

Responsive Management™



ARIZONA RESIDENTS' OPINIONS ON THE ARIZONA GAME AND FISH DEPARTMENT AND OUTDOOR RECREATION IN ARIZONA

TELEPHONE SURVEY AND TRENDS STUDY

Conducted for the Arizona Game and Fish Department

by Responsive Management

2018

**ARIZONA RESIDENTS' OPINIONS ON
THE ARIZONA GAME AND FISH DEPARTMENT
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Acknowledgments

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EXECUTIVE SUMMARY

This trends study was conducted for the Arizona Game and Fish Department (hereinafter referred to as the Department) to determine residents' participation in and satisfaction with outdoor recreation, their attitudes toward wildlife, and their opinions regarding the Department and its priorities. The study is a continuation of a series of similar surveys conducted for the Department since 1992. The study entailed a scientific telephone survey of Arizona residents.

METHODOLOGY

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones among Arizona residents (both landlines and cell phones were sampled in their proper proportions). Additionally, telephone surveys, relative to mail or Internet surveys, allow for more scientific sampling and data collection, provide higher quality data, obtain higher response rates, are more timely, and are more cost-effective.

Telephone surveys also have better representation of the sample than do surveys that are read by the respondent (i.e., mail and Internet surveys) because the latter systematically exclude those who are not literate enough to complete the surveys or who would be intimidated by having to complete a written survey—by an estimate of the U.S. Department of Education's National Institute of Literacy (2016), up to 43% of the general population read no higher than a "basic level," suggesting that they would be reticent to complete a survey that they have to read to themselves. Finally, telephone surveys also have fewer negative effects on the environment than do mail surveys because of reduced use of paper and reduced energy consumption for delivering and returning the questionnaires.

The telephone survey questionnaire was developed cooperatively by Responsive Management and the Department. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

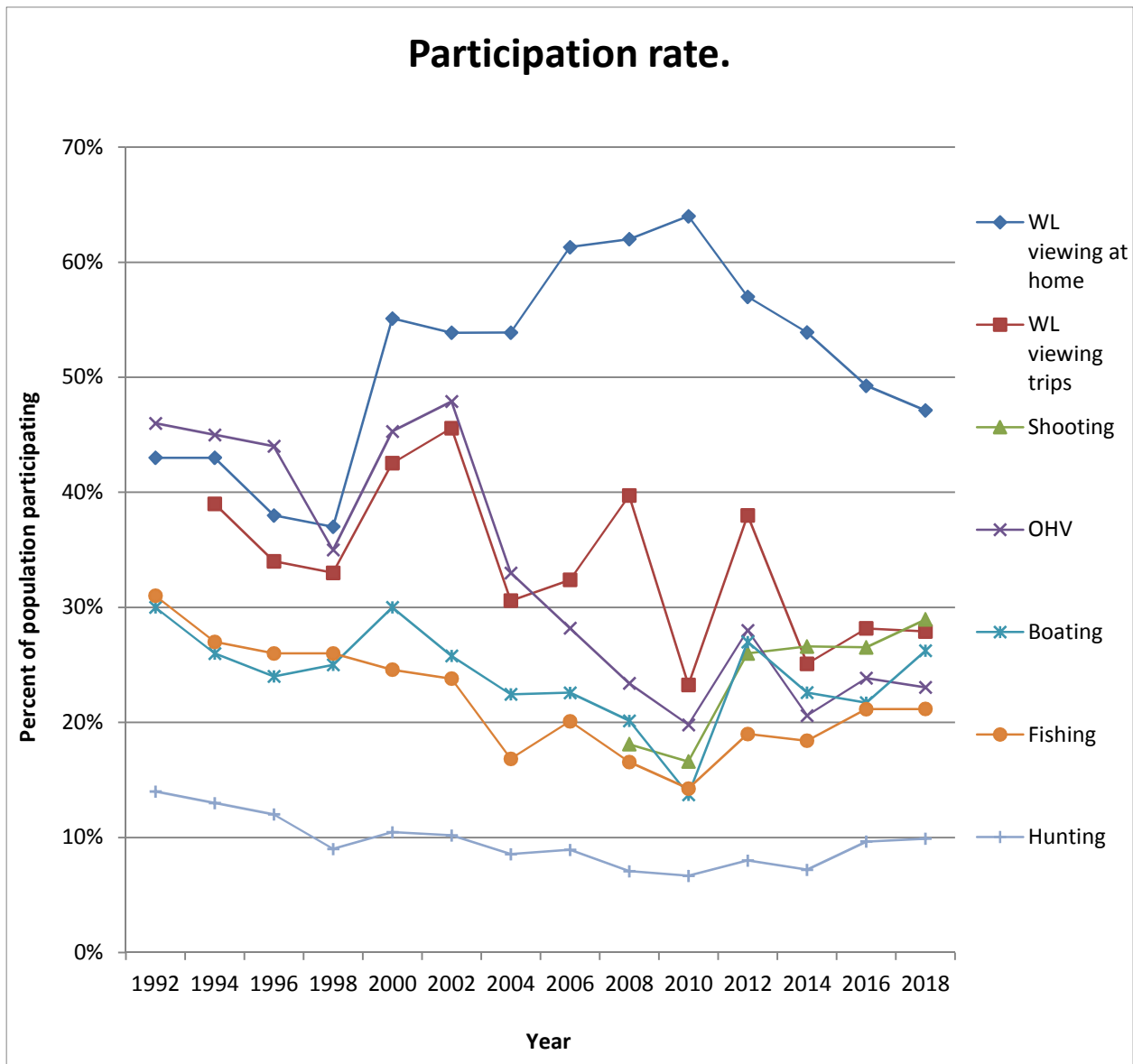
The sample of Arizona residents was obtained from SSI and MSG, firms that specialize in providing scientifically valid samples for survey research. Both landlines and cell phones were sampled in their proper proportions. Telephone surveying times are Monday through Friday from

noon to 9:00 p.m., Saturday from noon to 5:00 p.m., and Sunday from 5:00 p.m. to 9:00 p.m., local time. The survey was conducted in May and June 2018.

The software used for data collection was Questionnaire Programming Language. Responsive Management obtained a total of 833 completed interviews. The analysis of data was performed using IBM SPSS Statistics as well as proprietary software developed by Responsive Management.

PARTICIPATION IN OUTDOOR RECREATION

- The survey asked about seven outdoor activities, as shown in the graph of trends on the following page.
 - Boating participation shows a rise from 21.7% in 2016 to 26.2% in 2018, a statistically significant difference ($p < .01$). All other differences in the six remaining activities are *not* statistically significant.
 - Of those activities, current participation levels are shown, with wildlife viewing being the most popular, as nearly half of Arizona residents did so at home—47%—in the past 12 months, while 28% took a wildlife viewing trip during that time. Just under a third went target or recreational shooting (29%), and slightly more than a quarter did so with firearms (26%).

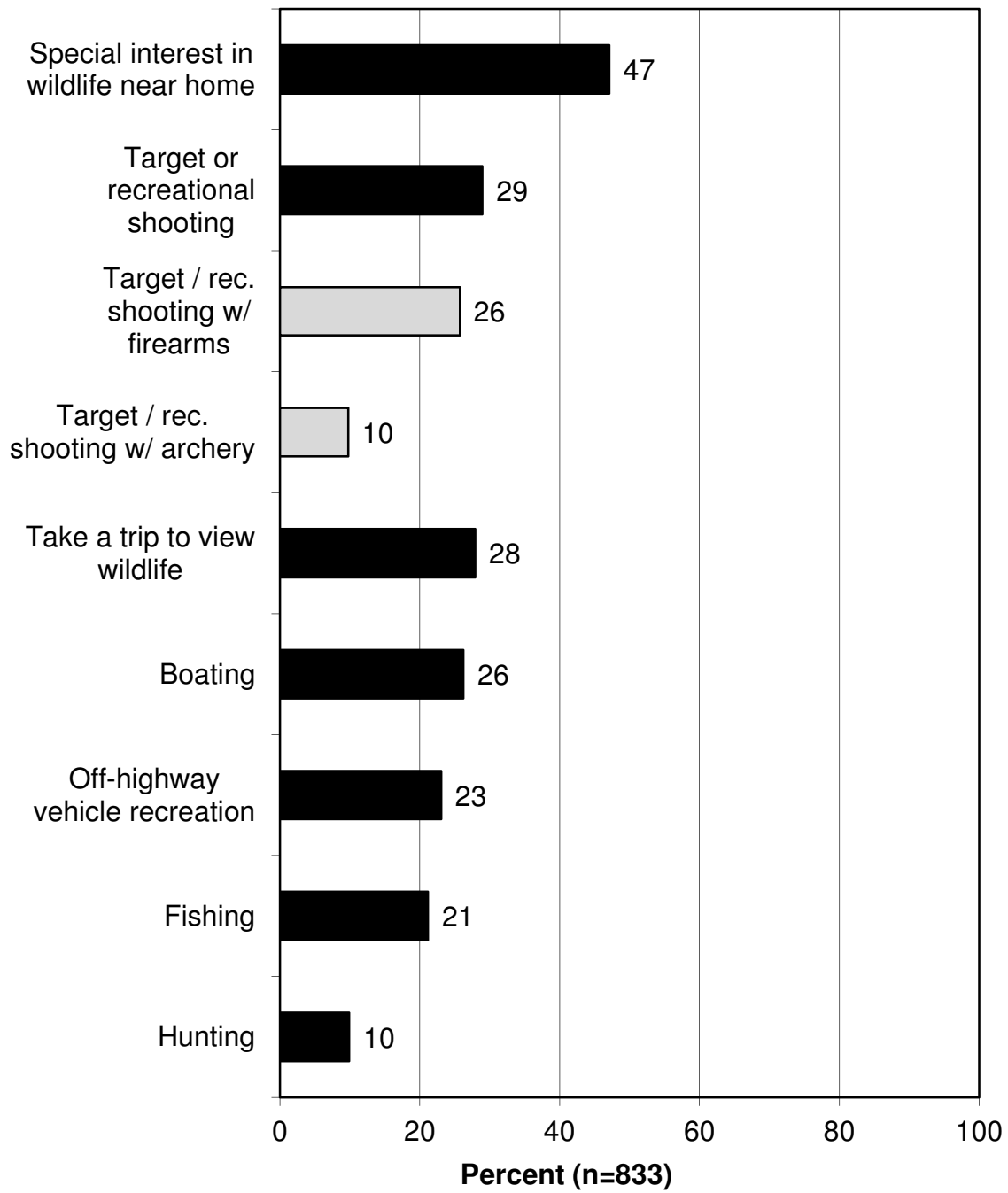


Graph produced in color; may lose some legibility if printed in black and white.

Trend in Participation Rate

	Participation Rate in 2016	Participation Rate in 2018	χ^2	Significant
Wildlife viewing at home	49.3%	47.1%	0.491	No
Target / Rec. Shooting	26.5%	28.9%	1.218	No
Wildlife Viewing Trip	28.2%	27.9%	0.001	No
Boating	21.7%	26.2%	4.556	Yes ($p < .05$)
Off-Highway Driving	23.9%	23.1%	0.114	No
Fishing	21.1%	21.2%	0.006	No
Hunting	9.6%	9.9%	0.032	No

Activities done in the past 12 months in Arizona.



- For each activity that the respondent had participated in, the survey asked about days of participation (except for wildlife viewing at home). A tabulation is presented showing a summary of the six activities about which the days questions were asked.
 - The highest means are for off-highway driving (28.5 days) and wildlife viewing trips (20.2 days). Boaters have the lowest mean (9.9 days), and target shooters and boaters are the most likely to go only a single day.

Days Participating in the Various Activities

	Mean Days Participated	Median Days Participated	Percentage Who Participated Only 1 Day	Percentage Who Participated From 1-5 Days	Percentage Who Participated From 6-10 Days	Percentage Who Participated More Than 10 Days
Target / Rec. Shooting	17.6	5	17	55	15	29
Wildlife Viewing Trip	20.2	7	14	42	18	37
Boating	9.9	3	15	59	13	23
Off-Highway Driving	28.5	10	6	37	13	47
Fishing	12.4	6	8	45	19	34
Hunting	16.5	10	7	23	31	45

SATISFACTION WITH OUTDOOR RECREATION IN ARIZONA

- The survey asked participants about their satisfaction with the activities that they had done (except for wildlife viewing at home, for which satisfaction was not asked).
 - Satisfaction for all activities had a slight decrease across the board from 2016 to 2018; however, only in sport shooting was the difference statistically significant.
 - In the 2018 survey, satisfaction ranged from 80% for fishing to 95% for boating, and dissatisfaction ranged from 0% to 12%, with anglers being the most dissatisfied, although still with a huge majority being satisfied (80% of anglers were satisfied; 12% were dissatisfied).
 - The tabulation on the following page is shown in the order of highest participation rate to lowest in 2018.

Trend in Satisfaction With the Various Activities

	Percentage Satisfied in 2016	Percentage Satisfied in 2018	X ²	Significant
Target / Rec. Shooting	96.2%	91.2%	4.814	Yes (p < .05)
Wildlife Viewing Trip	95.7%	93.6%	1.006	No
Boating	97.2%	95.4%	0.852	No
Off-Highway Driving	96.1%	93.6%	1.249	No
Fishing	87.5%	80.4%	3.211	No
Hunting	92.1%	90.5%	0.124	No

Current Satisfaction With the Various Activities

	Percentage Very Satisfied	Percentage Somewhat Satisfied	Percentage Overall Satisfied	Percentage Very Dissatisfied	Percentage Somewhat Dissatisfied	Percentage Overall Dissatisfied
Target / Recreational Shooting	65	26	91	0	2	2
Wildlife Viewing Trip	60	33	94	0	0	0
Boating	60	35	95	1	3	4
Off-Highway Driving	64	30	94	0	3	3
Fishing	48	32	80	4	9	12
Hunting	49	41	91	0	8	9

CONSTRAINTS TO PARTICIPATION IN FISHING AND HUNTING

- As with past surveys, the most important constraints to fishing participation (asked of both anglers and non-anglers) are not related to the resource but are, instead, social issues. This year, age/health topped the list (10% said that this was their top constraint), followed by lack of time (because of work, family, or in general). The primary constraint over which the Department has some influence is lack of access to places to fish (2%).
- The survey asked everybody (both hunters and non-hunters) about respondents' top hunting constraints, and, other than lack of interest, a top constraint among the general population is not wanting to hurt or kill animals (6%), followed by social issues of age/health (5%) and work obligations (4%). Of interest to the agency is that 3% responded with difficulty getting a draw or getting tags.

INTEREST IN PARTICIPATING IN OUTDOOR RECREATION AMONG NON-PARTICIPANTS

- Respondents were asked about their interest in participating in each activity in which they had not done. The activity with the highest percentage of nonparticipants being *extremely* or *very* interested is boating (17% are *extremely* or *very* interested), which is followed by three fairly close together: taking a wildlife viewing trip (13%), fishing (13%), and target or recreational shooting including archery (12%). (The questions was asked of those who had not participated.)
 - The tabulation is shown in the order of highest participation rate to lowest.

Interest in the Various Activities Among Non-Participants

	Percentage Extremely Interested	Percentage Very Interested	Percentage Extremely or Very Interested	Percentage Somewhat Interested	Percentage Overall Interested	Percentage Not at All Interested
Target / Recreational Shooting	5	6	12	16	28	72
Taking a Wildlife Viewing Trip	4	9	13	32	44	54
Boating	5	12	17	29	46	53
Off-Highway Driving	3	6	9	19	28	71
Fishing	4	9	13	23	36	63
Hunting	3	3	6	9	14	85

Any apparent discrepancies in sums are caused by rounding on the graphs; calculation of sums was performed on unrounded numbers.

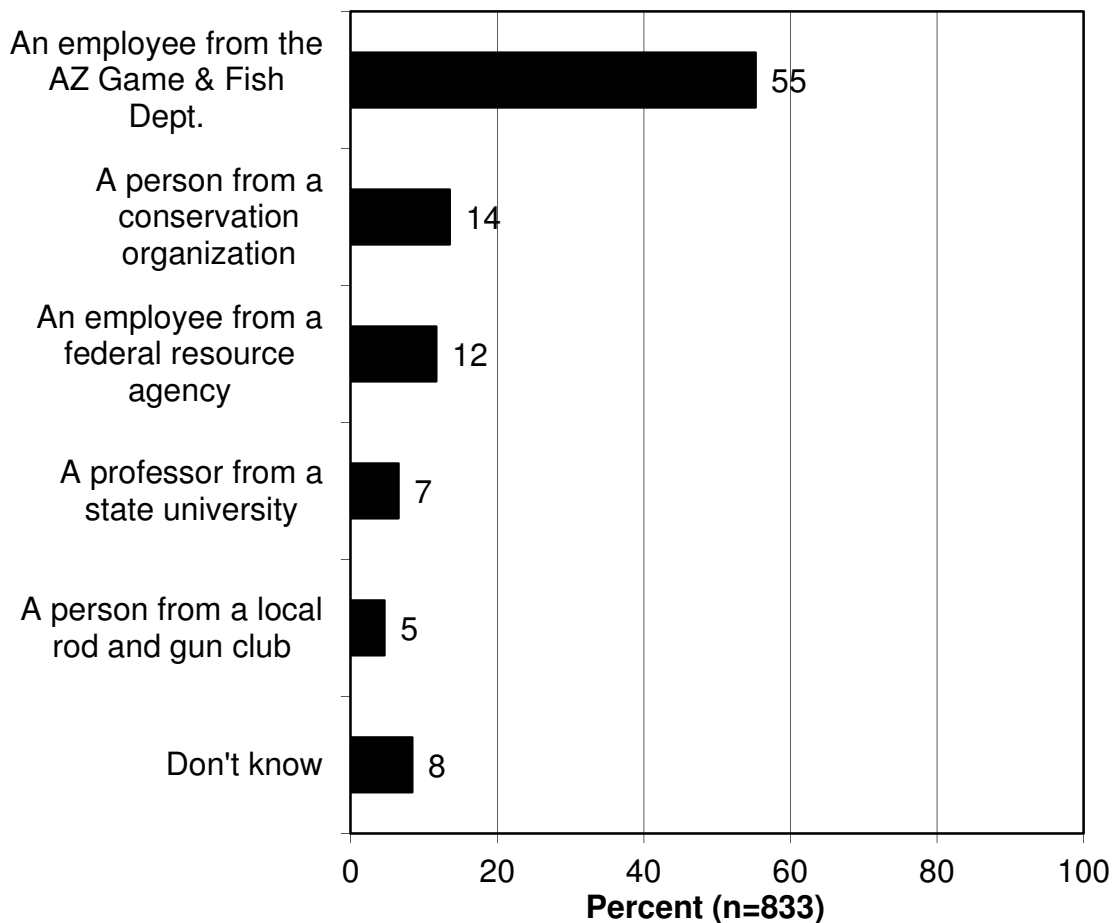
SOURCES OF INFORMATION ABOUT WILDLIFE

➤ The survey asked about the credibility of five sources of information on wildlife issues.

Credibility is highest for the Department: when asked to name the most credible source of information from a list of five possible sources, a majority of all residents (55%) say that an employee from the Arizona Game and Fish Department is the most credible. The remaining sources range from 5% to 14% saying the source is the most credible.

- Regarding the trend, there was no statistically significant difference between 2016 (when 54.7% said the AZ Game and Fish Department) and 2018 (when 55.2% gave this response).

Q78-82. Overall, what source of information on wildlife issues in Arizona would you consider to be the most credible?



KNOWLEDGE AND RATINGS OF THE ARIZONA GAME AND FISH DEPARTMENT

- Half of Arizona residents (50%) named the Arizona Game and Fish Department or a close derivative of the agency name as the government agency with primary responsibility for managing Arizona's wildlife (although only a third—33%—gave the absolutely correct name).

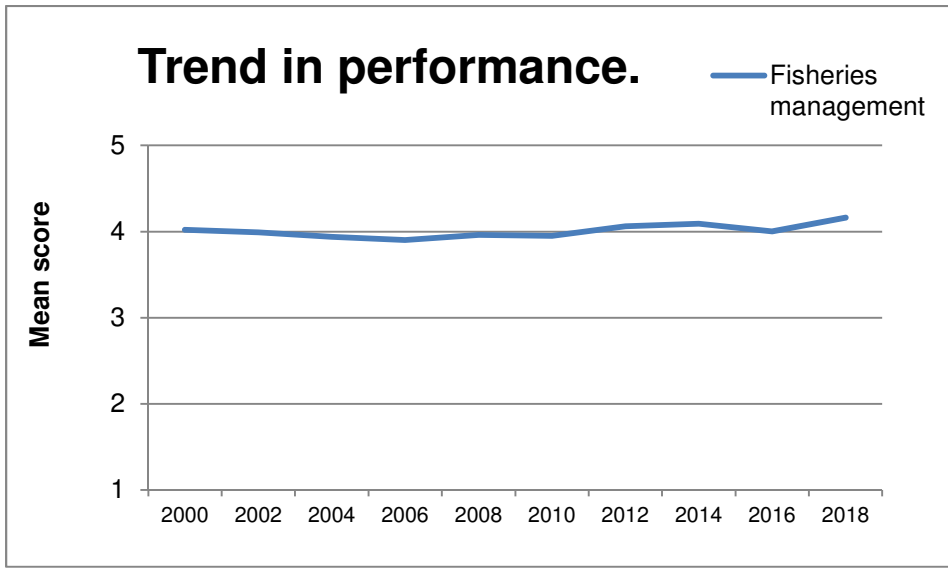
- The Department's overall performance rating is highly positive, with 69% giving a rating of *excellent* or *good*, while 1% give a rating of *poor* or *very poor*. Just under a quarter of residents (22%) do not know what rating to give.

- When presented with seven programs or areas of the Department and asked to indicate which one needs the most improvement, the top responses are off-highway vehicle management, watercraft safety and boating law enforcement, and shooting sports management.

- The survey asked respondents to rate the Department's performance in each of the aforementioned seven programs/areas. They are ranked by the percentage giving an *excellent* or *good* rating in 2018 (the positive end of the scale).
 - The mean scores in 2018 are all slightly up from 2016, and these are statistically significant gains for all the items.
 - The top areas currently are fisheries management (53% rate it *excellent* or *good*; only 2% rate it *poor* or *very poor*), game management (52% rate it *excellent* or *good*; 2% rate it *poor* or *very poor*), watercraft safety/enforcement of boating laws (51% *excellent* or *good*; 5% *poor* or *very poor*), and nongame wildlife (50% *excellent* or *good*; 2% *poor* or *very poor*)—all with at least 50% giving a rating in the top half of the scale. For all areas, a substantial percentage did not know what rating to give.

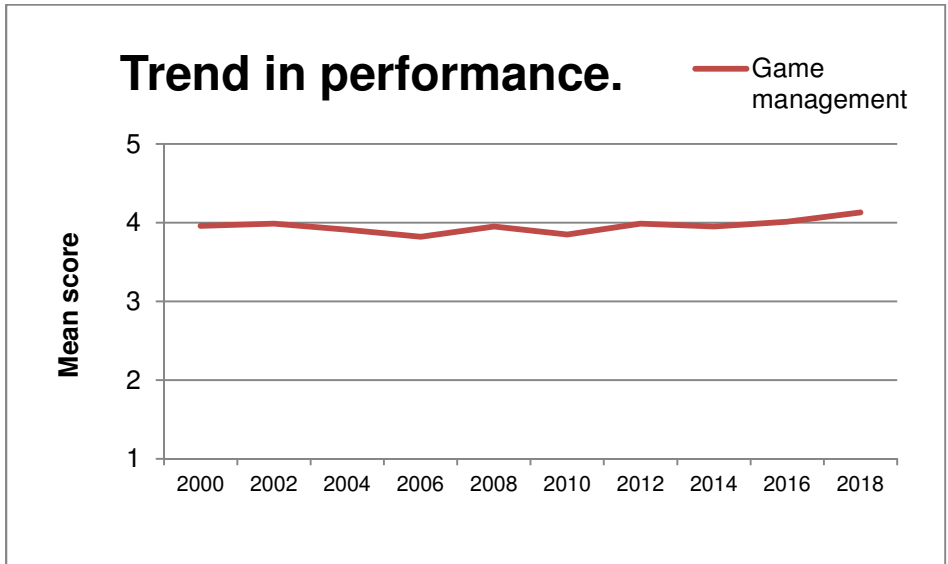
Trend in Performance Ratings

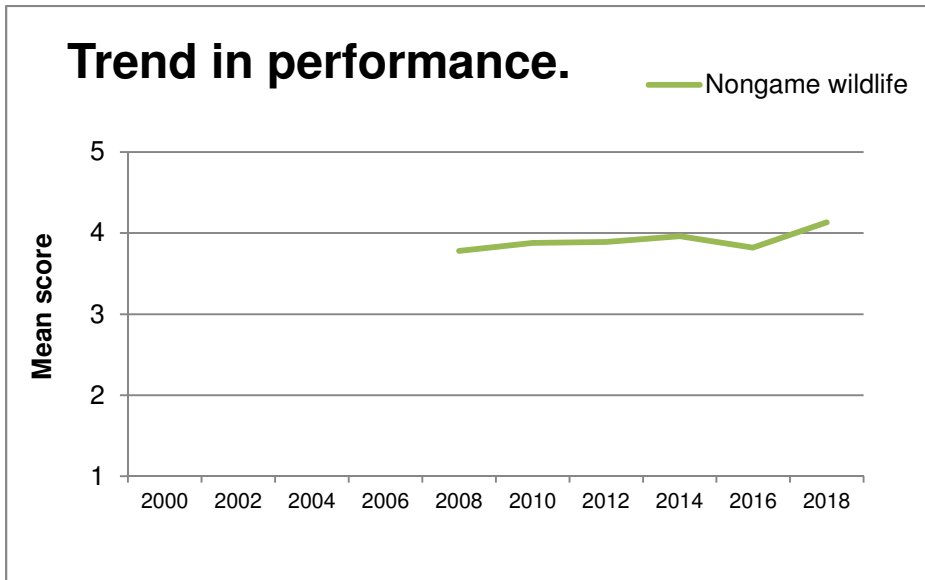
	Mean Score in 2016	Mean Score in 2018	<i>r</i>	Significant
Q98. How would you rate the Department in fisheries management?	4.0	4.2	.101	Yes (p < .01)
Q99. How would you rate the Department in watercraft safety and enforcement of boating laws?	4.0	4.1	.070	Yes (p < .05)
Q100. How would you rate the Department in off-highway vehicle management?	3.7	3.8	.095	Yes (p < .01)
Q101. How would you rate the Department in recreational shooting sports?	3.9	4.0	.087	Yes (p < .01)
Q102. How would you rate the Department in game management?	4.0	4.1	.072	Yes (p < .05)
Q103. How would you rate the Department in watchable wildlife information and opportunities?	3.9	4.1	.090	Yes (p < .01)
Q104. How would you rate the Department in nongame wildlife?	3.8	4.1	.184	Yes (p < .01)



Mean score calculated based on these values:

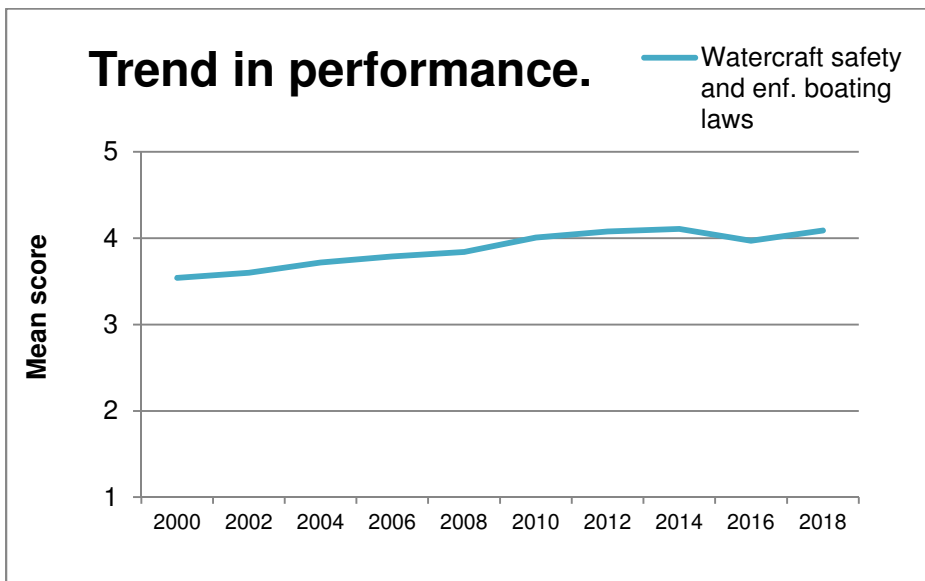
- Excellent = 5
- Good = 4
- Fair = 3
- Poor = 2
- Very poor = 1

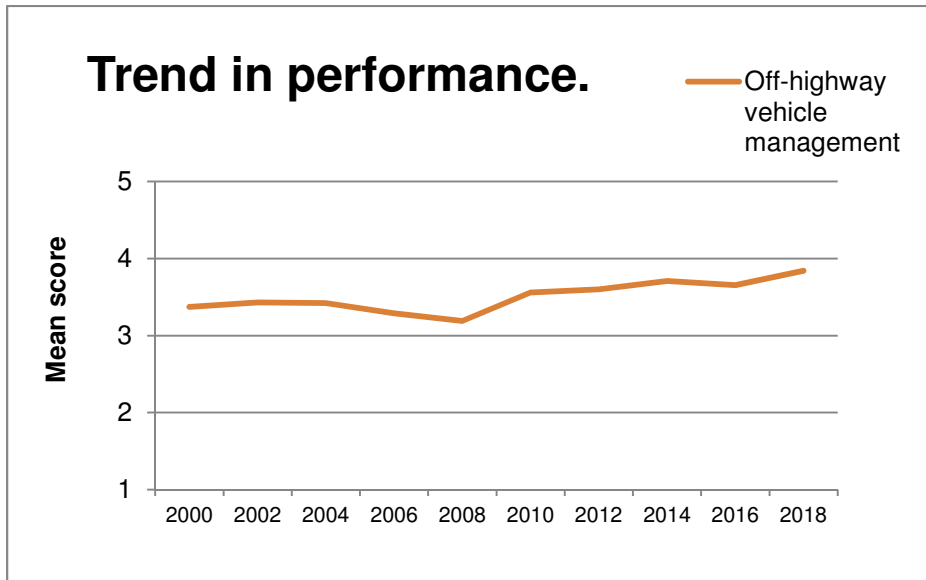




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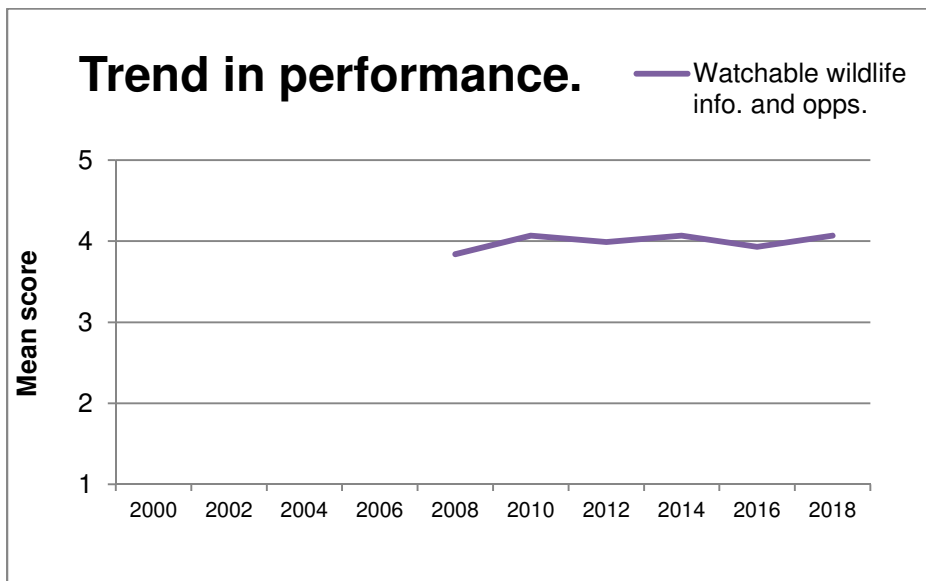
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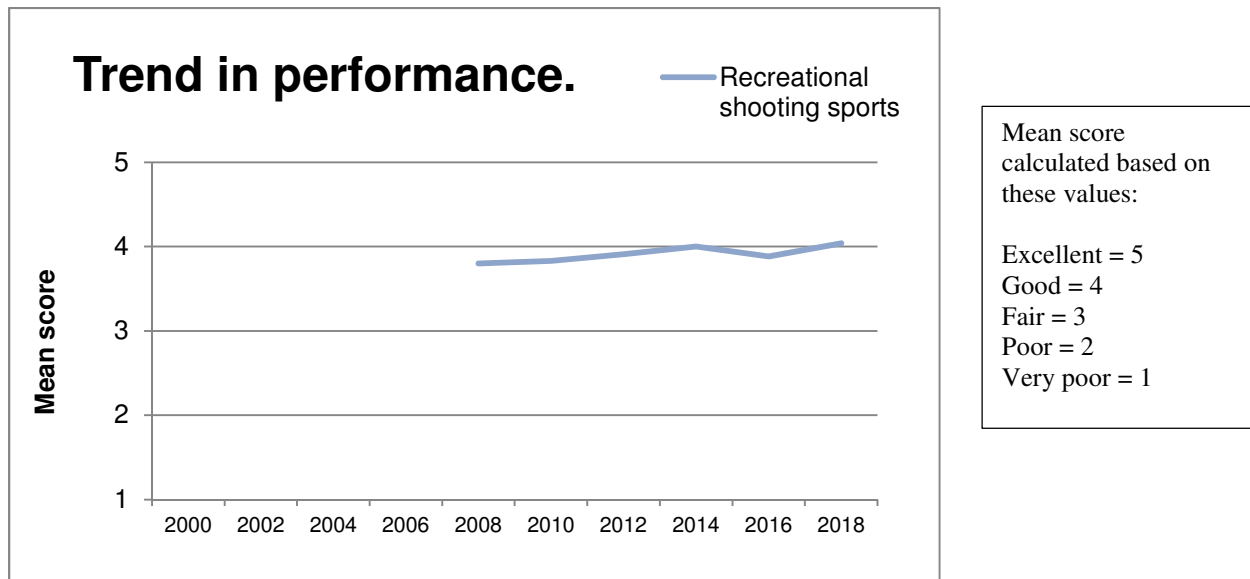




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SUPPORT FOR AND OPPOSITION TO HUNTING

- As in past years, the large majority of Arizona residents (78%) support legal, regulated hunting; meanwhile, 12% oppose it. The percentages in support in 2016 (80.7%) and 2018 (78.1%) show no statistically significant difference.
 - Follow-up questions asked why those who support it do so and why those who oppose it do so.
 - The top reasons given for supporting legal, regulated hunting are wildlife management/overpopulation control, stopping the dangers that would be created by a lack of regulations, and for food.
 - The top reason given for opposing legal, regulated hunting is concern about hurting or killing individual animals.

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INTRODUCTION AND METHODOLOGY

This trends study was conducted for the Arizona Game and Fish Department (hereinafter referred to as the Department) to determine residents' participation in and satisfaction with outdoor recreation, their attitudes toward wildlife, and their opinions regarding the Department and its priorities. The study is a continuation of a series of similar surveys conducted for the Department since 1992. The study entailed a scientific telephone survey of Arizona residents.

These biennial trends surveys have been conducted for the Department since 1992 to examine general patterns of wildlife-related recreation and attitudes toward wildlife-related issues among Arizona residents. The trends survey typically consists of one section of core questions that are repeated in every survey and a second section that contains questions addressing more contemporaneous issues. The core questions pertain to participation in wildlife-related recreation, frequency of participation, satisfaction of participants, and opinions on the Department's performance.

USE OF TELEPHONES FOR THE SURVEY

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones among Arizona residents (both landlines and cell phones were sampled in their proper proportions). Additionally, telephone surveys, relative to mail or Internet surveys, allow for more scientific sampling and data collection, provide higher quality data, obtain higher response rates, are more timely, and are more cost-effective.

Telephone surveys also have better representation of the sample than do surveys that are read by the respondent (i.e., mail and Internet surveys) because the latter systematically exclude those who are not literate enough to complete the surveys or who would be intimidated by having to complete a written survey—by an estimate of the U.S. Department of Education's National Institute of Literacy (2016), up to 43% of the general population read no higher than a "basic level," suggesting that they would be reticent to complete a survey that they have to read to themselves. Finally, telephone surveys also have fewer negative effects on the environment than do mail surveys because of reduced use of paper and reduced energy consumption for delivering and returning the questionnaires.

QUESTIONNAIRE DESIGN

The telephone survey questionnaire was developed cooperatively by Responsive Management and the Department, based on the past biennial surveys and the research team's familiarity with outdoor recreation and natural resource research. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

SURVEY SAMPLE

The sample of Arizona residents was obtained from SSI and MSG, firms that specialize in providing scientifically valid samples for survey research. Both landlines and cell phones were sampled in their proper proportions, taking into account those who use one type solely, those who use both types equally, and those who use both types but one type predominantly.

The sample was stratified into three areas of Arizona:

1. Maricopa County
2. Pima County
3. All other counties.

The sample used a probability-based selection process that ensured that all Arizona residents with a telephone had an approximately equal chance of being selected for the survey within each stratification area. For statewide results, the data were weighted by county so that the areas were in their proper proportions, based on population estimates of the U.S. Census Bureau.

TELEPHONE INTERVIEWING FACILITIES

A central polling site at the Responsive Management office allowed for rigorous quality control over the interviews and data collection. Responsive Management maintains its own in-house telephone interviewing facilities. These facilities are staffed by interviewers with experience conducting computer-assisted telephone interviews on the subjects of outdoor recreation and natural resources.

To ensure the integrity of the telephone survey data, Responsive Management has interviewers who have been trained according to the standards established by the Council of American Survey Research Organizations. The interviewers were instructed using materials specific to outdoor recreation and natural resources in Arizona, and they were familiarized with the Department and its programs prior to the survey. In a project briefing with the interviewers prior to the administration of this survey, interviewers were instructed on the type of study, its goals and objectives, handling of survey questions, interview length, termination points and qualifiers for participation, interviewer instructions within the survey questionnaire, reading of the survey questions, skip patterns, and probing and clarifying techniques necessary for specific questions on the survey questionnaire.

INTERVIEWING DATES AND TIMES

Telephone surveying times are Monday through Friday from noon to 9:00 p.m., Saturday from noon to 5:00 p.m., and Sunday from 5:00 p.m. to 9:00 p.m., local time. A five-callback design was used to maintain the representativeness of the sample, to avoid bias toward people easy to reach by telephone, and to provide an equal opportunity for all to participate. When a respondent could not be reached on the first call, subsequent calls were placed on different days of the week and at different times of the day. The survey was conducted in May and June 2018.

TELEPHONE SURVEY DATA COLLECTION AND QUALITY CONTROL

The software used for data collection was Questionnaire Programming Language (QPL). The survey data were entered into the computer as each interview was being conducted, eliminating manual data entry after the completion of the survey and the concomitant data entry errors that may occur with manual data entry. The survey questionnaire was programmed so that QPL branched, coded, and substituted phrases in the survey based on previous responses to ensure the integrity and consistency of the data collection.

The Survey Center Managers and statisticians monitored the data collection, including monitoring of the actual telephone interviews without the interviewers' knowledge to evaluate the performance of each interviewer and ensure the integrity of the data. The survey questionnaire itself contained error checkers and computation statements to ensure quality and

consistent data. After the surveys were obtained by the interviewers, the Survey Center Managers and/or statisticians checked each completed survey to ensure clarity and completeness. Responsive Management obtained a total of 833 completed interviews.

DATA ANALYSIS

The analysis of data was performed using IBM SPSS Statistics as well as proprietary software developed by Responsive Management. The results were slightly weighted by demographic characteristics to exactly match population data of the U.S. Census Bureau so that the sample was fully representative of Arizona residents as a whole.

County crosstabulations are shown of the data, based on the areas previously discussed in which the state was categorized into Maricopa County, Pima County, and then the rest of the counties making up the last area, referred to in the graphs as “rural counties.”

On questions that asked respondents to provide a number (e.g., number of days, percentage of shooting done with archery), graphs or tables may show 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 graph shows only ranges of numbers. Note that the calculation of means and medians used the precise numbers that the respondents provided. (The exception to this is the question about household income, where respondents were asked to choose from among a range of incomes.)

SAMPLING ERROR

Throughout this report, findings of the telephone survey are reported at a 95% confidence interval. For the entire sample of Arizona residents, the sampling error is at most plus or minus 3.40 percentage points.

ADDITIONAL INFORMATION ABOUT THE PRESENTATION OF RESULTS IN THE REPORT

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

- Open-ended questions are those in which no answer set is read to the respondents; rather, they can respond with anything that comes to mind from the question.
- 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 excellent-good-fair-poor-very poor.
- 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.

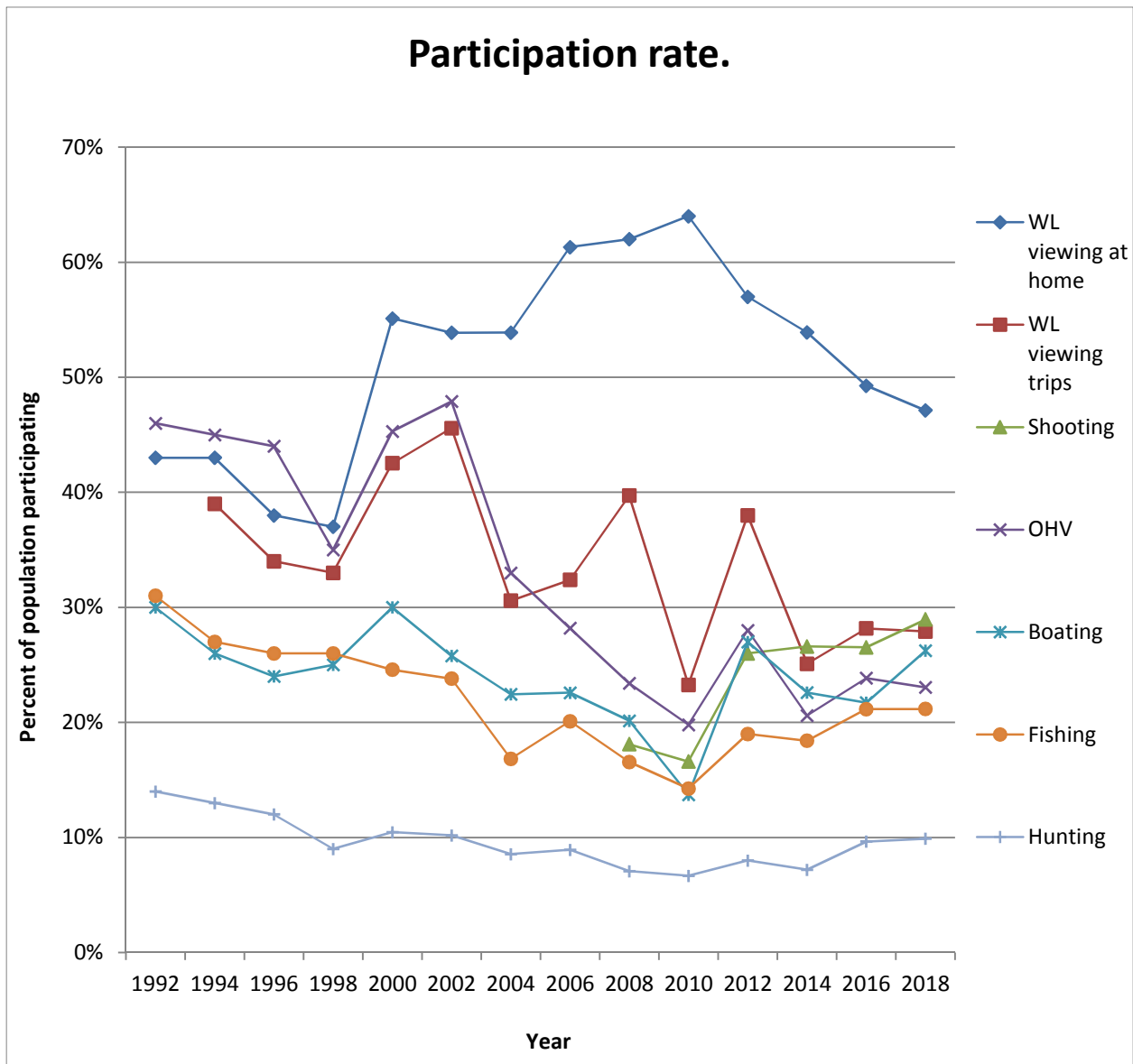
Some graphs show an average, either the mean or median (or both). The mean is simply the sum of all numbers divided by the number of respondents. Because outliers (extremely high or low numbers relative to most of the other responses) may skew the mean, the median may be shown. The median is the number at which half the sample is above and the other half is below. In other words, a median of 30 days means that half the sample gave an answer of more than 30 days and the other half gave an answer of less than 30 days.

