Department, a low percentage of new anglers (9%) used Department online sources (this compares to 16% of both returning and active anglers), and only 15% of new anglers used any Department-related source (this compares to 24% of both returning and active anglers who use any Department-related source).

A recent Virginia fishing license purchase by a staff member of Responsive Management highlights the lack of direction to Department resources. Although the confirmation email the staff member received included links to the Department website, the link was specifically to the regulations page. From this page, there are other links, but none, for instance, for information on where to fish—an information need expressed by many focus group participants. The links on the page did not clearly have anything for “where to fish”; the information on where to fish could be found only through more searching on the site. (In fact, there was access information on the link for Free Fishing Days and the link on What’s New; however, this is certainly not the intuitive place that one would look for access information.)

### **The Department may consider putting more links to its own information on the confirmation email that license purchasers receive. For instance, access information is buried and not readily apparent in the webpage to which the email sends users. Some new anglers, and returning anglers to a lesser extent, appear to be overwhelmed by information on the internet, and this would be the place to provide them with Department links to clearly named pages.**

It is apparent that many anglers are left to their own searches for fishing information, including the many non-governmental sites available, and can be overloaded with information because of this. To ameliorate this overload, the Department should include a few more obvious links to information on its confirmation emails for license purchasers, and the links should be clearly named (for instance, “Where to Fish” or “Identifying Fish”) (see the following pages for more on this). The Department has good credibility, so anglers would be comfortable with the information provided by the Department; therefore, efforts should be made to keep anglers on the Department website rather than have them visiting other sites that may not be as reputable or that simply may not be specific to Virginia.

A copy of a confirmation email is presented here and on the following page (it will not fit on a single page so necessarily spans two pages). Following the email are some remarks about it, based on the research.

From: **Virginia Department of Game & Inland Fisheries** <[noreply@gooutdoorsvirginia.com](mailto:noreply@gooutdoorsvirginia.com)>  
 Date: Sat, Jun 27, 2020 at 12:47 PM  
 Subject: License Purchase Confirmation  
 To: <[\[redacted\]](#)>



DEPARTMENT OF  
**GAME & INLAND  
 FISHERIES**  
 CONSERVE. CONNECT. PROTECT.

## License Purchase Confirmation

Thank you for your purchase! Your purchase plays an important role in the conservation of Virginia's fish and wildlife resources. Thank you for investing in Virginia's future.

**Did you know you can set your license(s) to auto renew?**

[Manage Auto Renew Settings](#)

Would you like your licenses to renew automatically every year? Our auto renew feature can do just that for you! We'll remind you which licenses are renewing a few days before and you can rest easy knowing your licenses will always be up to date. Log in to your DGIF Customer Account [here](#) to manage your auto renew settings.

Customer Information	
FULL NAME	[redacted]
DGIF CUSTOMER ID	[redacted]
SHIPPING ADDRESS	[redacted] Harrisonburg, VA 22801-[redacted]

License Items		
DGIF CUSTOMER ID [redacted]	ORDER # [redacted]	
ITEM	VALID FOR	PRICE
Resident State Freshwater Fishing	06/27/2020 - 06/26/2021	23.00
Donation		2.00

Thank You,  
Virginia Department of Game & Inland Fisheries



## Upgrade Your License!

Get a durable card upgrade with custom art fit for the woods and water. This small upgrade is the perfect complement for your new or existing license.

**\$5**

Go to [GoOutdoorsVirginia.com](http://GoOutdoorsVirginia.com) and click on Purchase/Reprint a License!



Conveniently store your licenses on your smartphone or tablet. Download the free GoOutdoorsVA mobile app!



### REGULATIONS

[Freshwater Fishing](#) | [Saltwater Fishing](#) | [Hunting](#) | [Boating Safety](#)

The links at the bottom of the page go to regulations pages that do not have intuitive links to necessary resources, such as “Where to Fish” or “Identifying Fish.” The email does contain the link to get the GoOutdoorsVA mobile app; however, the email could also include links to easily identifiable resources for the anglers.

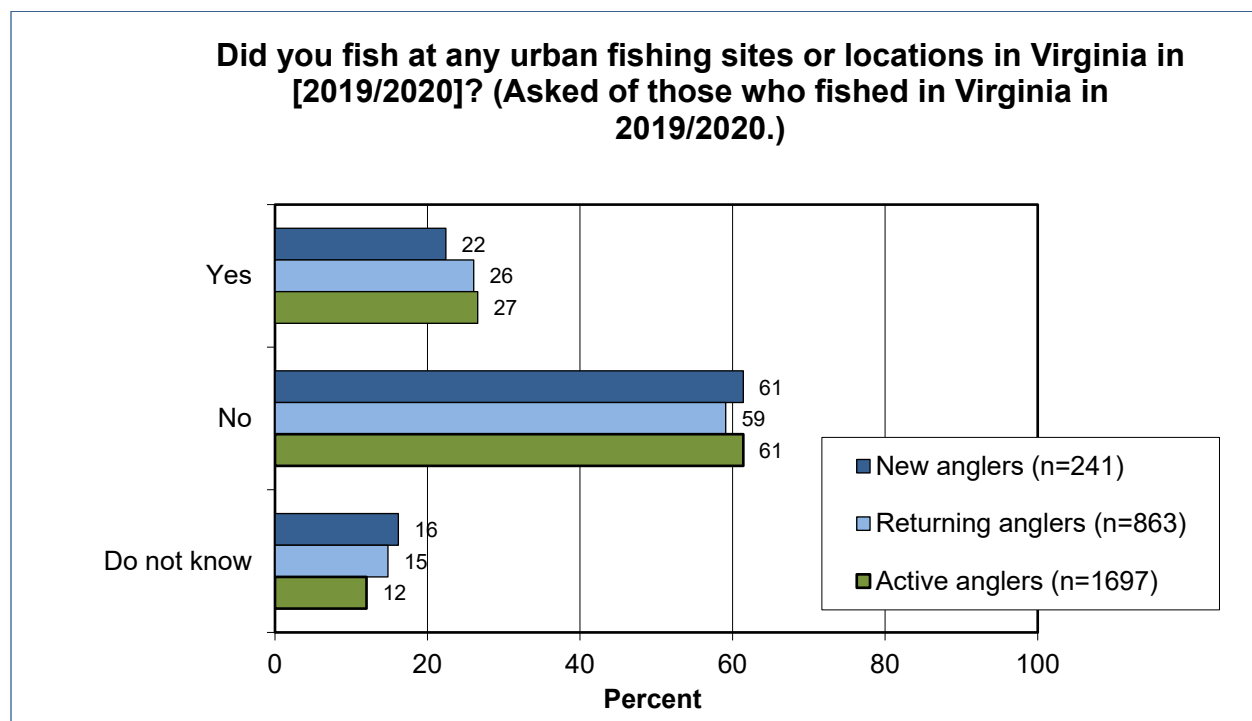
**New anglers would most like information on where to fish, identifying the fish they catch, and local or location-specific information.**

The focus group research suggested that these topics were of particular interest among new anglers. Other topics on which anglers want information were mentioned, including techniques and equipment use, but the most vigorous discussions were about where to fish and identifying fish.

## URBAN FISHING

**Urban fishing sites are popular, with about a quarter of anglers using them.**

About a quarter of anglers who had fished in Virginia in 2019/2020 had fished in an urban fishing site in Virginia. The differences among groups is slight and may be more related to not knowing rather than actual participation at one of these sites.



**Convenience is an overriding reason that new and returning anglers use urban sites. They are willing to trade off the aesthetic aspects (solitude, being in nature) for this convenience. As long as these sites provide a positive experience, this convenience may win out many times.**

Anglers use urban fishing sites because they are close and convenient and because the anglers are familiar with the sites. They know where to go and what to expect at the sites.

**Most anglers talked positively about camaraderie at urban sites.**

There is some camaraderie at urban sites because anglers interact with other anglers a bit more than they would at more backwoods sites.

**Stocking is a draw for urban sites. Anglers like that urban fishing sites are often stocked.**

Stocking was appreciated by these urban anglers. One described the urban site as the complete package because of stocking—having a convenient place that also has a high chance of success.

**Criticism of urban fishing sites commonly included crowding, pollution, and litter.**

A negative aspect of urban sites is that they are perceived to have too many other anglers, have waters that are not pristine, and have litter.

## **WOMEN ANGLERS**

**Among returning anglers, women are a little younger than their male counterparts.**

Analyses show that, among new anglers, women and men are not consistently different. Among returning anglers, however, there is a more consistent pattern: women tend to be a little younger than men in this group.

**Women who are new or returning anglers are slightly more likely than men to be white.**

Women anglers, both for the new and returning groups, have a higher percentage than men being white.

**Locationally, women are less often from large cities/urban areas, compared to men.**

**Women new anglers are disproportionately from small cities or towns, and women returning anglers are disproportionately from rural areas.**

Among new anglers, women are more likely than men to be from a small city or town, and women are less likely than men to be from a large city/urban area or suburban area. Among returning anglers, women are more likely than men to be from a rural area, and women are less likely than men to be from a suburban area.

**New anglers who are women are more likely to have been taken by spouses or boyfriends/girlfriends, compared to their male counterparts among new anglers.**

Among new anglers, women are much less likely than men to have first been taken by friends *other than a boyfriend/girlfriend or spouse*. On the other hand, among new anglers, women are much more likely than men to have first been taken by their boyfriend/girlfriend or spouse. Differences are not as marked among returning anglers.

## **ACCESS**

**Among new anglers, as well as to returning anglers to a lesser extent, a disincentive to trying new fishing locations is their lack of knowledge about what to expect at the site. Outreach needs to inform these new anglers about the amenities available at various sites throughout Virginia.**

New anglers indicated that branching out in their participation was stymied to some extent by their not knowing about other sites, such as whether there is parking nearby, whether there is enough space to easily cast, and so forth.

This trepidation about not knowing the procedures to follow in a new situation helps drive the franchising of restaurants and hotels—people on the road go to fast food restaurants, in part, because they know exactly what is available, how to order, where to park, and so forth. If the fishing industry taps into this motivation, having similarities in sites may benefit—for instance if the anglers always knew that a Department-managed urban site was within a certain walking distance from public parking.

## **FULL DISCUSSION OF METHODOLOGY**

The section first includes a discussion of the focus group methodology, followed by the details of the survey methodology.

### **FOCUS GROUPS**

Focus groups entail an in-depth, structured discussion with participants about their opinions regarding various issues, in this case about fishing and reasons for starting to fish. The use of focus groups is an accepted research technique for the qualitative exploration of attitudes, opinions, perceptions, motivations, constraints, and behaviors. Focus groups provide researchers with understanding and insights of the thought processes and the emotions of the participants in the group discussions.

Focus groups allow for extensive open-ended responses to questions; probing, follow-up questions; group discussion; and observation of emotional responses to topics—aspects that cannot be measured in a quantitative survey. Qualitative research sacrifices reliability for increased validity. This means that focus group findings cannot be replicated statistically as a survey can be (i.e., focus groups have low reliability), but focus groups provide a more nuanced understanding of the issues related to fishing (i.e., they have high validity). Focus group discussions are recorded for further analysis.