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 "strongly support" and "moderately support" are summed to determine the total percentage in support).

PARTICIPATION IN OUTDOOR RECREATION

- The survey asked about seven outdoor activities, as shown in the first graph in this section.
 - Boating participation shows a rise from 21.7% in 2016 to 26.2% in 2018, a statistically significant difference ($p < .01$). All other differences in the six remaining activities are *not* statistically significant.
 - Regarding current participation rates, wildlife viewing was the most popular, with nearly half of Arizona residents—47%—having done so at home* in the past 12 months, while 28% had taken a wildlife viewing trip during that time. Just under a third had gone target or recreational shooting (29%), and slightly more than a quarter had done so with firearms (26%). The full listing of activities is shown in the graph that follows the trends graph, with shooting broken down into two types.
 - A county crosstabulation is included; the rural counties have the highest participation rate on all activities except for hunting.
 - The mix of target/recreational shooters who use firearms or archery or both is presented in a pie graph.
 - A follow-up question showed that at least 43% of all hunters participated in small game hunting (which means that 4% of *all residents* went small game hunting in the past 12 months).
 - About a third of boaters (35%) fished while boating (which means that approximately 9% of *all residents* fished from a boat in the past 12 months).
 - County crosstabulation graphs are included for these follow-up questions.

* The survey asked: Did you, personally, take a special interest in wildlife at or near your home in Arizona by closely observing or trying to identify types of wildlife in the past 12 months?

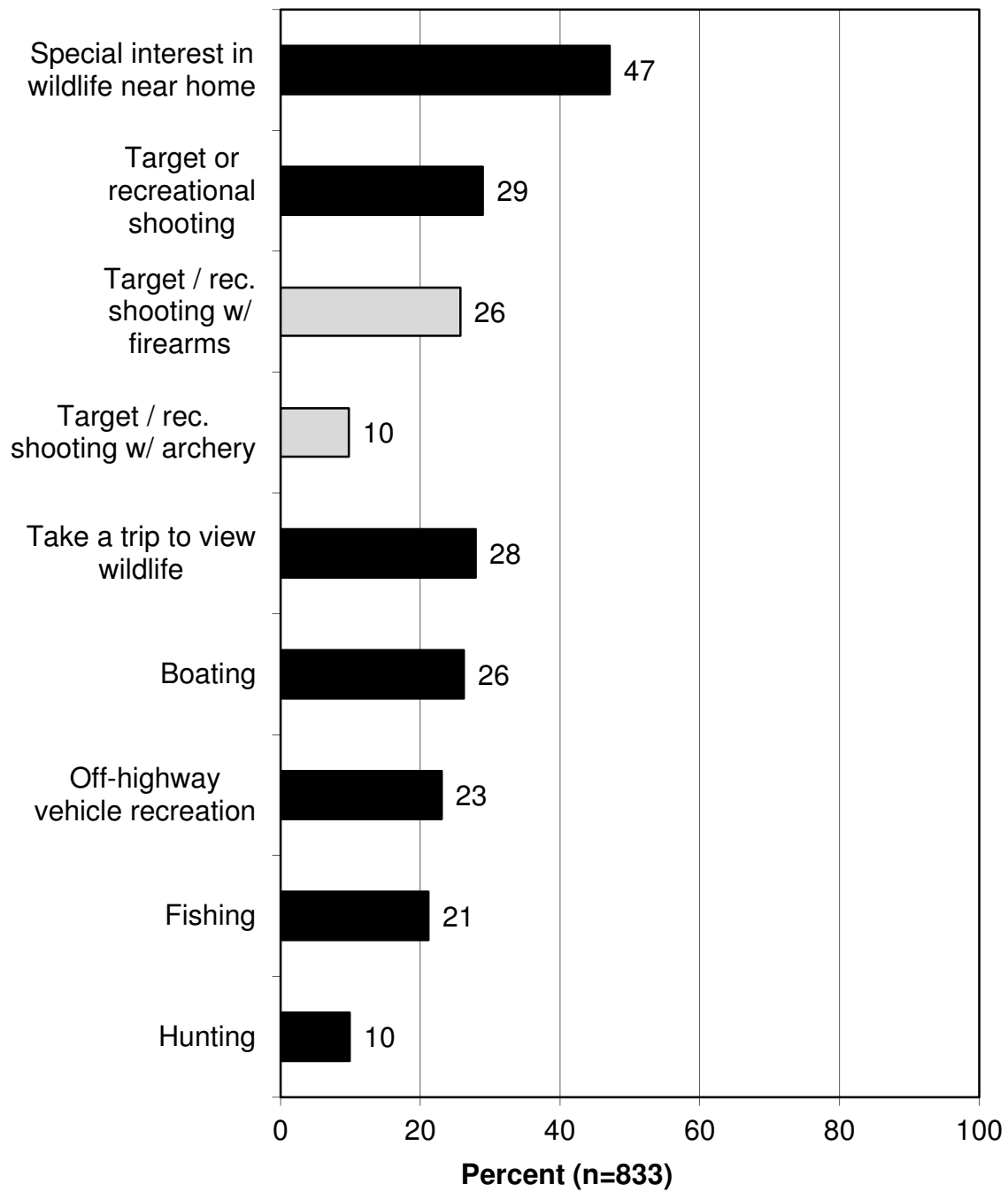


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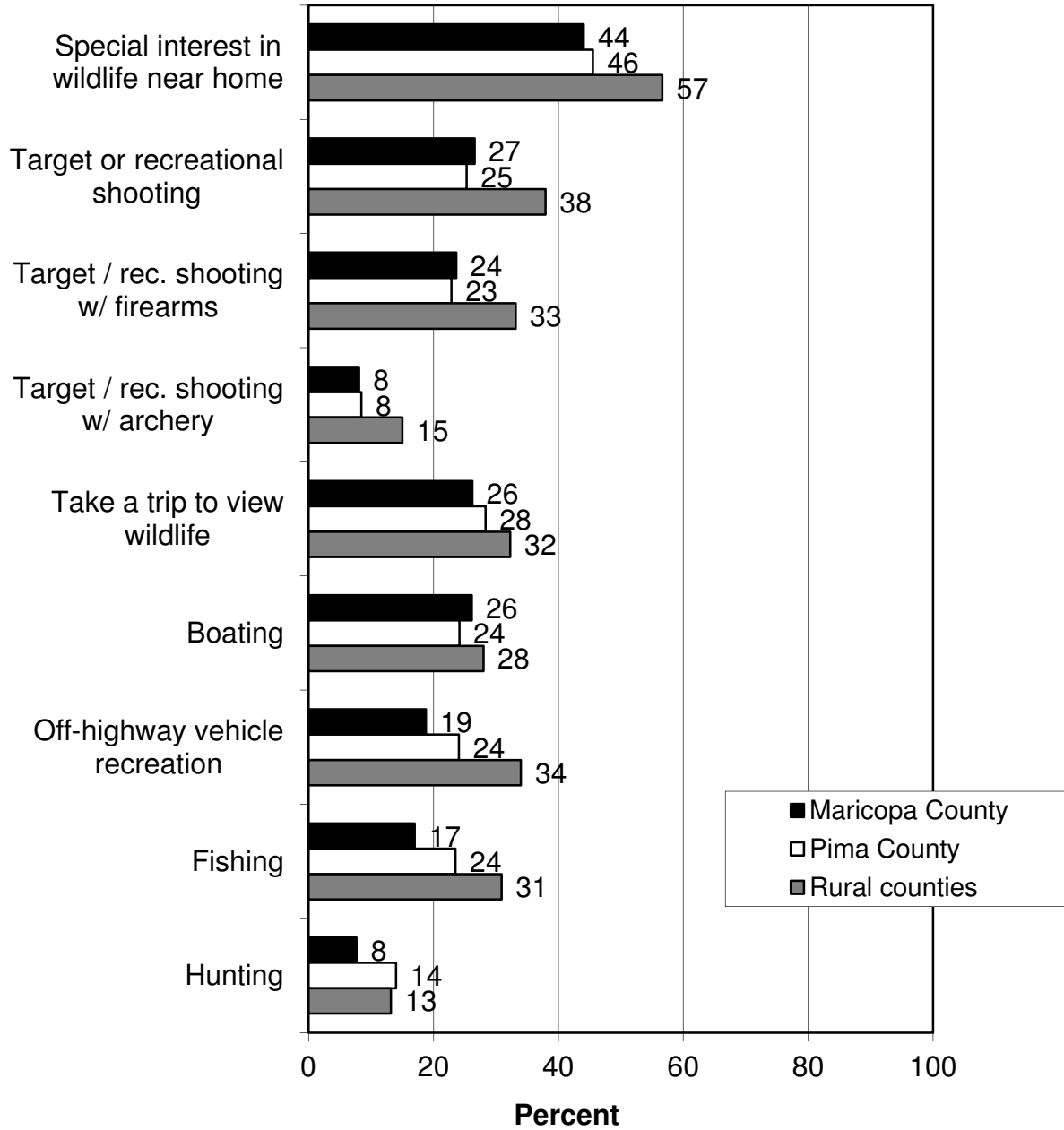
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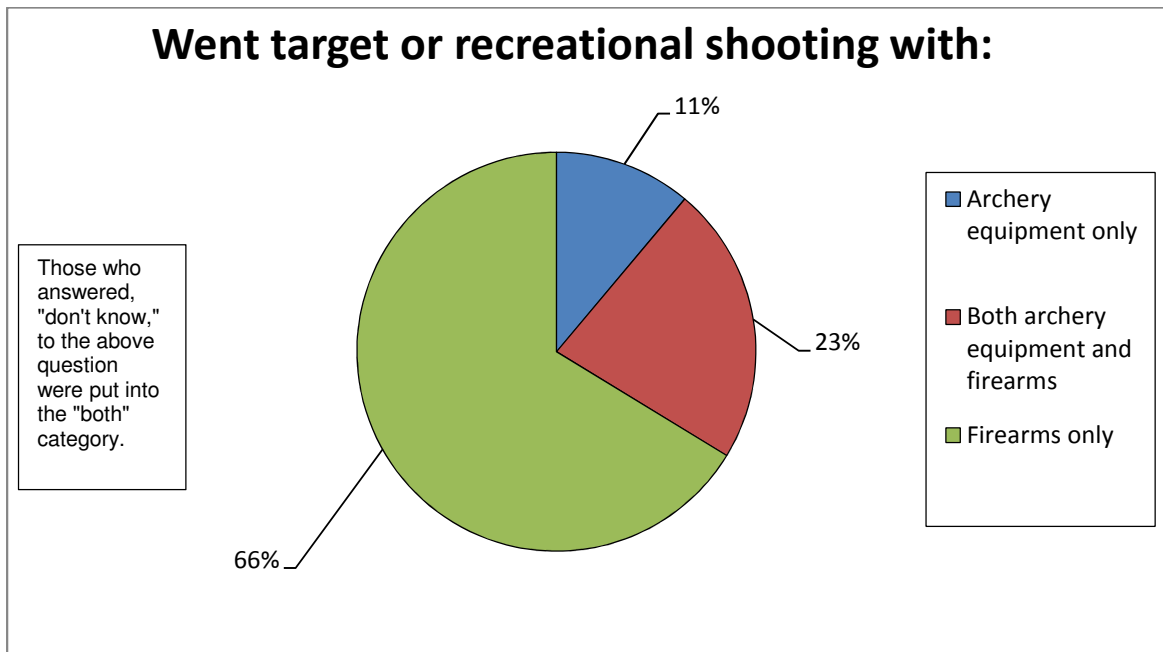
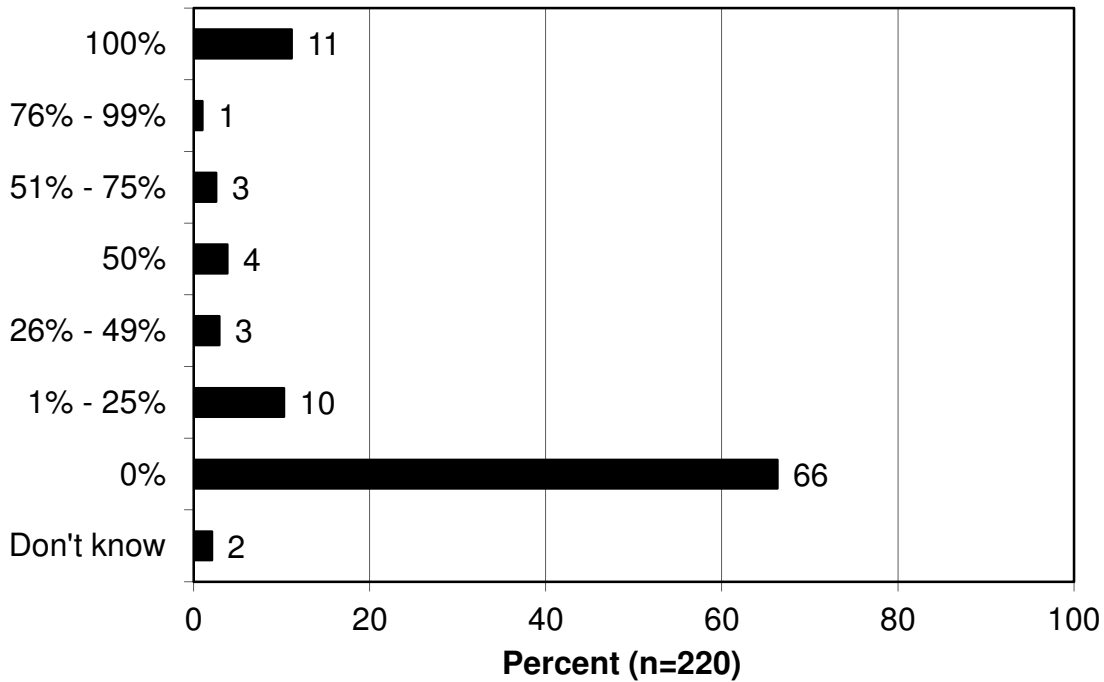
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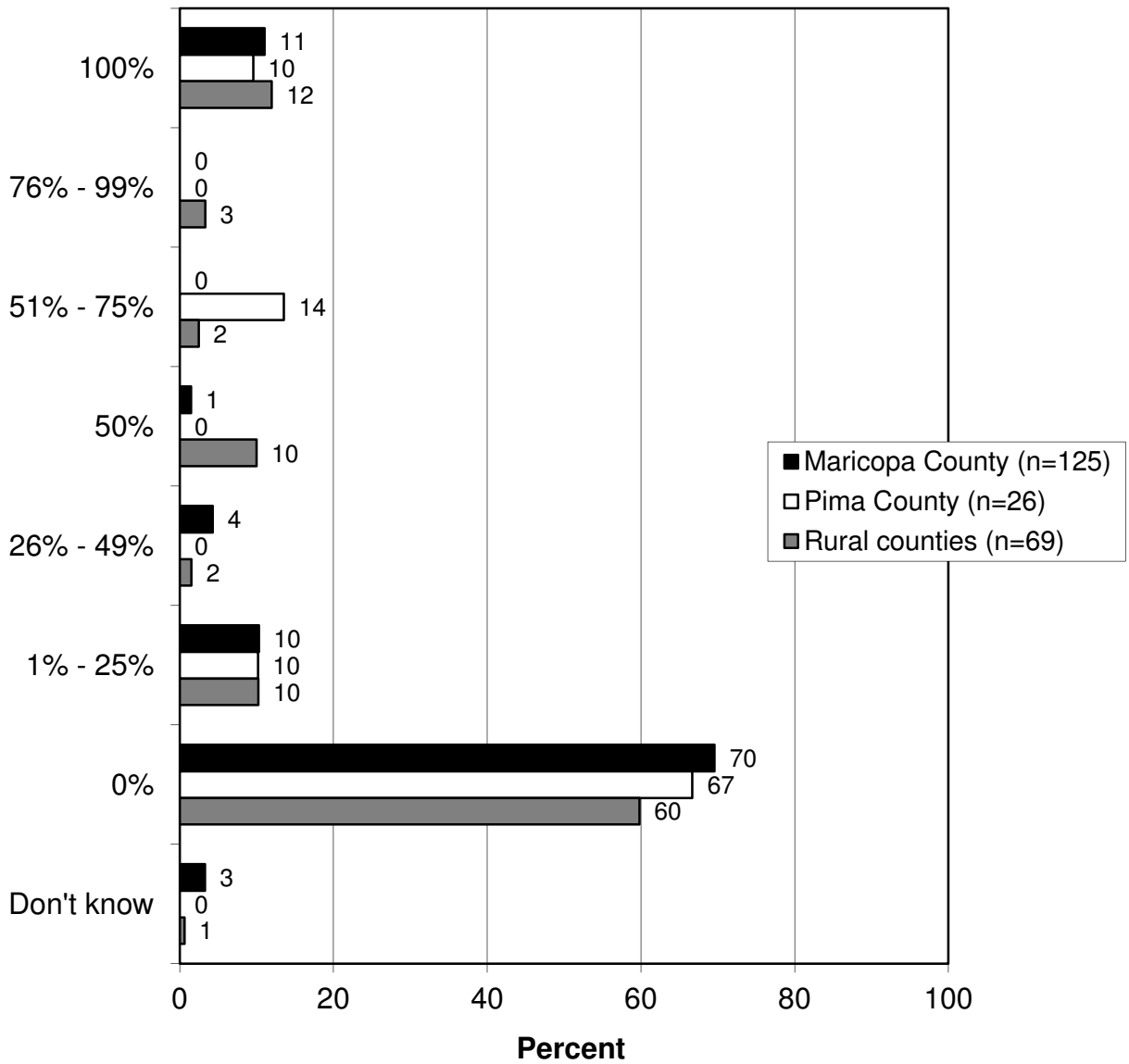


**Q47. What percentage, if any, did your target or recreational shooting include archery equipment?
(Asked of those who went target or recreational shooting in Arizona in the past 12 months.)**

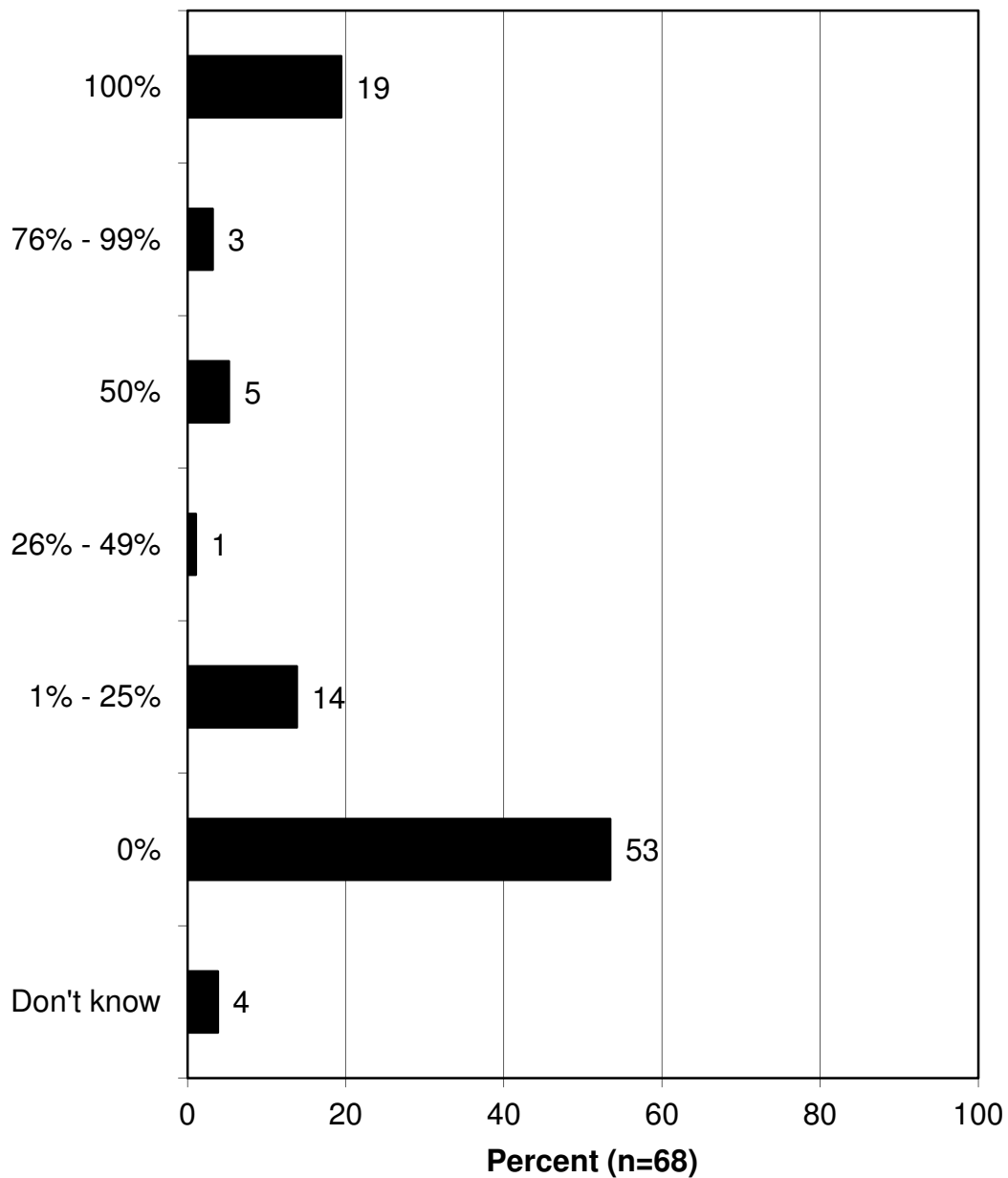


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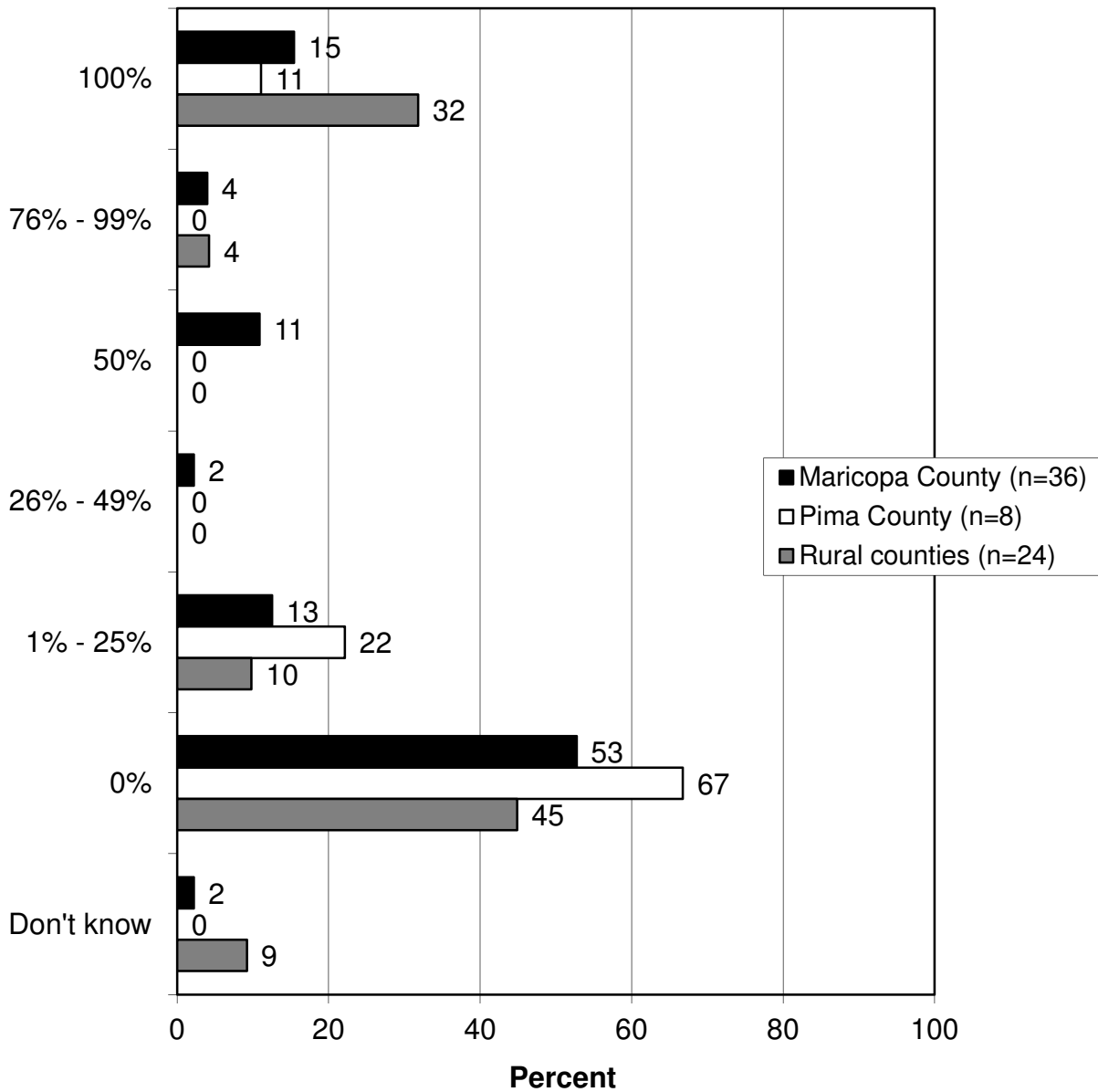
Q47. What percentage, if any, did your target or recreational shooting include archery equipment? (Asked of those who went target or recreational shooting in Arizona in the past 12 months.)



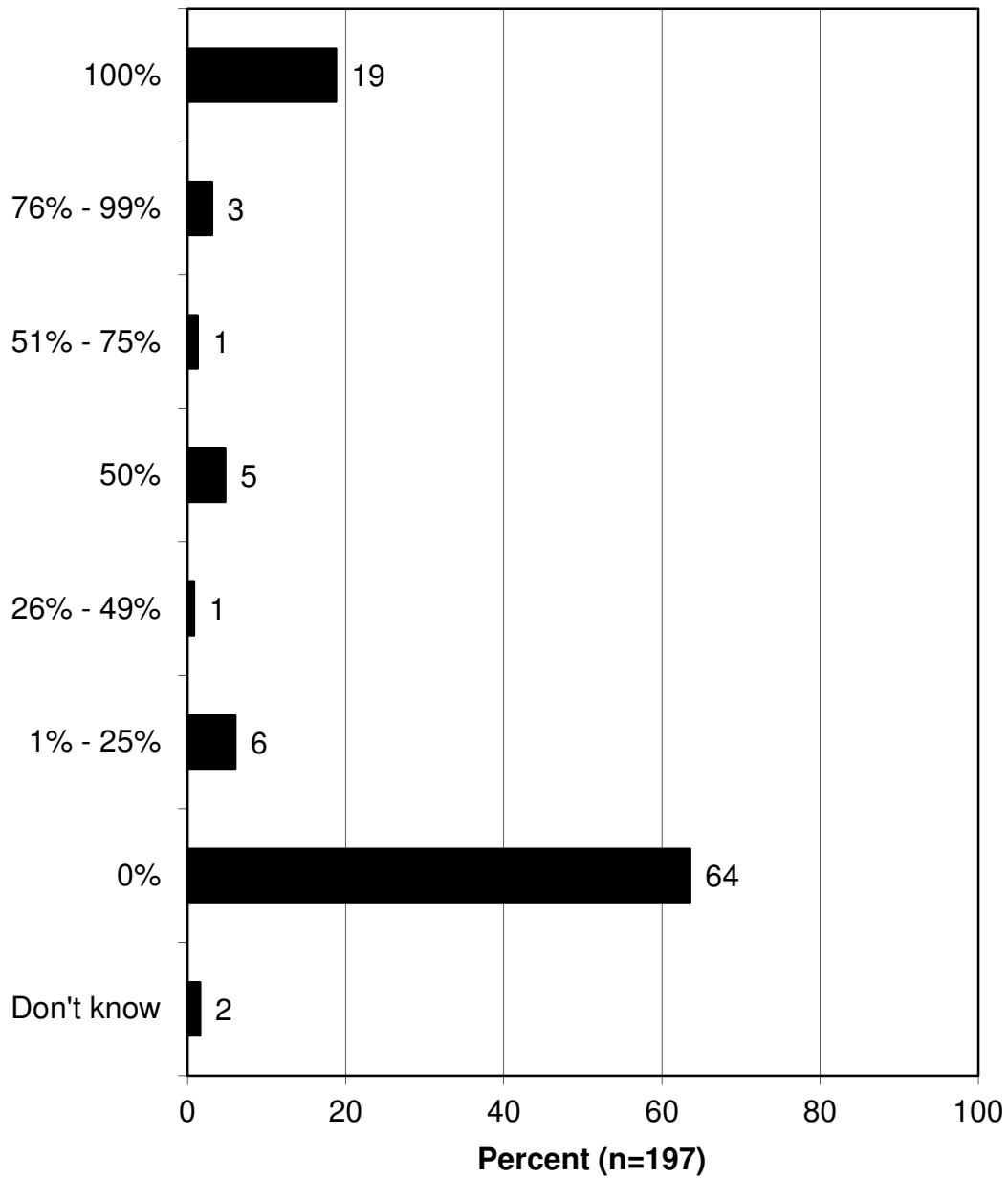
Q54. Considering the entire time you spent hunting, about what percentage was spent hunting small game species? (Asked of those who hunted in Arizona in the past 12 months.)



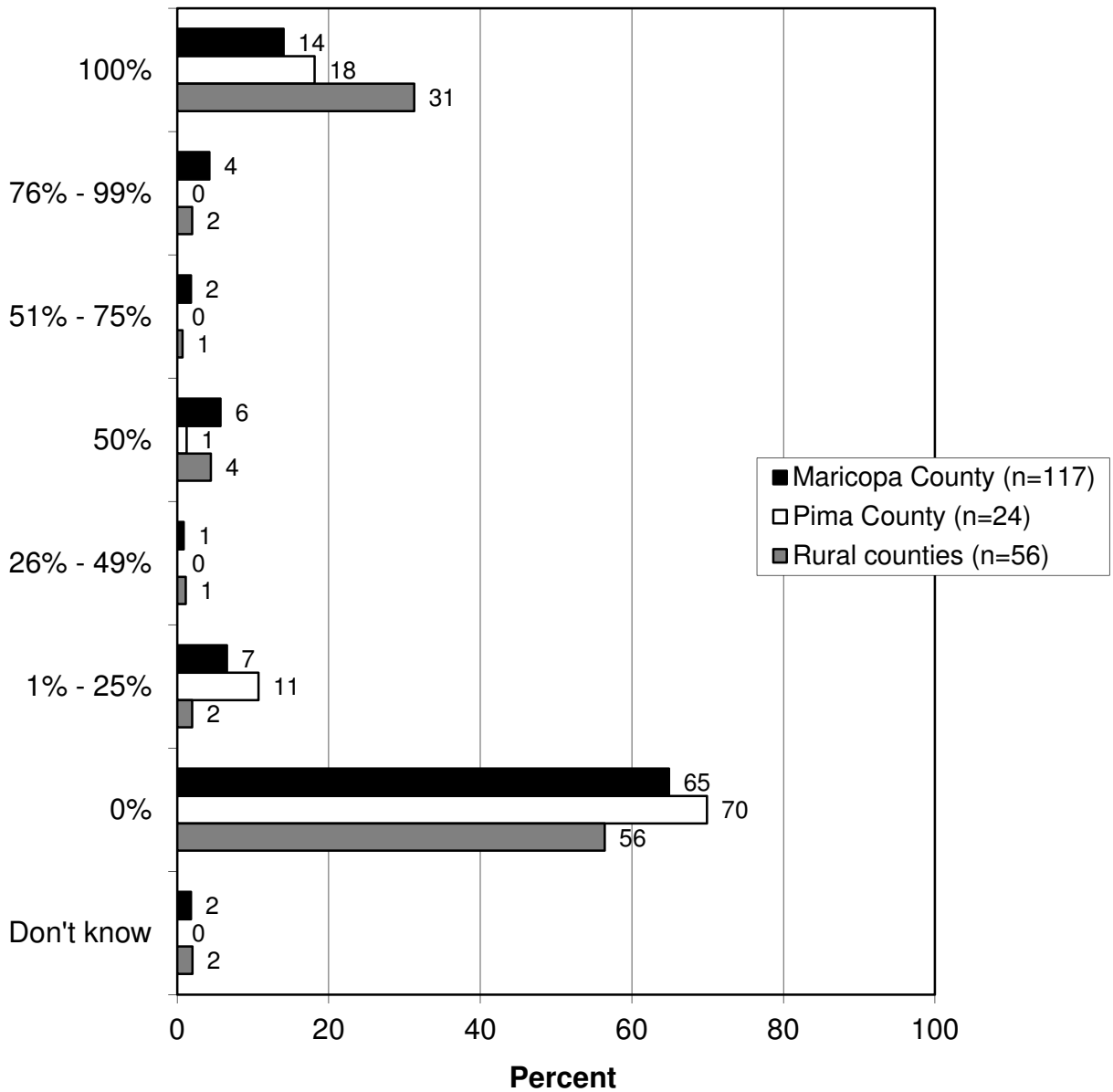
Q54. Considering the entire time you spent hunting, about what percentage was spent hunting small game species? (Asked of those who hunted in Arizona in the past 12 months.)



**Q34. What percentage, if any, of those days had any fishing activities associated with them?
(Asked of those who boated in Arizona in the past 12 months.)**



**Q34. What percentage, if any, of those days had any fishing activities associated with them?
(Asked of those who boated in Arizona in the past 12 months.)**

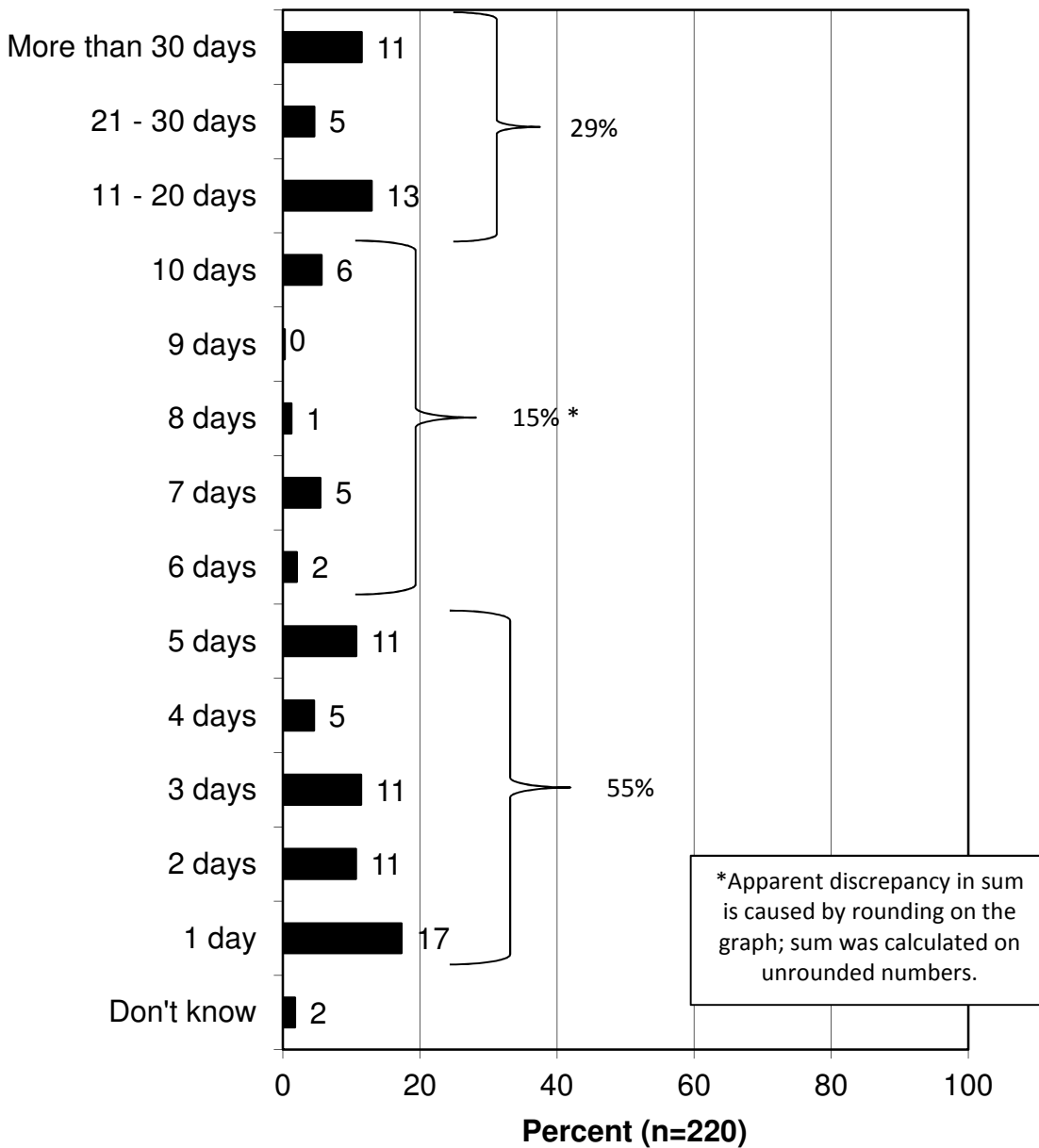


- For each activity that the respondent had participated in, the survey asked about days of participation (except for wildlife viewing at home). A tabulation is presented showing a summary of the six activities about which the days questions were asked, followed by graphs for each activity.
- The highest means are for off-highway driving (28.5 days) and wildlife viewing trips (20.2 days). Boaters have the lowest mean (9.9 days), and target shooters and boaters are the most likely to go only a single day.
 - The activities with the highest percentage going more than 10 days (i.e., being very avid) are off-highway driving and hunting.
 - The tabulation and graphs are shown in the order of highest participation rate to lowest. County crosstabulation graphs are included.

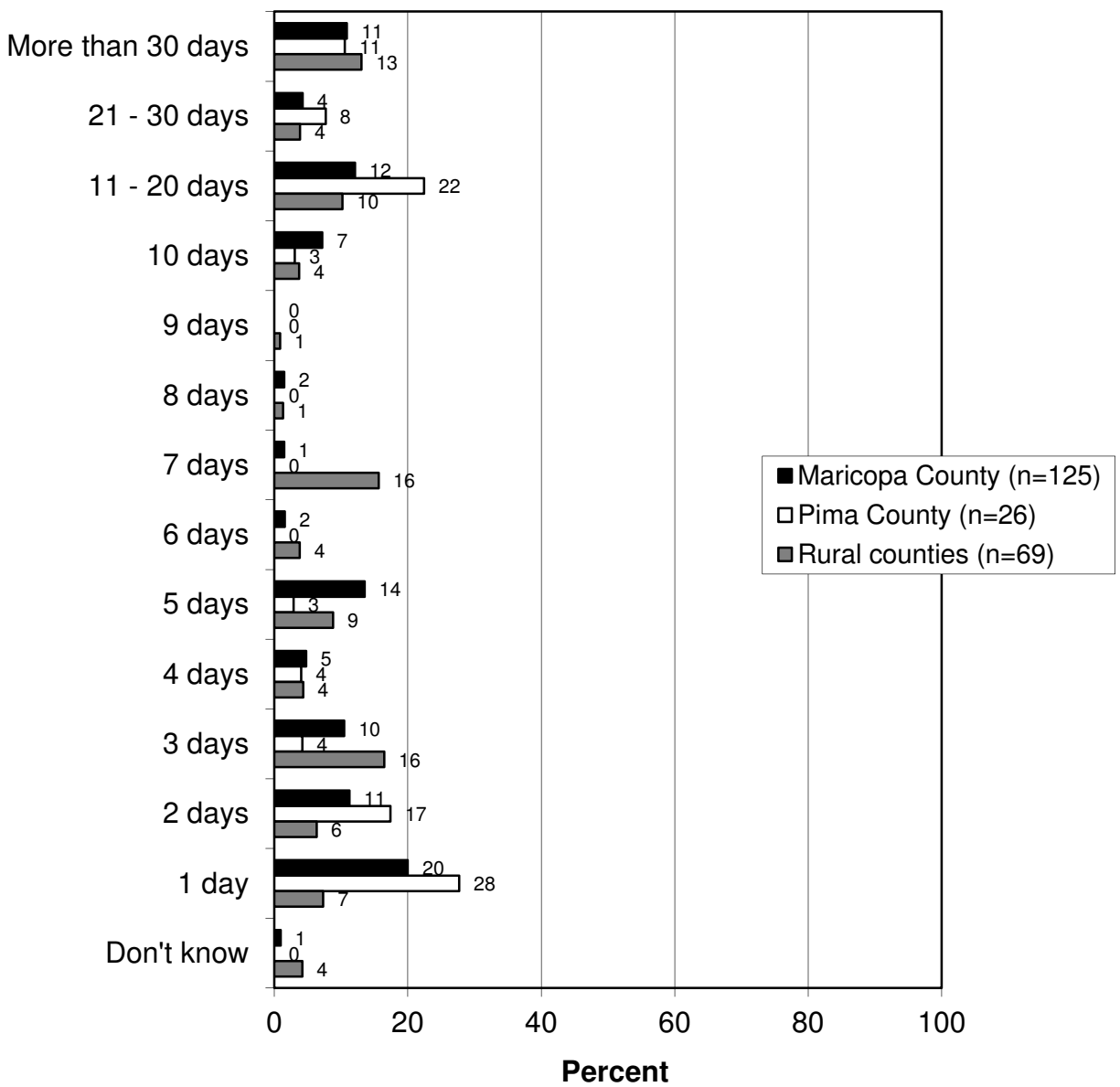
Days Participating in the Various Activities

	Mean Days Participated	Median Days Participated	Percentage Who Participated Only 1 Day	Percentage Who Participated From 1-5 Days	Percentage Who Participated From 6-10 Days	Percentage Who Participated More Than 10 Days
Target / Recreational Shooting	17.6	5	17	55	15	29
Wildlife Viewing Trip	20.2	7	14	42	18	37
Boating	9.9	3	15	59	13	23
Off-Highway Driving	28.5	10	6	37	13	47
Fishing	12.4	6	8	45	19	34
Hunting	16.5	10	7	23	31	45

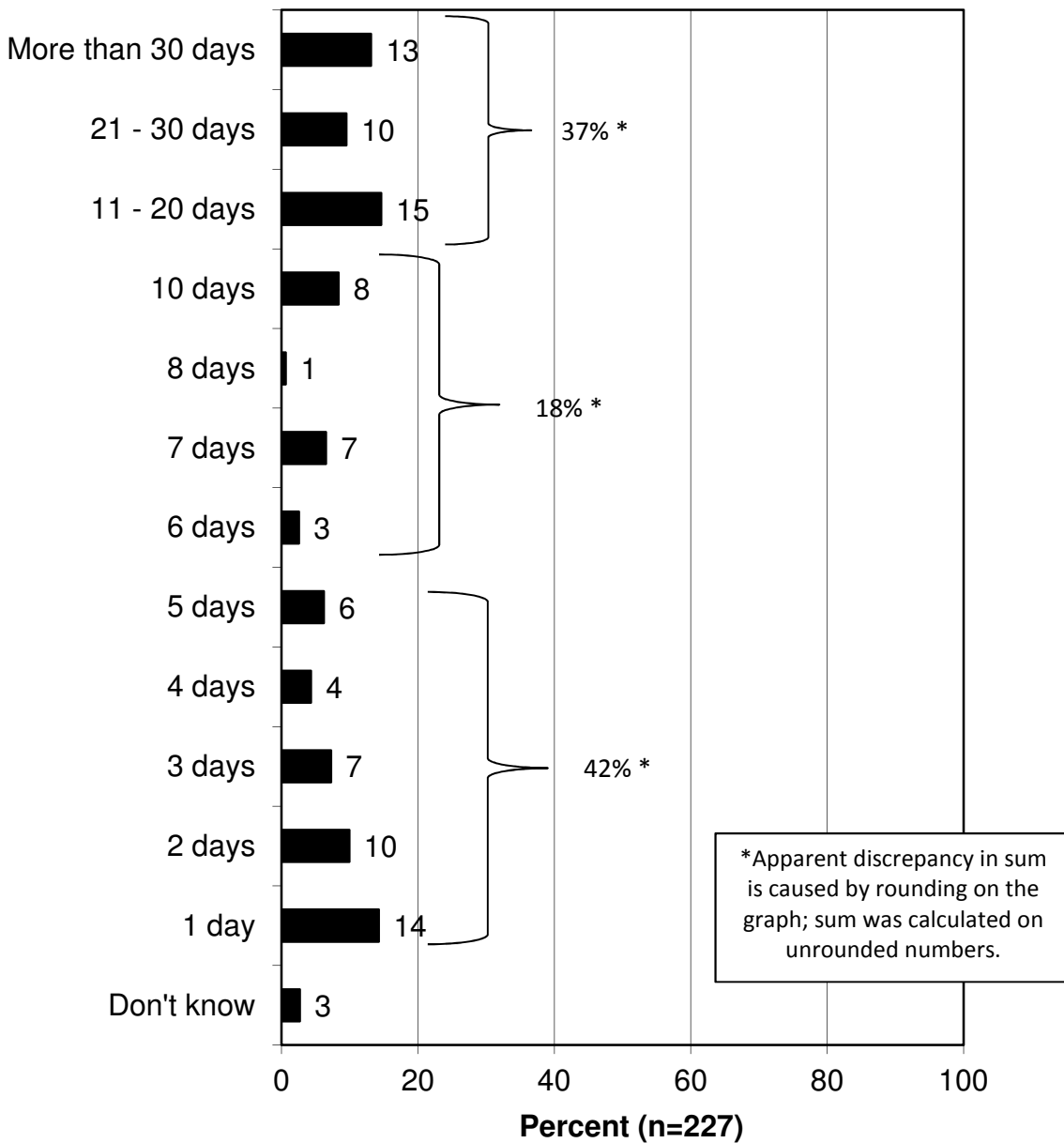
Q45. How many days did you participate in target or recreational shooting in Arizona in the past 12 months? (Asked of those who went target or recreational shooting in Arizona in the past 12 months.)



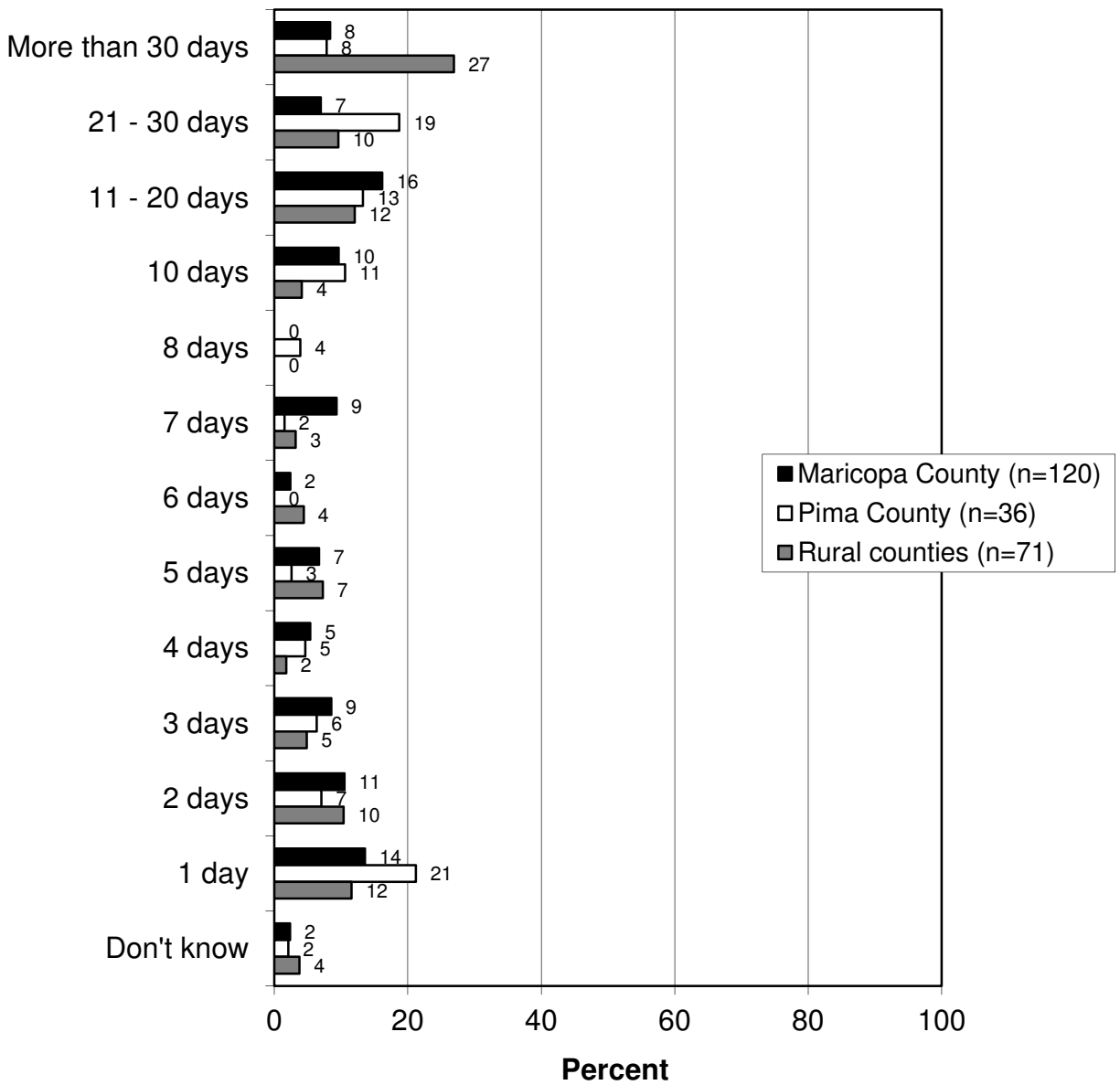
Q45. How many days did you participate in target or recreational shooting in Arizona in the past 12 months? (Asked of those who went target or recreational shooting in Arizona in the past 12 months.)



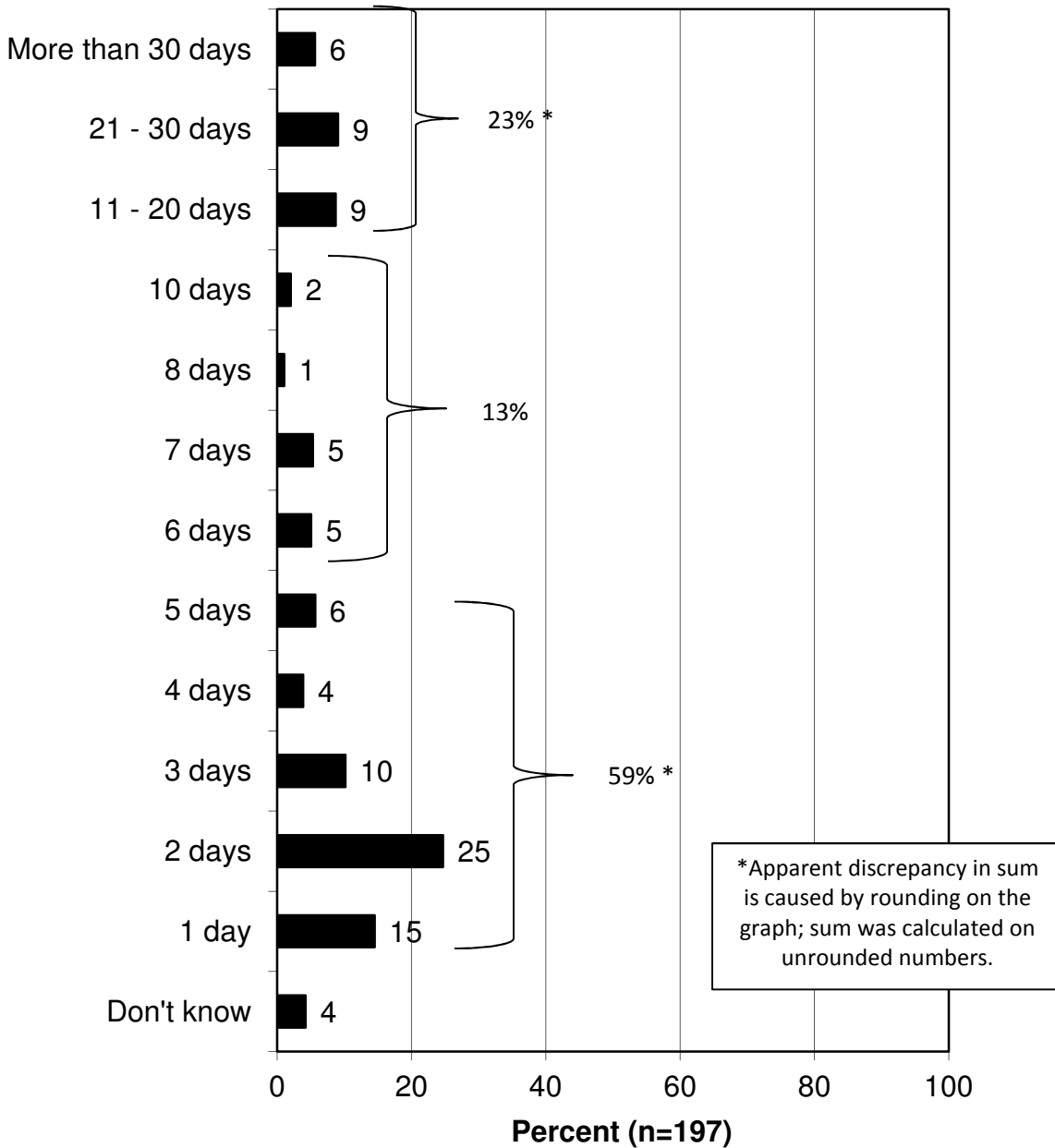
Q74. How many days did you spend away from home viewing or photographing wildlife in Arizona in the past 12 months? (Asked of those who took a wildlife viewing trip in Arizona in the past 12 months.)



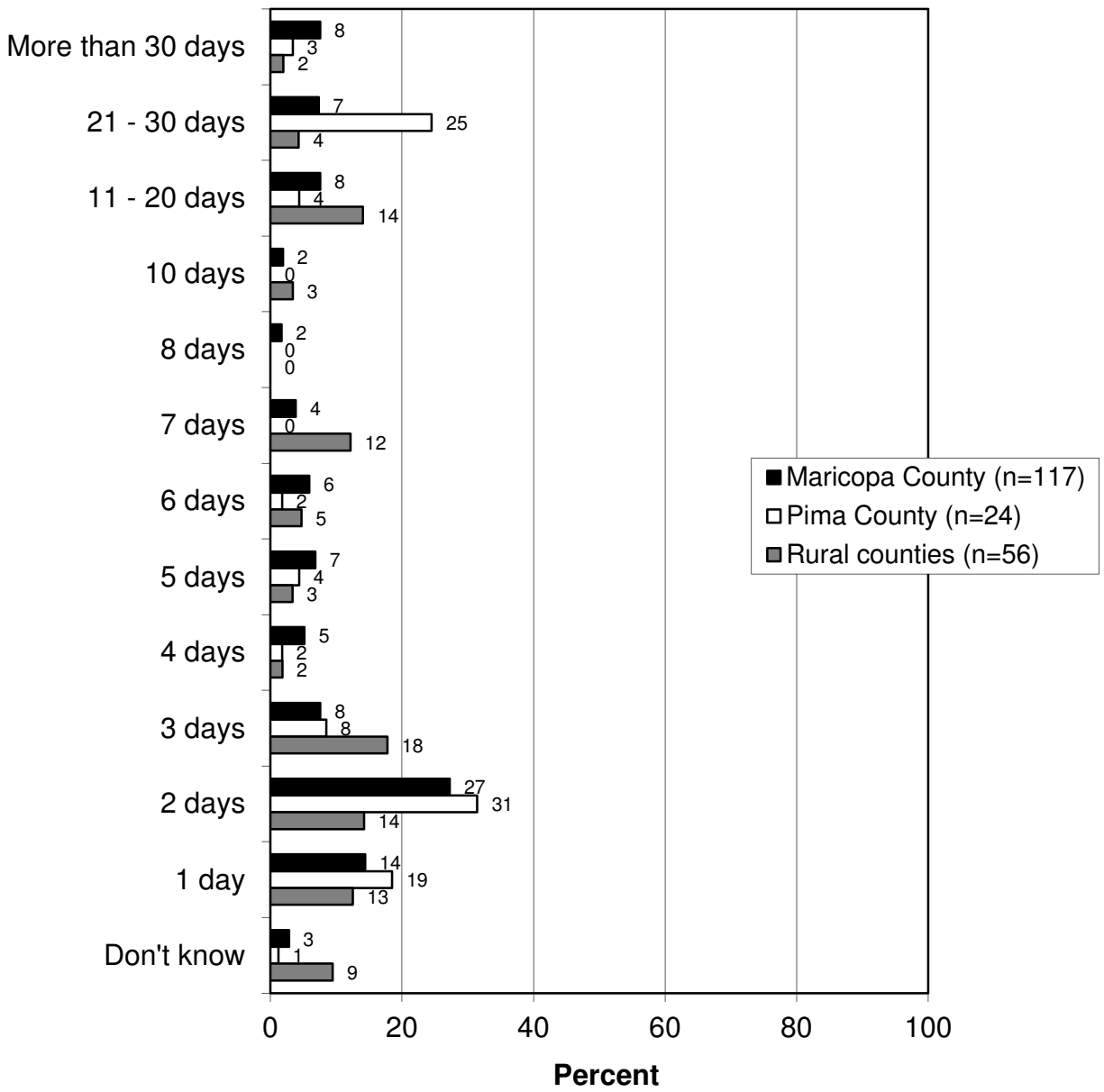
Q74. How many days did you spend away from home viewing or photographing wildlife in Arizona in the past 12 months? (Asked of those who took a wildlife viewing trip in Arizona in the past 12 months.)



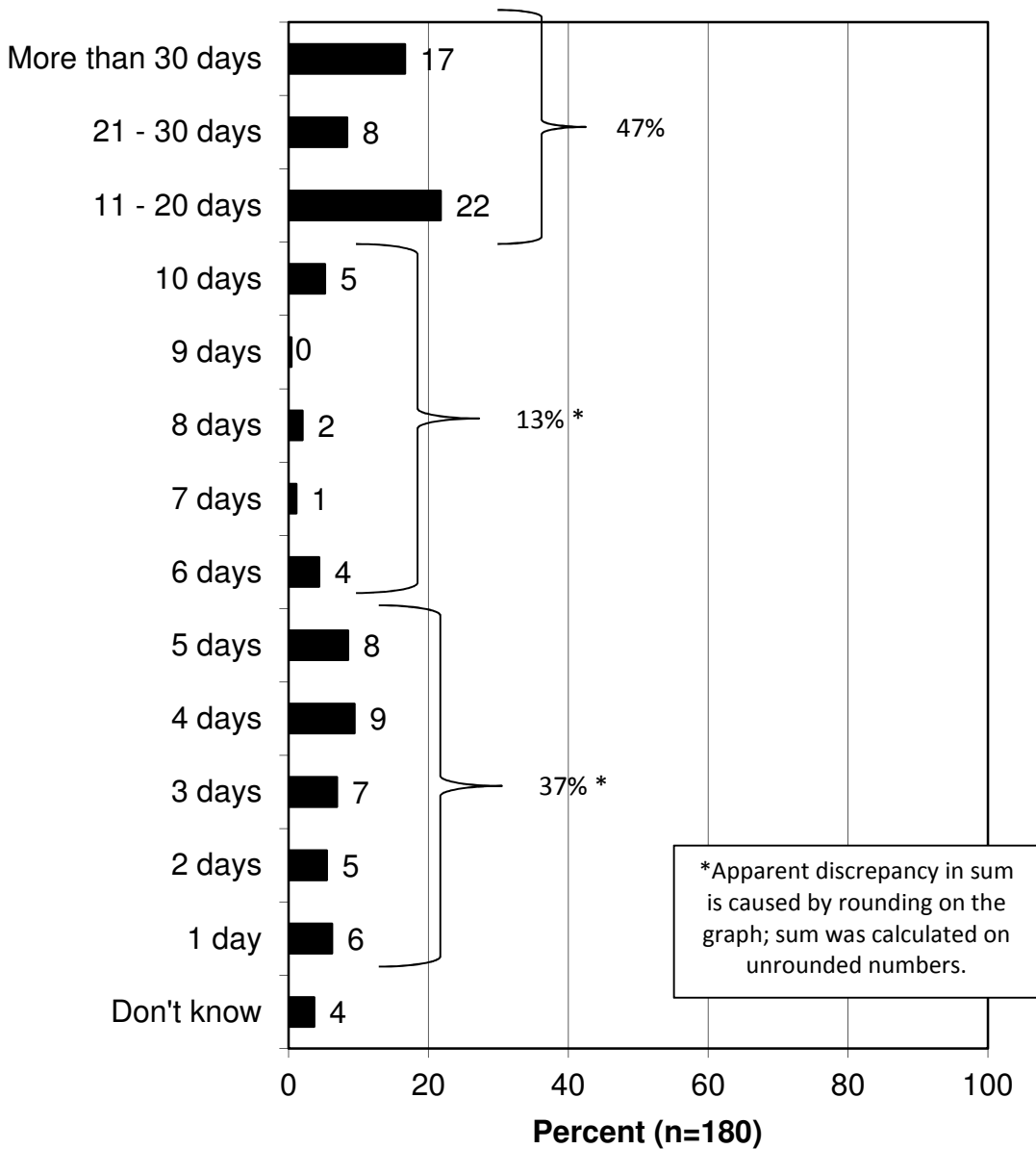
Q32. How many days did you go boating in Arizona in the past 12 months? (Asked of those who boated in Arizona in the past 12 months.)



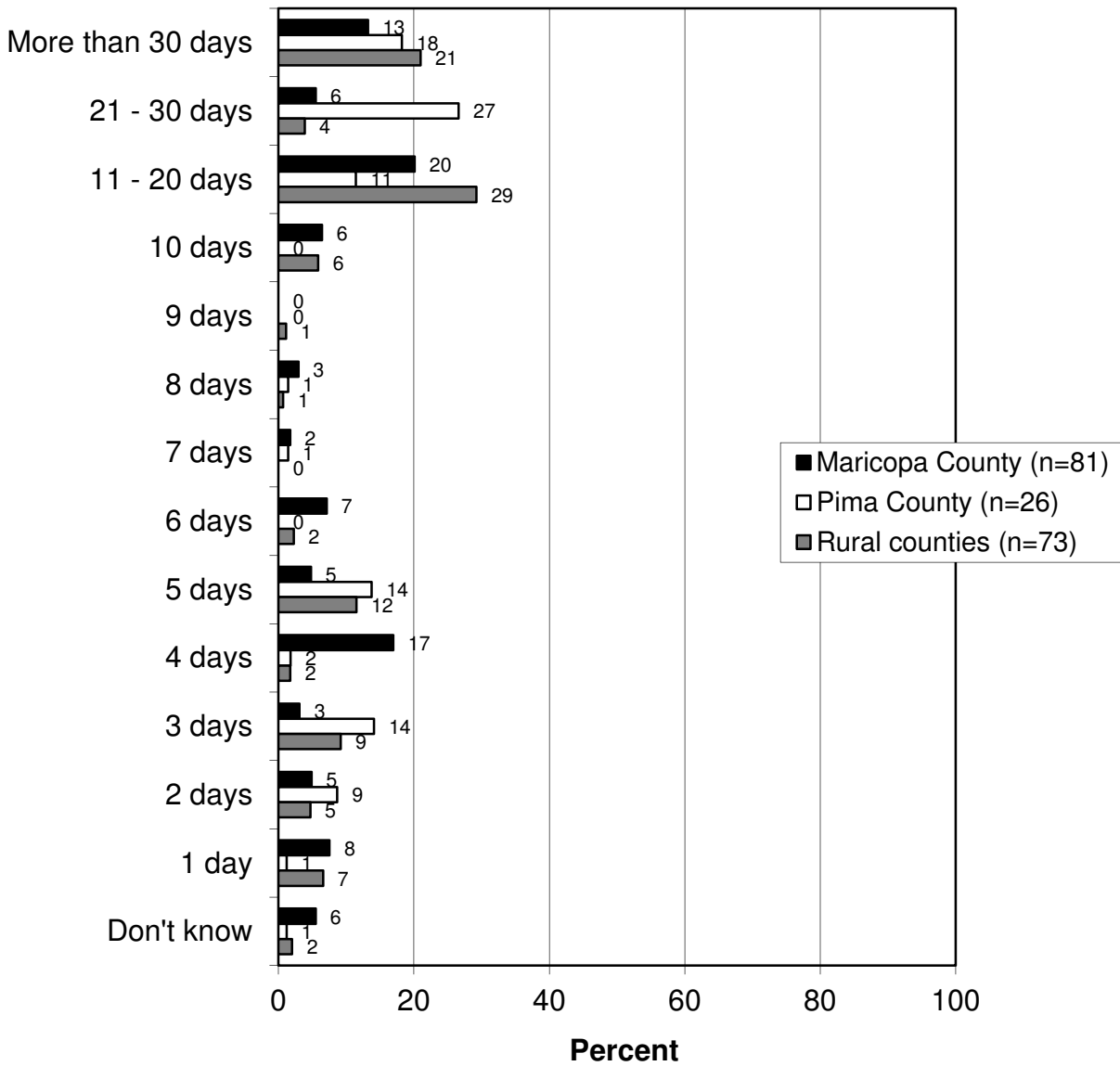
Q32. How many days did you go boating in Arizona in the past 12 months? (Asked of those who boated in Arizona in the past 12 months.)



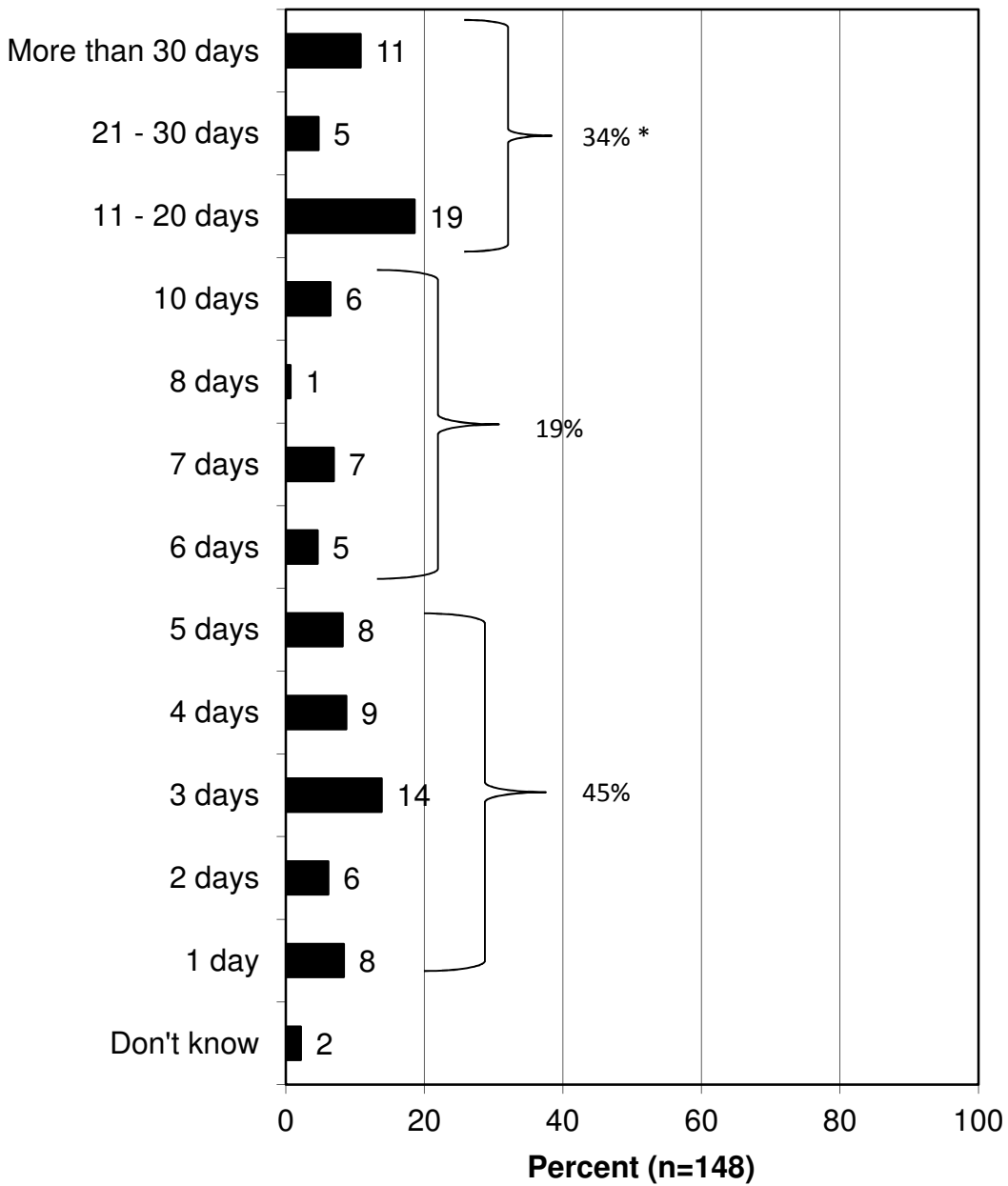
Q40. How many days did you participate in off-highway vehicle recreation in Arizona in the past 12 months? (Asked of those who went off-highway driving in Arizona in the past 12 months.)



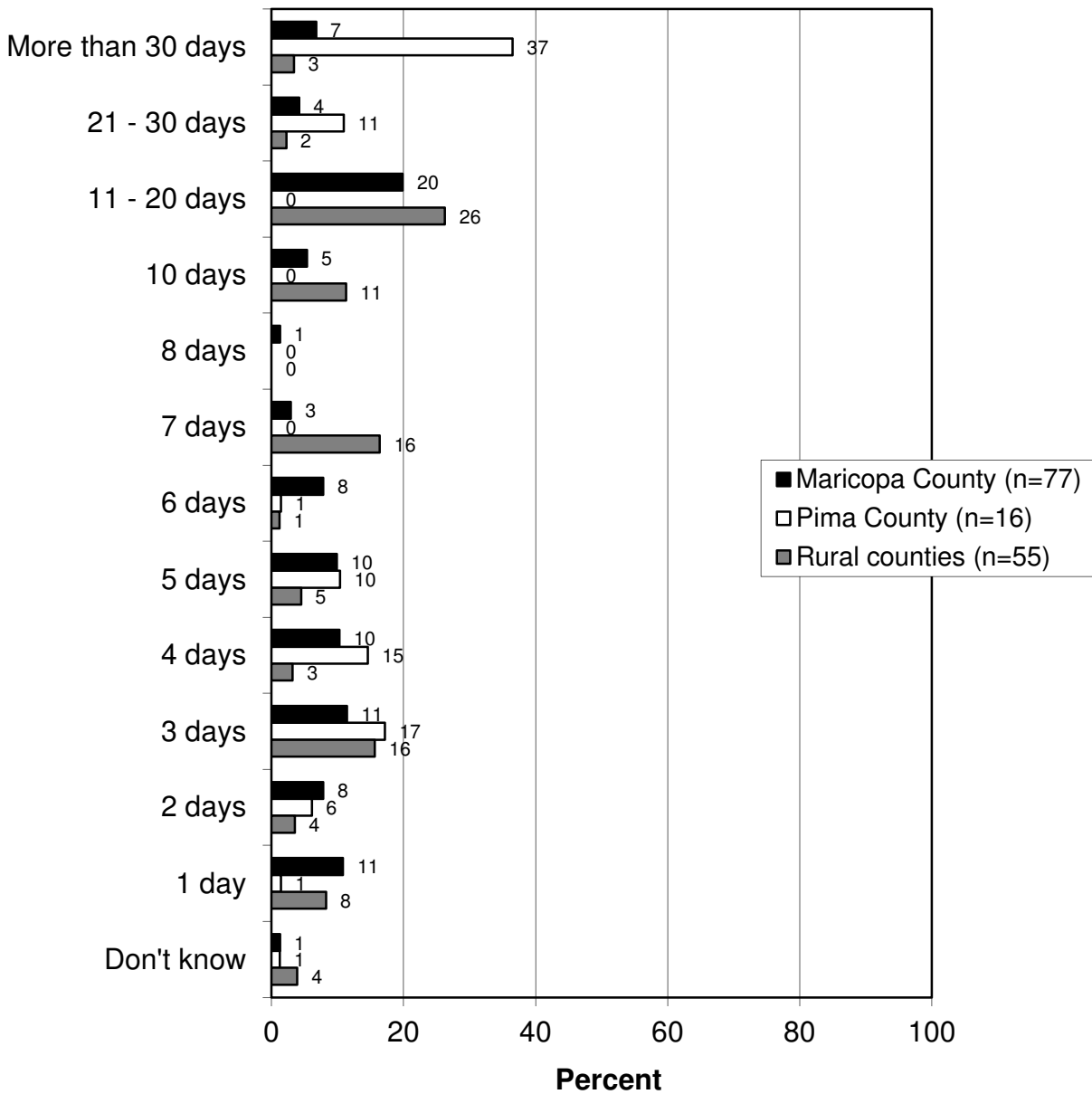
Q40. How many days did you participate in off-highway vehicle recreation in Arizona in the past 12 months? (Asked of those who went off-highway driving in Arizona in the past 12 months.)



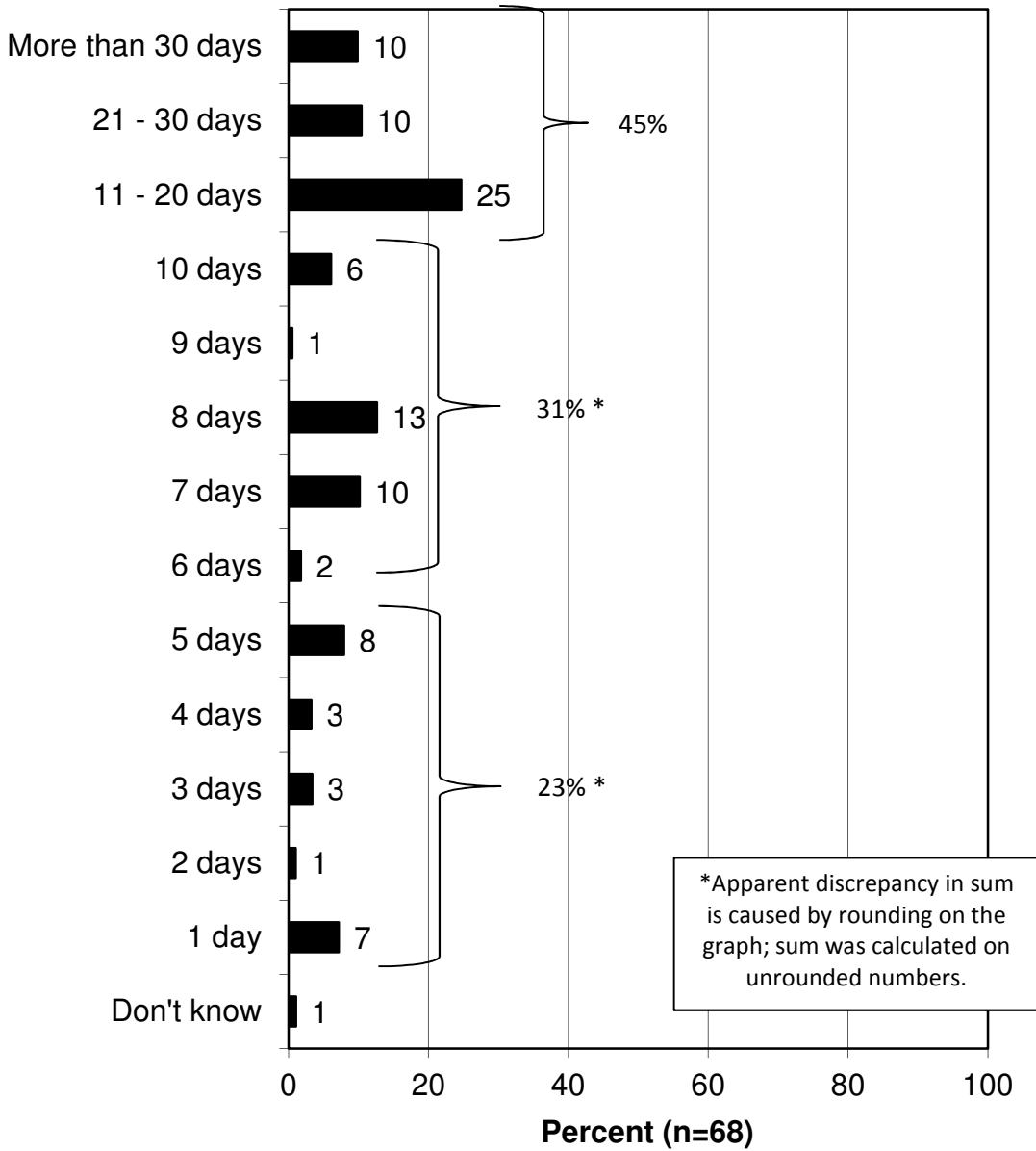
Q14. How many days did you go fishing in Arizona in the past 12 months? (Asked of those who fished in Arizona in the past 12 months.)



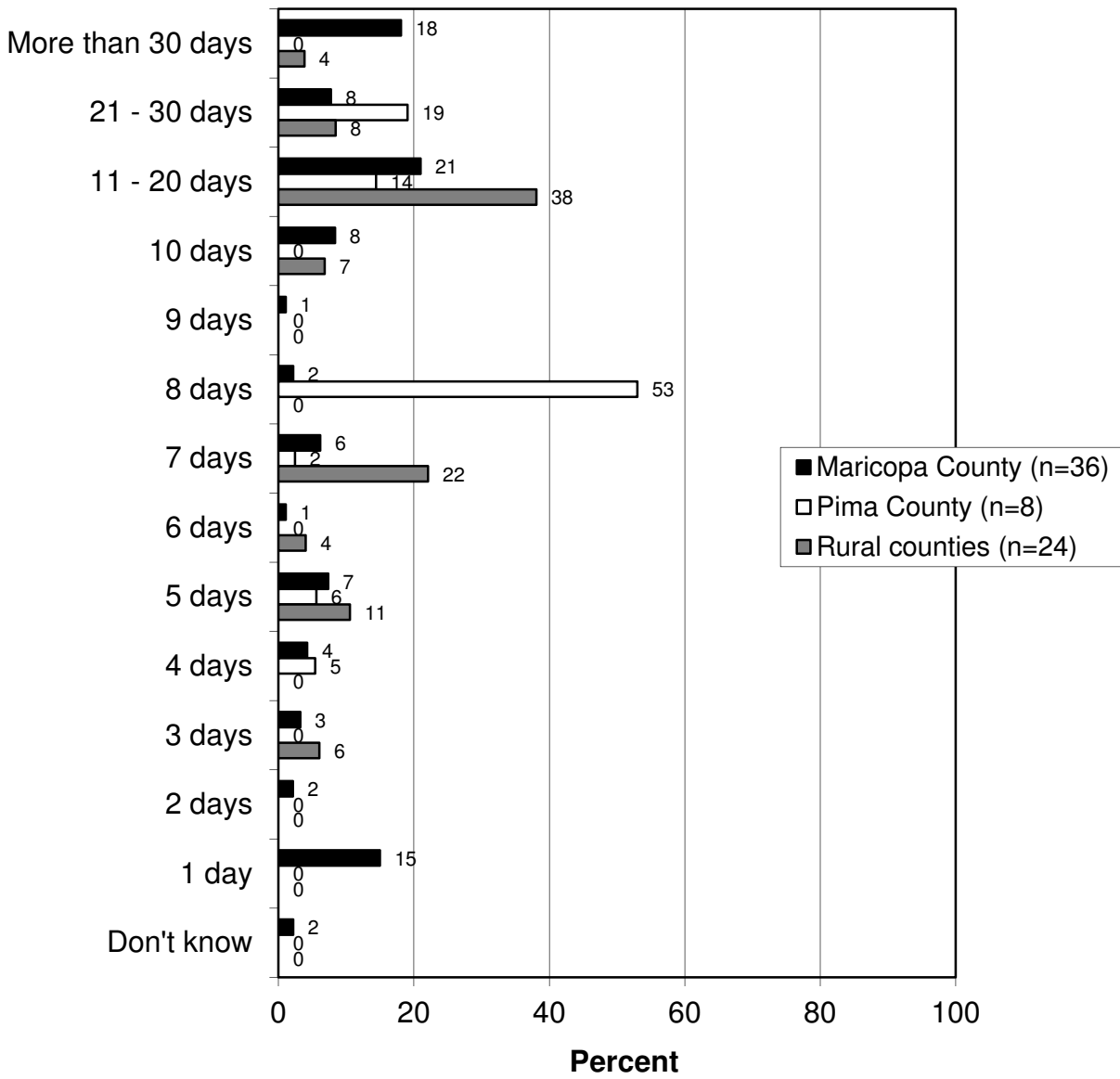
Q14. How many days did you go fishing in Arizona in the past 12 months? (Asked of those who fished in Arizona in the past 12 months.)



**Q52. How many days did you participate in hunting in Arizona in the past 12 months?
(Asked of those who hunted in Arizona in the past 12 months.)**



**Q52. How many days did you participate in hunting in Arizona in the past 12 months?
(Asked of those who hunted in Arizona in the past 12 months.)**

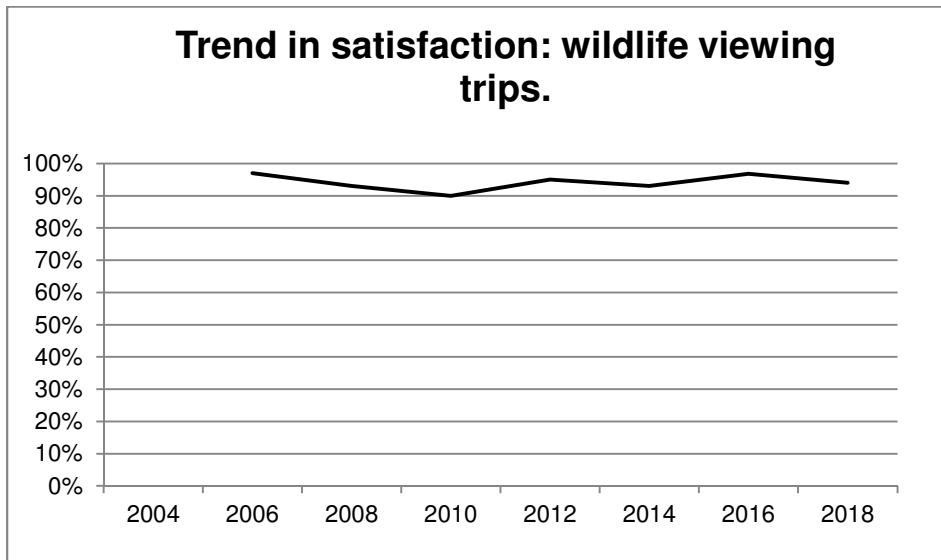
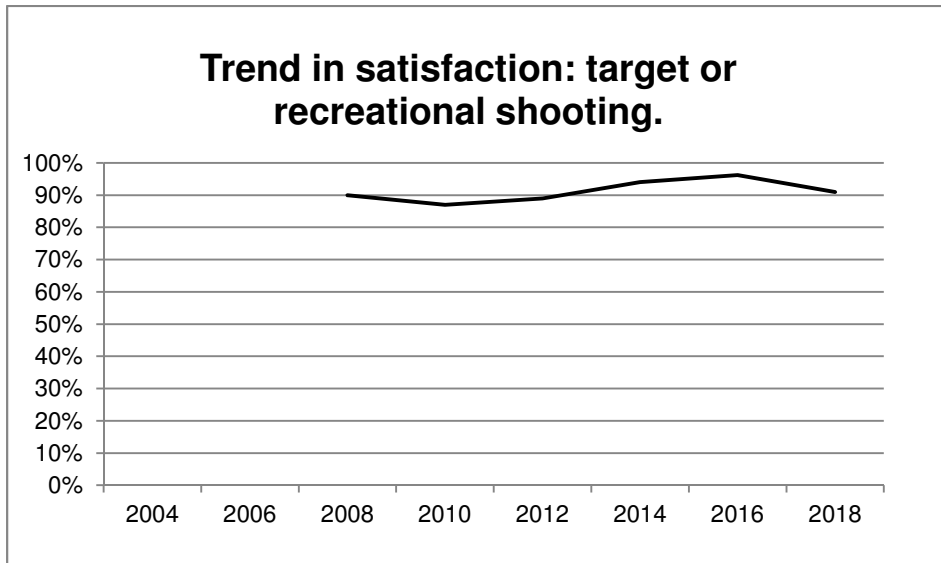


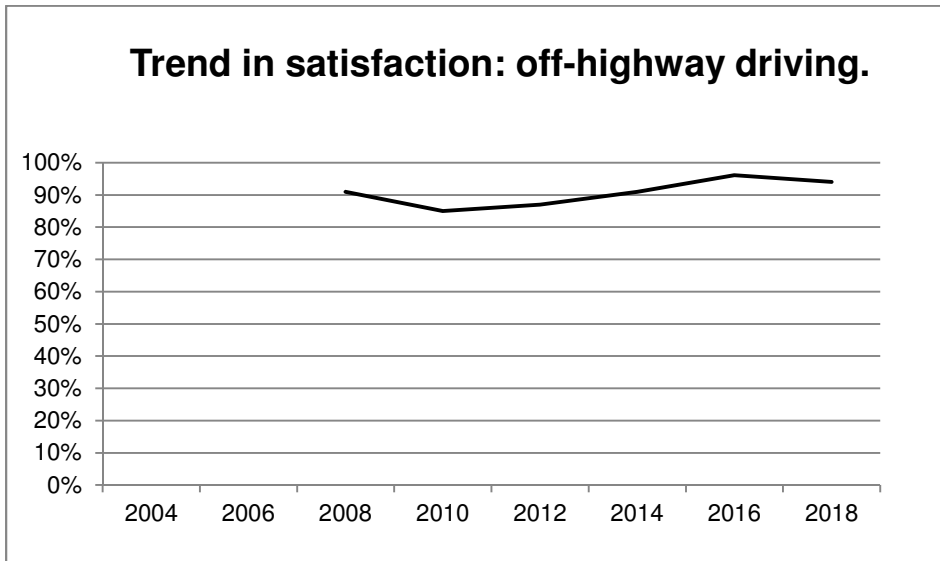
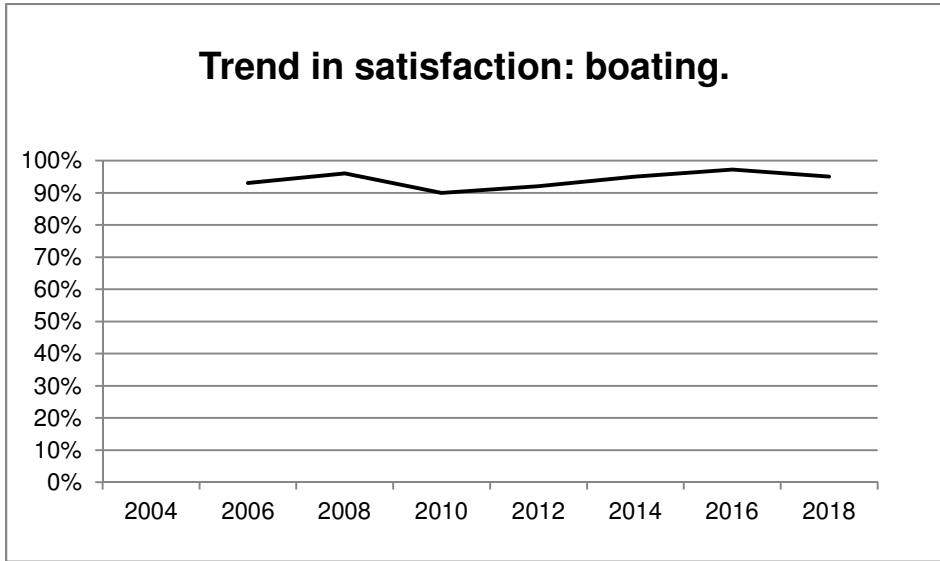
SATISFACTION WITH OUTDOOR RECREATION IN ARIZONA

- The survey asked participants about their satisfaction with the activities that they had done (except for wildlife viewing at home, for which satisfaction was not asked).
 - Satisfaction for all activities had a slight decrease across the board from 2016 to 2018; only in shooting was the difference statistically significant. A tabulation is presented, followed by individual graphs of the long-term trends.
 - Looking at 2018 by itself, satisfaction ranged from 80% for fishing to 95% for boating, and dissatisfaction ranged from 0% to 12%, with anglers being the most dissatisfied, although still with a huge majority who were satisfied (80% of anglers were satisfied; 12% were dissatisfied).
 - The tabulation and graphs are shown in the order of highest participation rate to lowest.
 - The county crosstabulations show a little less satisfaction in the rural counties.