### **COMPOSITION OF THE FOCUS GROUPS**

These focus groups consisted of anglers who had fished in Virginia in 2019 or 2020. Four of the focus groups consisted of new anglers (had not fished anywhere prior to 2019), and one consisted of returning anglers (had not fished in 2016 through 2018 in Virginia but had done so in 2015 or earlier). Additionally, the new angler focus groups consisted of three regional focus groups (one with anglers from Region 1, one with anglers from Region 4, and one with anglers from Regions 2 or 3) and one all-women focus group. Recruitment of these participants is discussed in more detail later in this chapter.

### **DISCUSSION GUIDE AND MODERATOR**

Each focus group was conducted using a discussion guide, moderated by one of Responsive Management's trained moderators. Using the discussion guide, the moderator kept the discussion within design parameters without exerting a strong influence on the discussion content. In this sense, the focus groups were non-directive group discussions that exposed the spontaneous attitudes, insights, and perceptions of new and returning anglers. The focus group discussion guides (one for new anglers and one for returning anglers) are presented in Appendix A.

While each discussion is allowed to flow organically and does not need to adhere precisely to the guide, the guide is in place when it is necessary for the moderator to steer the discussion back to the focus group topics. The order of the discussion topics on the guide, as well, does not need to be precisely followed; if the discussion naturally flows to a topic that is included further on in the guide, the moderator can later circle back to the parts of the guide that were skipped.

The guide was developed by Responsive Management in coordination with the Department. Its major topic areas included reasons for starting to fish, fishing experiences, factors associated with the decision to go fishing, urban fishing participation, and sources of information about fishing. The use of the guide helps ensure consistency in the data collection.

## **FOCUS GROUP FACILITIES**

Typically, focus groups are done in person in a professional facility around a table with the moderator at the head of the table. However, because of Covid-19 during the time of this project, these focus groups were conducted online using commercial virtual meeting software with each participant in his or her own home. The focus groups were recorded for further analysis.

## **FOCUS GROUP PARTICIPANT RECRUITING**

Focus group participants were recruited by Responsive Management staff based on a survey that was administered (discussed later in this chapter). Anglers who met the criteria for the focus groups were contacted and given a brief summary of the focus group topics. They were then further questioned to verify their eligibility for participation and, if qualified and interested, scheduled for attendance (virtually). Responsive Management developed the recruiting parameters in coordination with the Department.

To qualify for the focus groups, potential participants had to be new or returning anglers, as described previously. Additionally, they could not be currently employed by a marketing or advertising firm, and they could not be employed in the fishing industry, including a fishing equipment retailer. The selection criteria were based on certain attitudes and behaviors and demographic characteristics to ensure that a wide range of attitudes, behaviors, and characteristics were represented in each group. An advantage of having virtual focus groups is that participants are not constrained by travel distance to a single focus group facility—in other words, these participants were recruited from various locations across Virginia.

Responsive Management maintained contact with qualified, interested individuals as needed and provided confirmation that included the date and time of the focus group. To encourage participation, a monetary incentive was provided to participants. Responsive Management also ensured that each focus group participant had the necessary computer equipment and internet access to be able to participate, and Responsive Management remained available to the participants for any assistance needed or for any questions prior to the focus groups.

During the recruiting process, Responsive Management's recruiting staff provided project managers with status updates with progress tables that included participant names, addresses, contact telephone numbers, and essential participant characteristics. The project managers carefully reviewed each status update to ensure that each new recruit met the criteria. Reminder calls and interaction with potential participants prior to the focus group helped ensure their attendance, resulting in quality participation. Each group had six to eight participants, which is the ideal size for virtually conducted focus groups. The focus groups were conducted from October 22 through 29, 2020.

## **FOCUS GROUP ANALYSIS**

Responsive Management conducted the qualitative analyses in three phases. The first phase was the direct observation of the discussions by the moderators and their subsequent notes immediately after each focus group. The second phase of the analysis consisted of transcriptions of the discussions and a review of the recordings and transcriptions by other researchers. The development of findings into the report itself made up the third phase of the focus group analysis.

## **SURVEY OF ANGLERS**

As part of this project, Responsive Management also administered a scientific, closed online survey to anglers. A *closed* survey means that the survey is by invitation only and cannot be accessed in a general internet search.

### **SURVEY SAMPLE**

The Department provided a database of anglers who had purchased a fishing license between July 1, 2019, and June 30, 2020, but were not in the records as having purchased a license in 2016, 2017, or 2018. Use of these parameters ensured the best chance of locating respondents who fit the parameters to be considered new anglers or returning anglers—the focus of the study.

The following license types were included in the database:

- Resident 5-Day Freshwater Fishing
- Resident 5-Day Fresh/Saltwater Fishing
- Resident State Freshwater Fishing
- Resident State Fresh/Saltwater Fishing
- County/City Resident Freshwater Fishing

The database was first checked to prepare it for the contact procedures. The original database had 87,064 records.

- In the first step, 89 records were removed that had no email address.
- In the next step, 338 duplicates were removed based on Customer ID (license holders in the database more than once were reduced to a single record). In these situations, the record with the most recent purchase date was kept. If the records had the same purchase date, the license with the longest time period (i.e., annual license was kept over a 5-day license) or the most privileges (i.e., a combo license was kept over a freshwater only license, and a statewide license was kept over a county/city license) was kept.
- Email addresses that could be corrected were corrected (for instance, if the address was entered with a “.cm” instead of a “.com”). Using a non-invasive test, the email addresses in the remaining database were checked for invalid addresses, and 59 were removed.

After these steps, there were 86,578 records in the database for the survey that met the parameters for the study (in the license database for July 1, 2019, through June 30, 2020, but not in the database from 2016 to 2018).

### **QUESTIONNAIRE DESIGN**

Responsive Management developed the survey questionnaire in coordination with the Department, based on the goals of the study. The survey was coded in Responsive Management's online platform. The questionnaire was programmed to branch, code, and substitute phrases in the survey based on previous responses so that each survey was tailored to the respondent. Responsive Management conducted pre-tests of the online survey to ensure proper wording, flow, and logic in the survey. The survey questionnaire is presented in Appendix B.

### **CONTACT PROCEDURES AND SURVEYING DATES AND TIMES**

The initial email invitation to the survey was sent to the 86,578 contacts in the database in two batches on October 7 and October 9, 2020. The invitation included a link to the survey, as well

as an email address to Responsive Management for questions about the survey or help with technical matters. The online software tracks the respondents so that only the recipient can take the survey, the email cannot be forwarded to another to take the survey, and the recipient can only take the survey once. The email invitation was sent with the Department logo to lend credibility to the survey, thereby encouraging participation. The text of the email invitation is shown below. In this initial email contact, 4,366 records bounced or were undeliverable.

Dear John Smith,

The [Virginia Department of Wildlife Resources](#) (DWR), formerly known as the Virginia Department of Game and Inland Fisheries, is conducting a study to learn more about fishing participation in 2019 and 2020, as well as experiences, preferences, and interests regarding fishing in Virginia. DWR will use the information you and other licensed anglers provide to improve fishing opportunities and resources in Virginia, and your answers are very important to this study.

[Click Here to Start the Survey](#)

or copy and paste the following into your browser's URL address bar:

<https://s-65cfb0-i.sgizmo.com/s3/i-0000000-4049527/>

The Department has contracted Responsive Management, an independent research firm that specializes in natural resource and fish and wildlife issues, to conduct this study. If you need technical assistance with the survey, please contact Responsive Management via email at [research@responsivemanagement.com](mailto:research@responsivemanagement.com).

Thank you for your time and willingness to participate.

Sincerely,

Edward Herndon

Recruitment, Retention and Reactivation (R3) Coordinator

Virginia Department of Wildlife Resources

After this initial email invitation was sent, Responsive Management monitored the survey to identify those who had responded so that they would not be sent an email reminder. On October 14, 2020, the aforementioned email reminder was sent to all those in the database who had not yet responded to the survey (minus the bounced or undeliverable records). The email reminder is shown below. In this second email contact, 335 records bounced or were

undeliverable (leaving 81,877 potentially valid contacts after both the initial bounces and these bounces were removed).

Dear John Smith,

We wanted to remind you that the [Virginia Department of Wildlife Resources](#) (DWR), formerly known as the Virginia Department of Game and Inland Fisheries, is conducting a study to learn more about fishing participation in 2019 and 2020, as well as experiences, preferences, and interests regarding fishing in Virginia. DWR will use the information you and other licensed anglers provide to improve fishing opportunities and resources in Virginia, and your answers are very important to this study.

**Please consider participating in this study but clicking below to start the survey:**

**[Click Here to Start the Survey](#)**

or copy and paste the following into your browser's URL address bar:

<https://s-65cfb0-i.sgizmo.com/s3/i-0000000-4062374/>

The Department has contracted Responsive Management, an independent research firm that specializes in natural resource and fish and wildlife issues, to conduct this study. If you need technical assistance with the survey, please contact Responsive Management via email at [research@responsivemanagement.com](mailto:research@responsivemanagement.com).

Thank you for your time and willingness to participate.

Sincerely,

Edward Herndon

Recruitment, Retention and Reactivation (R3) Coordinator

Virginia Department of Wildlife Resources

Note that the survey was closed, meaning it was available only to those specifically invited to participate who were provided with a direct URL address for the survey. Respondents furthermore had to enter their unique access code to take the survey from the link to ensure that the URL could not be passed along to somebody ineligible for the survey. Therefore, only those specially invited could take the survey, and the survey could not be accessed through a general internet search.

## **SURVEY DATA COLLECTION AND QUALITY CONTROL**

A central data collection and survey center at the Responsive Management office allowed for rigorous quality control over the online data collection. Responsive Management maintains its own in-house survey and data gathering facilities. These facilities are staffed with data managers with experience administering online surveys on the subjects of fishing, fisheries management, and natural resources in general.

The online data were collected as the anglers completed their surveys. Responsive Management monitored the number of completed surveys and downloaded the survey data into its in-house data management facilities. The surveys were checked so that those who took the survey were not sent the email reminder.

After the online surveys were obtained, the Survey Center Managers and/or statisticians checked each completed survey to ensure clarity and completeness. Responsive Management obtained 249 completed questionnaires of new anglers, 889 completed questionnaires of returning anglers, 1,779 completed questionnaires of active anglers, and 72 completed questionnaires of inactive anglers (these groupings are explained in detail below).

## **DATA ANALYSIS**

The analysis of data was performed using IBM SPSS Statistics as well as proprietary software developed by Responsive Management.

The analysis was conducted on four groups in the survey (new anglers, returning anglers, active anglers, and inactive anglers). These groupings were based on the license database as well as screener questions in the survey. The screener questions identified new and returning anglers. These screeners also showed that many anglers in the database were not true new or returning anglers but had actually fished (and sometimes had purchased licenses) between 2016 and 2018 despite not being in the license database for those years. Although not the primary focus of the project, these active anglers were surveyed. Furthermore, a few people in the database had not fished in 2019 or 2020 or in the years 2016 through 2018; they are referred to as inactive anglers. The survey results were then analyzed among all these groups, where appropriate.

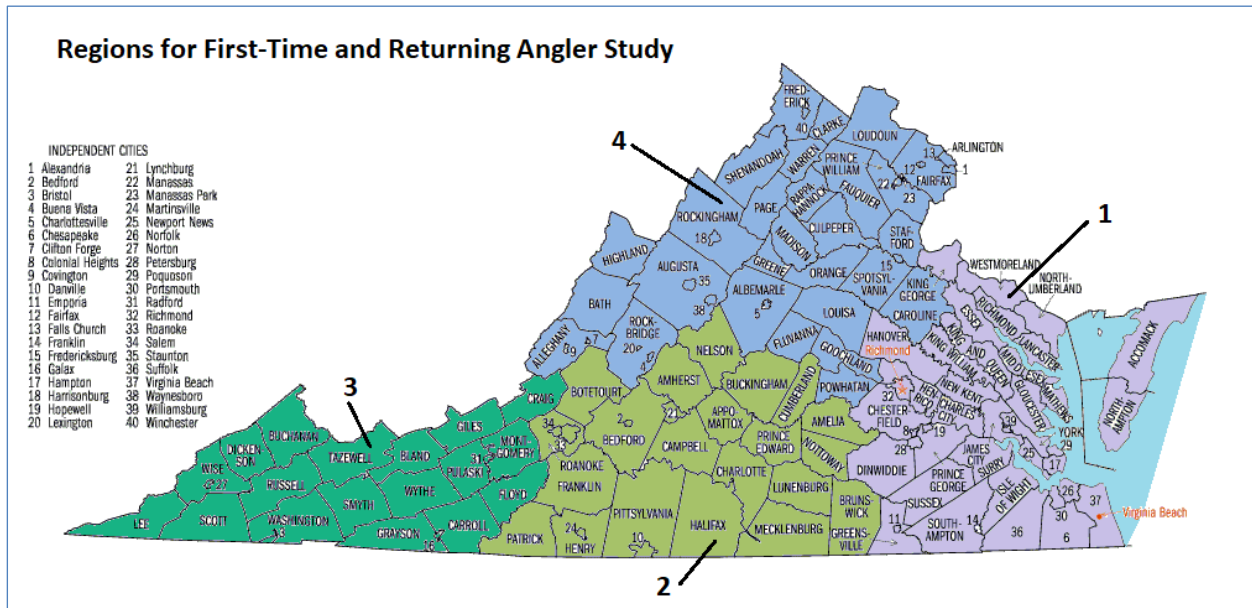
Specifically, the four categories of anglers identified for analysis were defined as follows. Note that all of them had purchased a license between July 1, 2019, and June 30, 2020, and none of them had a license record for 2016 through 2018—in other words, it was thought that they would all be new or returning anglers, which was not the case:

- New anglers: these are true first-time anglers who had fished for the first time in 2019 or 2020.
- Returning anglers: these are anglers who had fished in 2019 or 2020, had not fished in or outside of Virginia in 2016 through 2018, but had fished in our outside of Virginia in 2015 or earlier (sometimes much earlier).

- Active anglers: these are anglers who had fished in 2019 or 2020 but also had fished inside or outside of Virginia in 2016 through 2018. In some cases, they had fished in Virginia and had purchased a license in 2016 through 2018 but were not in the database for those years. In other cases, they had fished in 2016 through 2018 in Virginia but had not purchased a license (not all fishing requires a license in Virginia; in other cases, they had fished and *should* have purchased a license but had not). Lastly, in some cases they had fished in 2019 or 2020 in Virginia and had fished in 2016 through 2018 in another state.
- Inactive anglers: these are respondents who had not fished in 2019 or 2020, although some had fished previous to 2015 and some had not.

In the analyses, the researchers noted that the sample of active anglers would not be the same as would be a sample of pure active anglers pulled from a license database of all licensees for a single year based only on the definition of active angler (fishing in 2019-2020 as well as between 2016 and 2018). The active anglers in the analyses were those who, for whatever reason, *were not in the license database for 2016 through 2018* despite being an active angler. Nonetheless, although active anglers in these analyses could not be considered a “pure” sample of active anglers, comparisons of these active anglers to the other groups were still useful.

In addition to analyses by the groupings above, analyses were also conducted regionally, based on the Department’s administrative regions. The map and tabulation that follow showing the regions were included in the introduction of this report but are also included here for the reader’s convenience.



Region 1	Region 2	Region 3	Region 4
Accomack County	Amelia County	Bland County	Albemarle County
Charles City County	Amherst County	Bristol City	Alexandria City
Chesapeake City	Appomattox County	Buchanan County	Alleghany County
Chesterfield County	Bedford City	Carroll County	Arlington County
Colonial Heights City	Bedford County	Craig County	Augusta County
Dinwiddie County	Botetourt County	Dickenson County	Bath County
Emporia City	Brunswick County	Floyd County	Buena Vista City
Essex County	Buckingham County	Galax City	Caroline County
Franklin City	Campbell County	Giles County	Charlottesville City
Gloucester County	Charlotte County	Grayson County	Clarke County
Greensville County	Cumberland County	Lee County	Culpeper County
Hampton City	Danville City	Montgomery County	Fairfax City
Hanover County	Franklin County	Norton City	Fairfax County
Henrico County	Halifax County	Pulaski County	Falls Church City
Hopewell City	Henry County	Radford City	Fauquier County
Isle of Wight County	Lunenburg County	Russell County	Fluvanna County
James City	Lynchburg City	Scott County	Frederick County
James City County	Martinsville City	Smyth County	Fredericksburg City
King and Queen County	Mecklenburg County	Tazewell County	Goochland County
King George County	Nelson County	Washington County	Greene County
King William County	Nottoway County	Wise County	Harrisonburg City
Lancaster County	Patrick County	Wythe County	Highland County
Mathews County	Pittsylvania County		Loudoun County
Middlesex County	Prince Edward County		Louisa County
New Kent County	Roanoke City		Madison County
Newport News City	Roanoke County		Manassas City
Norfolk City	Salem City		Manassas Park City
Northampton County			Orange County
Northumberland County			Page County
Petersburg City			Powhatan County
Poquoson City			Prince William County
Portsmouth City			Rappahannock County
Prince George County			Rockbridge County
Richmond City			Rockingham County
Richmond County			Shenandoah County
Southampton County			Spotsylvania County
Suffolk City			Stafford County
Surry County			Staunton City
Sussex County			Warren County
Virginia Beach City			Waynesboro City
Westmoreland County			Winchester City
Williamsburg City			
York County			

On survey questions that asked respondents to provide a number (e.g., days fishing), the graphs and/or tables showed ranges of numbers rather than the precise numbers. Nonetheless, in the survey each respondent provided a precise number, and the dataset includes this precise number, even if the graphs and/or tables only showed ranges of numbers. Note that the calculation of means and medians used the precise numbers that the respondents provided.

Some of the questions were open-ended, meaning that no answer set was presented and anglers were able to respond with anything that came to mind. For the analysis of these questions, each verbatim open-ended response was put into one or more categories. For instance, on the question that asked anglers why they started fishing in Virginia, the verbatim responses, “Just got to the

state,” “Moved here from Florida,” and “New to the state,” were all categorized as “Moved to Virginia” even though each response was different and none of the anglers responded exactly, “Moved to Virginia.” In this way, each verbatim response was examined by an analyst and categorized so that the graph could show logical response sets. In total, the analysts categorized the responses to 7 open-ended questions, which totaled more than 4,200 lines of data that were categorized.

Most graphs and tabulations showed results rounded to the nearest integer; however, all data are stored in decimal format, and all calculations in the analyses were performed on unrounded numbers.

## SAMPLING ERRORS

Overall, there were 81,877 license holders for which contact was attempted. For calculating the sampling error, the assumption was made that the proportion of new, returning, active, and inactive anglers is the same in that database as it was in the survey respondents. The tabulation below shows the sampling error for each group. The tabulation is followed by the equation used in the calculations.

	New Anglers	Returning anglers	Active anglers	Inactive anglers
Sample Size	250	893	1,791	72
Estimated Population*	6,796	24,317	48,799	1,965
Sampling Error	6.08	3.22	2.27	11.34

\* Based on 81,877 total anglers in the database, divided in the same proportions as the groups were in the survey.

## Sampling Error Equation

$$B = \left( \sqrt{\frac{N_p(.25)}{N_s} - .25} \right) (1.96)$$

Where: B = maximum sampling error (as decimal)  
 $N_p$  = population size (i.e., total number who could be surveyed)  
 $N_s$  = sample size (i.e., total number of respondents surveyed)

Derived from formula: p. 206 in Dillman, D. A. 2000. *Mail and Internet Surveys*. John Wiley & Sons, NY.

**Note:** This is a simplified version of the formula that calculates the maximum sampling error using a 50:50 split (the most conservative calculation because a 50:50 split would give maximum variation).

# APPENDIX A: FOCUS GROUP DISCUSSION GUIDES

## VA New Anglers Focus Group Guide

10/14/2020

### I. INTRODUCTION

1. The purpose of this focus group is to learn more about your fishing participation over the past year. Many of you are new to fishing (or took a long break from fishing and returned), and the Virginia Department of Wildlife Resources is interested in learning about how and why you started fishing. This information will help the Department provide better resources and support for new anglers, giving them opportunities and support to continue fishing.
2. We are recording the discussion, but nothing you say will ever be associated with your name; we simply use the recording to transcribe comments and analyze the information obtained from you.
3. Focus group rules.
  - a. Be respectful of others' opinions, even if you disagree.
  - b. Although it is more difficult in an online meeting, please try as much as possible to not interrupt or talk over others. Everyone will have a chance to speak.
4. To begin, when I call on you, please introduce yourself and tell us where you're from, whether you do freshwater or saltwater fishing or both in Virginia, and when you actually first started fishing in Virginia.

### II. REASONS FOR STARTING TO FISH

1. What are the main reasons you started fishing in Virginia within the past year?
2. Of all the activities or hobbies you could have chosen to start within the past year, WHY fishing?
  - a. What about fishing was interesting or attractive to you?
  - b. What did fishing offer that prompted you to try it?
  - c. Did you see something specific that piqued your interest to try fishing? What was it?
  - d. Or did someone suggest you try fishing? Who was it?

### III. FISHING EXPERIENCES

1. Did fishing successfully provide you with the experience you were looking for when you decided to give it a try?
  - a. Did fishing meet your expectations? Why or why not?
  - b. How would you have liked your first experience with fishing to be different?
2. Who did you first go fishing with, or did you go alone?
3. How often have you been fishing since you first tried it?
  - a. (If has not continued fishing) What has prevented you from continuing to fish?
  - b. (If has not continued fishing) What would get you to fish in Virginia again?
  - c. (If has continued fishing) As you have continued to fish, have your reasons for fishing changed? If yes, how so?