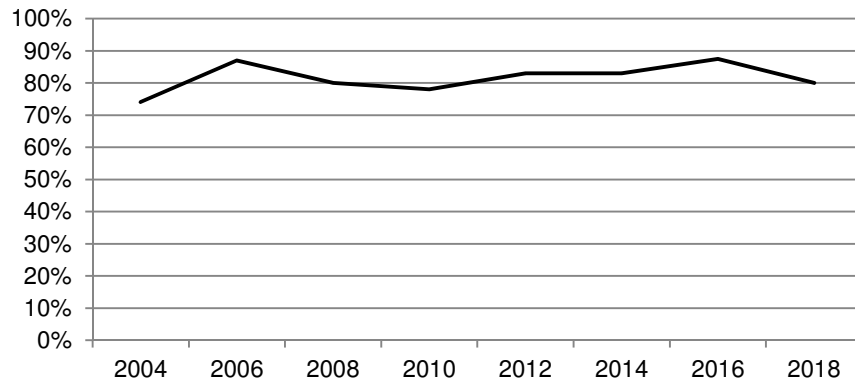
Trend in Satisfaction With the Various Activities

	Percentage Satisfied in 2016	Percentage Satisfied in 2018	X ²	Significant
Target / Rec. Shooting	96.2%	91.2%	4.814	Yes (p < .05)
Wildlife Viewing Trip	95.7%	93.6%	1.006	No
Boating	97.2%	95.4%	0.852	No
Off-Highway Driving	96.1%	93.6%	1.249	No
Fishing	87.5%	80.4%	3.211	No
Hunting	92.1%	90.5%	0.124	No

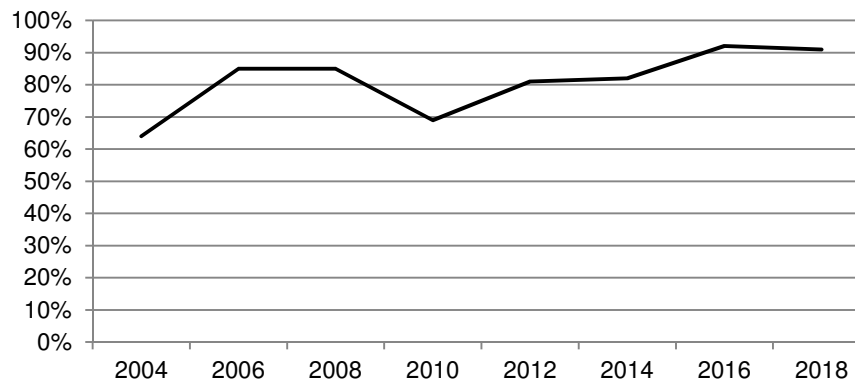




Trend in satisfaction: fishing.



Trend in satisfaction: hunting.

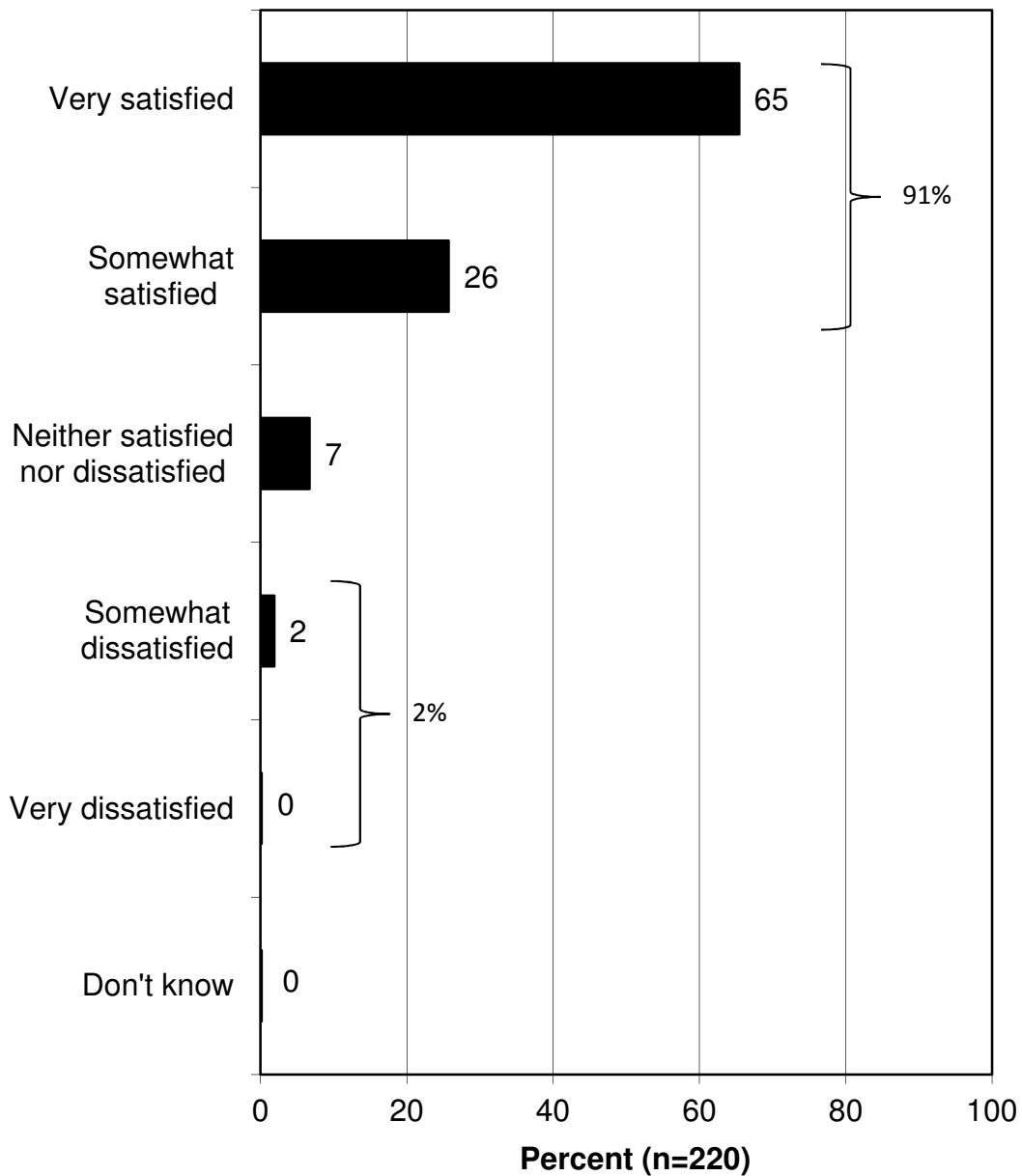


Current Satisfaction With the Various Activities

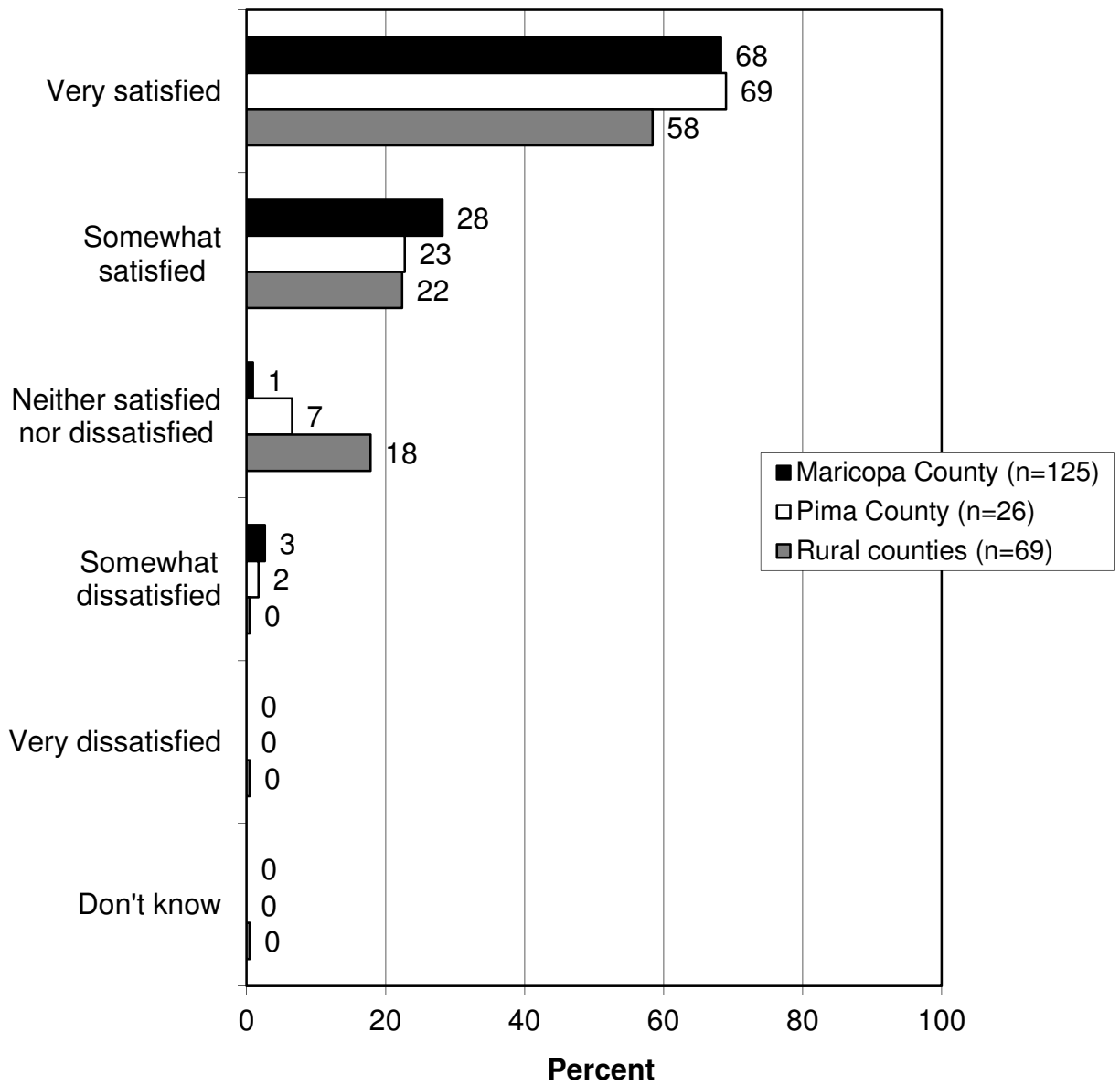
	Percentage Very Satisfied	Percentage Somewhat Satisfied	Percentage Overall Satisfied	Percentage Very Dissatisfied	Percentage Somewhat Dissatisfied	Percentage Overall Dissatisfied
Target / Recreational Shooting	65	26	91	0	2	2
Wildlife Viewing Trip	60	33	94	0	0	0
Boating	60	35	95	1	3	4
Off- Highway Driving	64	30	94	0	3	3
Fishing	48	32	80	4	9	12
Hunting	49	41	91	0	8	9

Any apparent discrepancies in sums are caused by rounding on the graphs; calculation of sums was performed on unrounded numbers.

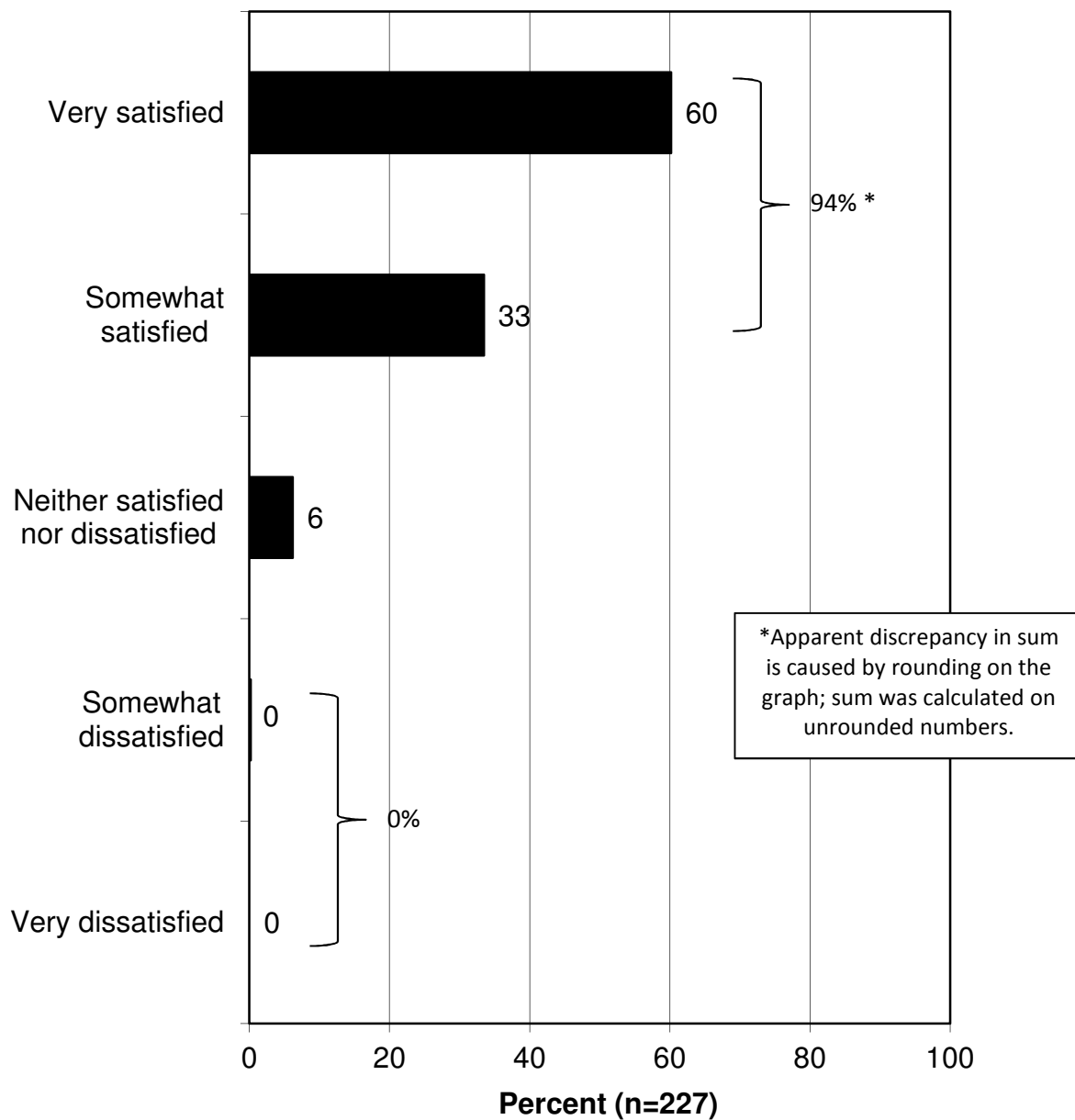
Q44. Overall how satisfied or dissatisfied are you with your target or recreational shooting in Arizona in the past 12 months? (Asked of those who went target or recreational shooting in Arizona in the past 12 months.)



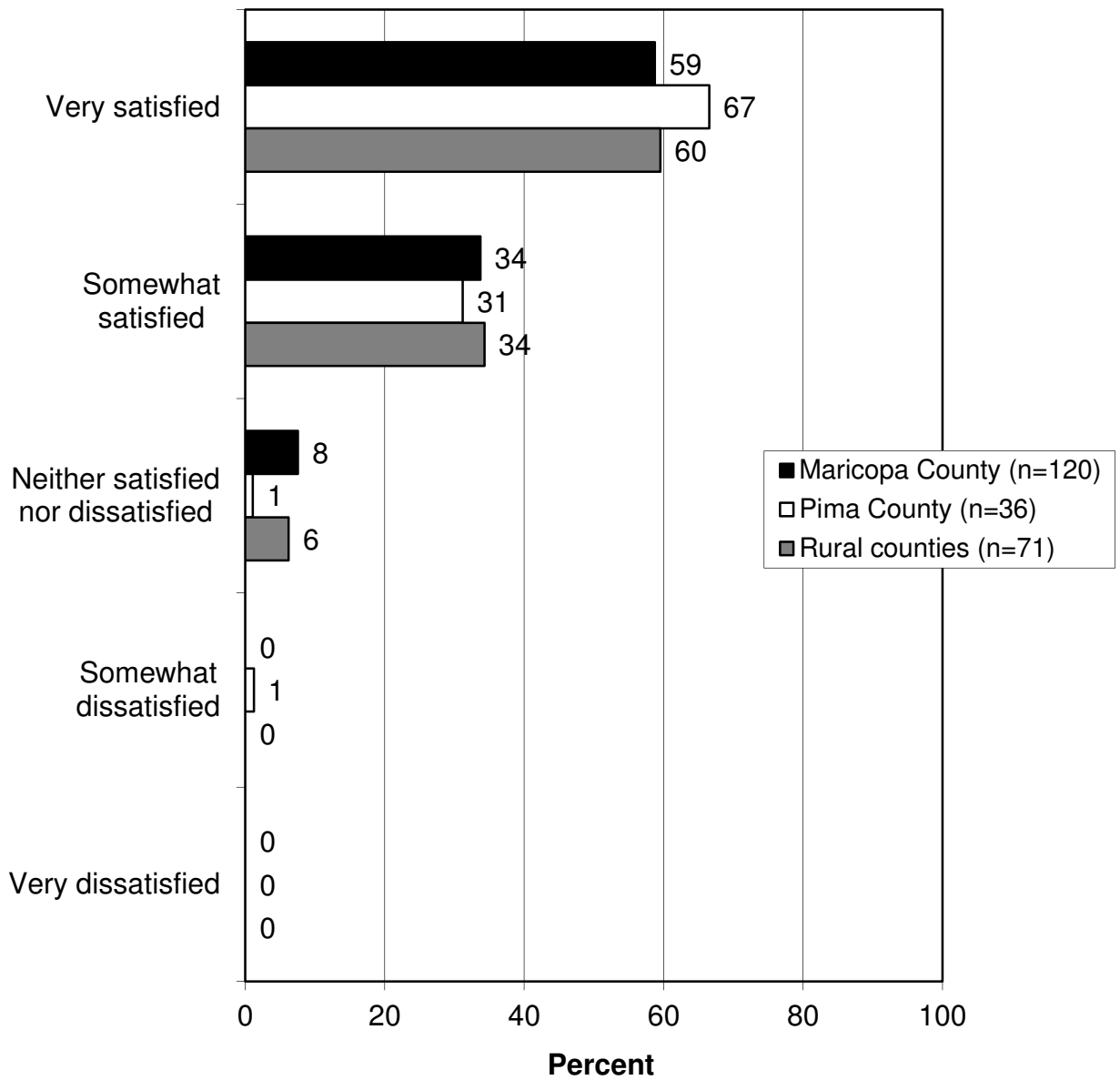
Q44. Overall how satisfied or dissatisfied are you with your target or recreational shooting in Arizona in the past 12 months? (Asked of those who went target or recreational shooting in Arizona in the past 12 months.)



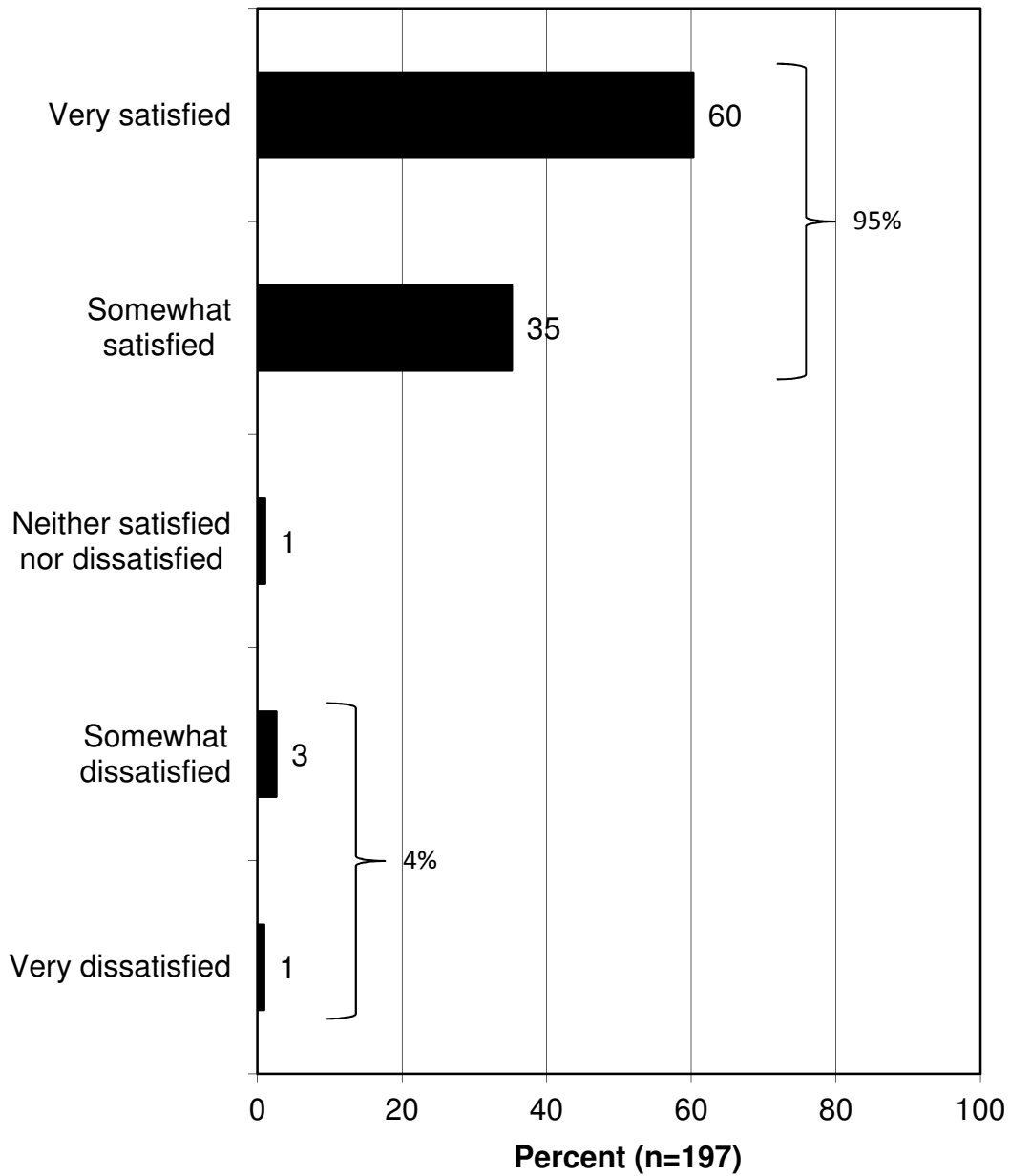
Q73. Overall how satisfied or dissatisfied are you with your experiences viewing or photographing wildlife away from home in Arizona in the past 12 months? (Asked of those who took a wildlife viewing trip in Arizona in the past 12 months.)



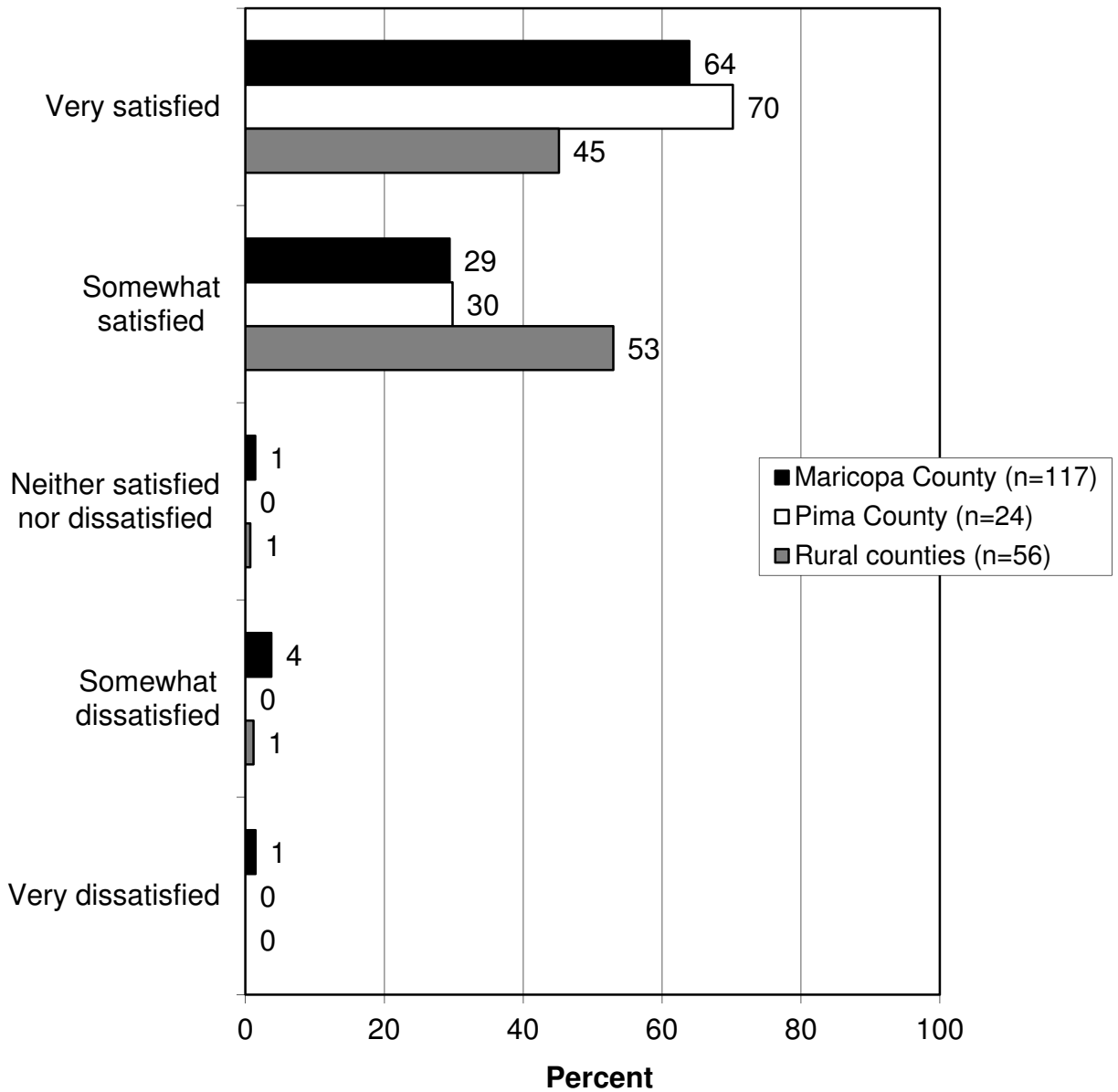
Q73. Overall how satisfied or dissatisfied are you with your experiences viewing or photographing wildlife away from home in Arizona in the past 12 months? (Asked of those who took a wildlife viewing trip in Arizona in the past 12 months.)



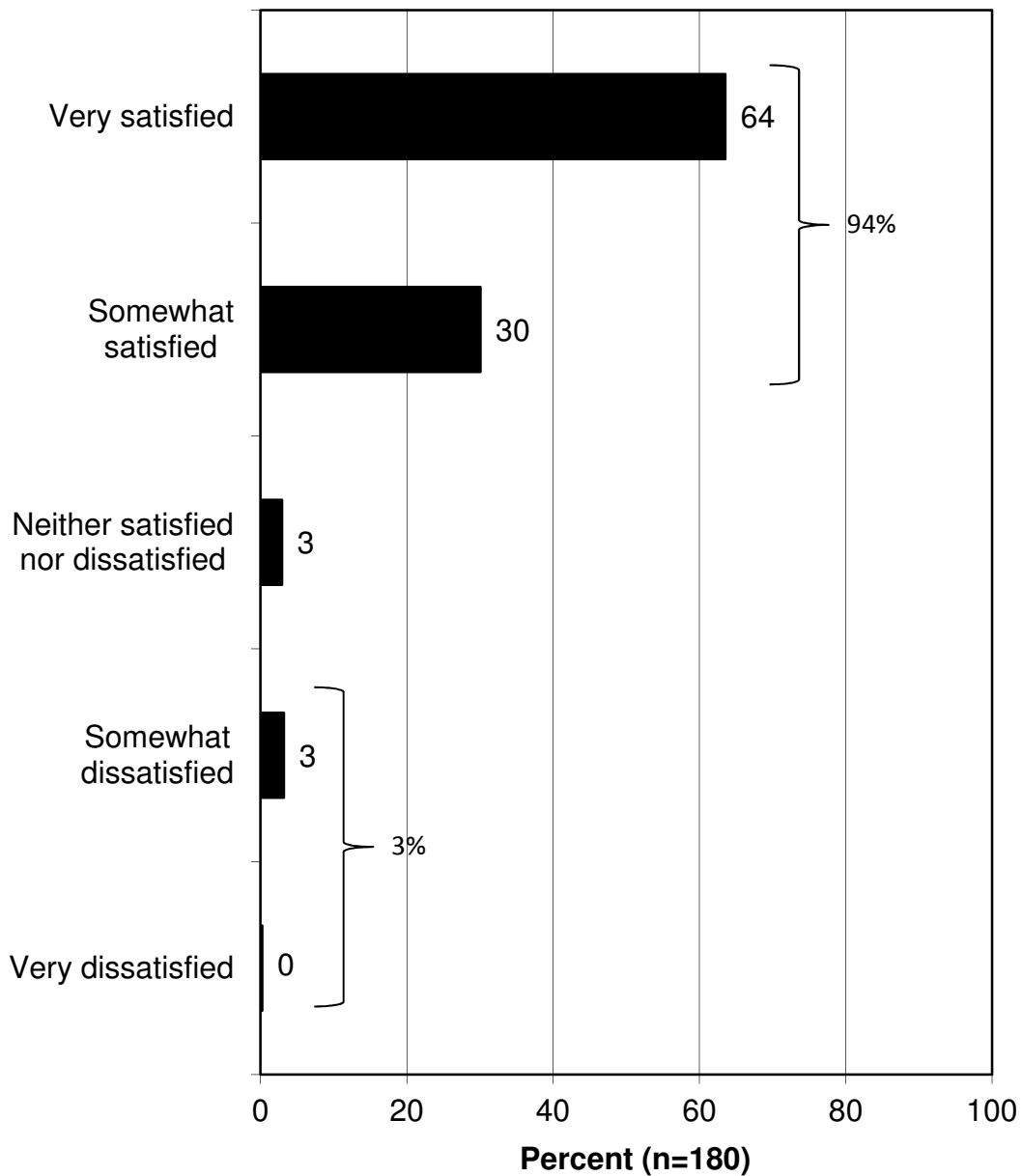
Q31. Overall how satisfied or dissatisfied are you with your boating experiences in Arizona in the past 12 months? (Asked of those who boated in Arizona in the past 12 months.)



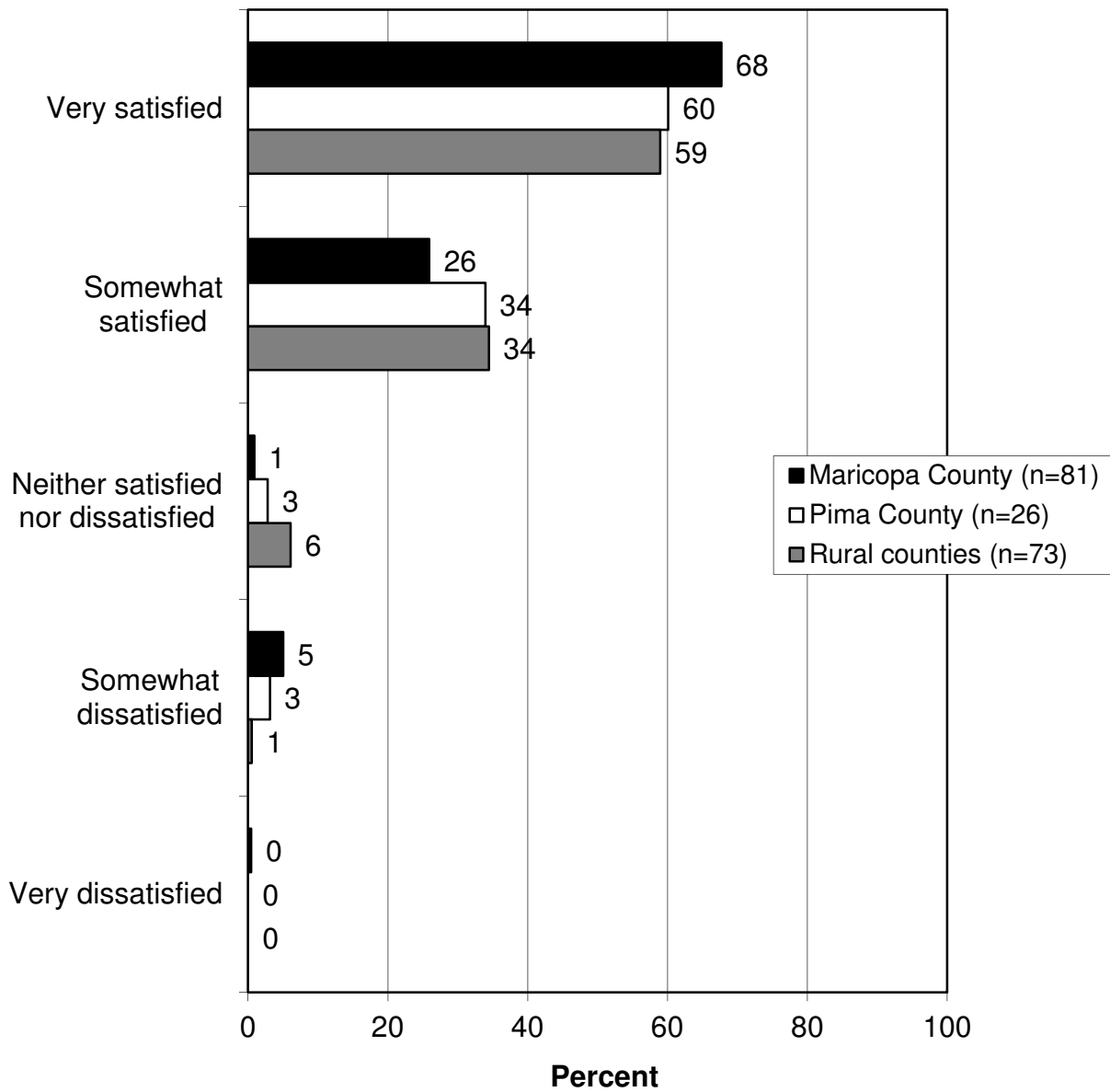
Q31. Overall how satisfied or dissatisfied are you with your boating experiences in Arizona in the past 12 months? (Asked of those who boated in Arizona in the past 12 months.)



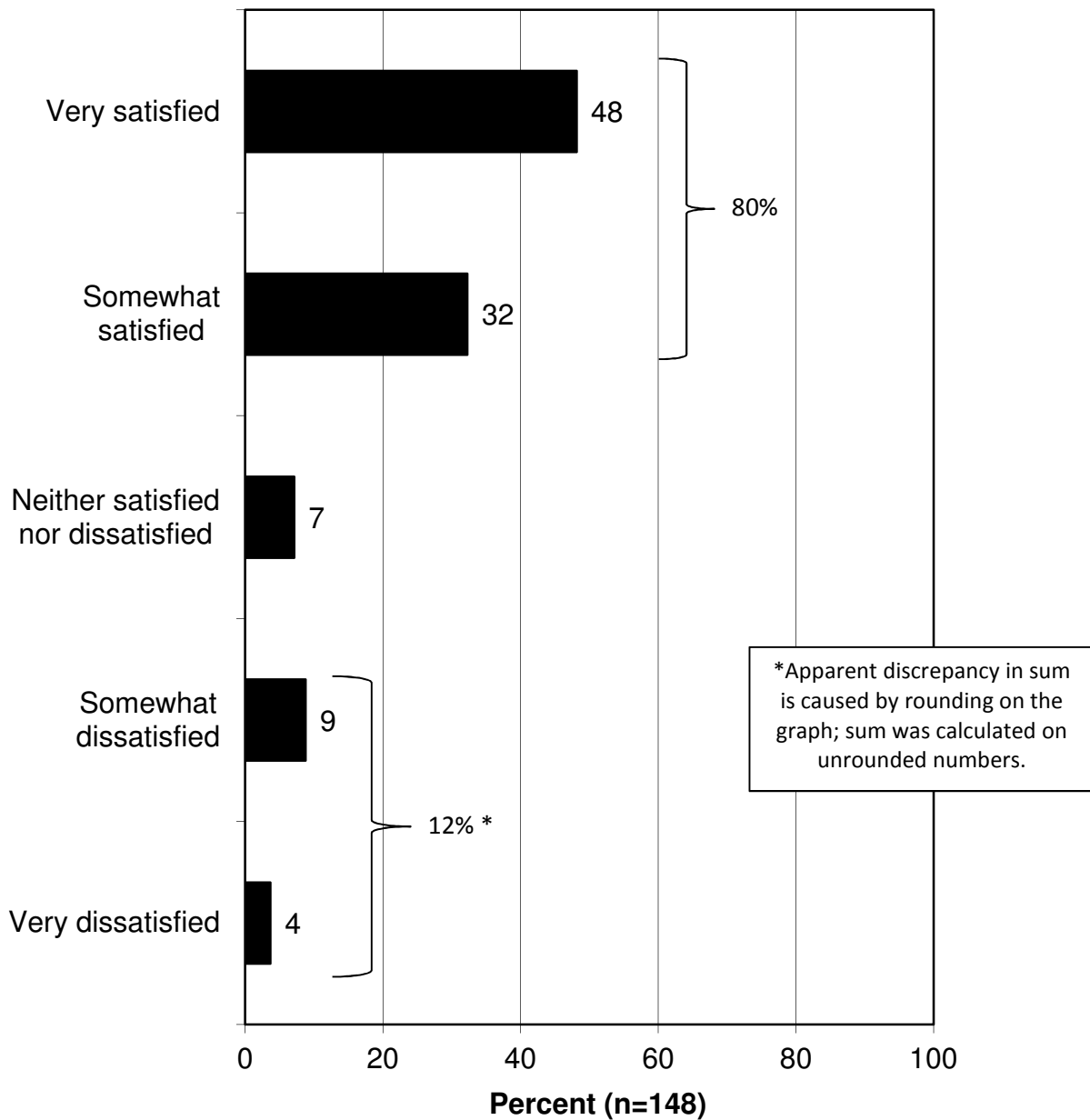
Q39. Overall how satisfied or dissatisfied are you with your off-highway vehicle recreation in Arizona in the past 12 months? (Asked of those who went off-highway driving in Arizona in the past 12 months.)



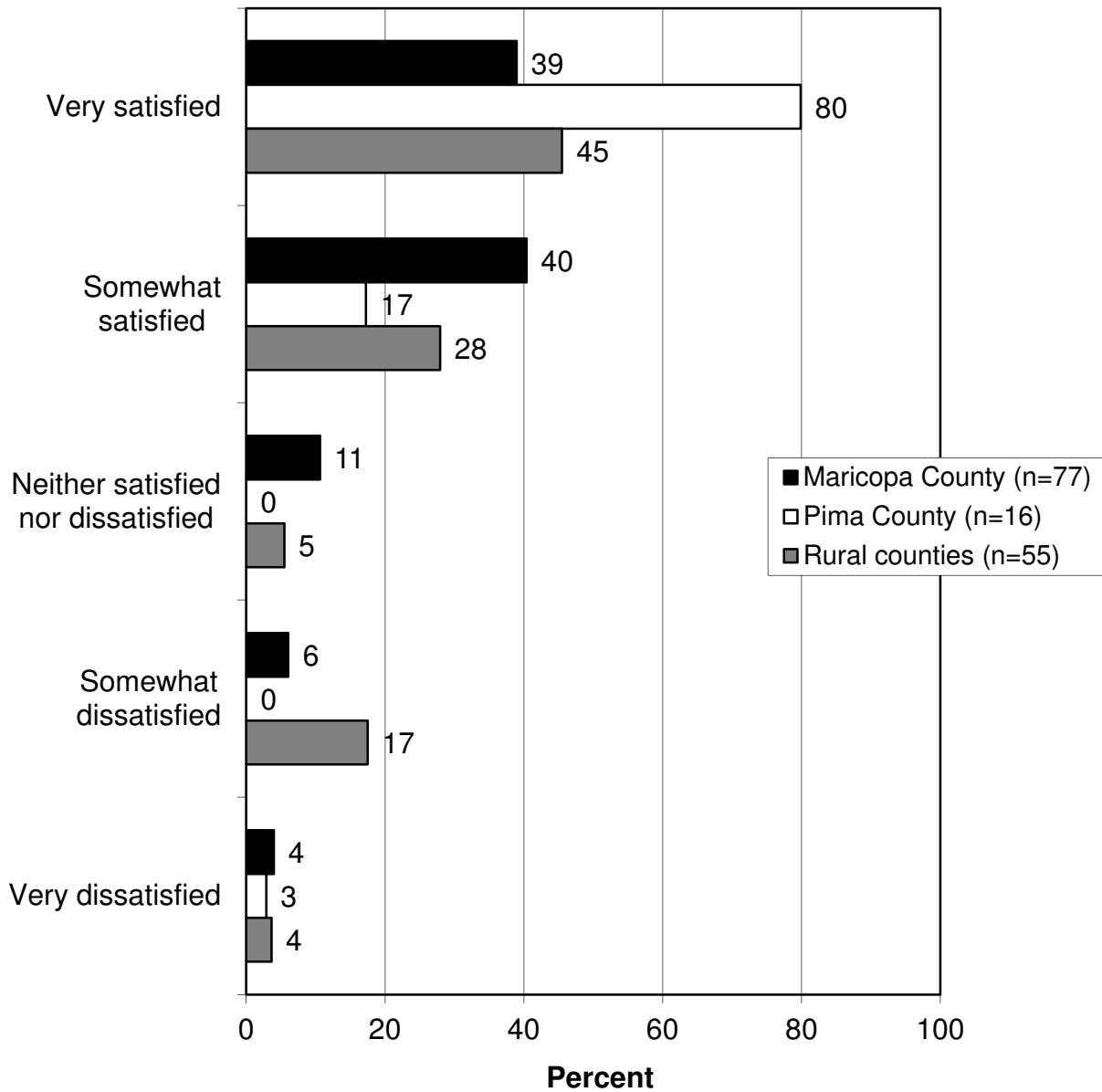
Q39. Overall how satisfied or dissatisfied are you with your off-highway vehicle recreation in Arizona in the past 12 months? (Asked of those who went off-highway driving in Arizona in the past 12 months.)