#### IV. OTHER FACTORS ASSOCIATED WITH FISHING PARTICIPATION

1. How do other reasons for fishing factor into your participation?
  - a. For example, catching fish to eat, catching a large fish to display, being with friends and family, fishing for the challenge, or fishing for the sport or recreation, or being in nature—do any of these factor into your decision to continue fishing?
2. How important are they? Do they keep you fishing, or is it something else (and what is that?)
3. Has Covid-19 influenced your fishing at all?
  - a. Did it influence your decision to start or try fishing?
  - b. Did it influence your decision to continue fishing?
  - c. How often you fish?
  - d. Do you think your fishing participation this year would have been different if Covid-19 and social distancing had not happened? How would it have been different?
  - e. What happens to your fishing participation when life goes back to “normal” after Covid-19?

#### V. URBAN FISHING PARTICIPATION

1. Did you fish at any urban sites or locations in Virginia in 2019/2020?
2. (If yes) Tell me about your fishing at the urban site(s); describe your experiences.
3. (If yes) What did you like most about your experiences fishing the urban site(s)?
4. (If yes) What did you like least about your experiences (fishing the urban site(s))?
5. (If yes) How could fishing opportunities in urban areas be improved?
6. (If yes) Did you choose urban fishing over fishing in a more rural area? Why?
  - a. Was it convenience of location? Not having to travel far?
  - b. Was it costs? Resources? Anything other reason?
  - c. Do you prefer the urban fishing sites or more rural areas? Why?
7. (If yes) Did you fish more rural areas at all? Why or why not?
8. (If yes) If the urban site(s) you fished had not been available, do you think you would have fished at all in Virginia in 2019/2020? Why or why not?
9. What would you like to see changed or improved at urban fishing sites?

## VI. CHANGES TO FISHING PARTICIPATION (ACTUAL AND DESIRED)

1. How has your fishing participation in Virginia changed since you first started fishing in 2019/2020?
  - a. Have your interests changed, such as different species, different types of water (different places or sites; *Are these differences listed?*), different fishing gear or techniques? Other?
2. How would you like your fishing to change, if at all?
  - a. More often?
  - b. Different species, types of water (places or sites), fishing gear, or techniques? Other?
3. What additional types of fishing or fishing-related activities would you like to try?
  - a. Why haven't you tried it/them yet?
  - b. What do you need to be able to try them? A guide or friend with more experience? Information or resources?

## VII. INFORMATION AND RESOURCES

1. What types of information do you feel you still need to continue fishing in Virginia?
2. What are the best ways to get you information on fishing in Virginia?
3. What other resources would help you to continue fishing?
4. What resources do new anglers need?
5. Is there anything you wish you had when starting out?
6. Is there anything that you feel you need to continue fishing in Virginia that you don't have or don't know where to obtain?

## VIII. FINAL COMMENTS

1. Do you have any further comments about fishing in Virginia?

## **VA Returning Anglers Focus Group Guide**

**10/29/2020**

### **I. INTRODUCTION**

1. The purpose of this focus group is to learn more about your fishing participation over the past year. Many of you took a long break from fishing and started fishing again recently, and the Virginia Department of Wildlife Resources is interested in learning about how and why you started fishing. This information will help the Department provide better resources and support for anglers, giving them opportunities and support to continue fishing now that you have returned.
2. We are recording the discussion, but nothing you say will ever be associated with your name; we simply use the recording to transcribe comments and analyze the information obtained from you.
3. Focus group rules.
  - a. Be respectful of others' opinions, even if you disagree.
  - b. Although it is more difficult in an online meeting, please try as much as possible to not interrupt or talk over others. Everyone will have a chance to speak.
4. To begin, when I call on you, please introduce yourself and tell us where you're from, whether you do freshwater or saltwater fishing or both in Virginia, and when you actually first started fishing in Virginia.

### **II. RETURNING TO FISHING**

1. How many years had it been since you'd last been fishing when you started fishing again in 2019 or 2020?
2. What are the main reasons you started fishing again in Virginia within the past couple years?
3. Of all the activities or hobbies you could have chosen to start within the past year or two, WHY did you start fishing again? Why did you choose to use your time fishing?
  - a. What about fishing was interesting or attractive to you?
  - b. What did fishing offer that prompted you to return to it?
  - c. Or did someone suggest fishing for you? Who was it?

### **III. FISHING EXPERIENCES**

1. Did fishing successfully provide you with the experience you were looking for when you decided to go fishing again recently?
  - a. Did fishing this time around meet your expectations? Why or why not?
  - b. How would you have liked fishing experiences to be different?
2. Who did you first go fishing with in 2019/2020, or did you go alone?
3. How often have you been fishing in 2019/2020?
  - a. What has prevented you from fishing more or as much as you would like to?
  - b. What would help you to continue fishing in Virginia?

#### IV. OTHER FACTORS ASSOCIATED WITH FISHING PARTICIPATION

1. How do other reasons for fishing factor into your participation?
  - a. For example, catching fish to eat, catching a large fish to display, being with friends and family, fishing for the challenge, or fishing for the sport or recreation, or being in nature—do any of these factor into your decision to continue fishing?
2. How important are they? Do they keep you fishing, or is it something else (and what is that?)
3. Has Covid-19 influenced your fishing at all?
  - a. Did it influence your decision to start fishing again recently?
  - b. Did it influence your decision to fish since March 2020?
  - c. How often do you fish?
  - d. Do you think your fishing participation this year would have been different if Covid-19 and social distancing had not happened? How would it have been different?
  - e. What happens to your fishing participation when life goes back to “normal” after Covid-19?

#### V. URBAN FISHING PARTICIPATION

1. Did you fish at any urban sites or locations in Virginia in 2019/2020?
2. (If yes) Is urban fishing new to you since you started fishing again in 2019/2020?
3. (If yes) Tell me about your fishing at the urban site(s); describe your experiences.
4. (If yes) What did you like most about your experiences fishing the urban site(s)?
5. (If yes) What did you like least about your experiences (fishing the urban site(s))?
6. (If yes) How could fishing opportunities in urban areas be improved?
7. (If yes) Did you choose urban fishing over fishing in a more rural area? Why?
  - a. Was it convenience of location? Not having to travel far?
  - b. Was it costs? Resources? Anything other reason?
  - c. Do you prefer the urban fishing sites or more rural areas? Why?
8. (If yes) Did you fish more rural areas at all? Why or why not?
9. (If yes) If the urban site(s) you fished had not been available, do you think you would have fished at all in Virginia in 2019/2020? Why or why not?
10. What would you like to see changed or improved at urban fishing sites?

#### VI. CHANGES TO FISHING PARTICIPATION (ACTUAL AND DESIRED)

1. How has your fishing participation in Virginia changed since you started fishing again in 2019/2020?
 

How about in comparison to your fishing years ago?

  - a. Have your interests changed, such as different species, different types of water, different places or sites, different fishing gear or techniques? Other?
 

*WHY have you changed your preferences?*
2. How would you like your fishing to change, if at all?
  - a. More often?
  - b. Different species, types of water (places or sites), fishing gear, or techniques? Other?
3. What additional types of fishing or fishing-related activities would you like to try?
  - a. Why haven't you tried it/them yet?
  - b. What do you need to be able to try them? A guide or friend with more experience? Information or resources?

VII. INFORMATION AND RESOURCES

1. What types of information do you feel you still need to continue fishing in Virginia?
2. What are the best ways to get you information on fishing in Virginia?
3. What other resources would help you to continue fishing?
4. What resources do anglers need?
5. Is there anything you wish you had this time when starting to fish again?
6. Is there anything that you feel you need to continue fishing in Virginia that you don't have or don't know where to obtain?

VIII. FINAL COMMENTS

1. Do you have any further comments about fishing in Virginia?

## APPENDIX B: ONLINE QUESTIONNAIRE

### Virginia Fishing Study

---

ID: 2

The [Virginia Department of Wildlife Resources \(DWR\), formerly known as the Virginia Department of Game and Inland Fisheries](#), is conducting a study to learn more about your fishing participation in 2019 and 2020, as well as your experiences, preferences, and interests regarding fishing in Virginia. DWR will use the information you and other anglers provide to improve fishing opportunities and resources in Virginia.

The Department has contracted Responsive Management, an independent research firm that specializes in natural resource and fish and wildlife issues, to conduct this study. If you need technical assistance with the survey, please contact Responsive Management via email at [research@responsivemanagement.com](mailto:research@responsivemanagement.com).

Thank you for your time and willingness to participate.

Please click "Next" below to begin the survey.

If you are on a mobile device and do not see a "Next" button, please click the small forward arrow at the bottom right of your screen. It may look similar to this:



*(If you do not see a "Next" button nor a small arrow at the bottom right, please consider accessing the survey on a different device, preferably a desktop or laptop computer, as both privacy and display settings specific to some devices may prevent the survey from displaying fully or correctly.)*

---

**Virginia Fishing License - Years Held****All Respondents**

(Database of those who appear to be first time license buyers from July 1, 2019, to June 30, 2020)

Shortname / Alias: LICENSEYEARS

ID: 3

Our records indicate that you obtained a Virginia fishing license at some point between July 1, 2019, and June 30, 2020. We would like to know about your recreational fishing license, interest, and participation in Virginia.

*1) Which of the following calendar years did you purchase or obtain a Virginia fishing license prior to July 1, 2019?*

(please check all that apply)\*

- 2019 before July 1
  - 2018
  - 2017
  - 2016
  - 2015 or earlier
  - None of these / Did not purchase or obtain a VA fishing license prior to July 1, 2019
  - Do not know
-



**Logic: Show/hide trigger exists.**

Shortname / Alias: FISHPRIOR2016

ID: 11

3) Which of those same activities did you participate in prior to 2016 (in 2015 or earlier)?\*  
(please check all that apply)

- Freshwater fishing in Virginia
- Saltwater fishing in Virginia
- Freshwater fishing outside of Virginia
- Saltwater fishing outside of Virginia
- None of these / Did not participate in any of these activities prior to 2016
- Do not know

Validation: Must be numeric Max character count = 2

**Logic: Hidden unless: #3 Question "Which of those same activities did you participate in prior to 2016 (in 2015 or earlier)?" is one of the following answers ("Freshwater fishing in Virginia", "Saltwater fishing in Virginia", "Freshwater fishing outside of Virginia", "Saltwater fishing outside of Virginia")**

Shortname / Alias: FISHYEARSTOTAL

ID: 12

4) How many years total have you been recreational fishing?\*

(In any state or country.)

(If unsure, please give your best estimate.)

**Page entry logic:** This page will show when: (( Question "Freshwater fishing in Virginia" is one of the following answers ("2020") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2020")) AND ( Question "Freshwater fishing in Virginia" is not one of the following answers ("2019") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2019")))

### Commercial Fishing Participation 1

**INTERNAL NOTE:** FISHCOMM1 - FISHCOMM4 questions are all the same and should be combined together for analysis. (Note that the respondent's answer to FISHCOMM does not affect any other questions, logic, or qualifications in the survey.)

I needed separate pages to set up word piping/computation for follow-up questions in the survey for the earliest year and the most recent year the respondent fished recreationally (freshwater or saltwater) in Virginia between 2019 and 2020.

The four FISHCOMM questions create the following groups:

- FISHCOMM1. Freshwater and/or saltwater fished in VA in 2020 but not 2019
- FISHCOMM2. Freshwater and/or saltwater fished in VA in 2019 but not 2020
- FISHCOMM3. Freshwater and/or saltwater fished in VA in both 2019 and 2020
- FISHCOMM4. Did not freshwater nor saltwater fish in VA in 2019 nor 2020

Shortname / Alias: FISHCOMM1

ID: 13

5) Have you *EVER* participated in commercial fishing, in or outside of Virginia?\*

Yes

No

Do not know

**Hidden Value: Fished VA 2020 (but not 2019)**

Value: 2020

**Page entry logic:** This page will show when: ((( Question "Freshwater fishing in Virginia" is one of the following answers ("2019") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2019")) AND Question "Freshwater fishing in Virginia" is not one of the following answers ("2020")) AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2020"))

## Commercial Fishing Participation 2

**INTERNAL NOTE:** FISHCOMM1 - FISHCOMM4 questions are all the same and should be combined together for analysis. (Note that the respondent's answer to FISHCOMM does not affect any other questions, logic, or qualifications in the survey.)

I needed separate pages to set up word piping/computation for follow-up questions in the survey for the earliest year and the most recent year the respondent fished recreationally (freshwater or saltwater) in Virginia between 2019 and 2020.

The four FISHCOMM questions create the following groups:

FISHCOMM1. Freshwater and/or saltwater fished in VA in 2020 but not 2019

FISHCOMM2. Freshwater and/or saltwater fished in VA in 2019 but not 2020

FISHCOMM3. Freshwater and/or saltwater fished in VA in both 2019 and 2020

FISHCOMM4. Did not freshwater nor saltwater fish in VA in 2019 nor 2020

Shortname / Alias: FISHCOMM2

ID: 16

6) Have you *EVER* participated in commercial fishing, in or outside of Virginia?\*

Yes

No

Do not know

**Hidden Value: Fished VA 2019 (but not 2020)**

Value: 2019

**Page entry logic:** This page will show when: (( Question "Freshwater fishing in Virginia" is one of the following answers ("2019") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2019")) AND ( Question "Freshwater fishing in Virginia" is one of the following answers ("2020") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2020")))

### Commercial Fishing Participation 3

**INTERNAL NOTE:** FISHCOMM1 - FISHCOMM4 questions are all the same and should be combined together for analysis. (Note that the respondent's answer to FISHCOMM does not affect any other questions, logic, or qualifications in the survey.)

I needed separate pages to set up word piping/computation for follow-up questions in the survey for the earliest year and the most recent year the respondent fished recreationally (freshwater or saltwater) in Virginia between 2019 and 2020.

The four FISHCOMM questions create the following groups:

- FISHCOMM1. Freshwater and/or saltwater fished in VA in 2020 but not 2019
- FISHCOMM2. Freshwater and/or saltwater fished in VA in 2019 but not 2020
- FISHCOMM3. Freshwater and/or saltwater fished in VA in both 2019 and 2020
- FISHCOMM4. Did not freshwater nor saltwater fish in VA in 2019 nor 2020

Shortname / Alias: FISHCOMM3

ID: 18

7) *Have you EVER participated in commercial fishing, in or outside of Virginia?\**

Yes

No

Do not know

**Hidden Value: Fished VA Both 2019 and 2020 (2019 Earliest Year)**

Value: 2019

**Hidden Value: Fished VA Both 2019 and 2020 (2020 Most Recent Year)**

Value: 2020

**Hidden Value: Fished VA Both 2019 and 2020 (Both Years)**

Value: 2019 and 2020

**Hidden Value: Fished VA Both 2019 or 2020 (Or Years)**

Value: 2019 or 2020

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is not one of the following answers ("2019","2020") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2019","2020"))

#### **Commercial Fishing Participation 4**

INTERNAL NOTE: FISHCOMM1 - FISHCOMM4 questions are all the same and should be combined together for analysis. (Note that the respondent's answer to FISHCOMM does not affect any other questions, logic, or qualifications in the survey.)

I needed separate pages to set up word piping/computation for follow-up questions in the survey for the earliest year and the most recent year the respondent fished recreationally (freshwater or saltwater) in Virginia between 2019 and 2020.

The four FISHCOMM questions create the following groups:

FISHCOMM1. Freshwater and/or saltwater fished in VA in 2020 but not 2019

FISHCOMM2. Freshwater and/or saltwater fished in VA in 2019 but not 2020

FISHCOMM3. Freshwater and/or saltwater fished in VA in both 2019 and 2020

FISHCOMM4. Did not freshwater nor saltwater fish in VA in 2019 nor 2020

Shortname / Alias: FISHCOMM4

ID: 40

8) Have you *EVER* participated in commercial fishing, in or outside of Virginia?\*

Yes

No

Do not know

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2019","2020"))

### **Self-Rate Skill as an Angler**

Asked of those who freshwater and/or saltwater fished in Virginia in 2019 and/or 2020  
(Word piping fills in the correct earliest year respondent fished in Virginia between 2019 and 2020)

Shortname / Alias: SKILL

ID: 14

9) How would you rate your skill as an angler PRIOR to going fishing in Virginia in [question("value"), id="15"][question("value"), id="17"][question("value"), id="38"]?\*

- Beginner
- Intermediate
- Advanced
- Expert
- Do not know

**Page entry logic:** This page will show when: ((((((#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2018") AND Question "Freshwater fishing in Virginia" is one of the following answers ("2018")) OR (#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2018") AND Question "Saltwater fishing in Virginia" is one of the following answers ("2018")))) OR (#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2017") AND Question "Freshwater fishing in Virginia" is one of the following answers ("2017")) OR (#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2017") AND Question "Saltwater fishing in Virginia" is one of the following answers ("2017")))) OR (#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2016") AND Question "Freshwater fishing in Virginia" is one of the following answers ("2016")) OR (#1 Question "Which of the following calendar years did you purchase or obtain a Virginia fishing license *prior* to July 1, 2019? (*please check all that apply*)" is not one of the following answers ("2016") AND Question "Saltwater fishing in Virginia" is one of the following answers ("2016"))))

### **Reasons Fished Without a License in 2018, 2017, and/or 2016**

Asked of those who freshwater and/or saltwater fished in Virginia in a year that they did NOT indicated they held a Virginia fish license for the years of 2018, 2017, and 2016

The goal of the logic for this question is to identify those who were flagged as "first time license buyers / anglers" for the sample but who are not truly first time anglers. They have fished in Virginia before 2019 but within the past 5 years. The responses to this question will help us understand the most common reasons some are mistaken as first time or new anglers.

Shortname / Alias: FISHNOLICENSE2016-18  
ID: 110

10) You indicated having fished in Virginia some years that you did not obtain a Virginia fishing license.

What are the main reasons you fished in Virginia but did not need or have a license?\*

(NOTE: We are aware that in Virginia there are some fishing license exemptions for which you may fish without a license. We are only trying to understand fishing participation and license buying frequency.)

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is not one of the following answers ("2019","2020") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2019","2020"))

### **Reasons for Not Fishing in Virginia in 2019 nor 2020**

Asked of those who purchased a Virginia fishing license from July 1, 2019, to June 30, 2020, but who did not freshwater nor saltwater fish in Virginia in 2019 nor 2020

Responses to this question will help us understand why some people bought a license (probably for the first time) but did not actually fish.

After this question, those whose previous answers indicate that they have NEVER fished in Virginia are skipped to the background/demographic questions. They do not qualify for focus group participation since they have never fished, and their surveys will be marked as "disqualified" (rather than "complete").

**Page exit logic: NEVER FISHED VAIF:** ((( Question "Freshwater fishing in Virginia" is not one of the following answers ("2016","2017","2018","2019","2020") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2016","2017","2018","2019","2020")) AND #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is not one of the following answers ("Freshwater fishing in Virginia","Saltwater fishing in Virginia")) OR (( Question "Freshwater fishing in Virginia" is one of the following answers ("None of these") AND Question "Saltwater fishing in Virginia" is one of the following answers ("None of these")) AND #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is one of the following answers ("None of these / Did not participate in any of these activities prior to 2016","Do not know")))) **THEN:** Jump to [page 32 - Background Information](#)

Shortname / Alias: WHYPURCLICENSE

ID: 20

11) You indicated that you did not go fishing in Virginia in 2019 nor 2020. Although you did not fish in Virginia, what are the main reasons you purchased or obtained a Virginia fishing license between July 1, 2019, and June 30, 2020?



**Page entry logic:** This page will show when: (( Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020") OR Question "Saltwater fishing in Virginia" is one of the following answers ("2019","2020")) AND ((( Question "Freshwater fishing in Virginia" is not one of the following answers ("2016","2017","2018") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2016","2017","2018")) AND Question "Freshwater fishing outside of Virginia" is not one of the following answers ("2016","2017","2018")) AND Question "Saltwater fishing outside of Virginia" is not one of the following answers ("2016","2017","2018")) AND #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is not one of the following answers ("Freshwater fishing in Virginia","Saltwater fishing in Virginia","Freshwater fishing outside of Virginia","Saltwater fishing outside of Virginia"))))

### First Time / New Virginia Angler Confirmation

Asked of those who participated in freshwater and/or saltwater fishing in Virginia in 2019 and/or 2020 but did NOT indicate having participated in ANY of the recreational fishing activities (in or outside of Virginia) in 2018, 2017, 2016, or 2015 or earlier (note they may or may not have participated in fishing outside of Virginia in 2019 and/or 2020).

This question helps us 100% identify truly new anglers who have not done ANY fishing prior to fishing in Virginia in 2019 and/or 2020. This is our primary target audience for the focus groups (although, those who took a break from fishing but fished 2015 or earlier and then again in 2019 and/or 2020 may be a consideration and, therefore, stay in the survey and receive the focus group interest questions).

Shortname / Alias: CONFIRMNEW

ID: 22

12) *We would just like to confirm that you went recreational fishing for the FIRST time ever in [question("value"), id="15"][question("value"), id="17"][question("value"), id="38"] and that you did so in Virginia?\**

- Yes, fished for the first time ever in [question("value"), id="15"][question("value"), id="17"][question("value"), id="38"] in Virginia
- Yes, fished for the first time ever in [question("value"), id="15"][question("value"), id="17"][question("value"), id="38"], but it was outside of Virginia
- No, [question("value"), id="15"][question("value"), id="17"][question("value"), id="38"] was not the first time I have ever fished
- Do not know

## Fishing Initiation

FIRSTFISHLOC - Asked of those who indicated freshwater and/or saltwater fishing outside of Virginia in 2020, 2019, 2018, 2017, 2016, and/or 2015 or earlier, as well as those who did NOT confirm that going fishing in Virginia in 2019/2020 was their first time ever fishing.