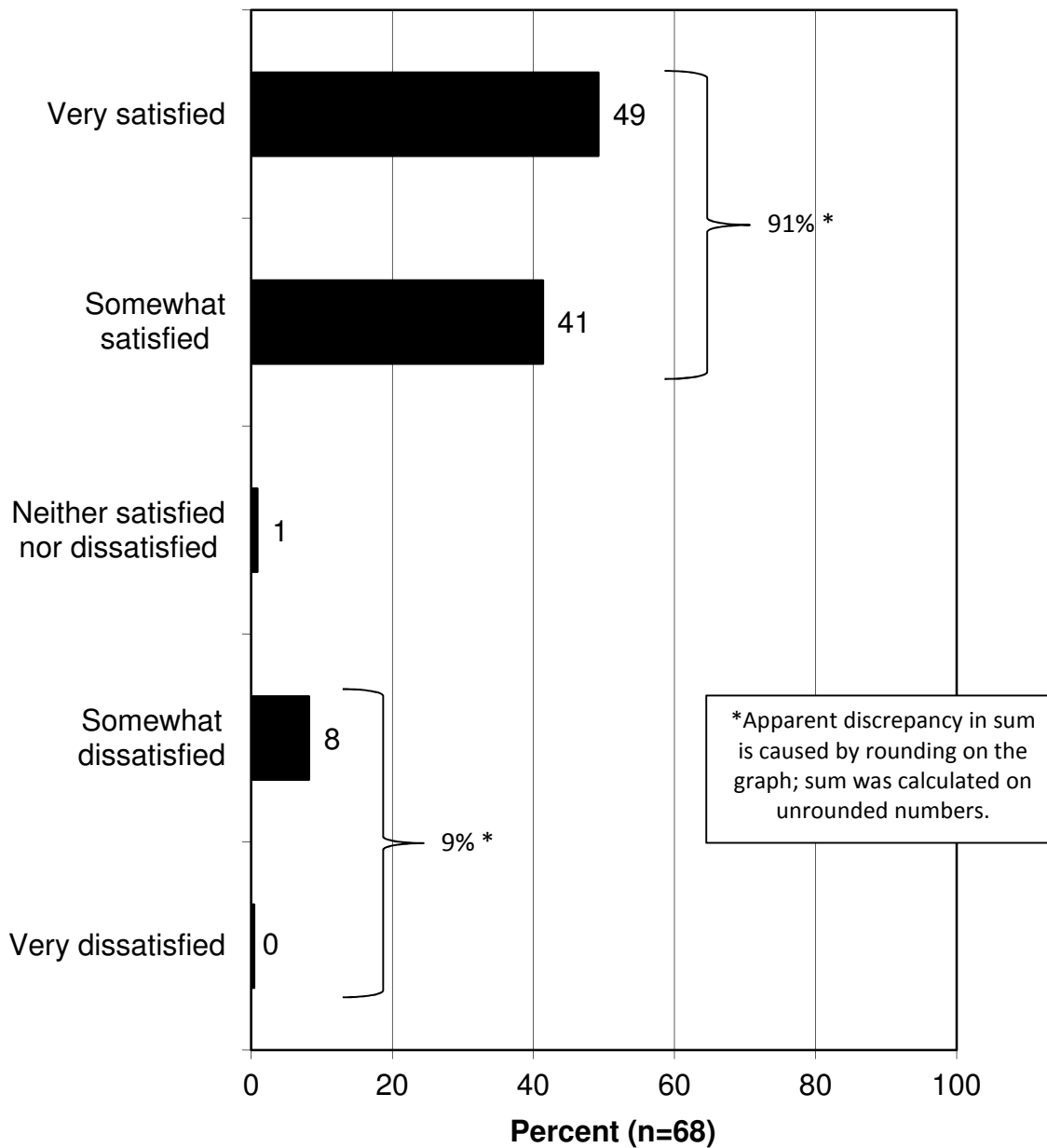
Q13. Overall how satisfied or dissatisfied are you with your fishing experiences in Arizona in the past 12 months? (Asked of those who fished in Arizona in the past 12 months.)



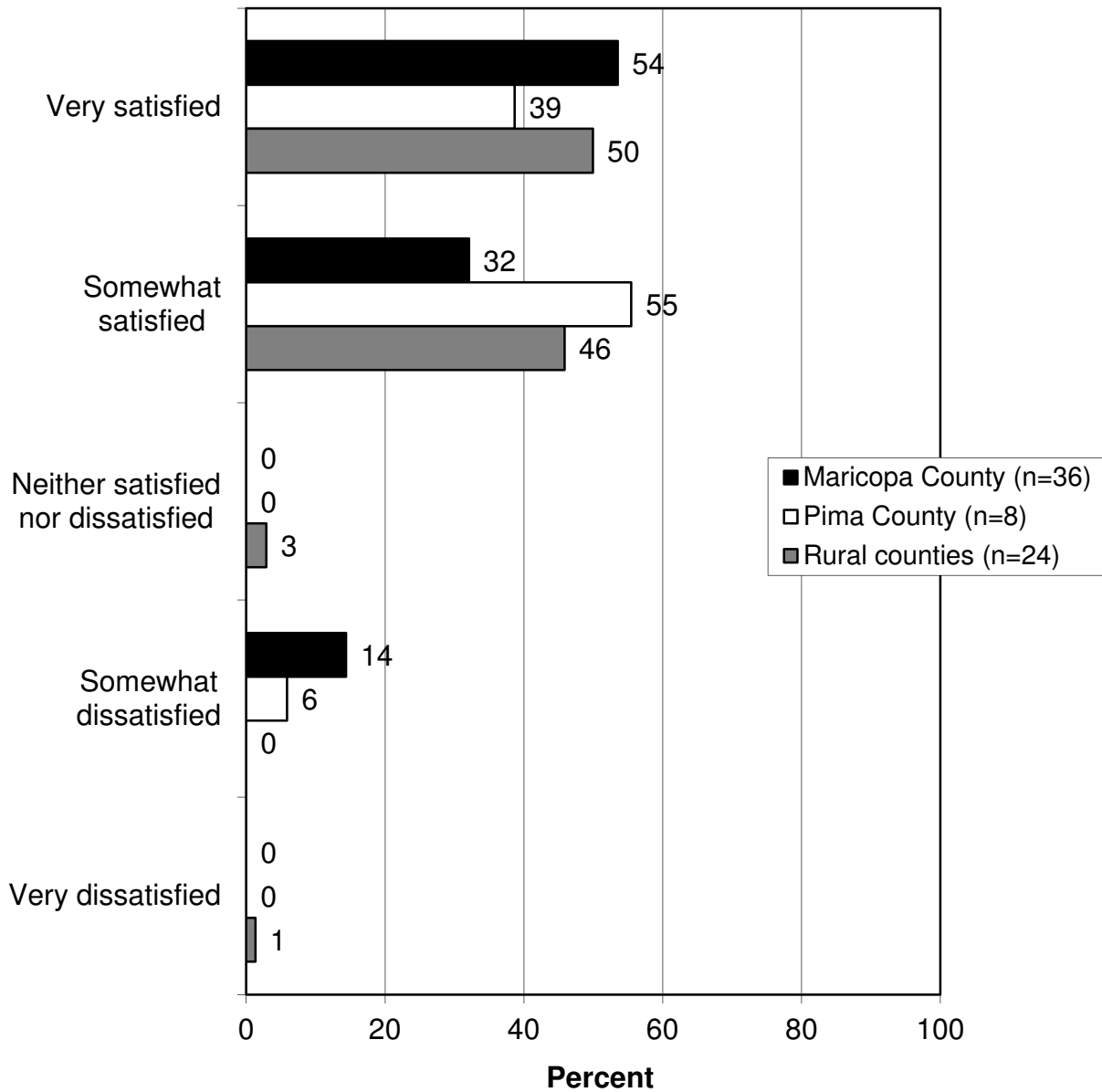
Q13. Overall how satisfied or dissatisfied are you with your fishing experiences in Arizona in the past 12 months? (Asked of those who fished in Arizona in the past 12 months.)



Q51. Overall how satisfied or dissatisfied are you with your hunting experiences in Arizona in the past 12 months? (Asked of those who hunted in Arizona in the past 12 months.)



Q51. Overall how satisfied or dissatisfied are you with your hunting experiences in Arizona in the past 12 months? (Asked of those who hunted in Arizona in the past 12 months.)

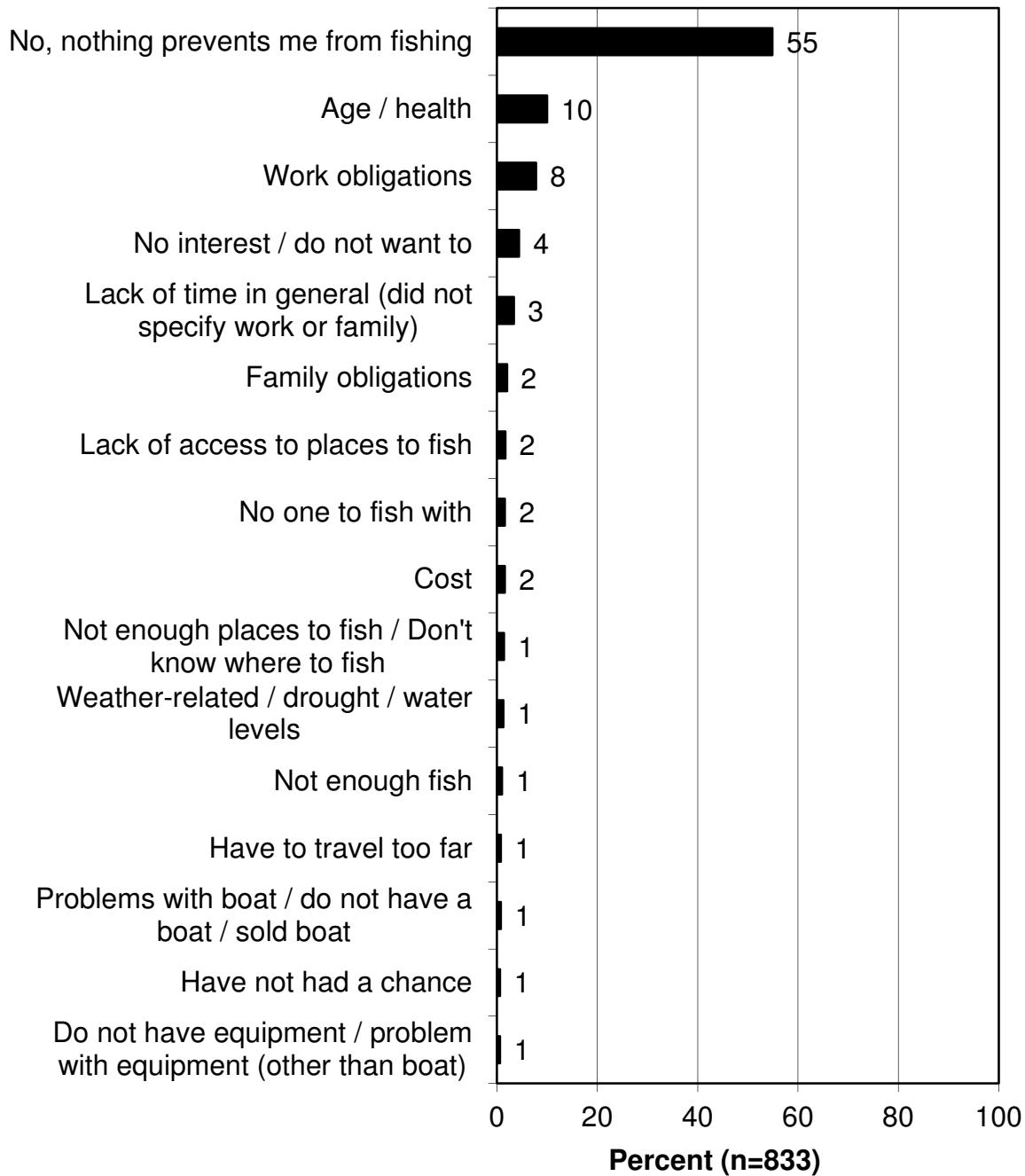


CONSTRAINTS TO PARTICIPATION IN FISHING AND HUNTING

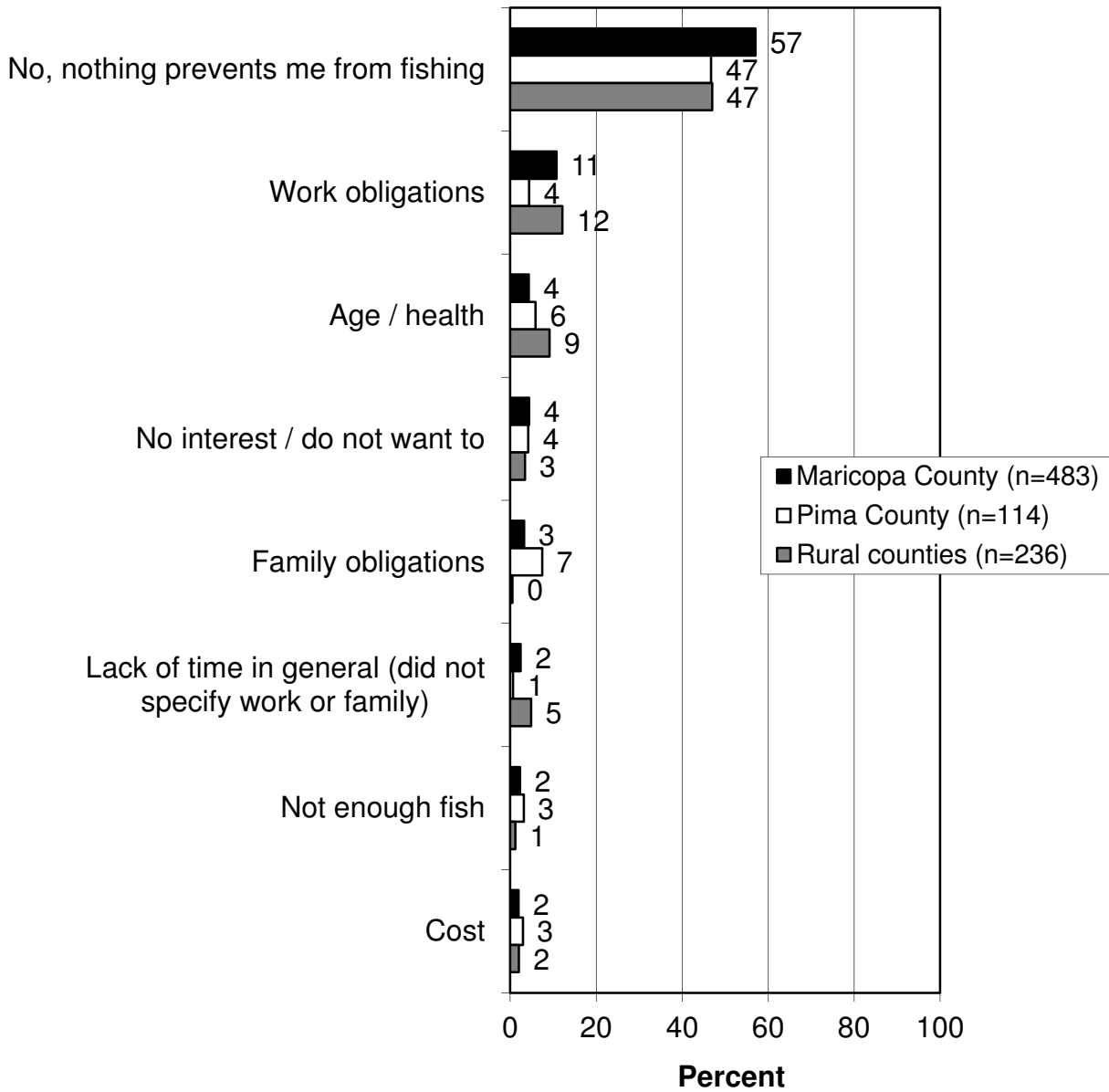
- As with past surveys, the most important constraints to fishing participation (asked of both anglers and non-anglers) are not related to the resource but are, instead, social issues. This year, age/health topped the list (10% said that this was their top constraint), followed by lack of time (because of work, family, or in general). The primary constraint over which the Department has some influence is lack of access to places to fish (2%).
 - Follow-up questions asked about other constraints after that top constraint. Putting all the questions together, including the top constraint, the analysis shows the full list of items that act as constraints. The top ones are social. The top ones related to the resource or to fishing itself are cost (3%), not enough places to fish (2%), not enough fish (2%), and lack of access to places to fish (2%).
 - County crosstabulations are included.

- The survey asked everybody (both hunters and non-hunters) about respondents' top hunting constraints, and, other than lack of interest, a top constraint among the general population is not wanting to hurt or kill animals (6%), followed by social issues of age/health (5%) and work obligations (4%). Of interest to the agency is that 3% responded with difficulty getting a draw or getting tags.
 - The analysis of the follow-up questions shows that the top non-social constraints to hunting participation are difficulty getting a draw/tags (3%), cost (2%), and lack of access to places to hunt (1%).
 - County crosstabulations are included.

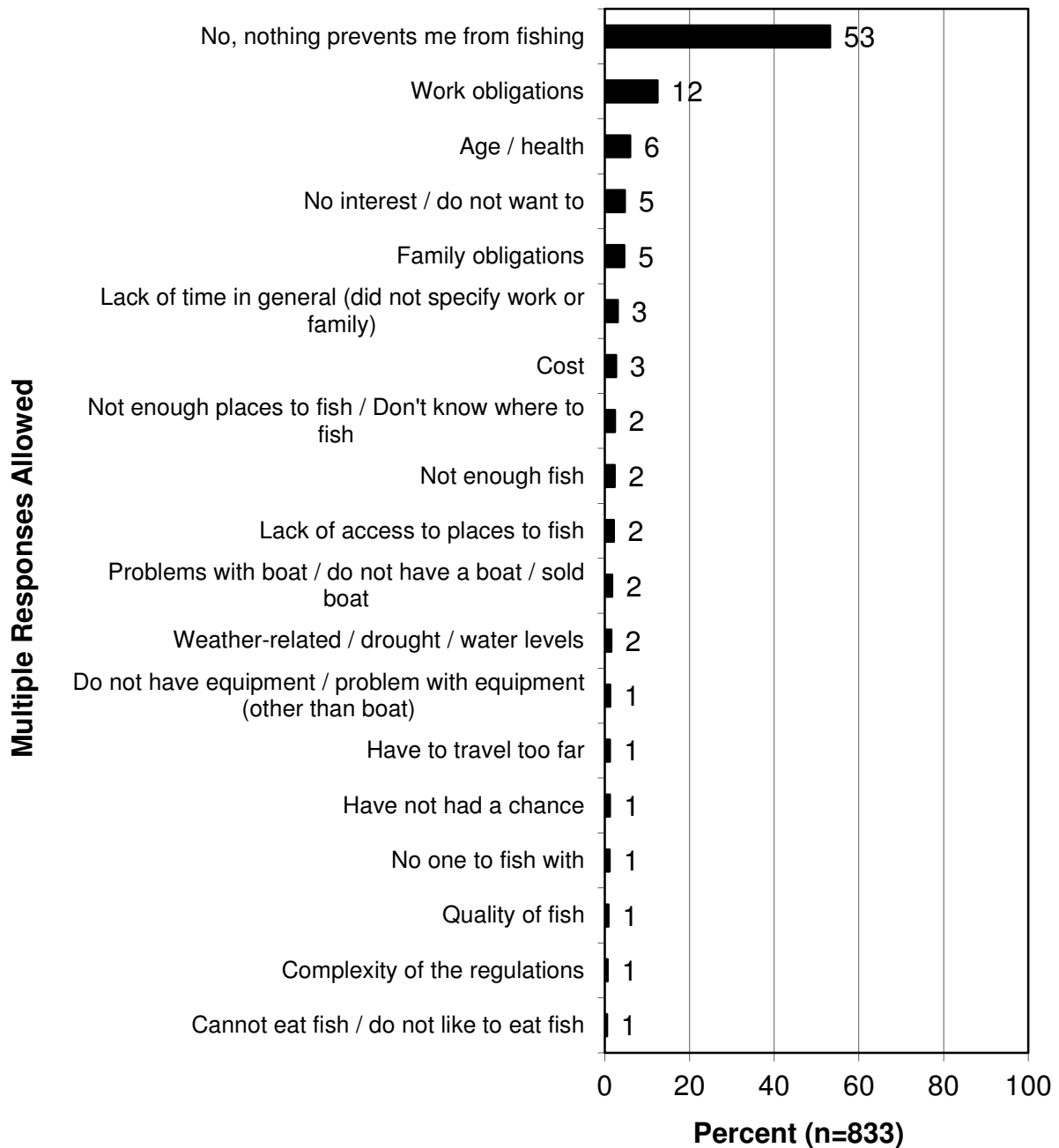
Q19. Is there anything that prevents you from going fishing or going fishing as much as you would like in Arizona? If so, what is the most important thing preventing you from going?



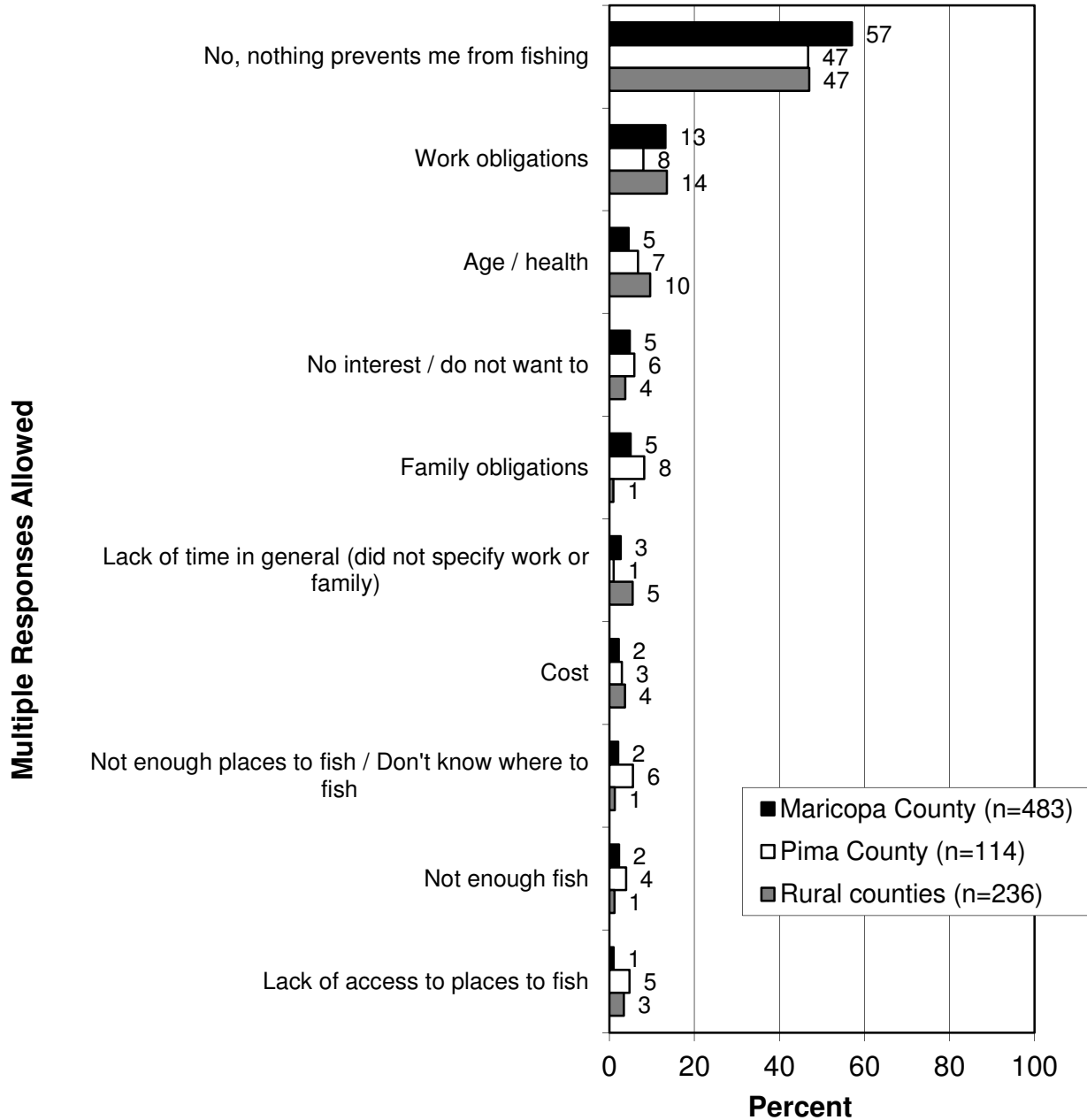
**Q19. Is there anything that prevents you from going fishing or going fishing as much as you would like in Arizona? If so, what is the most important thing preventing you from going?
(Shows those with at least 2% of total.)**



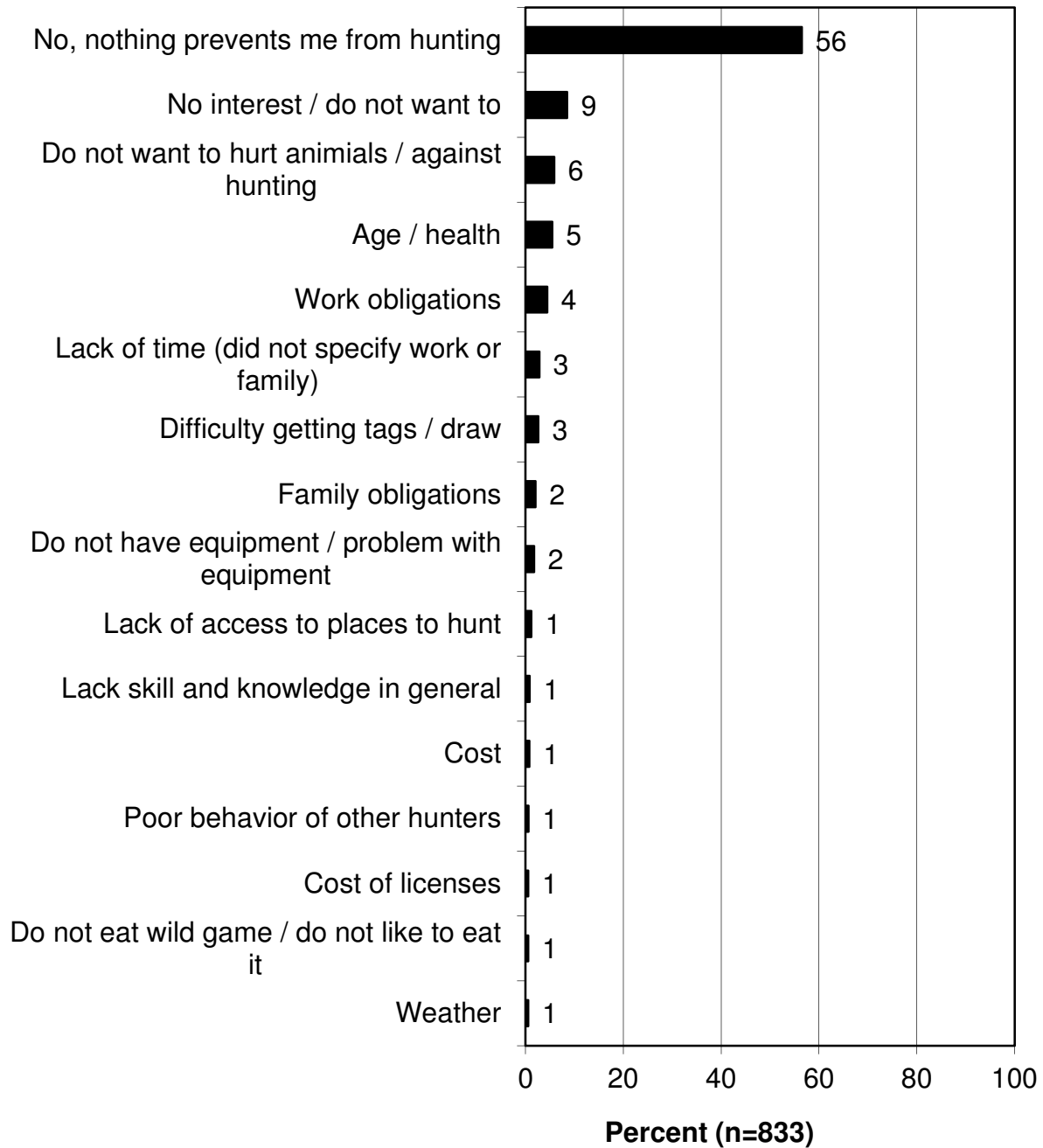
Q19-23. Is there anything that prevents you from going fishing or going fishing as much as you would like in Arizona? If so, what is the most important thing preventing you from going?



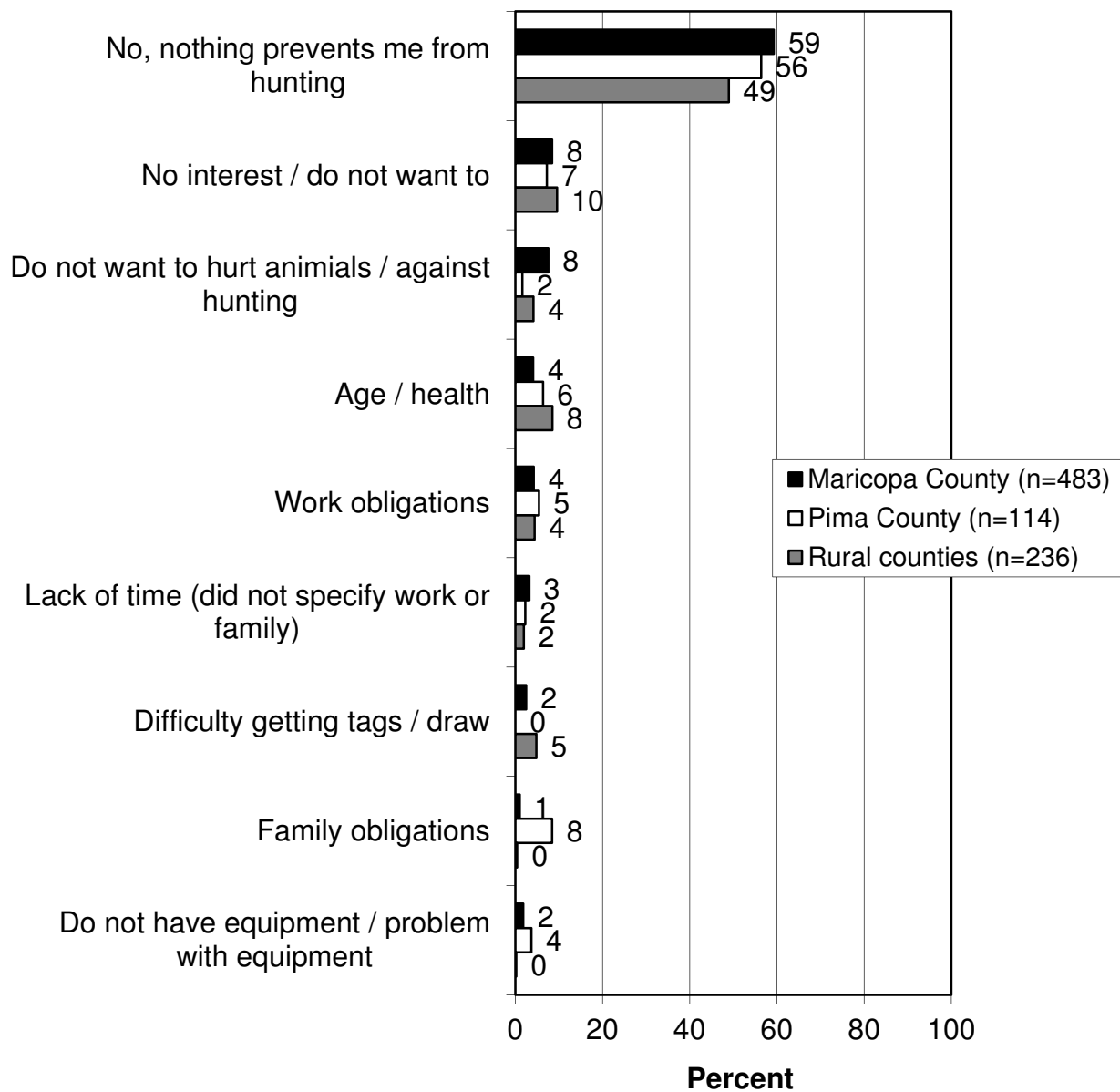
Q19-23. Is there anything that prevents you from going fishing or going fishing as much as you would like in Arizona? If so, what is the most important thing preventing you from going? (Shows those with at least 2% of total.)



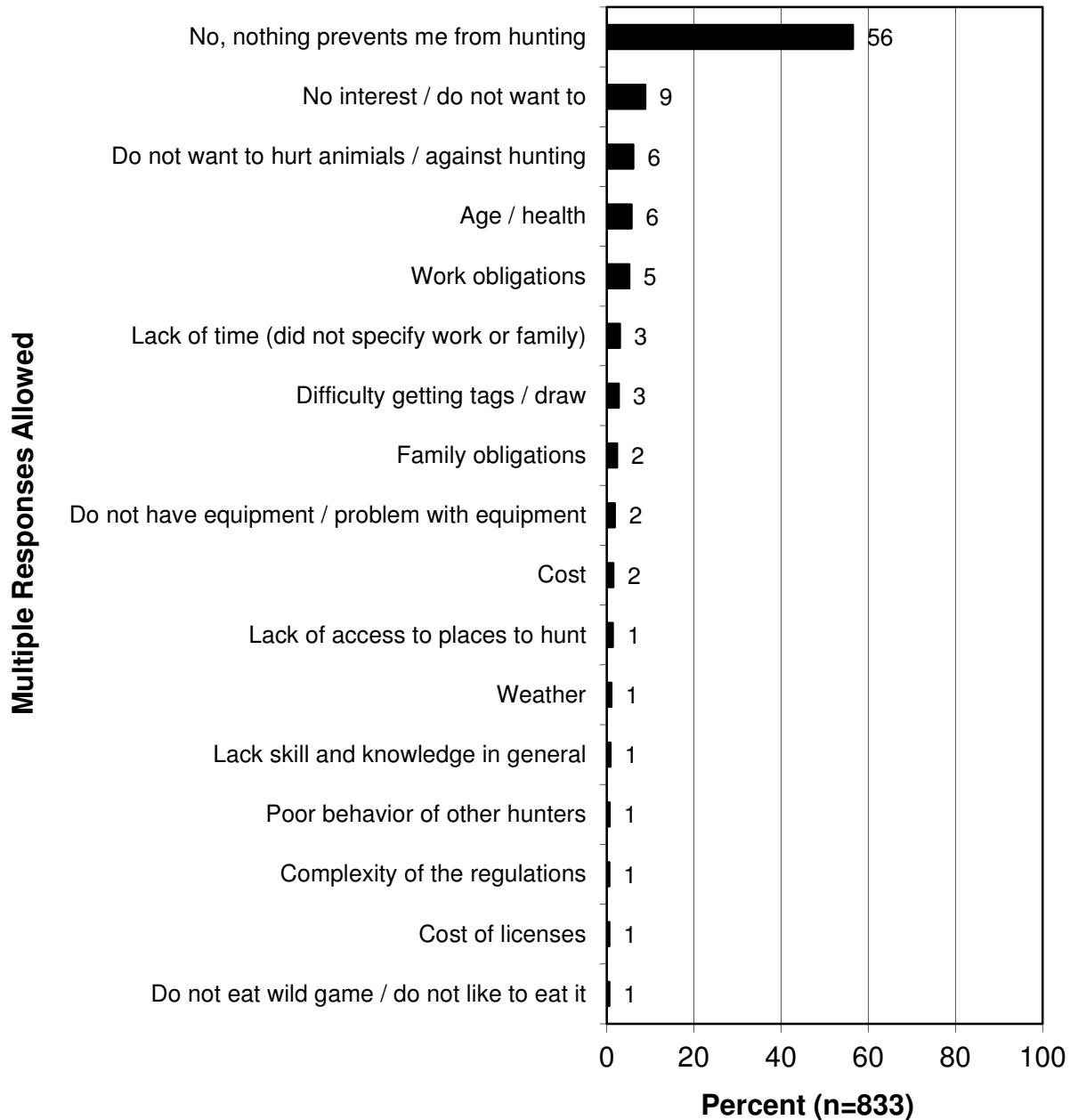
Q60. Is there anything that prevents you from going hunting or going hunting as much as you would like in Arizona? If so, what is the most important thing preventing you from going?



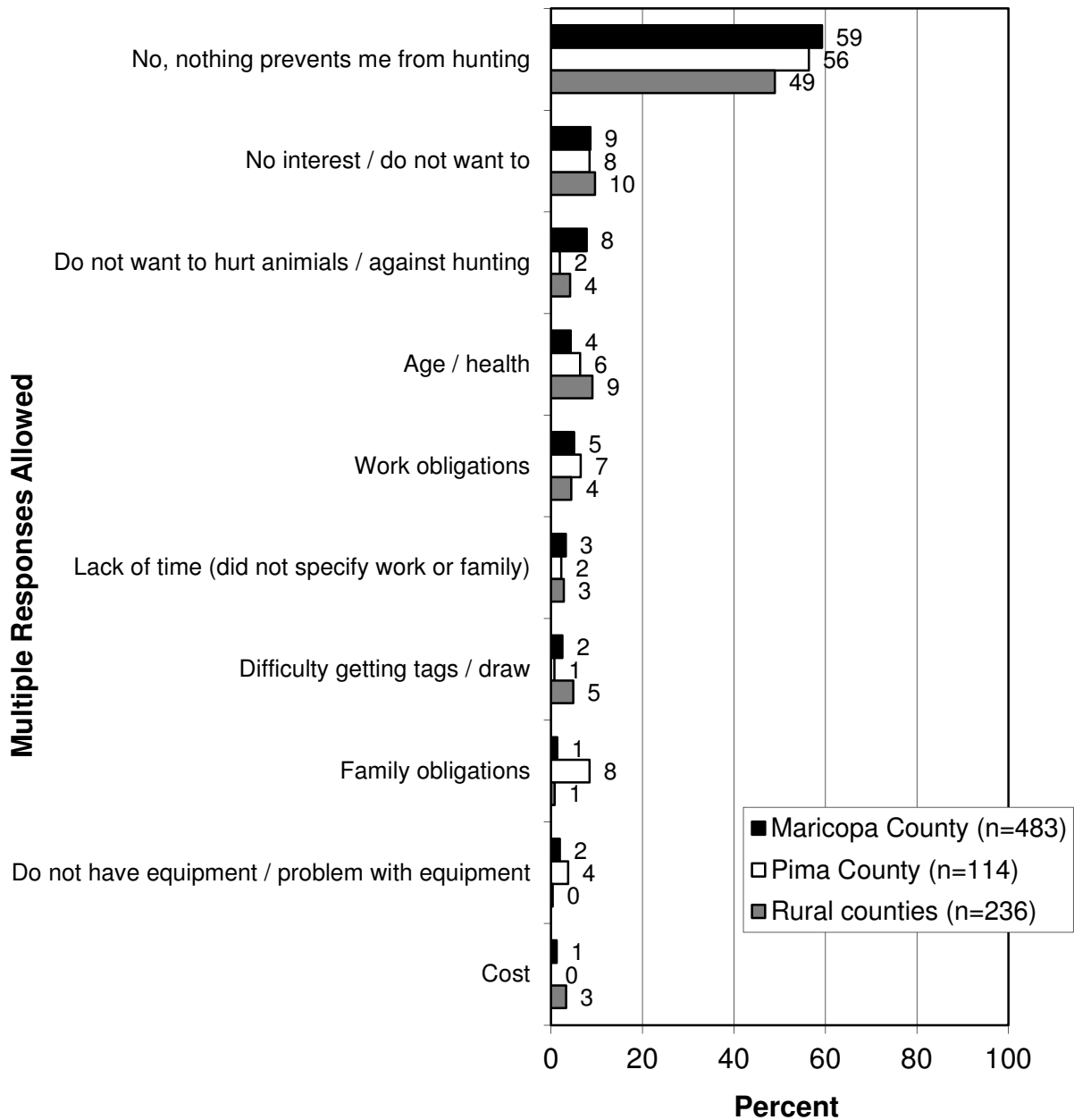
Q60. Is there anything that prevents you from going hunting or going hunting as much as you would like in Arizona? If so, what is the most important thing preventing you from going? (Shows those with at least 2% of total.)



Q60-64. Is there anything that prevents you from going hunting or going hunting as much as you would like in Arizona? If so, what is the most important thing preventing you from going?



Q60-64. Is there anything that prevents you from going hunting or going hunting as much as you would like in Arizona? If so, what is the most important thing preventing you from going? (Shows those with at least 1.5% of total.)