FIRSTFISHYEAR - Asked of those who indicated having participated in any recreational fishing activity (in or outside of Virginia) in 2015 or earlier, as well as those who did NOT confirm that going fishing in 2019/2020 (in or outside of Virginia) was their first time ever fishing.

(Note that if they did NOT participate in any fishing activities in 2015 or earlier, we will be able to determine their first year fishing based on their responses to participation in 2016-2020).

FIRSTFISHYEAR - Asked of all respondents

**Logic: Hidden unless: (#12 Question "We would just like to confirm that you went recreational fishing for the FIRST time ever in [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] and that you did so in Virginia?" is not one of the following answers ("Yes, fished for the first time ever in [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] in Virginia") AND (( Question "Freshwater fishing outside of Virginia" is one of the following answers ("2016","2017","2018","2019","2020") OR Question "Saltwater fishing outside of Virginia" is one of the following answers ("2016","2017","2018","2019","2020")) OR #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is one of the following answers ("Freshwater fishing outside of Virginia","Saltwater fishing outside of Virginia"))))**

Shortname / Alias: FIRSTFISHLOC

ID: 32

13) Where did you first go fishing?

Please enter the U.S. state or territory (or country if outside of U.S.) below where you first went recreational fishing:

Validation: Max character count = 4 Min character count = 4

**Logic: Hidden unless: (#12 Question "We would just like to confirm that you went recreational fishing for the FIRST time ever in [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] and that you did so in Virginia?" is one of the following answers ("No, [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] was not the first time I have ever fished", "Do not know") OR #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is one of the following answers ("Freshwater fishing in Virginia", "Saltwater fishing in Virginia", "Freshwater fishing outside of Virginia", "Saltwater fishing outside of Virginia"))**

Shortname / Alias: FIRSTFISHYEAR

ID: 23

14) What year did you first go fishing?\*

(Fishing in general, in any state or country.)

(If unsure, please give your best estimate.)

Validation: Max character count = 2

ID: 33

15) How old were you when you first went fishing?

(If unsure, please give your best estimate.)\*

(Fishing in general, in any state or country.)

## Fishing Initiation Mentor

### All Respondents

After this question, those who did not specifically FRESHWATER fish in Virginia in 2019 nor 2020 but DID saltwater fish in Virginia in 2019 or 2020 are skipped directly to the focus group interest section. The questions that follow all pertain to freshwater fishing participation in Virginia in 2019 and/or 2020. (While those who did NOT freshwater fish in Virginia in 2019 nor 2020 are NOT our primary interest for the focus group, they may be considered for their saltwater fishing participation if it is determined to be of interest.)

After this question, those who did not fish (freshwater nor saltwater) in Virginia in 2019 nor 2020 are skipped directly to the background/demographic questions. They do not qualify for focus group participation since they are not new anglers for 2019 nor 2020, and their surveys will be marked as "disqualified" (rather than "complete").

**Page exit logic:** DID NOT FISH AT ALL IN VIRGINIA IN 2019 NOR 2020**IF:** ( Question "Freshwater fishing in Virginia" is not one of the following answers ("2019","2020") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2019","2020"))  
**THEN:** Jump to [page 32 - Background Information](#)

**Page exit logic:** SALTWATER FISHED BUT DID NOT FRESHWATER FISH VA IN 2019 NOR 2020**IF:** ( Question "Freshwater fishing in Virginia" is not one of the following answers ("2019","2020") AND Question "Saltwater fishing in Virginia" is one of the following answers ("2019","2020"))  
**THEN:** Jump to [page 28 - Focus Group Interest](#)

Shortname / Alias: FIRSTFISHWHO

ID: 34

16) *Who first took you fishing?\**

(Fishing in general, in any state or country.)

*(please check all that apply)*

- No one; first went fishing alone
- Father (or stepfather)
- Grandfather
- Uncle
- Brother
- Nephew
- Son
- Grandson
- Mother
- Sister
- Daughter
- In-laws
- Friend(s)
- Cousin(s)
- Spouse
- Boyfriend / girlfriend
- Organized group (church, school, etc.)
- Other *(please specify)*:
- Do not know

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is one of the following answers ("2020") AND Question "Freshwater fishing in Virginia" is not one of the following answers ("2019"))

### **Freshwater Fishing 2020 Introduction**

I needed separate pages to set up word piping/computation again for follow-up questions in the survey for the earliest year and the most recent year the respondent specifically freshwater fished in Virginia between 2019 and 2020.

ID: 112

Next, we would like to know more specifically about your recreational FRESHWATER fishing participation in Virginia. (Please do not include any saltwater fishing or commercial fishing activities in your answers.)

**Hidden Value: Freshwater Fished VA 2020 (but not 2019)**

Value: 2020

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is one of the following answers ("2019") AND Question "Freshwater fishing in Virginia" is not one of the following answers ("2020"))

### **Freshwater Fishing 2019 Introduction**

I needed separate pages to set up word piping/computation again for follow-up questions in the survey for the earliest year and the most recent year the respondent specifically freshwater fished in Virginia between 2019 and 2020.

ID: 114

Next, we would like to know more specifically about your recreational FRESHWATER fishing participation in Virginia. (Please do not include any saltwater fishing or commercial fishing activities in your answers.)

**Hidden Value: Freshwater Fished VA 2019 (but not 2020)**

Value: 2019

**Page entry logic:** This page will show when: ( Question "Freshwater fishing in Virginia" is one of the following answers ("2019") AND Question "Freshwater fishing in Virginia" is one of the following answers ("2020"))

### **Freshwater Fishing 2019 & 2020 Introduction**

I needed separate pages to set up word piping/computation again for follow-up questions in the survey for the earliest year and the most recent year the respondent specifically freshwater fished in Virginia between 2019 and 2020.

ID: 116

Next, we would like to know more specifically about your recreational FRESHWATER fishing participation in Virginia. (Please do not include any saltwater fishing or commercial fishing activities in your answers.)

#### **Hidden Value: Freshwater Fished VA Both 2019 and 2020 (2019 Earliest Year)**

Value: 2019

#### **Hidden Value: Freshwater Fished VA Both 2019 and 2020 (2020 Most Recent Year)**

Value: 2020

#### **Hidden Value: Freshwater Fished VA Both 2019 and 2020 (Both Years)**

Value: 2019 and 2020

#### **Hidden Value: Freshwater Fished VA Both 2019 or 2020 (Or Years)**

Value: 2019 or 2020

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2020")

### **Freshwater Fishing Timing and Avidity in Virginia in 2020**

Page asked of those who freshwater fished in Virginia in 2020

2020MONTHSFISHED - Asked of those who freshwater fished in Virginia in 2020; this question will be used to determine who to ask to also rate the specific COVID-19-related factors as reasons for fishing and can also be used to crosstab out those who participated in freshwater fishing in Virginia after quarantine started (March 2020 or later).

2020DAYSFISHED - Asked of those who freshwater fished in Virginia in 2020

COMPAREDAYSFISHED - Asked of those who freshwater fished in Virginia in 2020 AND who freshwater fished in Virginia in any one of the previous 4 years: 2019, 2018, 2017, and/or 2016

**Logic: Show/hide trigger exists. Hidden unless: Question "Freshwater fishing in Virginia" is one of the following answers ("2020")**

Shortname / Alias: 2020MONTHSFISHED

ID: 37

17) Can you please indicate which of the following months you, personally, went FRESHWATER fishing in Virginia in 2020?\*

(please check all that apply)

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October (to date)
- Do not know

Validation: Max = 366 Must be numeric Max character count = 3

**Logic: Hidden unless: Question "Freshwater fishing in Virginia" is one of the following answers ("2020")**

Shortname / Alias: 2020DAYSFISHED

ID: 43

18) Through today, how many days total have you been freshwater fishing in Virginia in 2020?\*

(If unsure, please give your best estimate.)

**Logic: Show/hide trigger exists. Hidden unless: ( Question "Freshwater fishing in Virginia" is one of the following answers ("2020") AND Question "Freshwater fishing in Virginia" is one of the following answers ("2016","2017","2018","2019"))**

Shortname / Alias: COMPAREDAYSFISHED

ID: 44

*19) You indicated that you also freshwater fished in Virginia prior to 2020 within the past 5 years.*

*Would you say you fished more days, about the same number of days, or fewer days in Virginia in 2020 than you typically did during each year you fished from 2016 to 2019?\**

- More days in 2020
- About the same
- Fewer days in 2020
- Do not know

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020")

### **Reasons for New or Increased Freshwater Fishing Participation in Virginia**

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

**WHYFISHMOREDAYS** - Asked of those who freshwater fished in Virginia in 2020, who freshwater fished in Virginia in any one of the previous 4 years: 2019, 2018, 2017, and/or 2016, AND who said they freshwater fished more in 2020 than in the previous year(s).

**WHYSTARTFISH** - Asked of those who freshwater fished in Virginia in 2019 and/or 2020 but did not indicate having participated in freshwater fishing in Virginia in 2018, 2017, 2016, or 2015 or earlier, as well as those who, when asked, did NOT confirm that they fished for the first time ever in Virginia in 2019 and/or 2020.

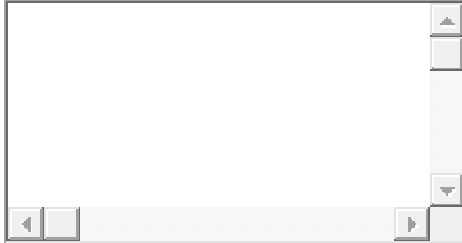
**WHYFISHAGAIN** - Asked of those who freshwater fished in Virginia in 2019 and/or 2020 and did NOT freshwater fish in Virginia in 2018, 2017, nor 2016, but DID freshwater fish in Virginia in 2015 or earlier.

**Logic: Hidden unless: #19 Question "You indicated that you also freshwater fished in Virginia prior to 2020 within the past 5 years. Would you say you fished more days, about the same number of days, or fewer days in Virginia in 2020 than you typically did during each year you fished from 2016 to 2019?" is one of the following answers ("More days in 2020")**

Shortname / Alias: WHYFISHMOREDAYS

ID: 46

20) What are the main reasons you freshwater fished MORE days in Virginia in 2020 than you typically did in each of the 4 years prior (from 2016 to 2019)?



**Logic: Hidden unless: (#12 Question "We would just like to confirm that you went recreational fishing for the FIRST time ever in [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] and that you did so in Virginia?" is one of the following answers ("Yes, fished for the first time ever in [question("value"), id="15"] [question("value"), id="17"] [question("value"), id="38"] in Virginia") OR (( Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020") AND Question "Freshwater fishing in Virginia" is not one of the following answers ("2016","2017","2018")) AND #3 Question "Which of those same activities did you participate in prior to 2016 (in 2015 or earlier)?" is not one of the following answers ("Freshwater fishing in Virginia")))**

Shortname / Alias: WHYSTARTFISH

ID: 47

21) What are the main reasons you started freshwater fishing in Virginia in [question("value"), id="113"] [question("value"), id="115"] [question("value"), id="118"]?