INTEREST IN PARTICIPATING IN OUTDOOR RECREATION AMONG NON-PARTICIPANTS

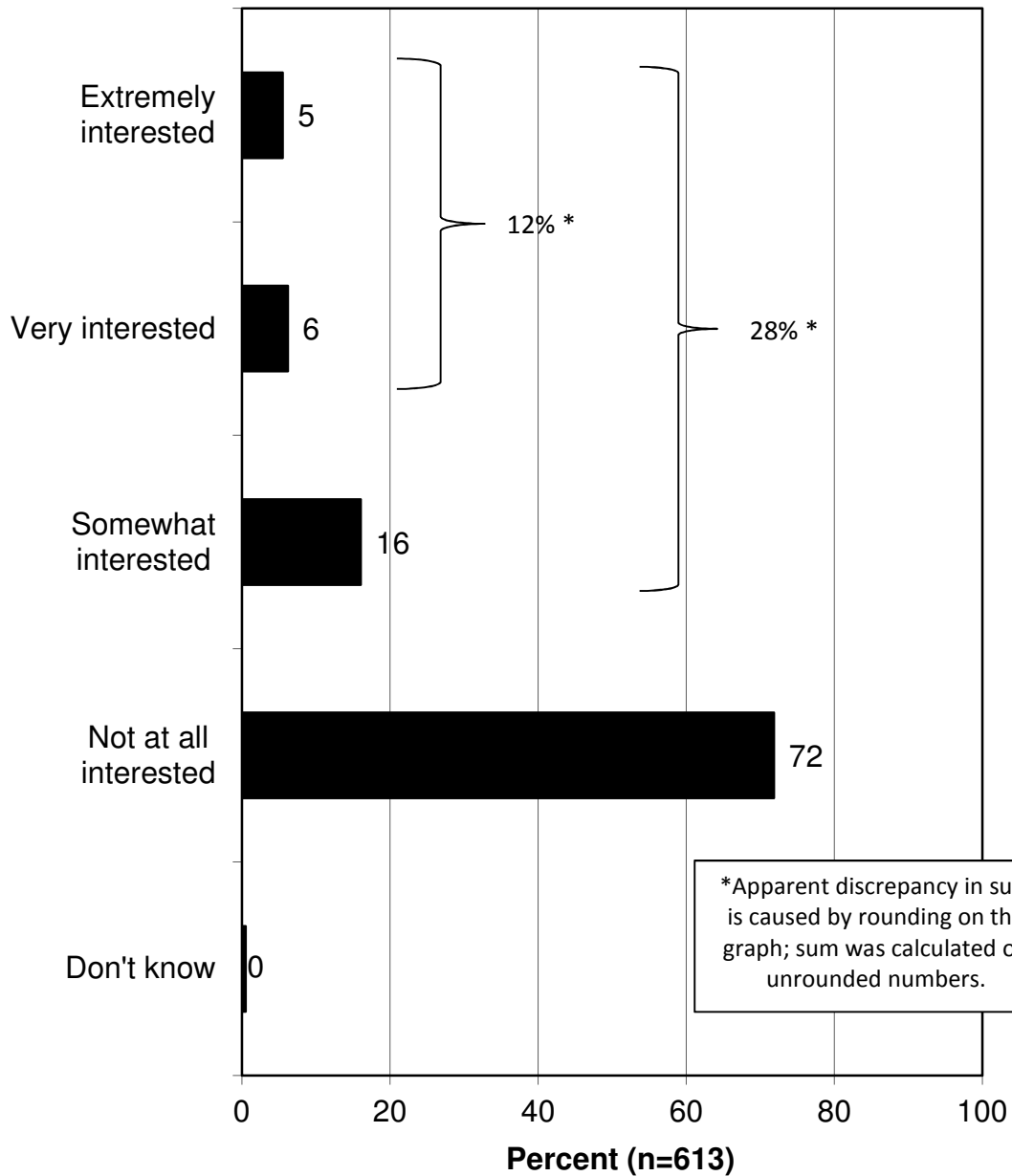
- Respondents were asked about their interest in participating in each activity in which they had not done. The most salient responses to examine are *extremely* interested and *very* interested rather than the anemic interest expressed by those who say *somewhat* interested. The activity with the highest percentage of nonparticipants being *extremely* or *very* interested is boating (17% are *extremely* or *very* interested), which is followed by three fairly close together: taking a wildlife viewing trip (13%), fishing (13%), and target or recreational shooting including archery (12%). (The questions was asked of those who had not participated.)
- The tabulation and graphs are shown in the order of highest participation rate to lowest. In this case, it means that the biggest group is last (i.e., the percentage who did not participate in hunting). County crosstabulations are included.

Interest in the Various Activities Among Non-Participants

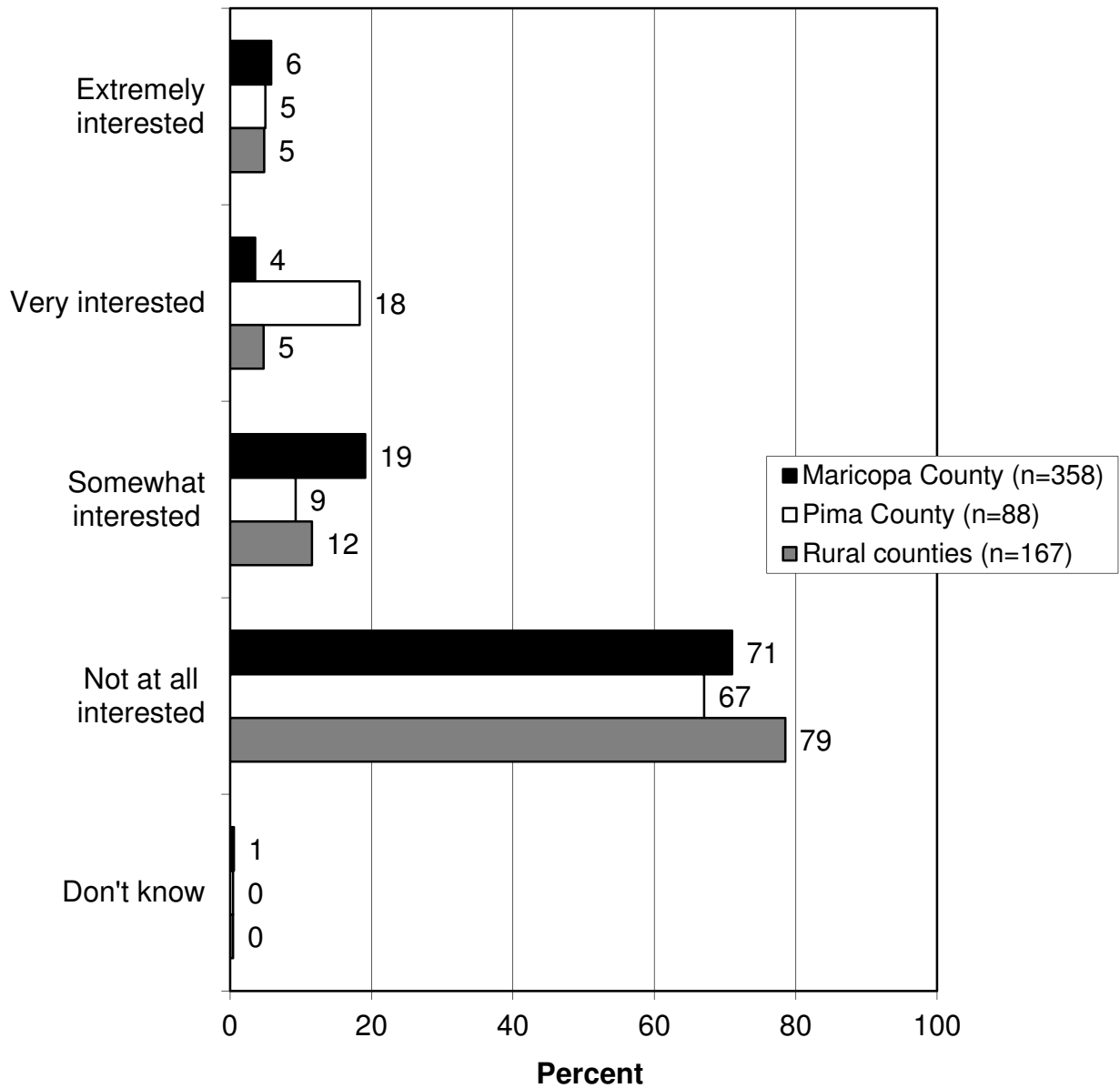
	Percentage Extremely Interested	Percentage Very Interested	Percentage Extremely or Very Interested	Percentage Somewhat Interested	Percentage Overall Interested	Percentage Not at All Interested
Target / Recreational Shooting	5	6	12	16	28	72
Taking a Wildlife Viewing Trip	4	9	13	32	44	54
Boating	5	12	17	29	46	53
Off-Highway Driving	3	6	9	19	28	71
Fishing	4	9	13	23	36	63
Hunting	3	3	6	9	14	85

Any apparent discrepancies in sums are caused by rounding on the graphs; calculation of sums was performed on unrounded numbers.

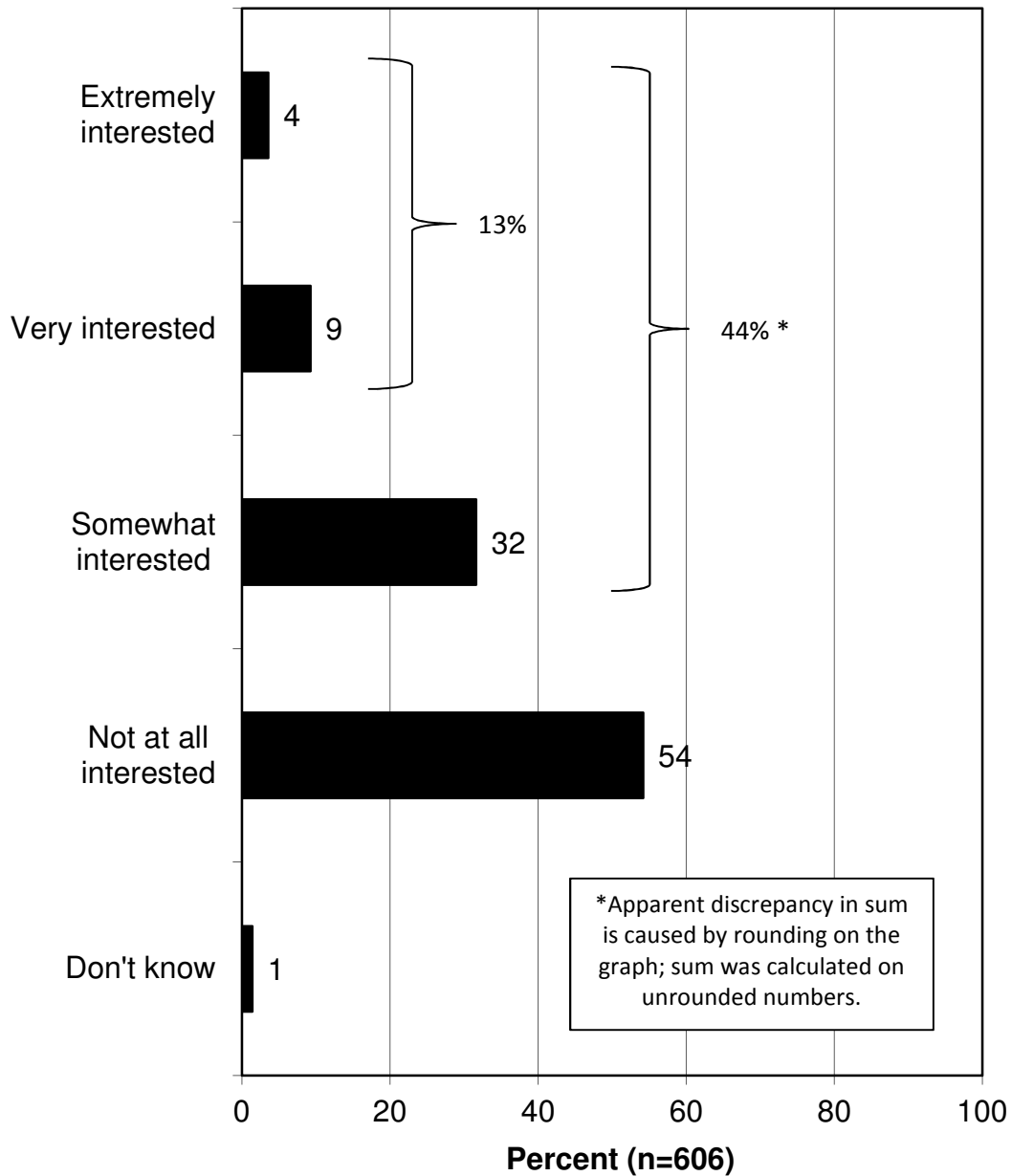
Q49. How interested are you in going shooting in the next 12 months? (Asked of those who did not go target or recreational shooting in Arizona in the past 12 months.)



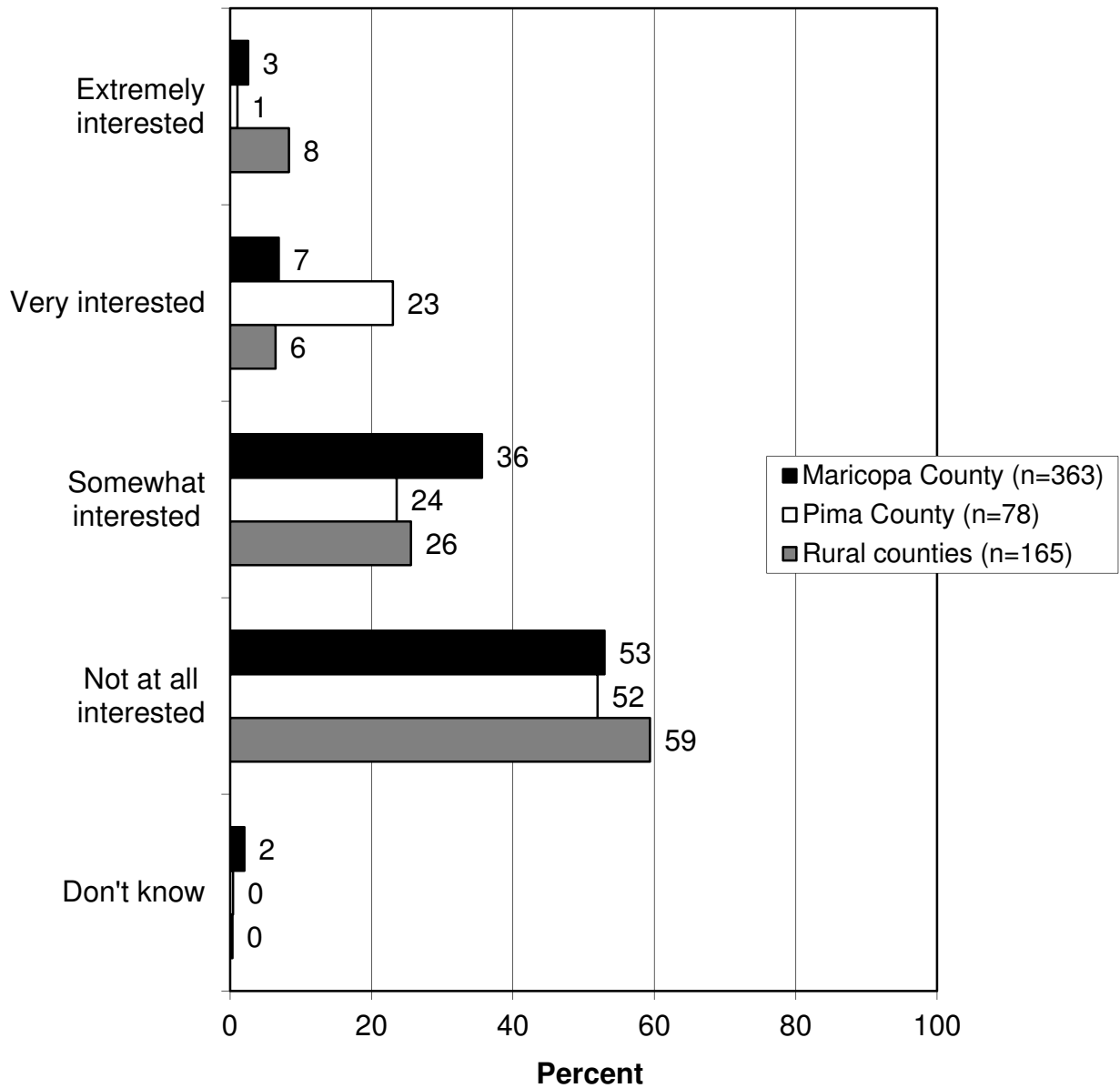
Q49. How interested are you in going shooting in the next 12 months? (Asked of those who did not go target or recreational shooting in Arizona in the past 12 months.)



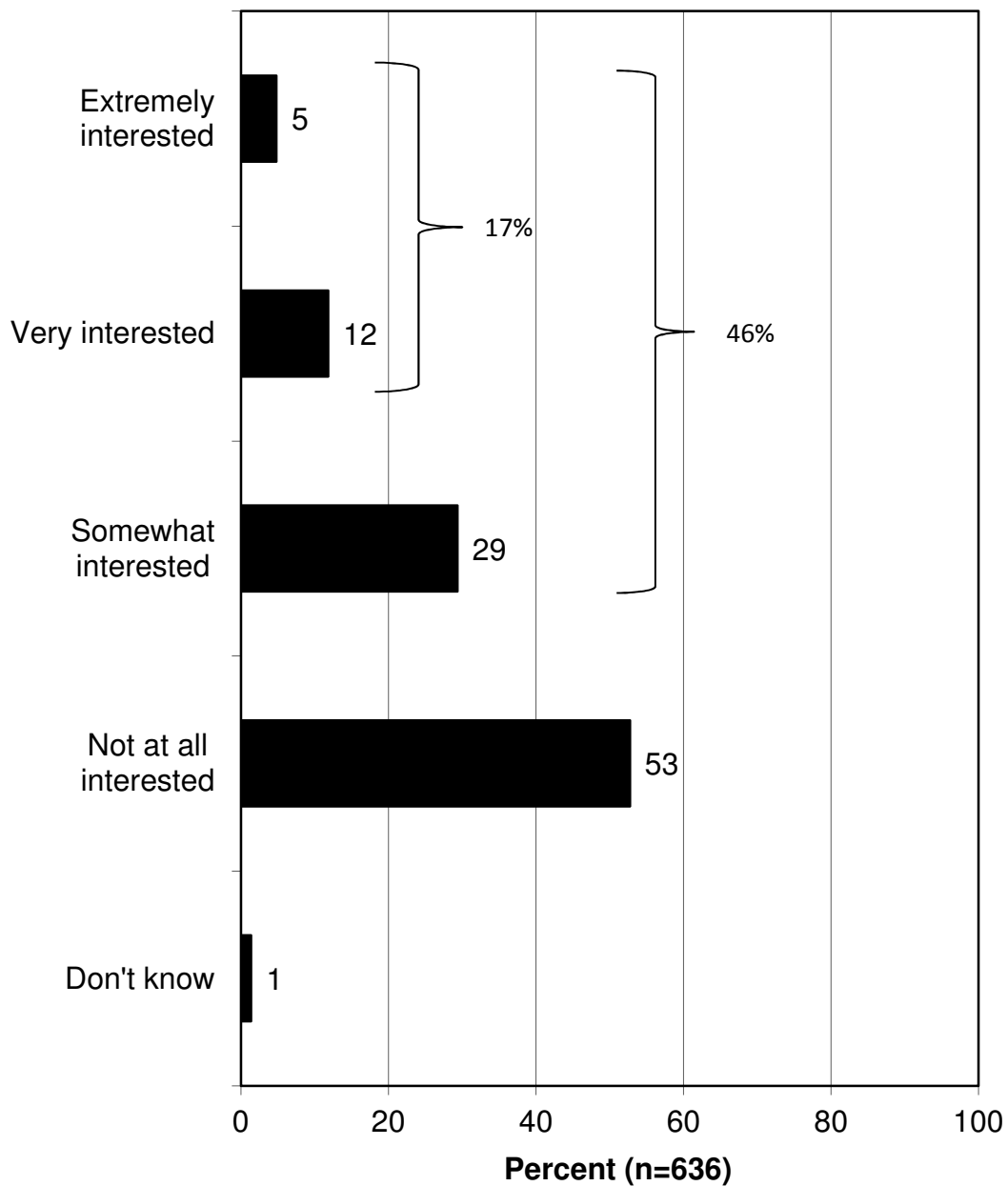
Q76. How interested are you in going wildlife viewing in the next 12 months? (Asked of those who did not take a wildlife viewing trip in Arizona in the past 12 months.)



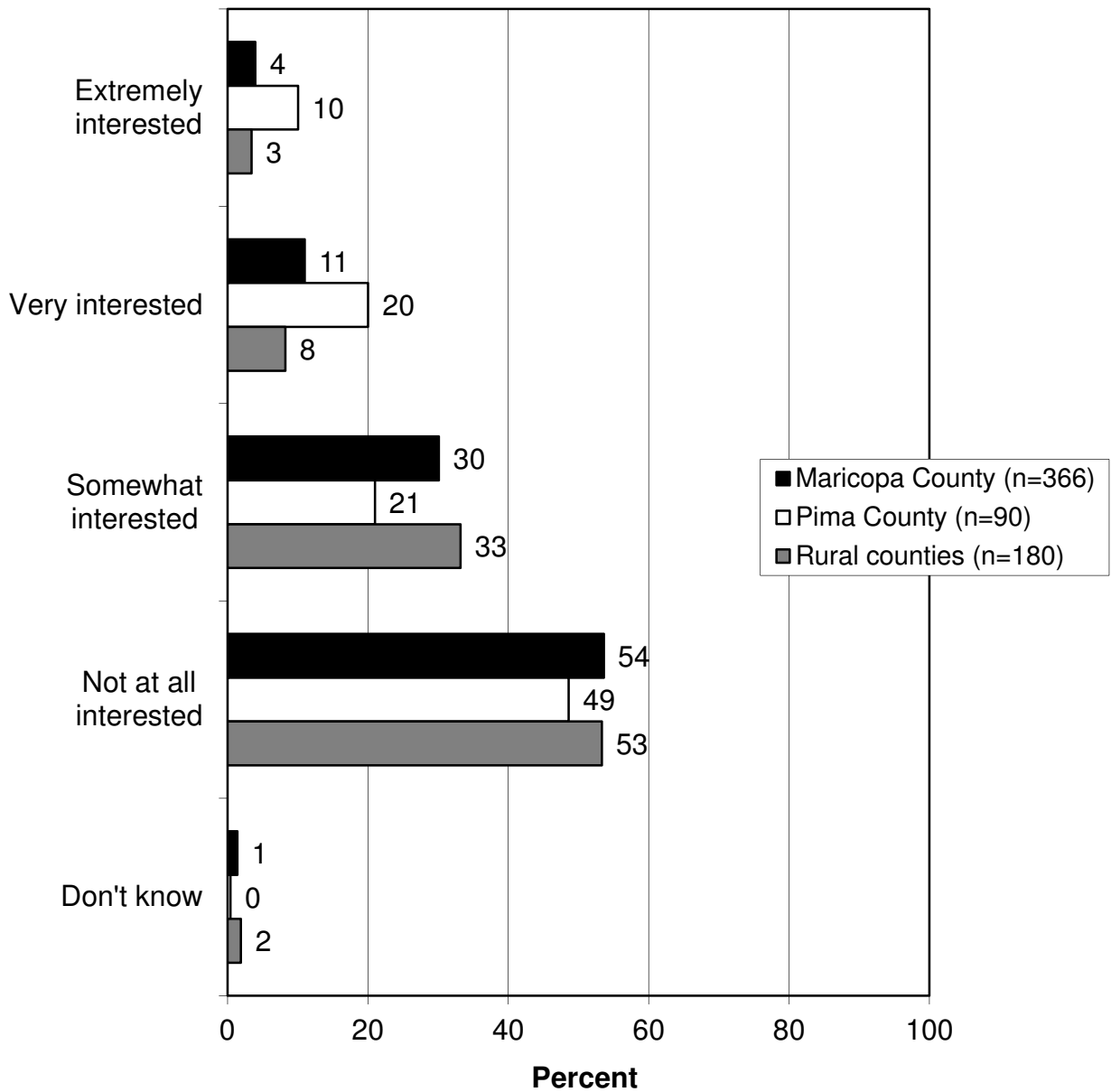
Q76. How interested are you in going wildlife viewing in the next 12 months? (Asked of those who did not take a wildlife viewing trip in Arizona in the past 12 months.)



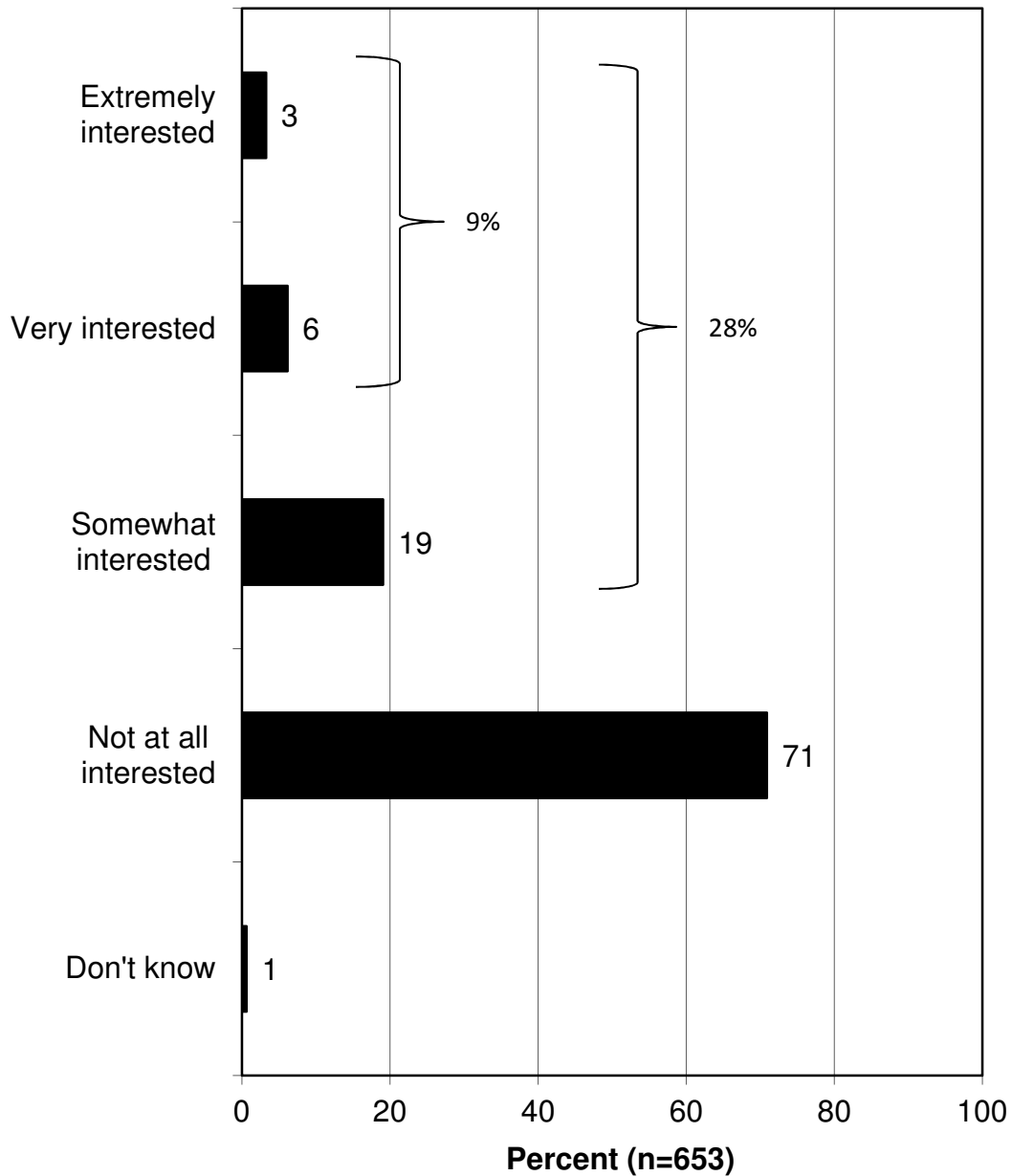
Q37. How interested are you in going boating in the next 12 months? (Asked of those who did not go boating in Arizona in the past 12 months.)



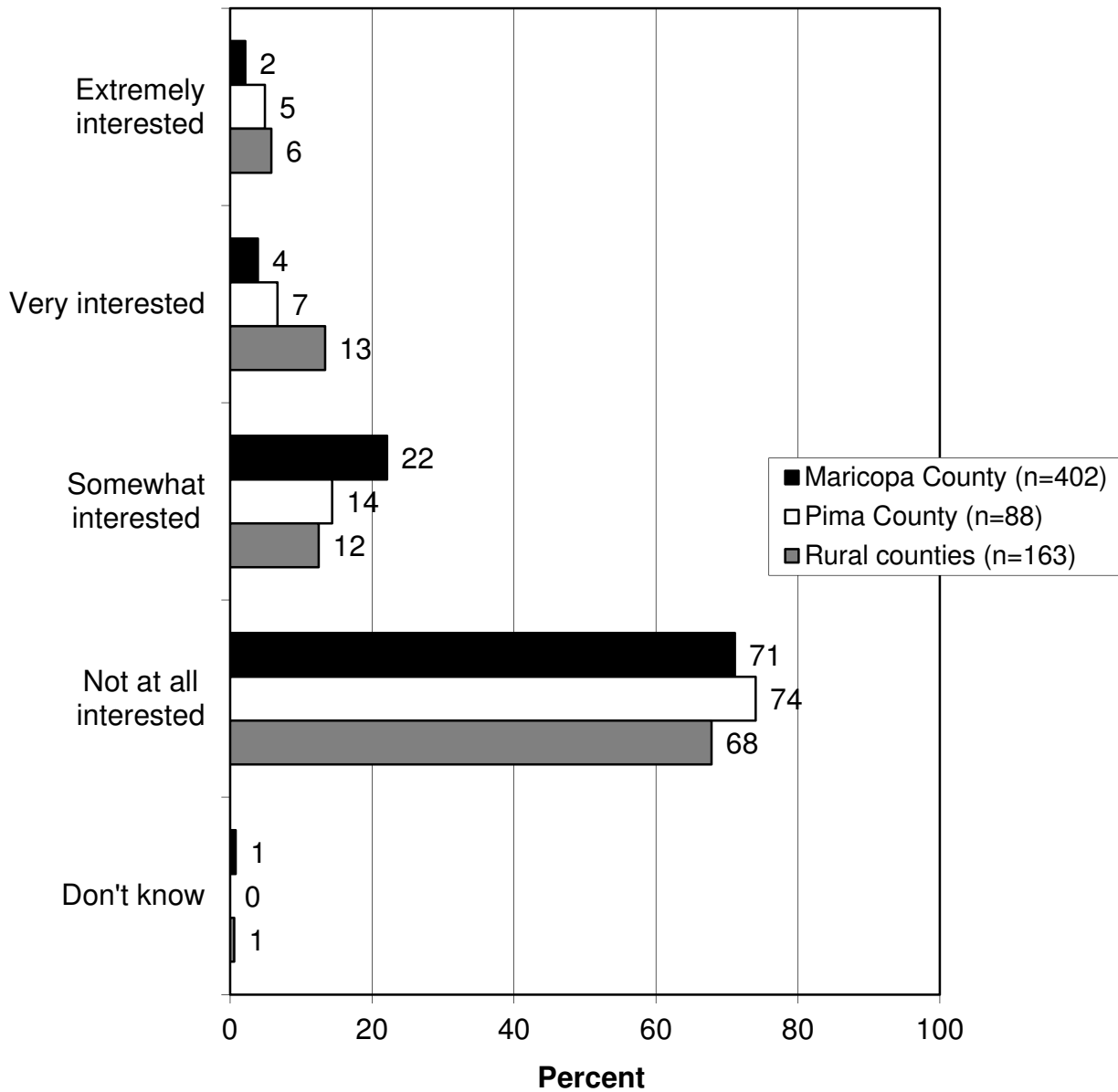
Q37. How interested are you in going boating in the next 12 months? (Asked of those who did not go boating in Arizona in the past 12 months.)



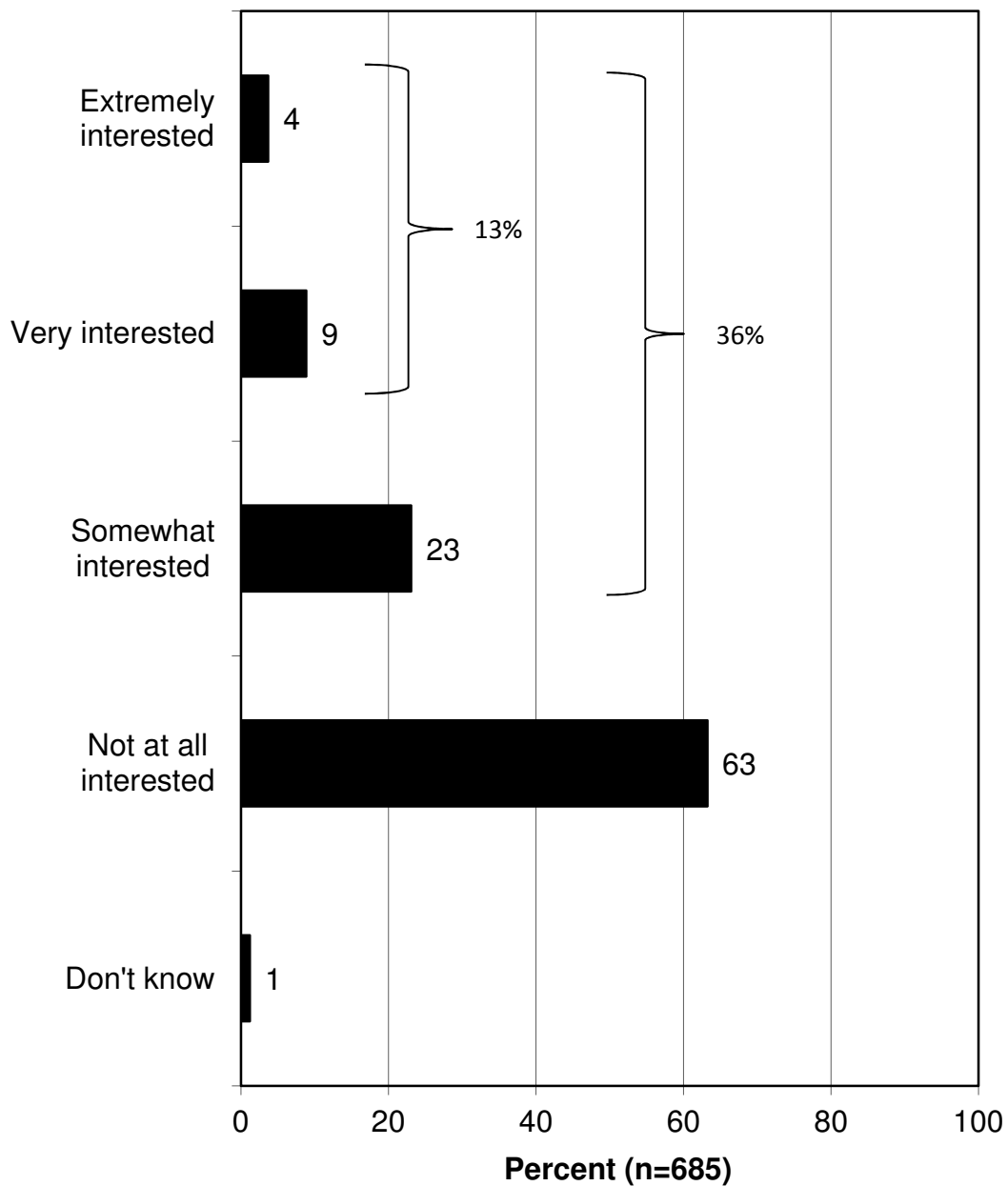
Q42. How interested are you in going recreating with an OHV in the next 12 months? (Asked of those who did not go OHV driving in Arizona in the past 12 months.)



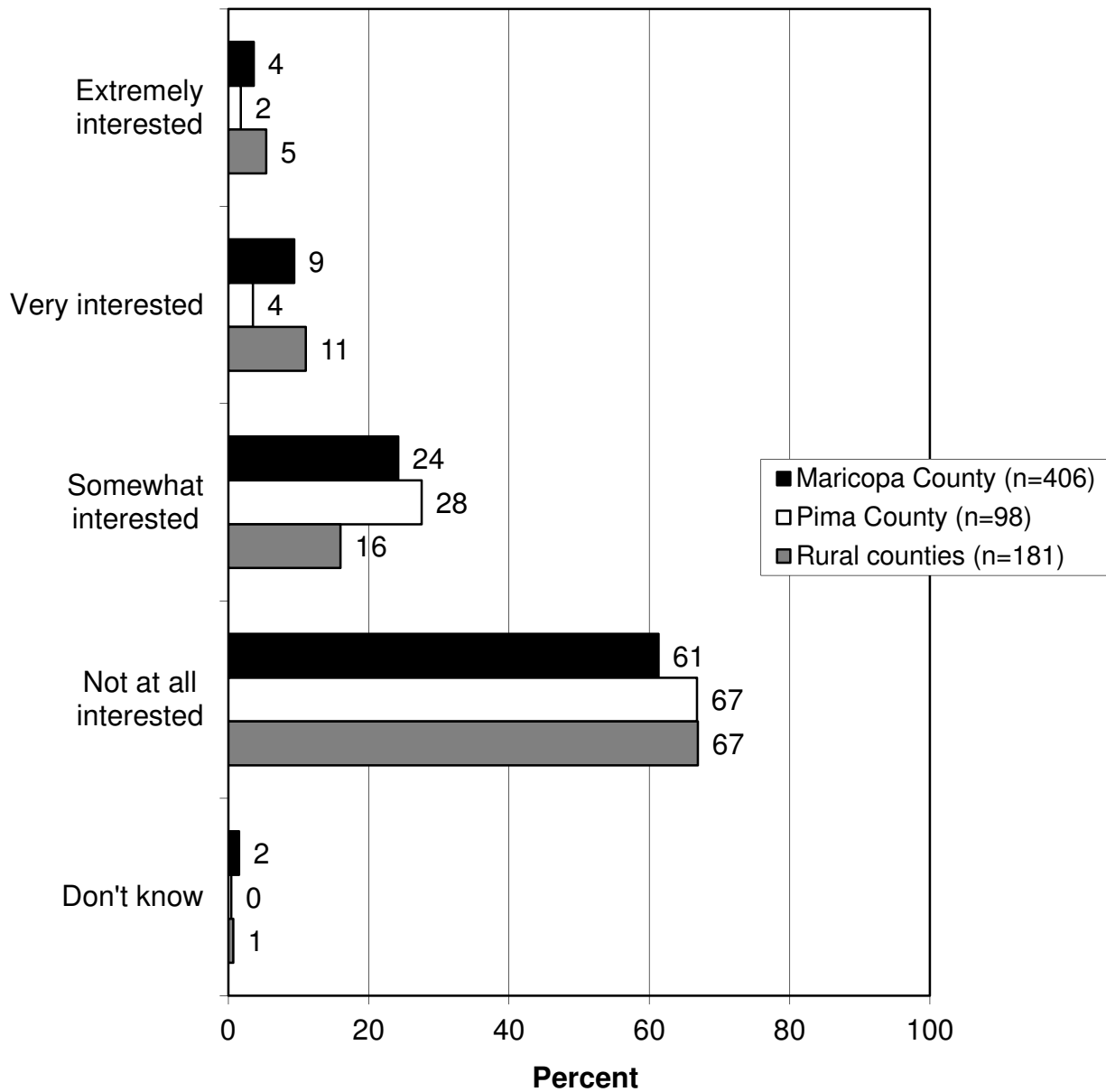
Q42. How interested are you in going recreating with an OHV in the next 12 months? (Asked of those who did not go OHV driving in Arizona in the past 12 months.)



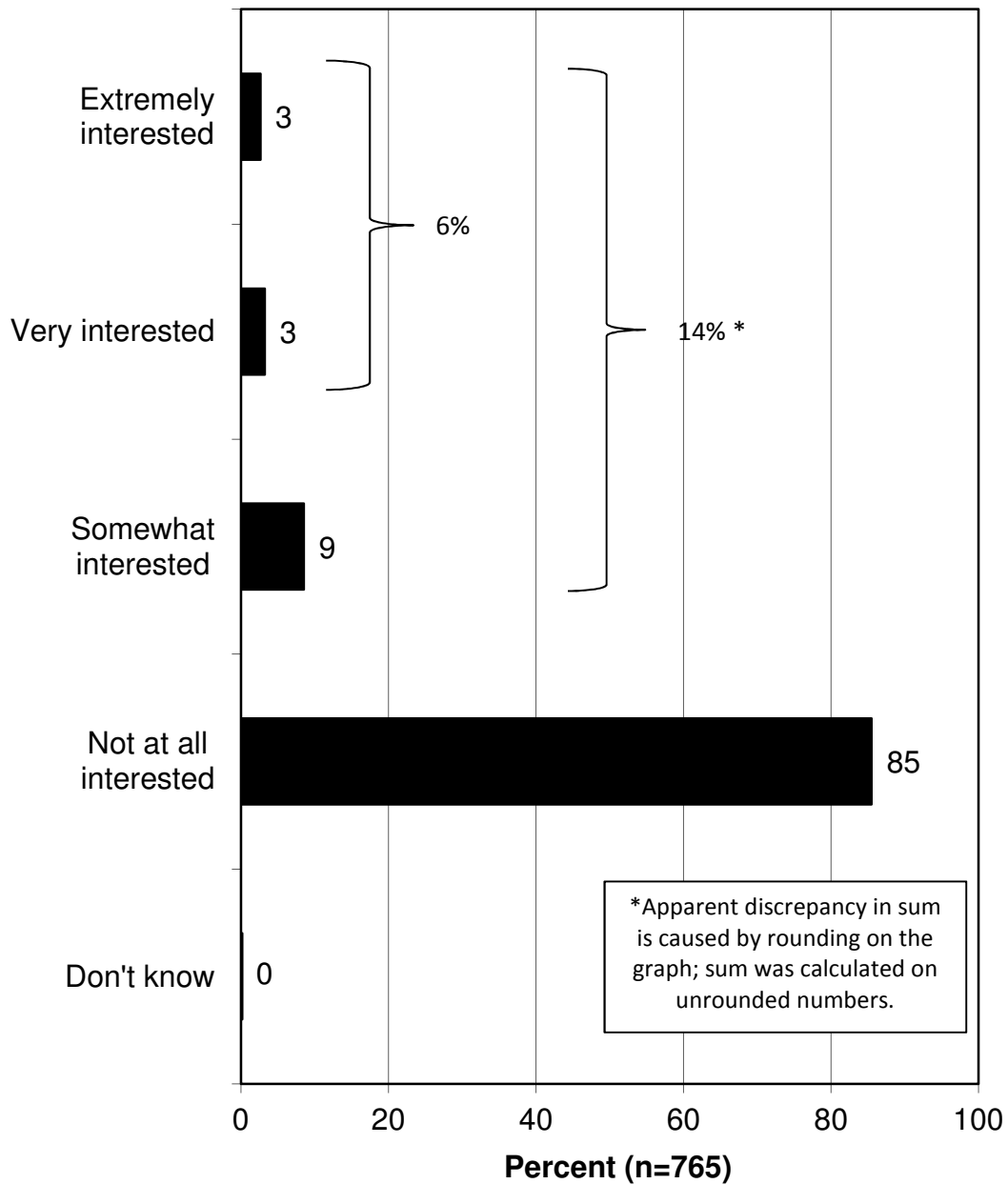
Q16. How interested are you in going fishing in the next 12 months? (Asked of those who did not go fishing in Arizona in the past 12 months.)