**Logic: Hidden unless: (( Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020") AND Question "Freshwater fishing in Virginia" is not one of the following answers ("2016","2017","2018")) AND #3 Question "Which of those same activities did you participate in *prior* to 2016 (in 2015 or earlier)?" is one of the following answers ("Freshwater fishing in Virginia"))**

Shortname / Alias: WHYFISHAGAIN

ID: 48

22) You indicated you had been freshwater fishing in Virginia prior to 2016. What are the main reasons you started freshwater fishing again in Virginia in [question('value'), id='113'] [question('value'), id='115'] [question('value'), id='118']?





Shortname / Alias: FACTORSOTHER

ID: 72

24) Are there any other important factors that influenced your decision to freshwater fish in Virginia in [question('value'), id='113'] [question('value'), id='115'] [question('value'), id='120']?

If yes, please enter them below:

A large, empty text input field with a scroll bar on the right side. The scroll bar has a small arrow pointing up and another pointing down. At the bottom of the field, there are two small navigation buttons: one with a left-pointing arrow and one with a right-pointing arrow.

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019", "2020")

### Freshwater Species Fished for in Virginia in 2019 and/or 2020

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

ID: 73

25) Which freshwater species did you fish for in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"]?\*(  
(please check all that apply)

- Smallmouth bass
- Largemouth bass
- Striped bass or Hybrid Striped Bass
- Panfish (bream, sunfish, rock bass)
- Shad or herring
- White Perch
- Crappie
- Catfish
- Walleye, Sauger, or Saugeye
- Stocked trout (Brook, Rainbow, Brown)
- Wild trout (not stocked; Brook, Rainbow, Brown)
- Northern Pike or Chain Pickerel
- Muskellunge
- Yellow Perch
- Northern Snakehead
- Anything that bites
- Other(s) (please specify):
- Do not know

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020")

### Freshwater Fishing Locations in Virginia in 2019 and/or 2020

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Shortname / Alias: VAFISHCTY

ID: 74

26) *In which one city or county did you freshwater fish most often in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"]?\**

- Accomack County
- Albemarle County
- Alexandria
- Alleghany County
- Amelia County
- Amherst County
- Appomattox County
- Arlington County
- Augusta County
- Bath County
- Bedford County
- Bland County
- Botetourt County
- Bristol
- Brunswick County
- Buchanan County
- Buckingham County
- Buena Vista
- Campbell County
- Caroline County
- Carroll County
- Charles City County
- Charlotte County
- Charlottesville

- Chesapeake
- Chesterfield County
- Clarke County
- Colonial Heights
- Covington
- Craig County
- Culpeper County
- Cumberland County
- Danville
- Dickenson County
- Dinwiddie County
- Emporia
- Essex County
- Fairfax
- Fairfax County
- Falls Church
- Fauquier County
- Floyd County
- Fluvanna County
- Franklin
- Franklin County
- Frederick County
- Fredericksburg
- Galax
- Giles County
- Gloucester County
- Goochland County
- Grayson County
- Greene County
- Greensville County

- Halifax County
- Hampton
- Hanover County
- Harrisonburg
- Henrico County
- Henry County
- Highland County
- Hopewell
- Isle of Wight County
- James City County
- King and Queen County
- King George County
- King William County
- Lancaster County
- Lee County
- Lexington
- Loudoun County
- Louisa County
- Lunenburg County
- Lynchburg
- Madison County
- Manassas
- Manassas Park
- Martinsville
- Mathews County
- Mecklenburg County
- Middlesex County
- Montgomery County
- Nelson County
- New Kent County

- Newport News
- Norfolk
- Northampton County
- Northumberland County
- Norton
- Nottoway County
- Orange County
- Page County
- Patrick County
- Petersburg
- Pittsylvania County
- Poquoson
- Portsmouth
- Powhatan County
- Prince Edward County
- Prince George County
- Prince William County
- Pulaski County
- Radford
- Rappahannock County
- Richmond
- Richmond County
- Roanoke
- Roanoke County
- Rockbridge County
- Rockingham County
- Russell County
- Salem
- Scott County
- Shenandoah County

- Smyth County
- Southampton County
- Spotsylvania County
- Stafford County
- Staunton
- Suffolk
- Surry County
- Sussex County
- Tazewell County
- Virginia Beach
- Warren County
- Washington County
- Waynesboro
- Westmoreland County
- Williamsburg
- Winchester
- Wise County
- Wythe County
- York County
- Do not know

Validation: Must be numeric

Shortname / Alias: MILES

ID: 75

27) How far, in miles, one-way, did you typically travel to the site where you most often freshwater fished in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"]?\*

(If unsure, please give your best estimate.)

(If less than 1 mile, please enter 0.)

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019", "2020")

### Freshwater Fishing Locations and Types of Water in Virginia in 2019 and/or 2020

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Validation: Must be numeric

Shortname / Alias: SITES

ID: 76

28) How many different sites or locations would you say you freshwater fished at in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"]?\*

(If unsure, please give your best estimate.)

Shortname / Alias: LANDWATERTYPE

ID: 77

29) When freshwater fishing in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"], did you fish mostly on public land or waters, mostly on private land with inland waters, or both about equally?\*

- Mostly on public land / waters
- Mostly on private land with inland waters
- Both about equally
- Do not know

**Logic: Show/hide trigger exists.**

Shortname / Alias: WATERTYPES2

ID: 78

30) In which types of water did you freshwater fish in Virginia in [question("value"), id="113"] [question("value"), id="115"] [question("value"), id="120"]?\*

(please check all that apply)

- Public lakes or reservoirs, greater than 500 acres  
(Examples: Smith Mountain, Kerr, Chickahominy, Moomaw, Briery Creek)
- Public lakes, reservoirs, or ponds, less than 500 acres
- Rivers or streams
- Other (please specify):
- Do not know

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019", "2020")

**Urban Fishing Participation**

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

**Logic: Show/hide trigger exists.**

Shortname / Alias: FISHURBAN

ID: 81

31) Did you fish at any urban fishing sites or locations in Virginia in [question("value"), id="113"] [question("value"), id="115"] [question("value"), id="121"]?\*

- Yes
- No
- Do not know

**Logic: Hidden unless: #31 Question "Did you fish at any urban fishing sites or locations in Virginia in [question("value"), id="113"] [question("value"), id="115"] [question("value"), id="121"]?" is one of the following answers ("Yes")**

Shortname / Alias: RATEURBAN

ID: 83

32) How would you rate your experiences fishing at urban fishing sites in Virginia in [question("value"), id="113"] [question("value"), id="115"] [question("value"), id="121"] ?\*

- Very good
- Good
- Fair
- Bad
- Very bad
- Do not know

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019", "2020")

### Freshwater Fishing Companions in Virginia in 2019 and/or 2020

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Shortname / Alias: TYPCLYFISHWHO

ID: 84

33) Who did you typically go freshwater fishing with in Virginia in [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"]?\*

(please check all that apply)

- No one; typically went alone
- Father (or stepfather)
- Grandfather
- Uncle
- Brother
- Nephew
- Son
- Grandson
- Mother
- Sister
- Daughter
- In-laws
- Friend(s)
- Cousin(s)
- Spouse
- Boyfriend / girlfriend
- Organized group (church, school, etc.)
- Other (please specify):
- Do not know

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020")

**Sources of Information for Freshwater Fishing in Virginia in 2019 and/or 2020**

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Shortname / Alias: INFOSOURCES

ID: 85

34) In [question("value"), id="113"][question("value"), id="115"][question("value"), id="120"], what sources did you use or where did you look for information about freshwater fishing in Virginia?\*

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020")

**Likelihood of Freshwater Fishing in Virginia in 2021**

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Shortname / Alias: FISHAFTERCOVID

ID: 86

35) Assuming that the pandemic is resolved and you are able to resume your normal work obligations and social activities soon, how likely are you to go freshwater fishing in Virginia next year in 2021, on a scale of 0 to 10, where 0 is not at all likely and 10 is extremely likely?\*

	Not at all likely 0	1	2	3	4	5	6	7	8	9	Extremely likely 10	Do not know
--	------------------------	---	---	---	---	---	---	---	---	---	------------------------	-------------

**Page entry logic:** This page will show when: Question "Freshwater fishing in Virginia" is one of the following answers ("2019","2020")

### **Anticipated Freshwater Fishing Frequency in 2021**

Page asked of those who freshwater fished in Virginia in 2019 and/or 2020

Shortname / Alias: FISHMORELESS

ID: 87

*36) Again, assuming your work and social activities return to normal soon and assuming that you do go fishing in Virginia in 2021, do you think you will go fishing more, about the same amount, or less than you have in [question('value'), id='113'] [question('value'), id='115'] [question('value'), id='119']?\**

- More
- About the same
- Less
- Do not know

## Focus Group Interest

Focus Group Interest asked of those who freshwater fished in Virginia in 2019 and/or 2020

They may or may not have also saltwater fished in Virginia in 2019 and/or 2020 and they may or may not have freshwater or saltwater fished in Virginia in 2018, 2017, 2016, or 2015 or earlier.

Our priority for focus groups are those who are truly new anglers: they freshwater fished in Virginia in 2019 and/or 2020 but did not freshwater nor saltwater fish in Virginia or anywhere else at all prior to 2019.

**Logic: Show/hide trigger exists.**

Shortname / Alias: FGINTEREST

ID: 88

A series of virtual (online) focus groups with Virginia licensed anglers will be conducted for the Virginia Department of Wildlife Resources by Responsive Management to obtain more detailed information on fishing participation in 2019 and 2020, as well as fishing preferences, information and resource needs for anglers, and opinions on local fishing opportunities.

Focus groups are in-depth, structured discussion with a small group of participants (generally 10 to 12 individuals) and are an accepted research technique for qualitative explorations of attitudes, opinions, behaviors, and more. These groups will be conducted via Zoom, or another appropriate online meeting service at some point between October 19 and October 29, 2020.

Focus group participants will be paid \$100 for their time. Participants must have reliable internet access and the ability to participate via Zoom or another online meeting service. Participants may participate in only one group and must be at least 18 years old. The discussion is for research purposes only; you will not be asked for sign up for, buy, or donate anything.

All groups will take place in the evening, usually starting at 5:00 or 6:00 p.m., and will last no longer than 2 hours.

Please note that indicating interest in participating does not guarantee selection for participation. Potential respondents will be randomly selected from among all qualifying respondents who indicate interest.

*37) Are you interested in participating in an online focus group discussion about fishing in Virginia?\**

- YES, I am interested and will likely be able to do so between October 19 and October 29, 2020
- I am interested but most likely cannot do so between October 19 and October 29, 2020
- NO, I am not interested in participating in an online focus group

**Page entry logic:** This page will show when: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("YES, I am interested and will likely be able to do so between October 19 and October 29, 2020", "I am interested but most likely cannot do so between October 19 and October 29, 2020")

### Focus Group Dates

**FGABLETOPART** - Asked of those who are interested and able to participate in a focus group during the designated time period.

**FGALTERNATES** - Asked of those who are interested but unable to participate in a focus group during the designated time period.