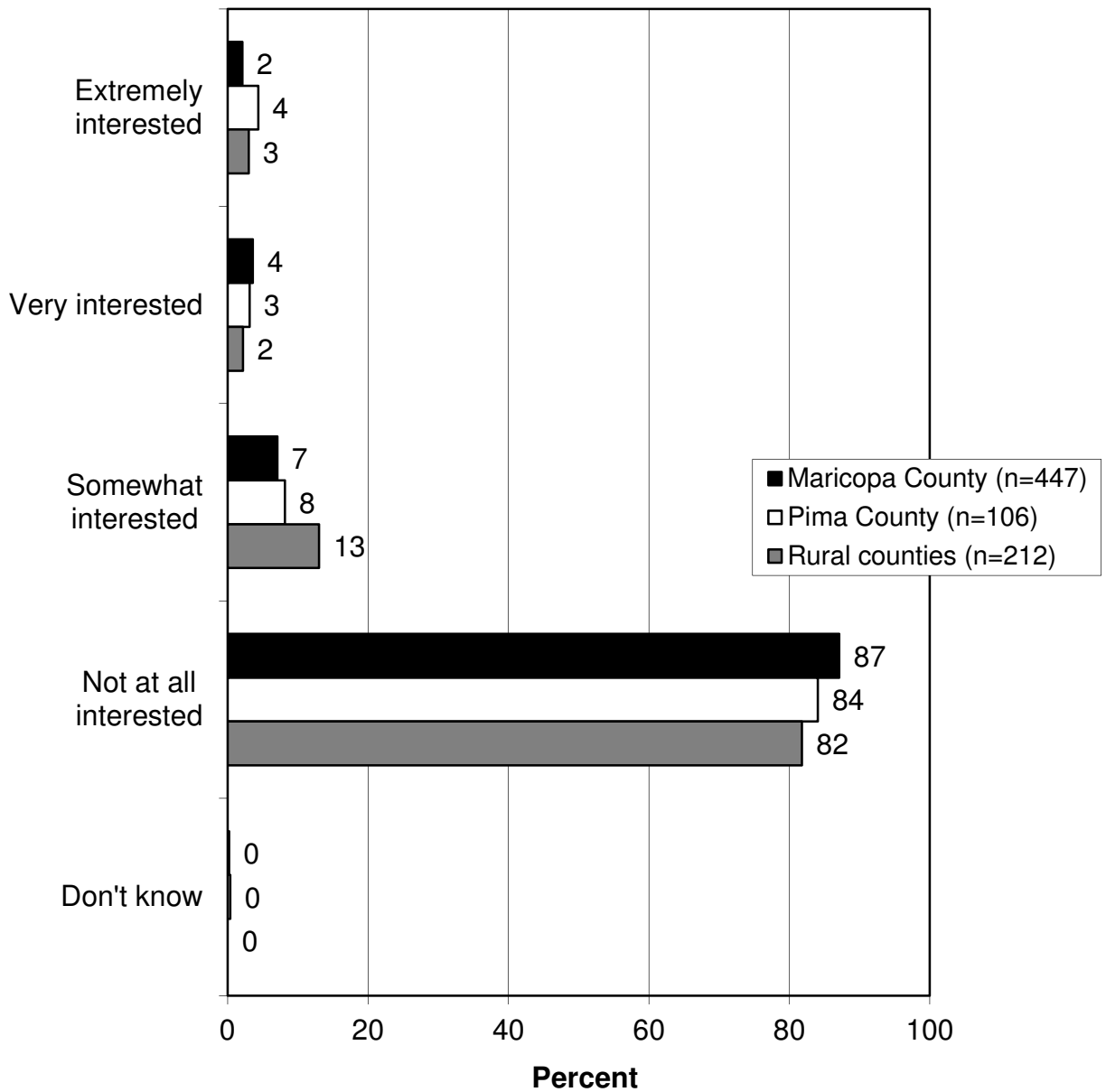
Q16. How interested are you in going fishing in the next 12 months? (Asked of those who did not go fishing in Arizona in the past 12 months.)



Q57. How interested are you in going hunting in the next 12 months? (Asked of those who did not go hunting in Arizona in the past 12 months.)

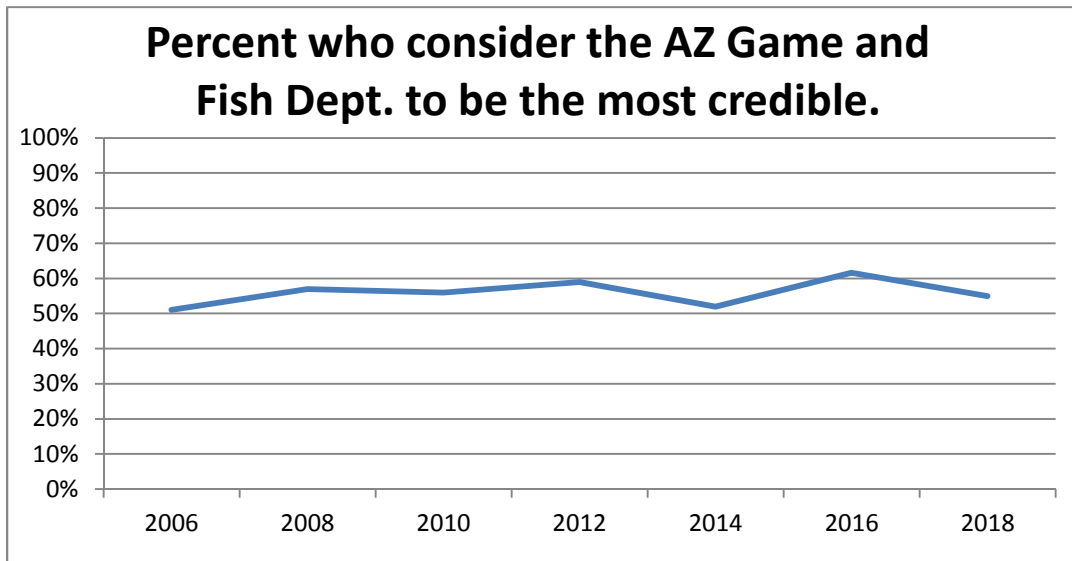


Q57. How interested are you in going hunting in the next 12 months? (Asked of those who did not go hunting in Arizona in the past 12 months.)

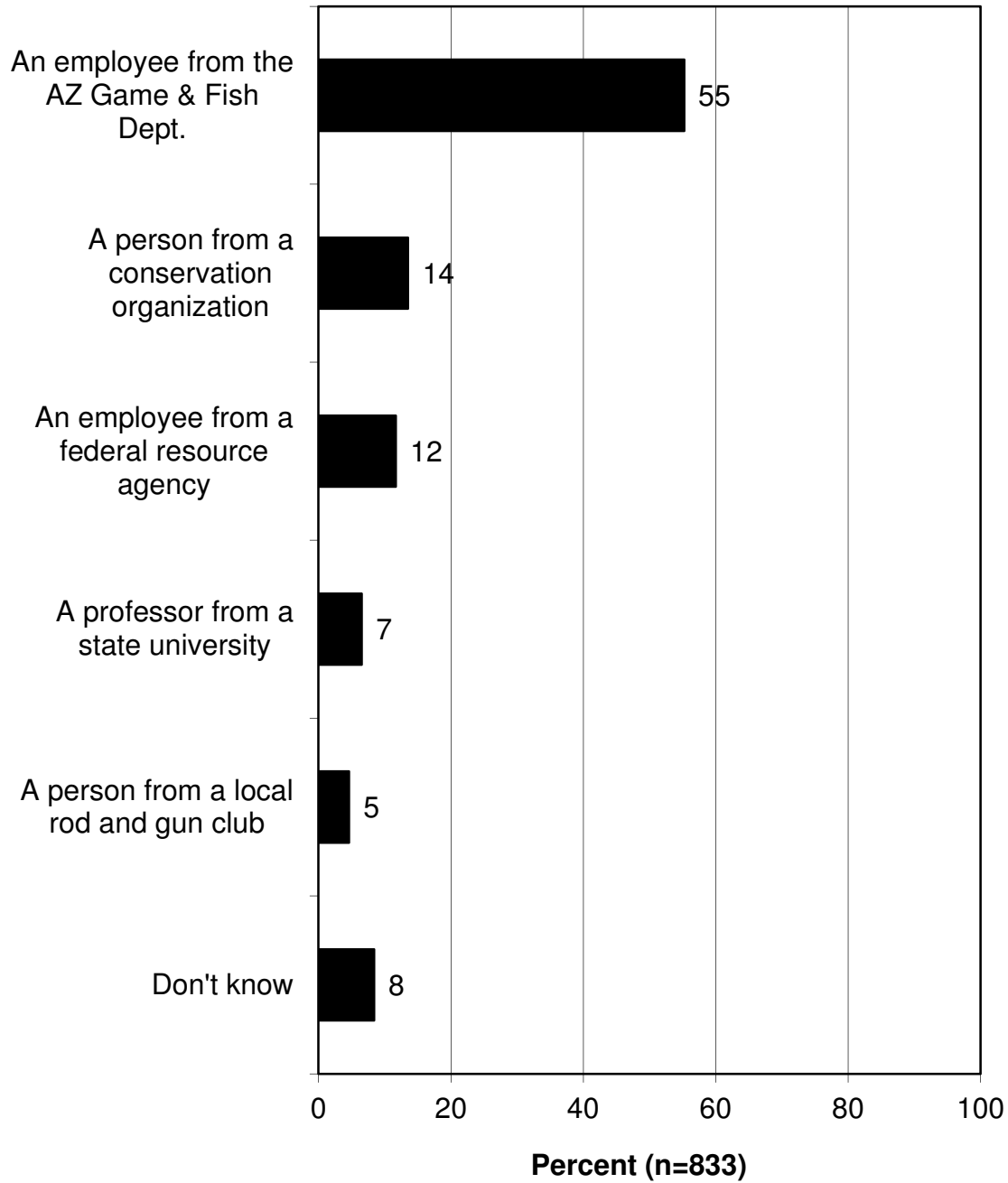


SOURCES OF INFORMATION ABOUT WILDLIFE

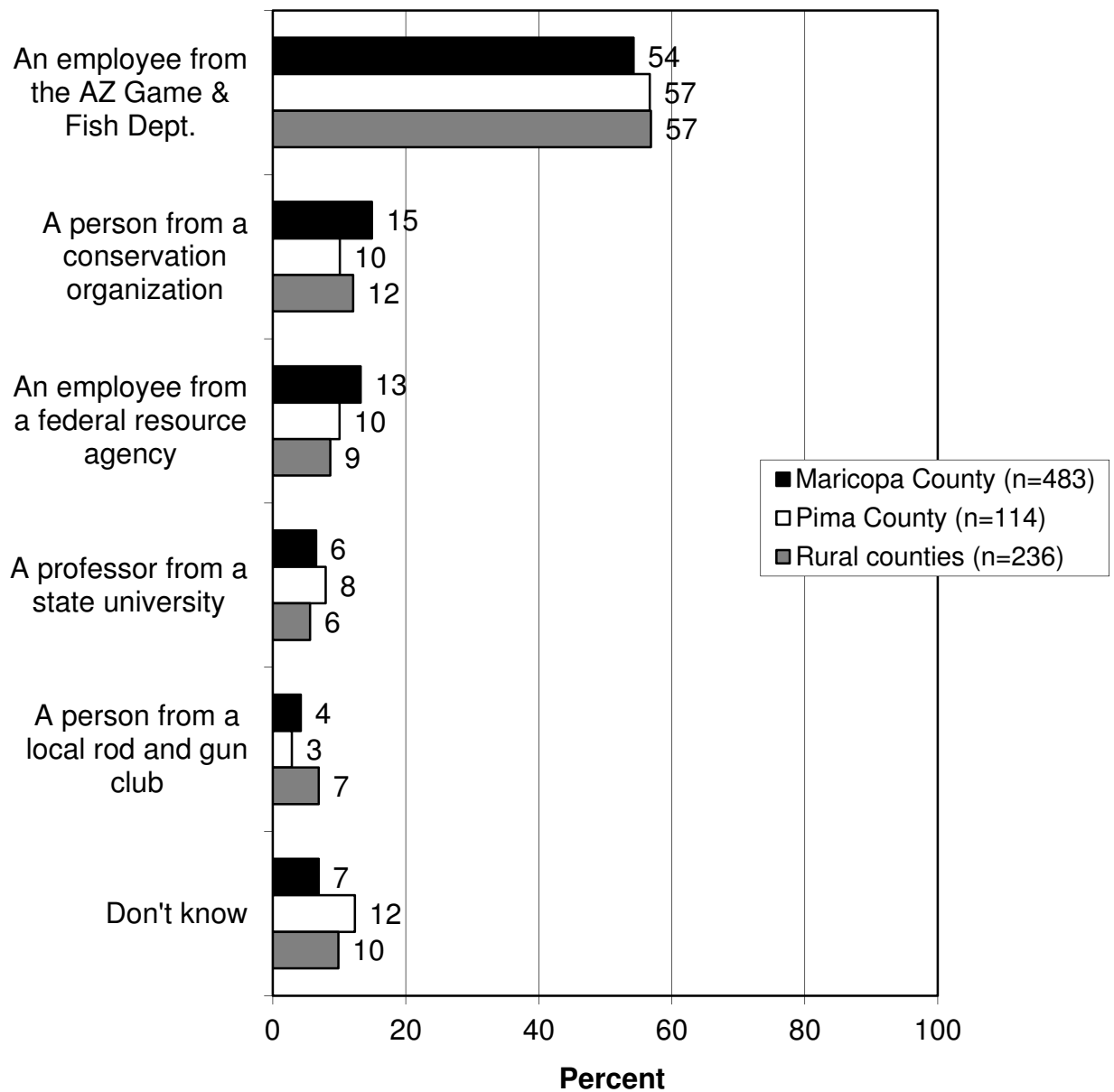
- The survey asked about the credibility of five sources of information on wildlife issues. The order of the sources was randomized in the question to avoid any order bias in the survey.
- In the trends, there was no statistically significant difference between 2016 (when 54.7% said the AZ Game and Fish Department) and 2018 (when 55.2% gave this response). A graph shows the long-term trends.
 - Currently, credibility is still highest for the Department: when asked to name the most credible source of information from a list of five possible sources, a majority of all residents (55%) say that an employee from the Arizona Game and Fish Department is the most credible. The remaining sources range from 5% to 14% saying the source is the most credible.
 - County crosstabulations are included.



Q78-82. Overall, what source of information on wildlife issues in Arizona would you consider to be the most credible?



Q78-82. Overall, what source of information on wildlife issues in Arizona would you consider to be the most credible?



KNOWLEDGE AND RATINGS OF THE ARIZONA GAME AND FISH DEPARTMENT

- Half of Arizona residents (50%) named the Arizona Game and Fish Department or a close derivative of the agency name as the government agency with primary responsibility for managing Arizona's wildlife (although only a third—33%—gave the absolutely correct name).
 - The lowest knowledge on this question is in Maricopa County.
 - Note that the previous question had the “Arizona Game and Fish Department” within its list of agencies/organizations presented to respondents when they were asked about the credibility of sources of information, along with several other entities.

- The Department's overall performance rating is highly positive, with 69% giving a rating of *excellent* or *good*, while 1% give a rating of *poor* or *very poor*. Just under a quarter of residents (22%) do not know what rating to give.
 - Graphs are shown for the data on reasons for rating the Department's performance as *excellent* and, conversely, reasons for not giving a higher rating (the latter among those who did not give an *excellent* rating).
 - County crosstabulations are included.

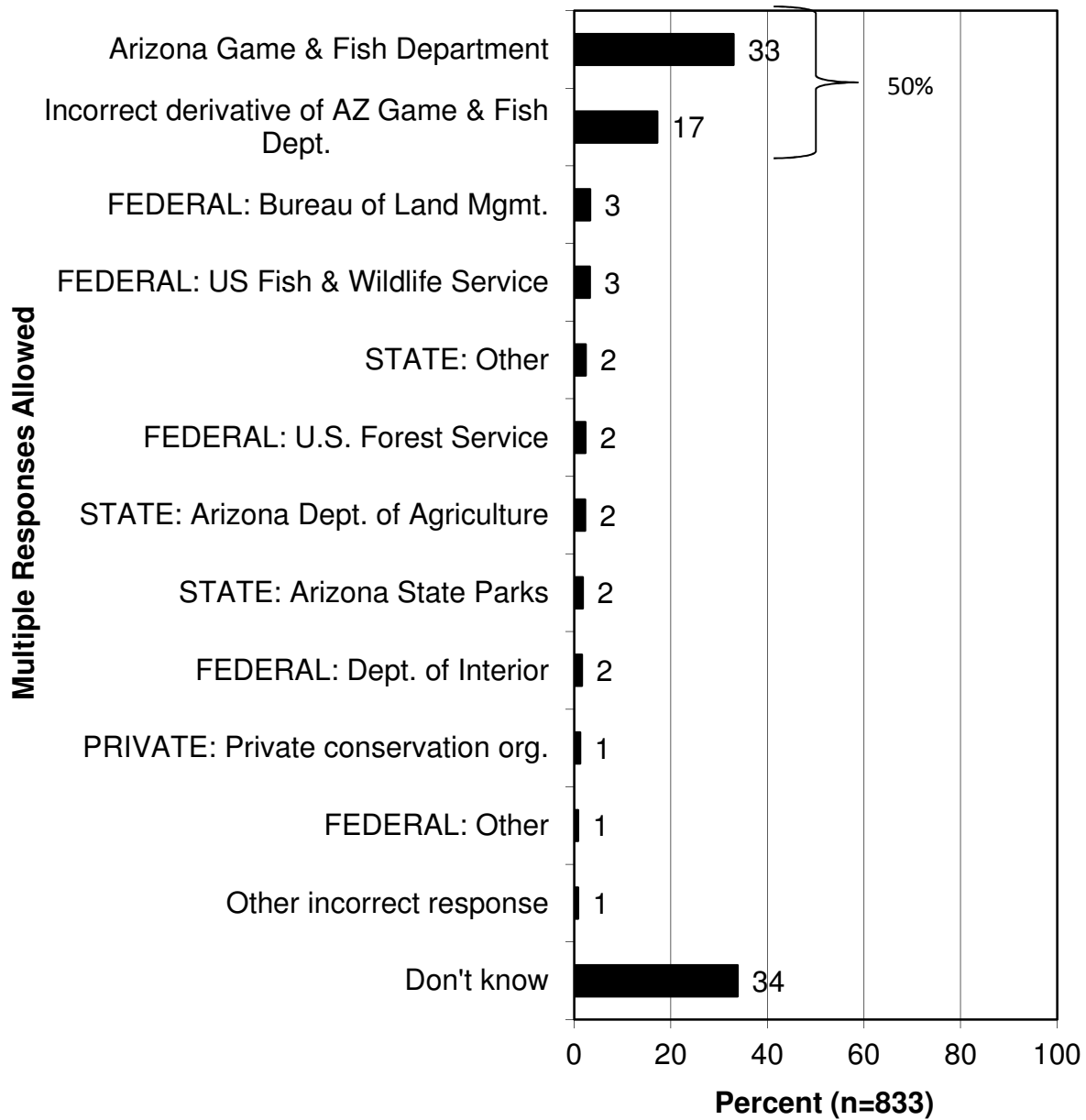
- When presented with seven programs or areas of the Department and asked to indicate which one needs the most improvement, the top responses are off-highway vehicle management, watercraft safety and boating law enforcement, and shooting sports management.
 - A county crosstabulation graph is included.

- The survey asked respondents to rate the Department's performance in each of the aforementioned seven programs/areas. They are ranked by the percentage giving an *excellent* or *good* rating (the positive end of the scale).
 - A tabulation shows 2016 compared to 2018; the mean scores in 2018 are all slightly up from 2016, and these are statistically significant gains for all the items. Long-term graphs of trends are also shown, as well. (To make the graphs, a numeric value was attached to

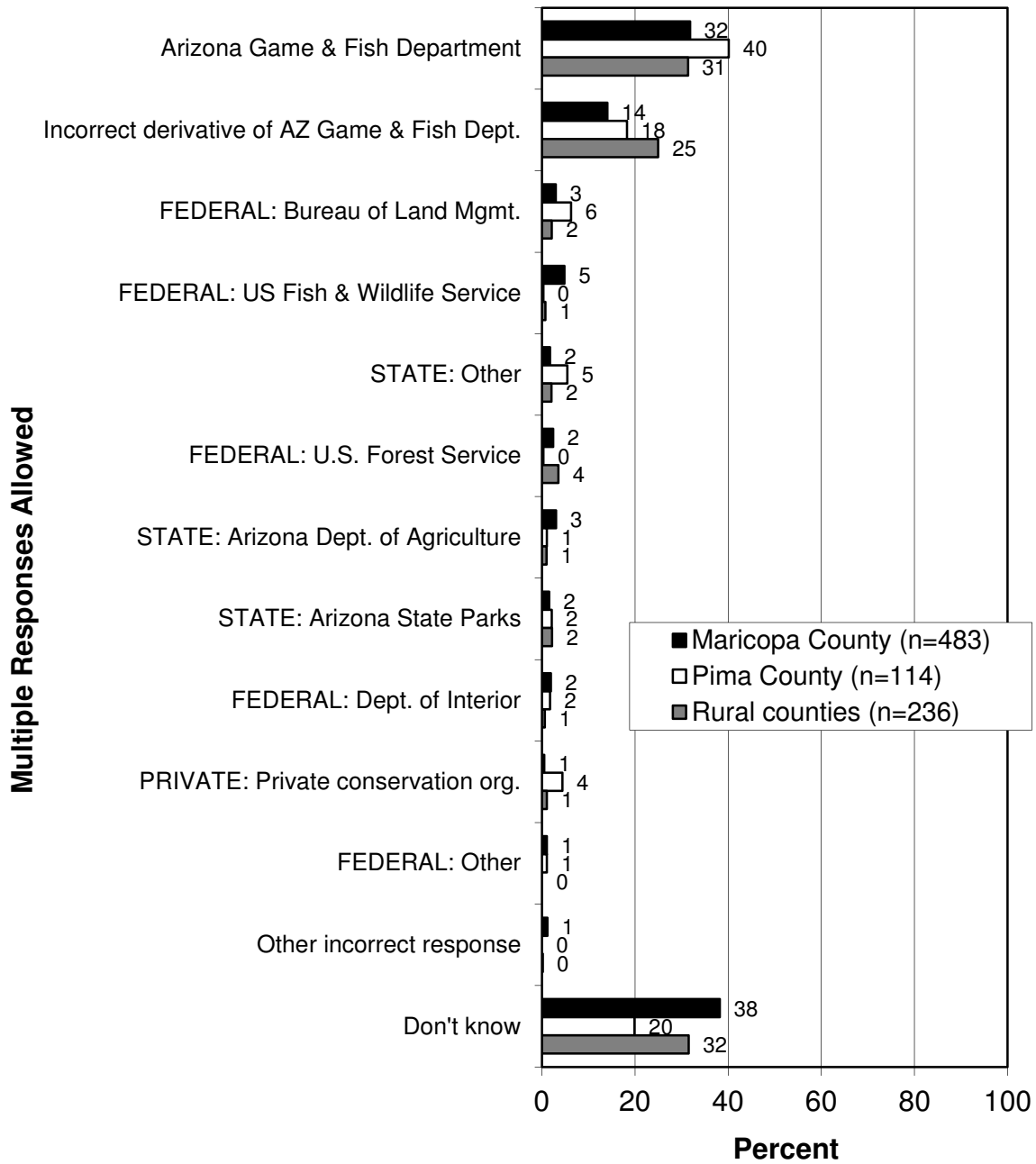
each response, as follows: excellent = 5, good = 4, fair = 3, poor = 2, and very poor = 1. Then, a mean score was determined from the responses from all respondents.)

- Currently, the top-rated areas are fisheries management (53% rate it *excellent* or *good*; only 2% rate it *poor* or *very poor*), game management (52% rate it *excellent* or *good*; 2% rate it *poor* or *very poor*), watercraft safety/enforcement of boating laws (51% *excellent* or *good*; 5% *poor* or *very poor*), and nongame wildlife (50% *excellent* or *good*; 2% *poor* or *very poor*)—all with at least 50% giving a rating in the top half of the scale. For all areas, a substantial percentage did not know what rating to give.
- County crosstabulations are included.

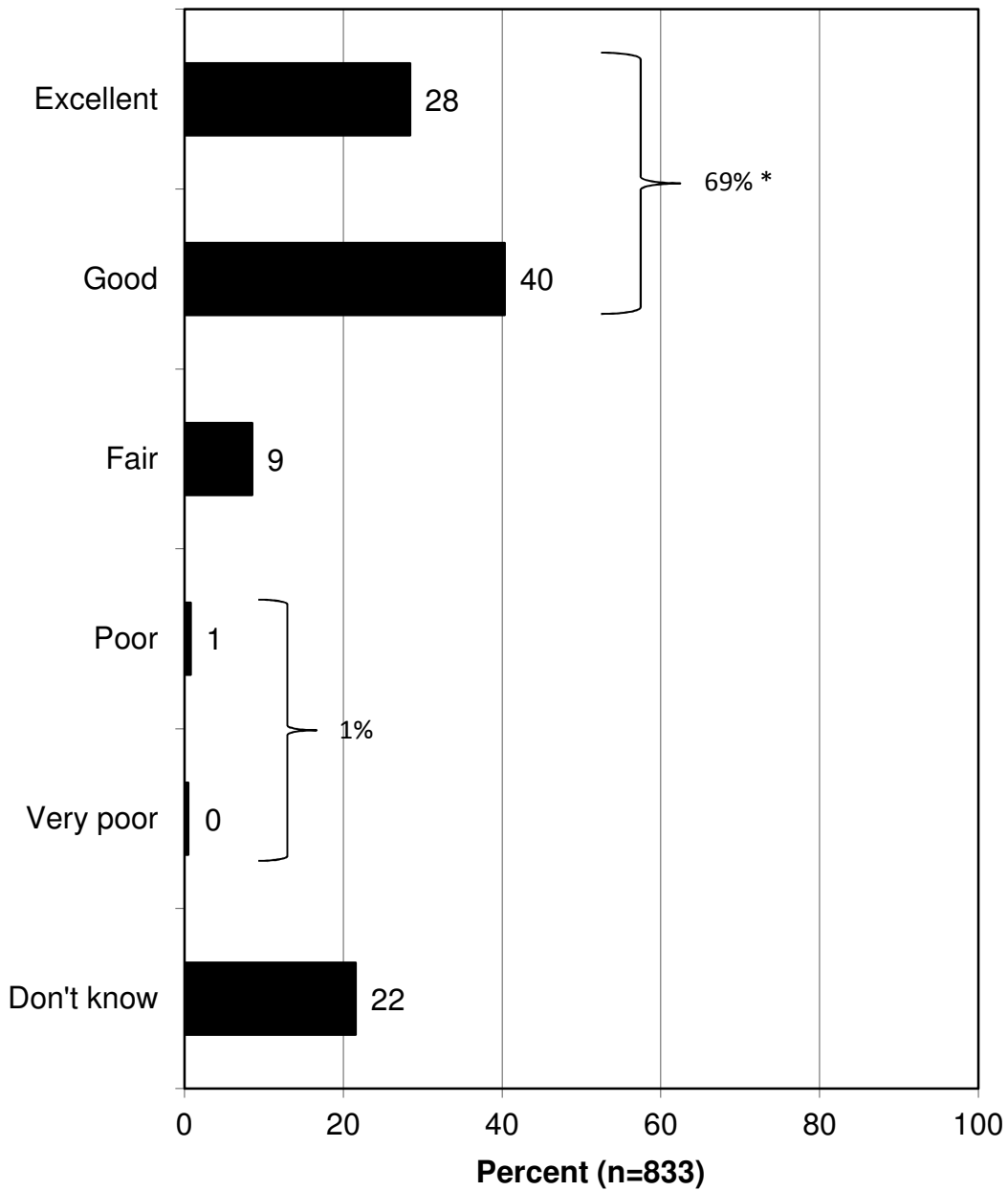
Q85. As far as you know, which government agency has primary responsibility for managing Arizona's wildlife resources?



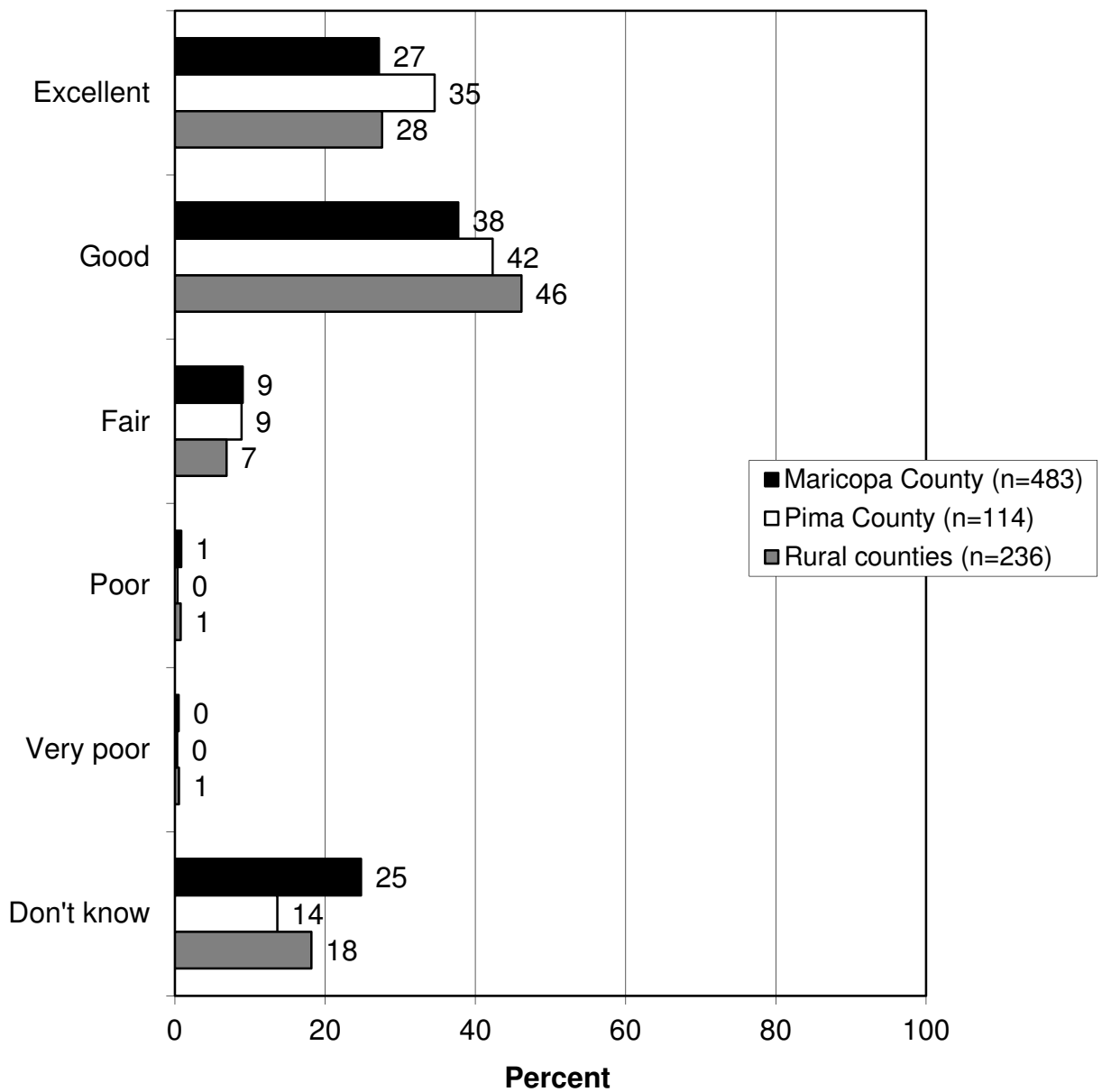
Q85. As far as you know, which government agency has primary responsibility for managing Arizona's wildlife resources?



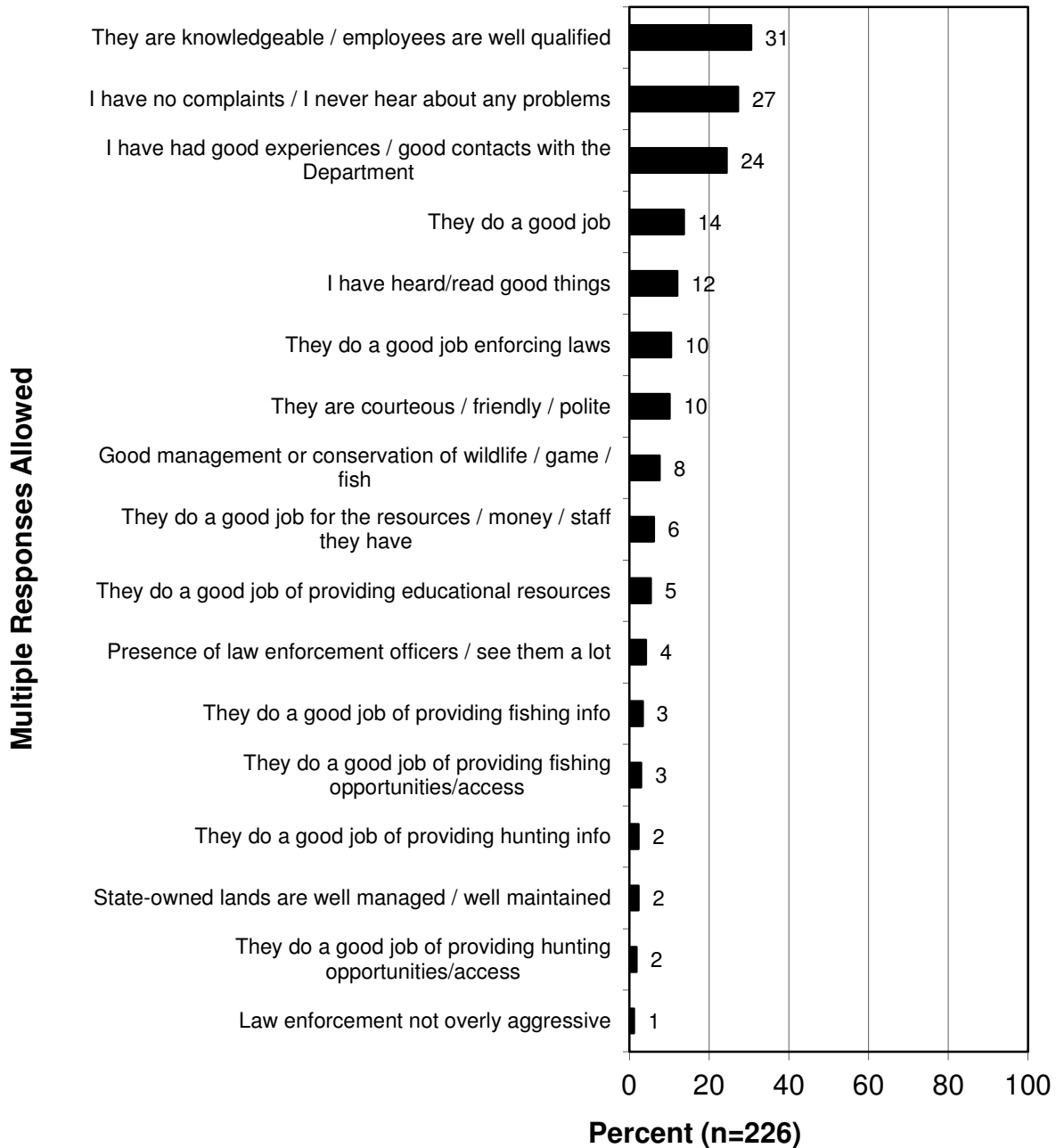
Q87. Would you rate the overall performance of the Arizona Game and Fish Department as excellent, good, fair, poor, or very poor?



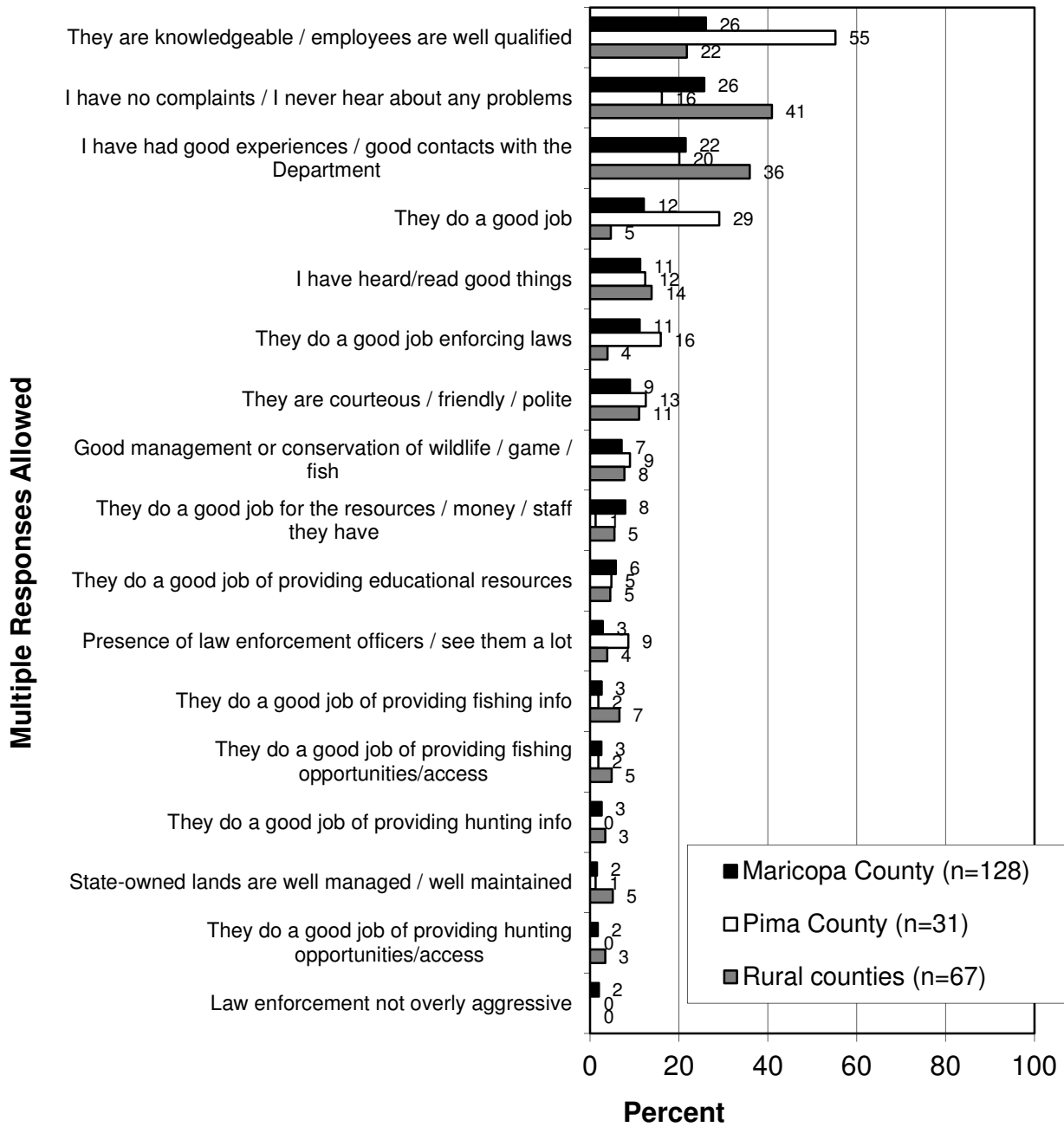
Q87. Would you rate the overall performance of the Arizona Game and Fish Department as excellent, good, fair, poor, or very poor?



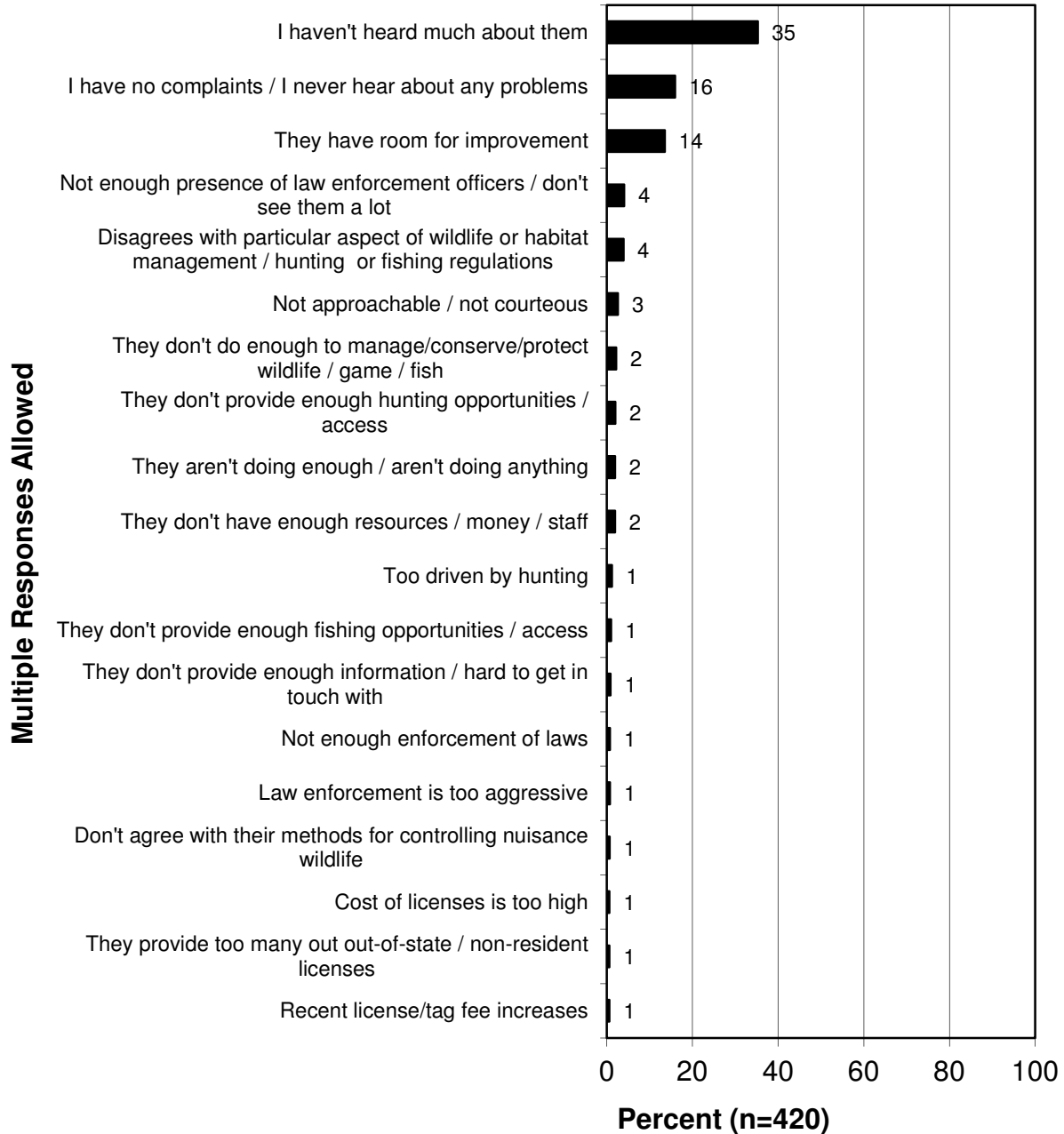
Q90. Why did you rate the AZ Game and Fish Department as excellent? (Asked of those who rated the Department's performance as excellent.)