**Logic: Hidden unless: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("YES, I am interested and will likely be able to do so between October 19 and October 29, 2020")**

Shortname / Alias: FGABLETOPART

ID: 89

Thank you very much for your interest in participating in a focus group discussion about fishing in Virginia! We have just a few more questions related to focus group participation.

*38) In general, are you able to participate in a focus group discussion during the evening hours on a date that occurs between October 19 and October 29, 2020?*

*(The focus group requires only two hours on one evening during that timeframe. We understand that not everyone would be available every evening, but in general, would you most likely be able to participate one evening at some point during that timeframe?)\**



Yes



No



Do not know

**Logic: Hidden unless: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("I am interested but most likely cannot do so between October 19 and October 29, 2020")**

Shortname / Alias: FGALTERNATES

ID: 90

39) Thank you very much for your interest in participating in a focus group discussion about fishing in Virginia. At this time, we are planning for the groups to occur during that time period (October 19 to October 29, 2020). Although you do not think you can participate that week, we have noted your interest and will keep you in mind if the dates change. Please indicate the best date(s) in October for you to participate in an evening focus group discussion:

(The focus group requires only two hours on a single evening.)

**Page entry logic:** This page will show when: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("YES, I am interested and will likely be able to do so between October 19 and October 29, 2020", "I am interested but most likely cannot do so between October 19 and October 29, 2020")

### Focus Group Technology

Page asked of those who are interested in participated in a focus group (regardless of date availability).

Shortname / Alias: FGTECH

ID: 91

40) Please indicate which of the following you have available to you for participating in the virtual focus group discussion:\*

(Please select if yes, it is available to you.)

- Reliable internet service or access
- Desktop computer, laptop, or other internet-capable device with a camera and microphone
- An already established Zoom account (Note: This is not necessary to be able to participate in the focus group; we are only measuring ease of access to Zoom.)
- An already established account with an online meeting service other than Zoom (if yes, please specify service(s) (please specify):: )

- None of these

Shortname / Alias: FGDOWNLOAD

ID: 92

41) Are you willing to download Zoom or another service onto your computer or device to participate in the focus group?\*

- Yes
- No

**Page entry logic:** This page will show when: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("YES, I am interested and will likely be able to do so between October 19 and October 29, 2020", "I am interested but most likely cannot do so between October 19 and October 29, 2020")

### Respondent Contact Information

Page asked of those who are interested in participated in a focus group (regardless of date availability).

**Logic: Hidden unless: #37 Question "Are you interested in participating in an online focus group discussion about fishing in Virginia?" is one of the following answers ("YES, I am interested and will likely be able to do so between October 19 and October 29, 2020")**

ID: 95

Thank you. We will be contacting potential focus group participants within the next few weeks. Again, please note that indicating interest in participating does not guarantee selection for participation. Potential respondents will be randomly selected from among all qualifying respondents to this survey.

Shortname / Alias: FGCONTACTINFO

ID: 93

42) Please provide your name and the best phone number and email address at which to contact you about the focus group:

(Your information will not be used for any other purposes, nor will it be sold.)

First Name::

Last Name::

Phone Number:

(Format 555-123-4567):

Email Address::

## Background Information

### All Respondents

**Page exit logic: DID NOT FISH VA 2019 NOR 2020 DISQUALIFYIF:** (( Question "Freshwater fishing in Virginia" is not one of the following answers ("2016","2017","2018","2019","2020") AND Question "Saltwater fishing in Virginia" is not one of the following answers ("2016","2017","2018","2019","2020")) OR ( Question "Freshwater fishing in Virginia" is one of the following answers ("None of these") AND Question "Saltwater fishing in Virginia" is one of the following answers ("None of these"))) **THEN:** Disqualify and display: "Thank you, your completed survey has been submitted. We appreciate your time and participation."

**Logic: Show/hide trigger exists.**

Shortname / Alias: VARESCTY

ID: 97

Great, you are almost finished. The final questions are for background information and help us analyze the results.

*43) What Virginia city or county do you currently live in?*

- Accomack County
- Albemarle County
- Alexandria
- Alleghany County
- Amelia County
- Amherst County
- Appomattox County
- Arlington County
- Augusta County
- Bath County
- Bedford County
- Bland County
- Botetourt County
- Bristol
- Brunswick County
- Buchanan County
- Buckingham County
- Buena Vista

- Campbell County
- Caroline County
- Carroll County
- Charles City County
- Charlotte County
- Charlottesville
- Chesapeake
- Chesterfield County
- Clarke County
- Colonial Heights
- Covington
- Craig County
- Culpeper County
- Cumberland County
- Danville
- Dickenson County
- Dinwiddie County
- Emporia
- Essex County
- Fairfax
- Fairfax County
- Falls Church
- Fauquier County
- Floyd County
- Fluvanna County
- Franklin
- Franklin County
- Frederick County
- Fredericksburg
- Galax

- Giles County
- Gloucester County
- Goochland County
- Grayson County
- Greene County
- Greensville County
- Halifax County
- Hampton
- Hanover County
- Harrisonburg
- Henrico County
- Henry County
- Highland County
- Hopewell
- Isle of Wight County
- James City County
- King and Queen County
- King George County
- King William County
- Lancaster County
- Lee County
- Lexington
- Loudoun County
- Louisa County
- Lunenburg County
- Lynchburg
- Madison County
- Manassas
- Manassas Park
- Martinsville

- Mathews County
- Mecklenburg County
- Middlesex County
- Montgomery County
- Nelson County
- New Kent County
- Newport News
- Norfolk
- Northampton County
- Northumberland County
- Norton
- Nottoway County
- Orange County
- Page County
- Patrick County
- Petersburg
- Pittsylvania County
- Poquoson
- Portsmouth
- Powhatan County
- Prince Edward County
- Prince George County
- Prince William County
- Pulaski County
- Radford
- Rappahannock County
- Richmond
- Richmond County
- Roanoke
- Roanoke County

- Rockbridge County
- Rockingham County
- Russell County
- Salem
- Scott County
- Shenandoah County
- Smyth County
- Southampton County
- Spotsylvania County
- Stafford County
- Staunton
- Suffolk
- Surry County
- Sussex County
- Tazewell County
- Virginia Beach
- Warren County
- Washington County
- Waynesboro
- Westmoreland County
- Williamsburg
- Winchester
- Wise County
- Wythe County
- York County
- Not currently a Virginia resident
- Do not know

**Logic: Hidden unless: #43 Question "What Virginia city or county do you currently live in?" is one of the following answers ("Not currently a Virginia resident", "Do not know")**

Shortname / Alias: CURRENTRES

ID: 109

44) What is your current state (or territory or country) of residence?

Please enter the U.S. state or territory (or country if outside of U.S.) below where you first went recreational fishing:

Validation: Must be numeric

ID: 98

45) What is your zip code?

Shortname / Alias: RESIDENCE

ID: 100

46) *Do you consider your place of residence to be a large city or urban area, a suburban area, a small city or town, a rural area on a farm or ranch, or a rural area NOT on a farm or ranch?*

- Large city or urban area
- Suburban area
- Small city or town
- Rural area on a farm or ranch
- Rural area NOT on a farm or ranch
- Do not know

Shortname / Alias: RACE

ID: 101

47) What races or ethnic backgrounds do you consider yourself?  
(please check all that apply)

- White or Caucasian
- Black or African-American
- Hispanic or Latino (includes Mexican, Central American, etc.)
- Native American or Alaskan native or Aleutian
- Native Hawaiian
- Middle Eastern
- East Asian (from Japan, China, Korea, Philippines, etc.)
- South Asian (from India, Pakistan, Bangladesh, etc.)
- African (NOT African-American)
- Other (please specify):
- Do not know

Validation: Max = 108 Must be numeric Whole numbers only Positive numbers only

Shortname / Alias: AGE

ID: 102

48) What is your age?

ID: 103

49) Are you...?

- Male
- Female
- Prefer to self-describe::
- Prefer not to answer

**Thank You!****ID: 1**

Thank you, your completed survey has been submitted. We appreciate your time and participation.

(You will be redirected to the [Virginia Department of Wildlife Resources](#) website shortly.)

**Action: URL Redirect: New URL Redirect**

---

## ABOUT RESPONSIVE MANAGEMENT

Responsive Management is an internationally recognized survey research firm specializing in natural resource and outdoor recreation issues. Our mission is to help natural resource and outdoor recreation agencies, businesses, and organizations better understand and work with their constituents, customers, and the public. Focusing only on natural resource and outdoor recreation issues, Responsive Management has conducted telephone, mail, and online surveys, as well as multi-modal surveys, on-site intercepts, focus groups, public meetings, personal interviews, needs assessments, program evaluations, marketing and communication plans, and other forms of human dimensions research measuring how people relate to the natural world for more than 30 years. Utilizing our in-house, full-service survey facilities with 75 professional interviewers, we have conducted studies in all 50 states and 15 countries worldwide, totaling more than 1,000 human dimensions projects *only* on natural resource and outdoor recreation issues.

Responsive Management has conducted research for every state fish and wildlife agency and every federal natural resource agency, including the U.S. Fish and Wildlife Service, the National Park Service, the U.S. Forest Service, Bureau of Land Management, U.S. Coast Guard, and the National Marine Fisheries Service. Additionally, we have also provided research for all the major conservation NGOs including the Archery Trade Association, the American Sportfishing Association, the Association of Fish and Wildlife Agencies, Dallas Safari Club, Ducks Unlimited, Environmental Defense Fund, the Izaak Walton League of America, the National Rifle Association, the National Shooting Sports Foundation, the National Wildlife Federation, the Recreational Boating and Fishing Foundation, the Rocky Mountain Elk Foundation, Safari Club International, the Sierra Club, Trout Unlimited, and the Wildlife Management Institute.

Other nonprofit and NGO clients include the American Museum of Natural History, the BoatUS Foundation, the National Association of Conservation Law Enforcement Chiefs, the National Association of State Boating Law Administrators, and the Ocean Conservancy. As well, Responsive Management conducts market research and product testing for numerous outdoor recreation manufacturers and industry leaders, such as Winchester Ammunition, Vista Outdoor (whose brands include Federal Premium, CamelBak, Bushnell, Primos, and more), Trijicon, Yamaha, and others. Responsive Management also provides data collection for the nation's top universities, including Auburn University, Clemson University, Colorado State University, Duke University, George Mason University, Michigan State University, Mississippi State University, North Carolina State University, Oregon State University, Penn State University, Rutgers University, Stanford University, Texas Tech, University of California-Davis, University of Florida, University of Montana, University of New Hampshire, University of Southern California, Virginia Tech, West Virginia University, Yale University, and many more.

Our research has been upheld in U.S. Courts, used in peer-reviewed journals, and presented at major wildlife and natural resource conferences around the world. Responsive Management's research has also been featured in many of the nation's top media, including *Newsweek*, *The Wall Street Journal*, *The New York Times*, CNN, National Public Radio, and on the front pages of *The Washington Post* and *USA Today*.

**[responsivemanagement.com](http://responsivemanagement.com)**