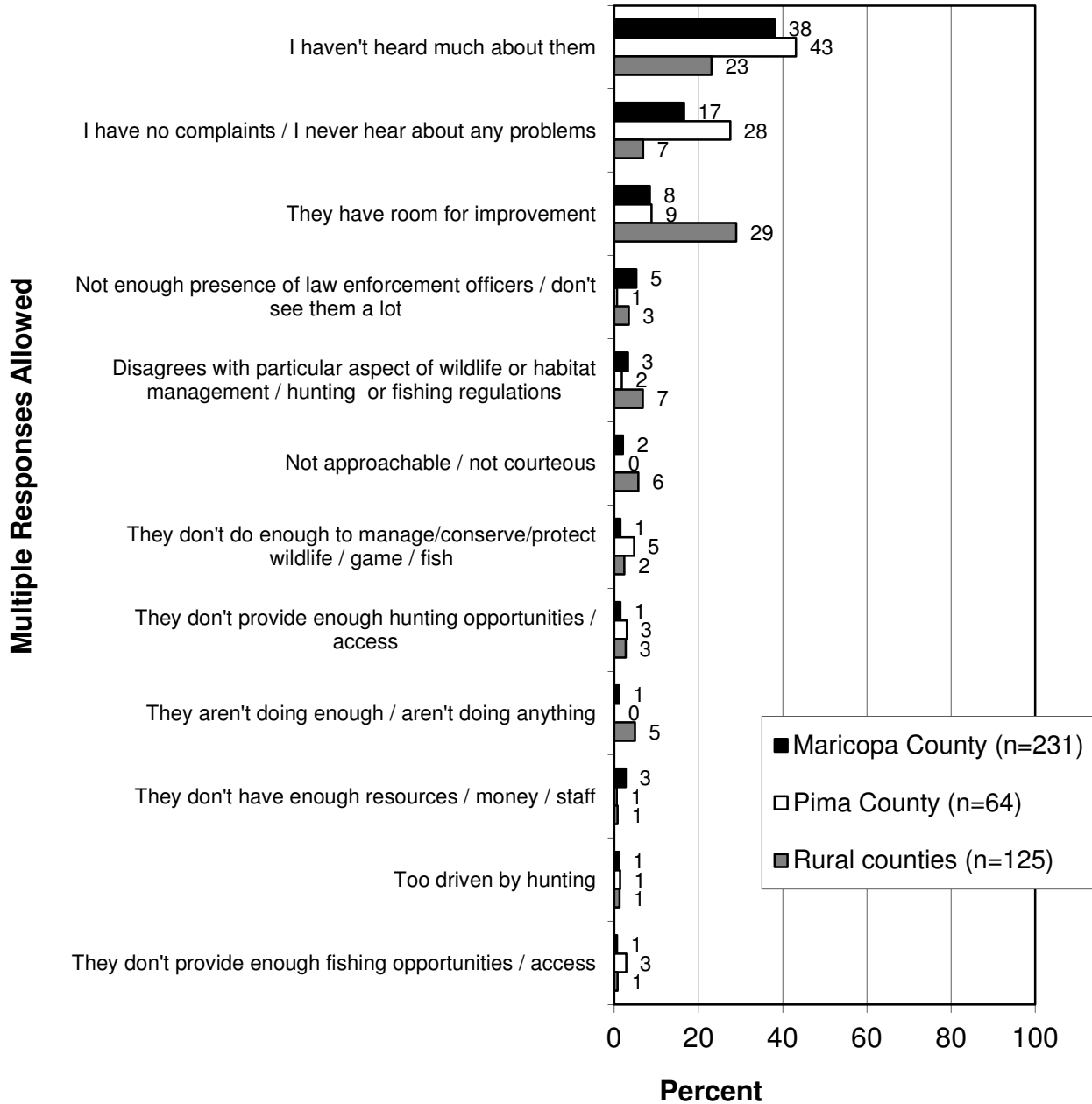
Q90. Why did you rate the AZ Game and Fish Department as excellent? (Asked of those who rated the Department's performance as excellent.)



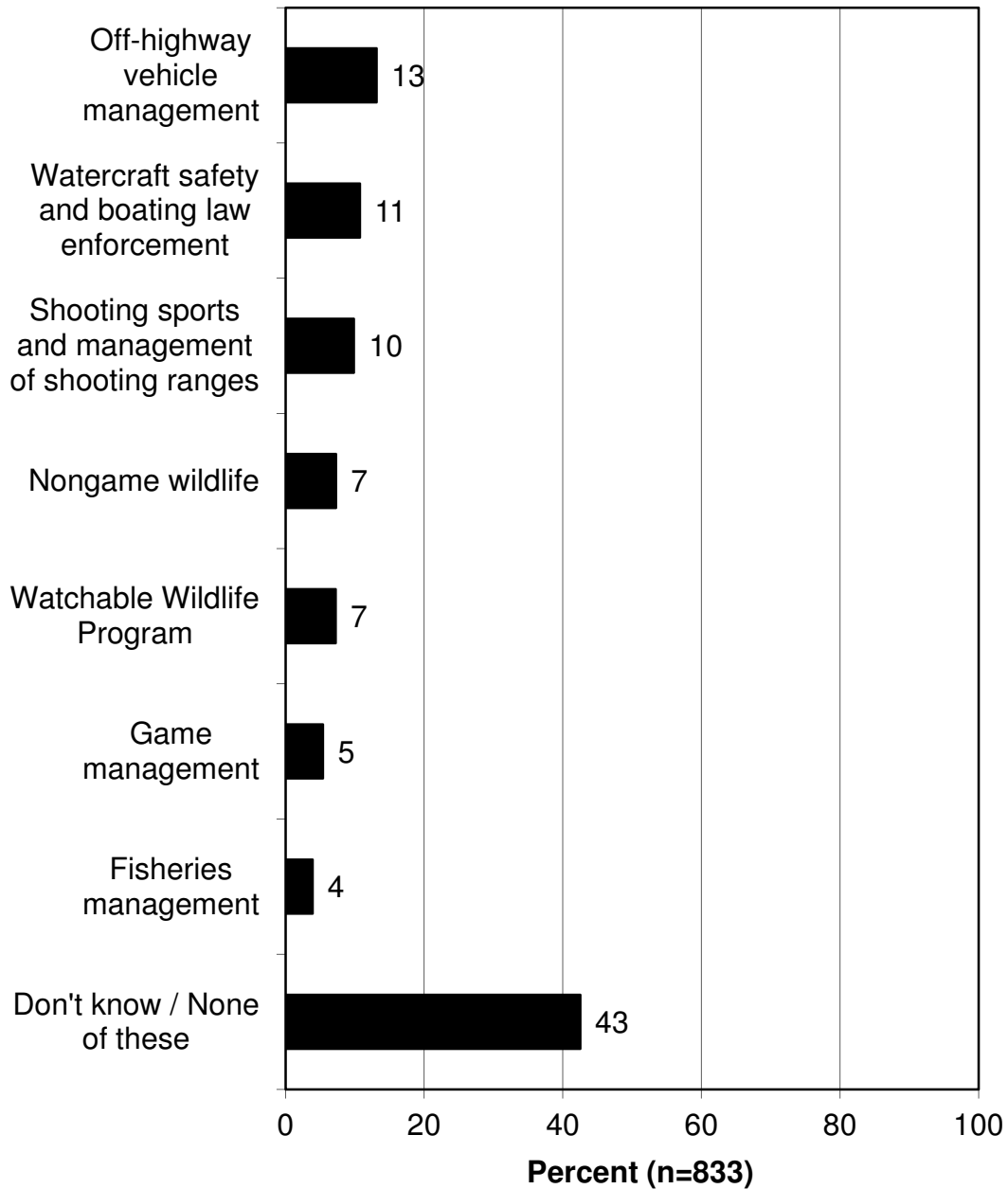
Q94. Why did you not rate the AZ Game and Fish Department higher? (Asked of those who gave some rating below excellent to the performance of the Department.)



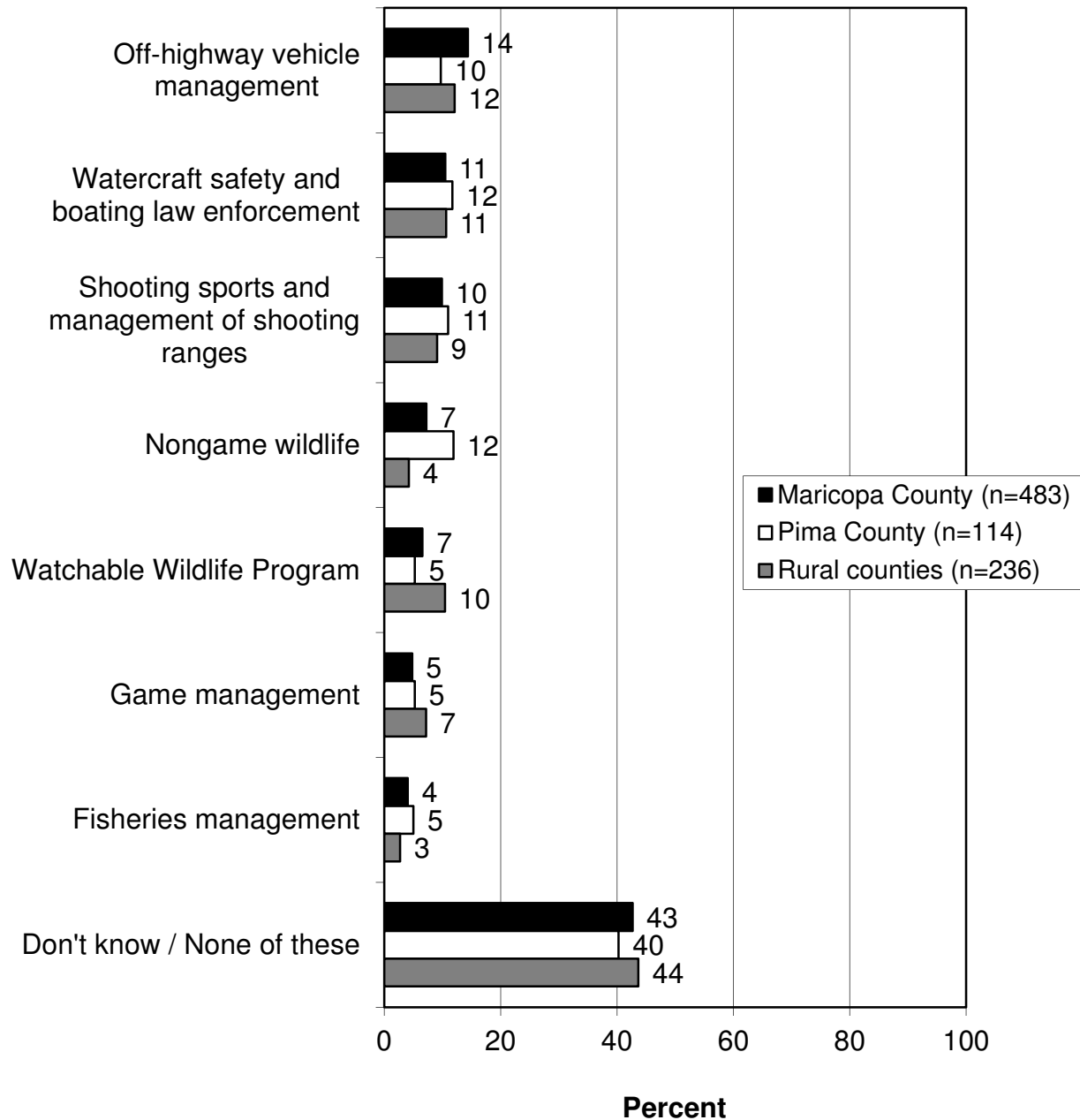
Q94. Why did you not rate the AZ Game and Fish Department higher? (Asked of those who gave some rating below excellent to the performance of the Department.) (Shows those with at least 1.0% of total)



Q105. Which of these Department programs or areas do you feel needs the most improvement?

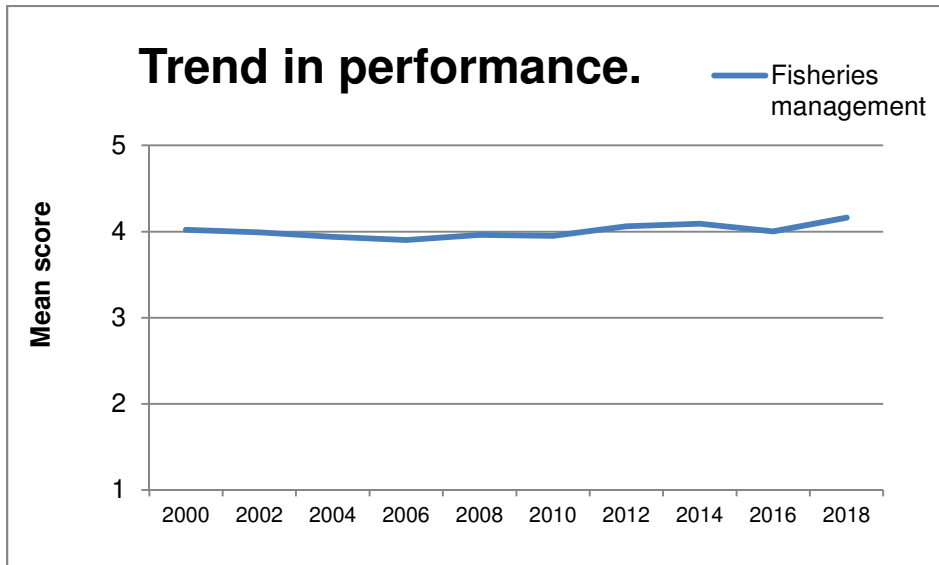


Q105. Which of these Department programs or areas do you feel needs the most improvement?



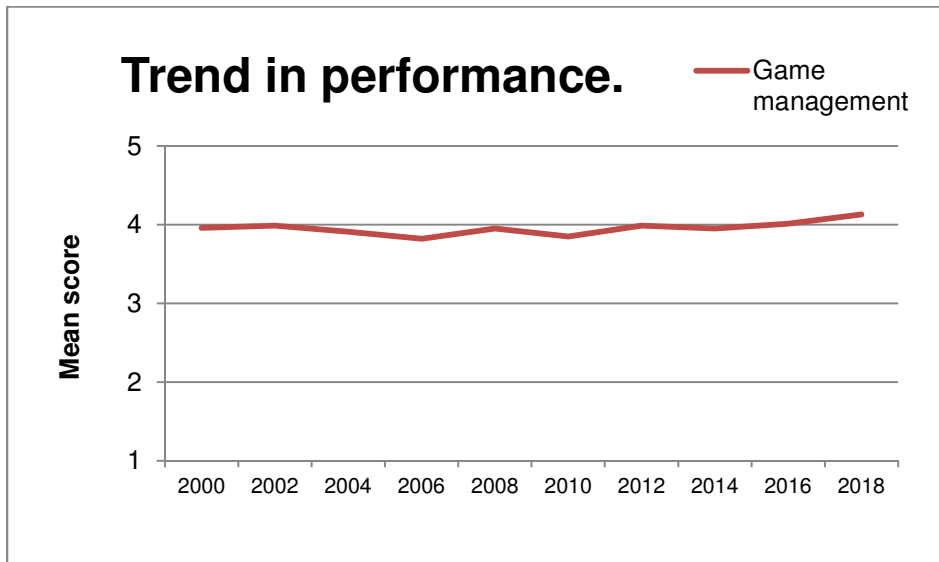
Trend in Performance Ratings

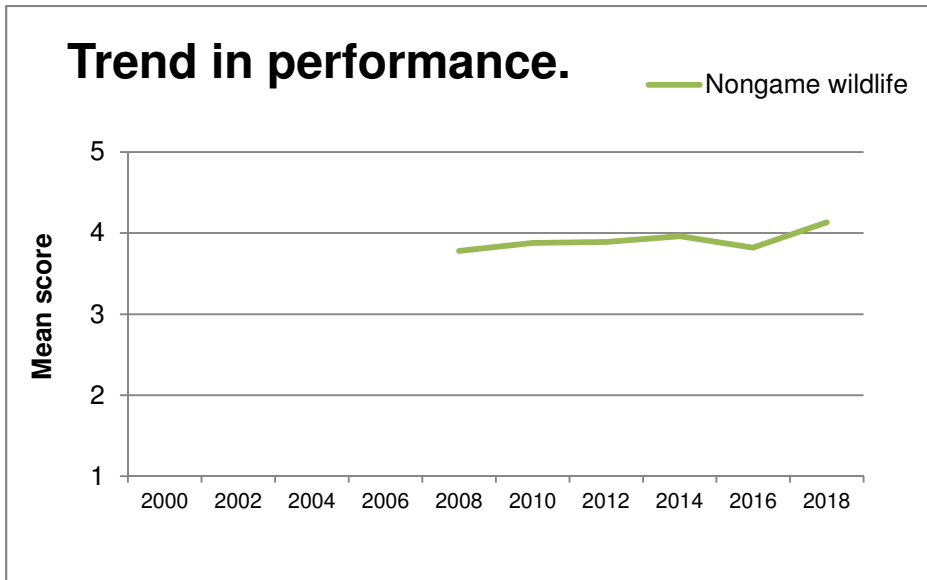
	Mean Score in 2016	Mean Score in 2018	<i>r</i>	Significant
Q98. How would you rate the Department in fisheries management?	4.0	4.2	.101	Yes (p < .01)
Q99. How would you rate the Department in watercraft safety and enforcement of boating laws?	4.0	4.1	.070	Yes (p < .05)
Q100. How would you rate the Department in off-highway vehicle management?	3.7	3.8	.095	Yes (p < .01)
Q101. How would you rate the Department in recreational shooting sports?	3.9	4.0	.087	Yes (p < .01)
Q102. How would you rate the Department in game management?	4.0	4.1	.072	Yes (p < .05)
Q103. How would you rate the Department in watchable wildlife information and opportunities?	3.9	4.1	.090	Yes (p < .01)
Q104. How would you rate the Department in nongame wildlife?	3.8	4.1	.184	Yes (p < .01)



Mean score calculated based on these values:

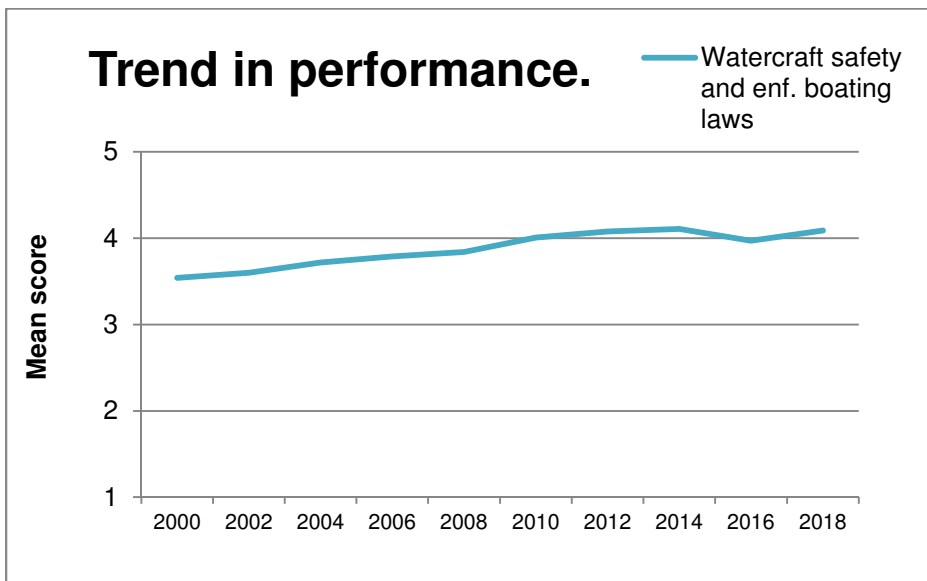
- Excellent = 5
- Good = 4
- Fair = 3
- Poor = 2
- Very poor = 1

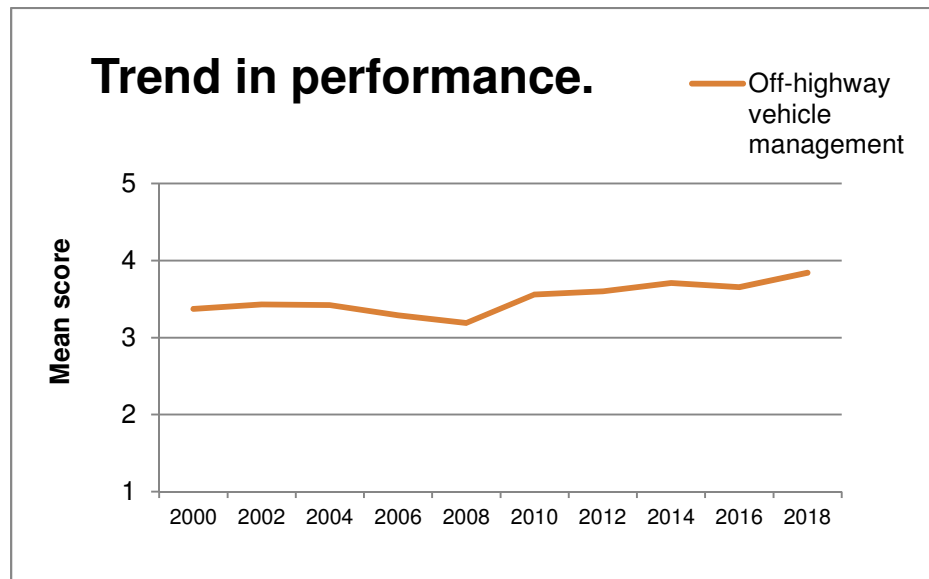




Mean score
calculated based on
these values:

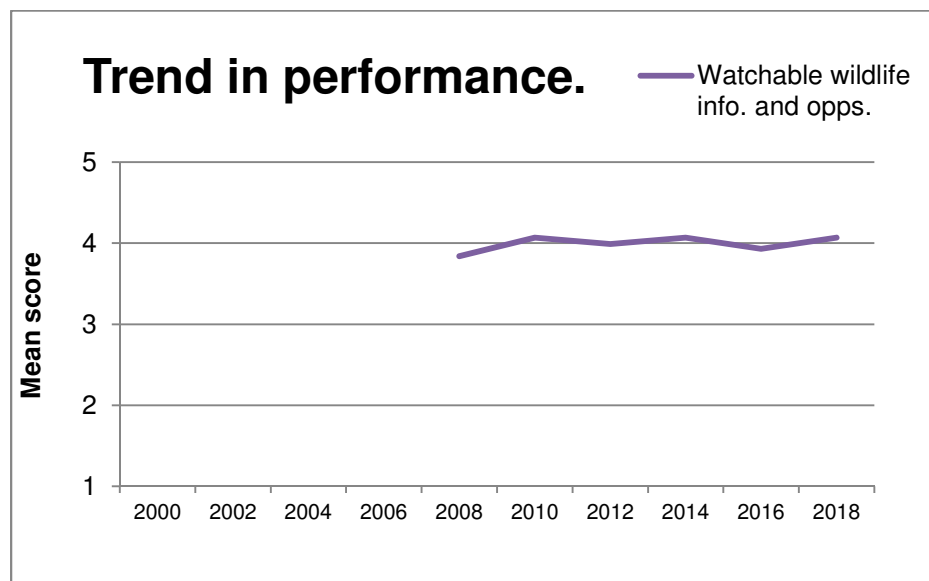
Excellent = 5
Good = 4
Fair = 3
Poor = 2
Very poor = 1

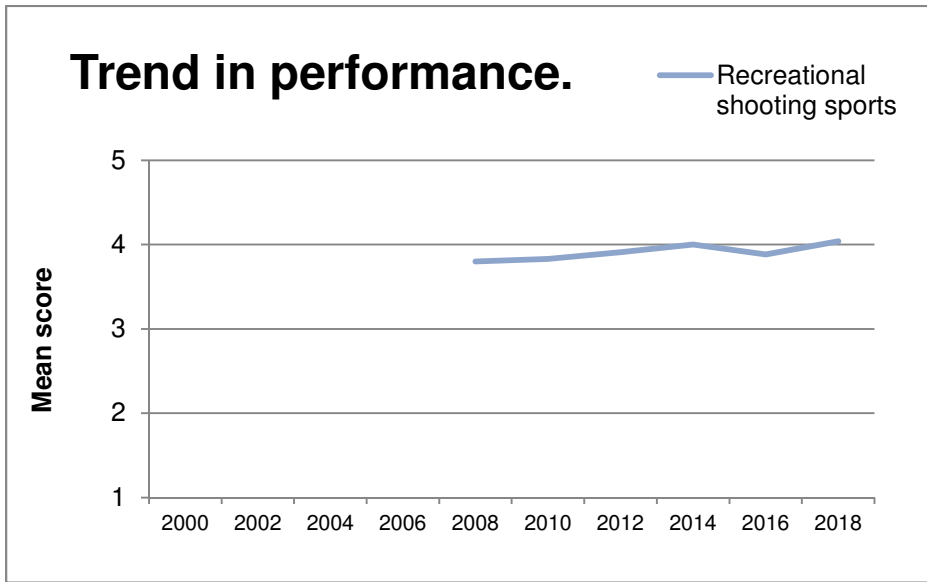




Mean score calculated based on these values:

Excellent = 5
 Good = 4
 Fair = 3
 Poor = 2
 Very poor = 1

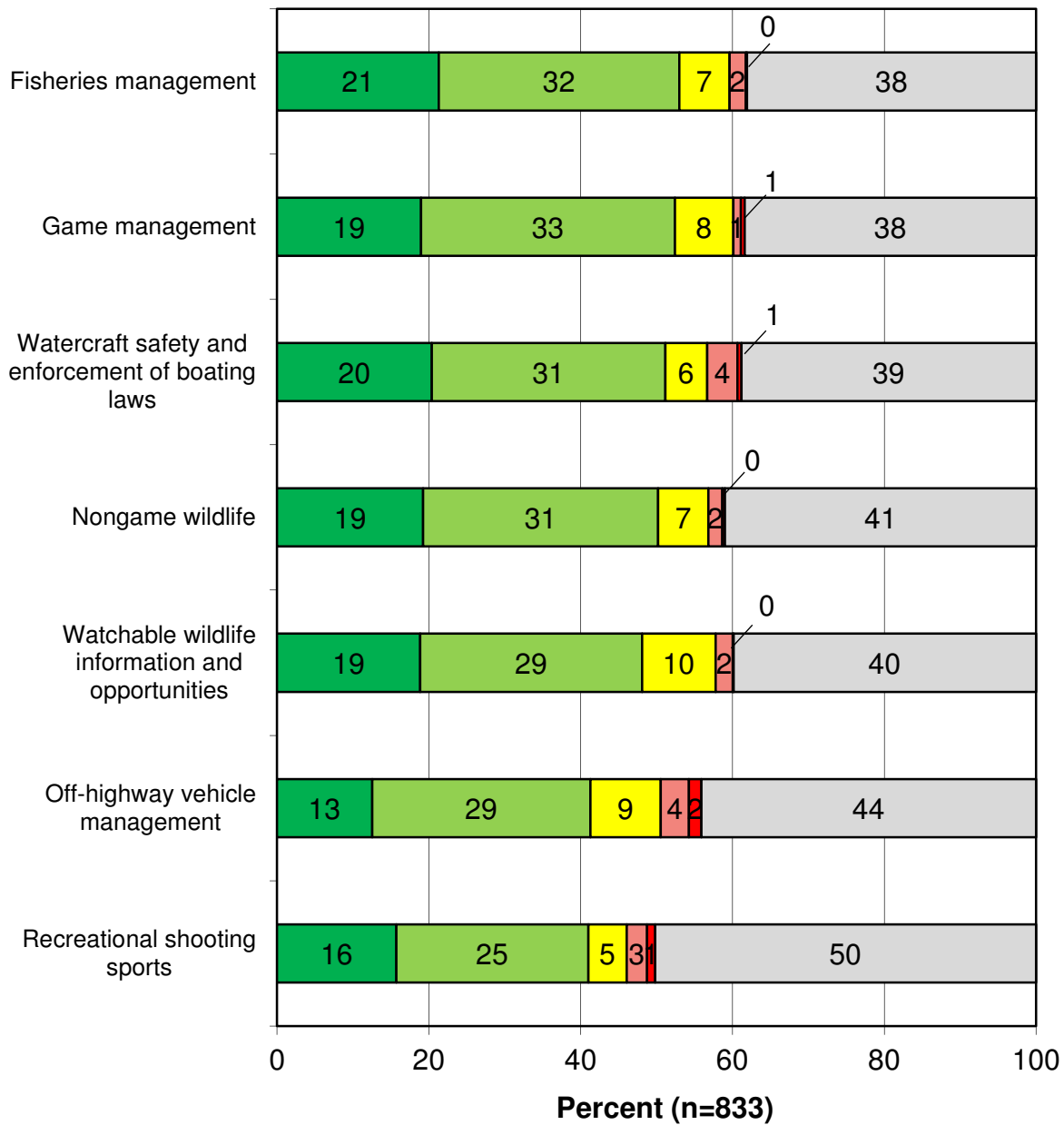




Mean score calculated based on these values:

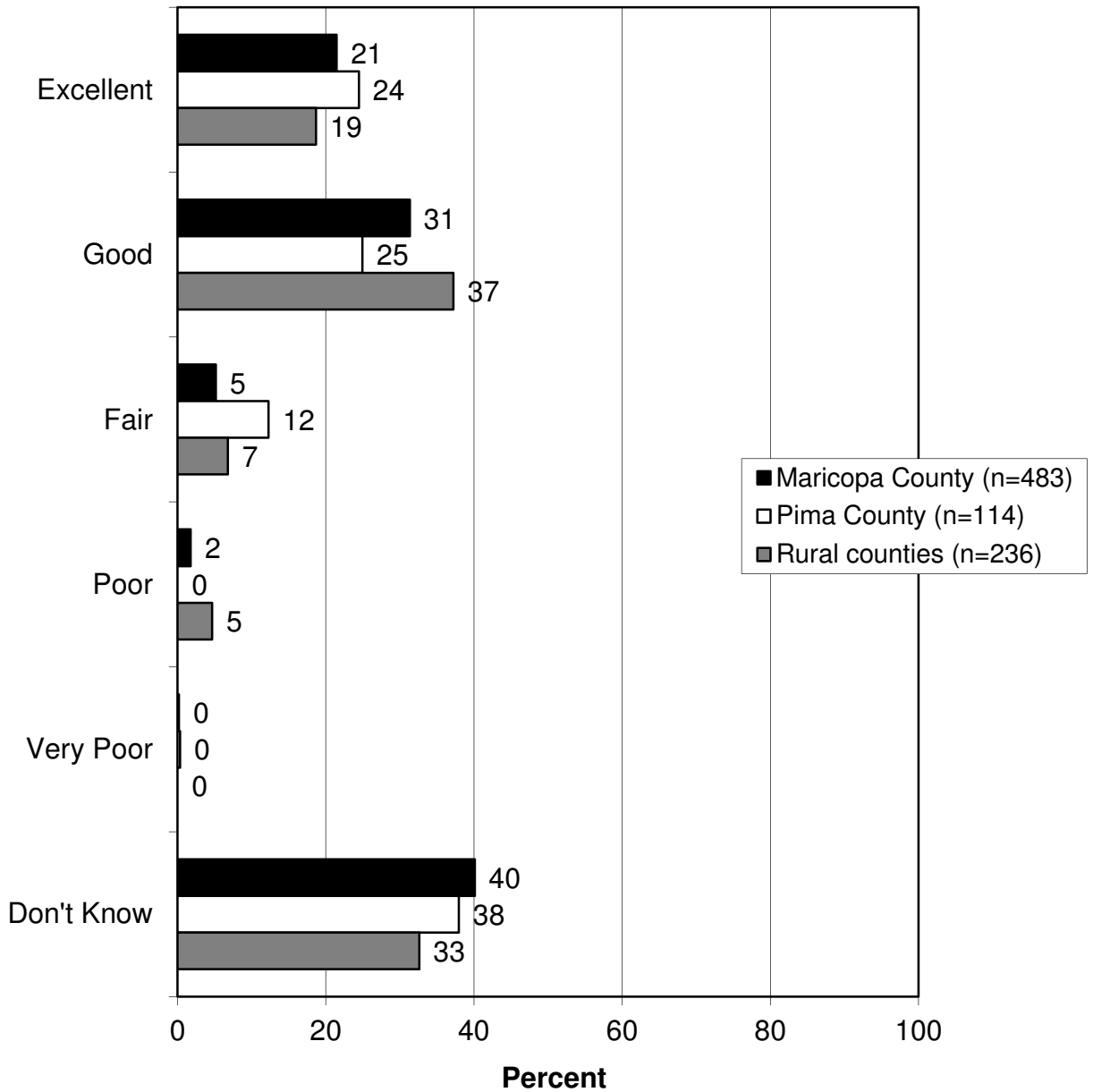
- Excellent = 5
- Good = 4
- Fair = 3
- Poor = 2
- Very poor = 1

Q98-Q104. Percent who rated the Arizona Game and Fish Department as [rating] in each of the following programs/areas in 2018:

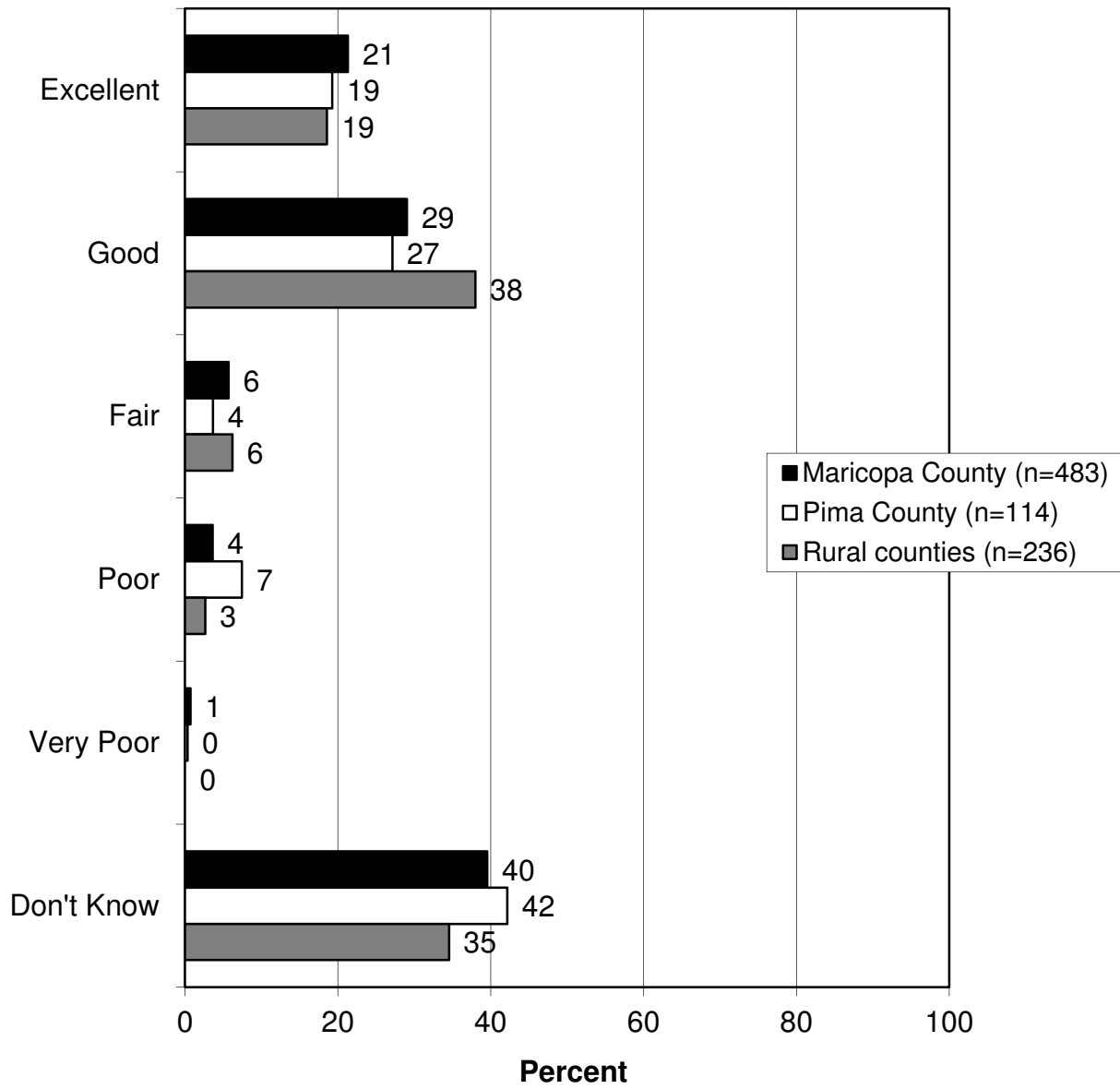


Graph produced in color; may lose some legibility if printed in black and white.

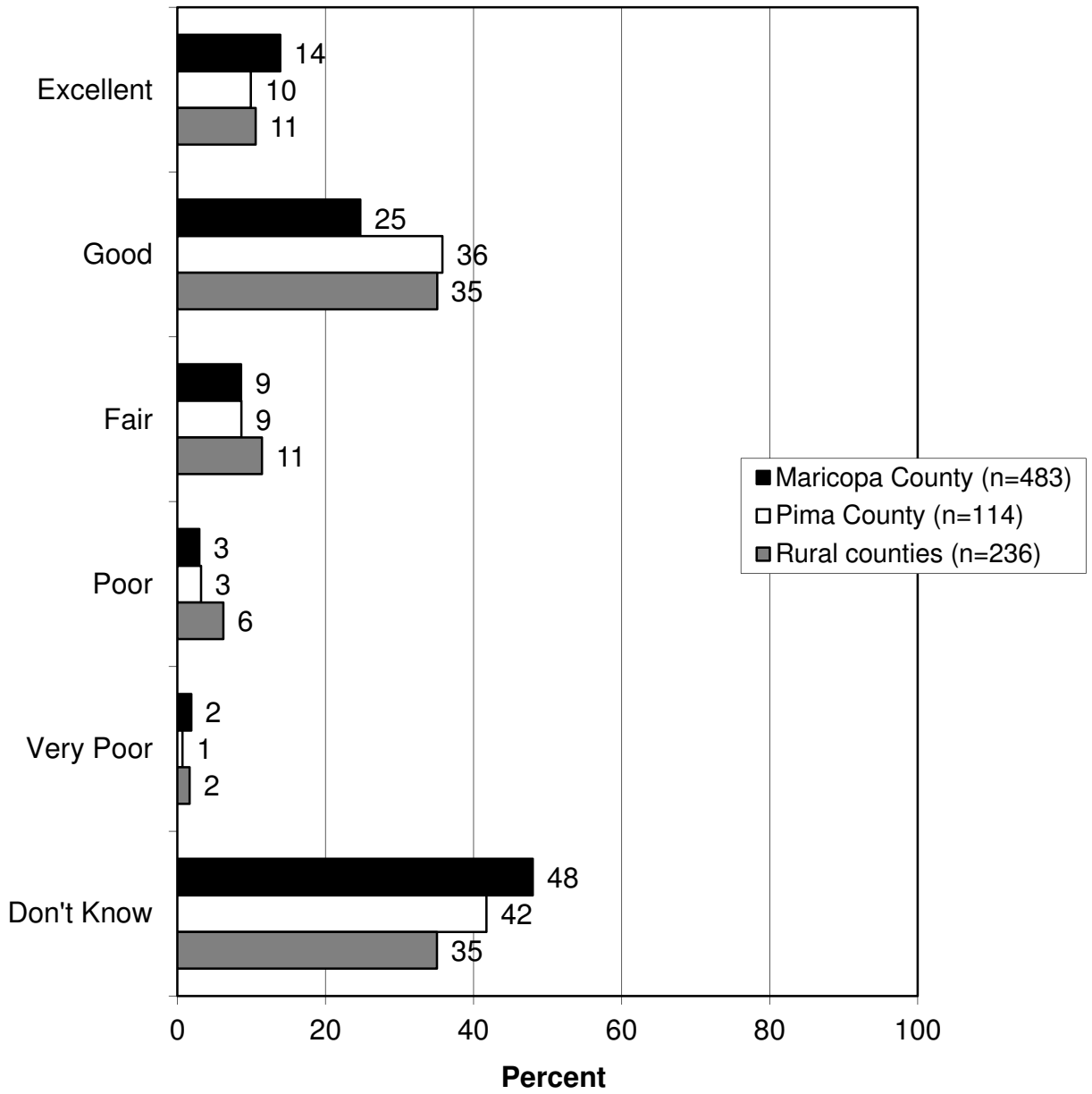
Q98. How would you rate the Department in fisheries management?



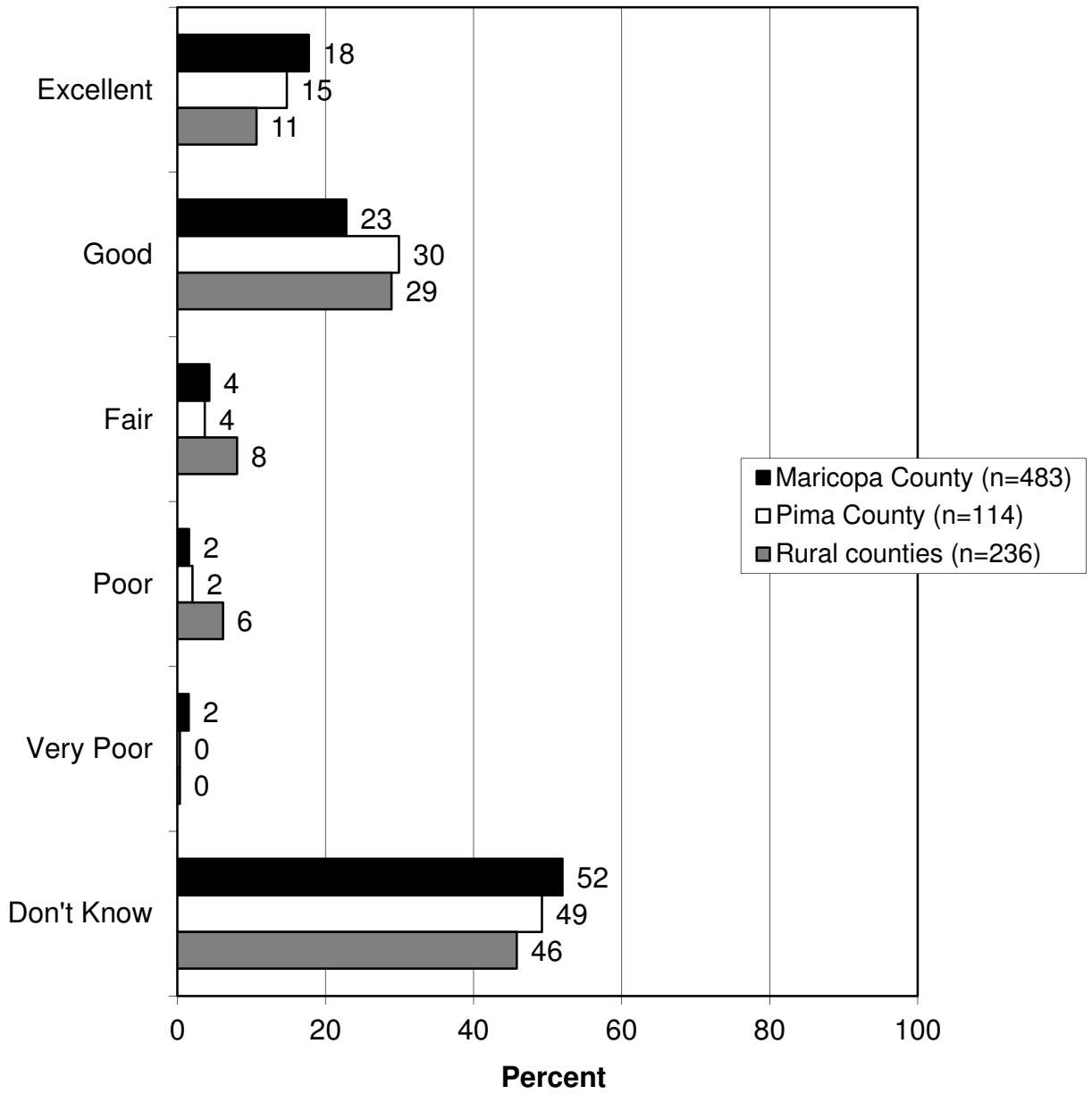
Q99. How would you rate the Department in watercraft safety and enforcement of boating laws?



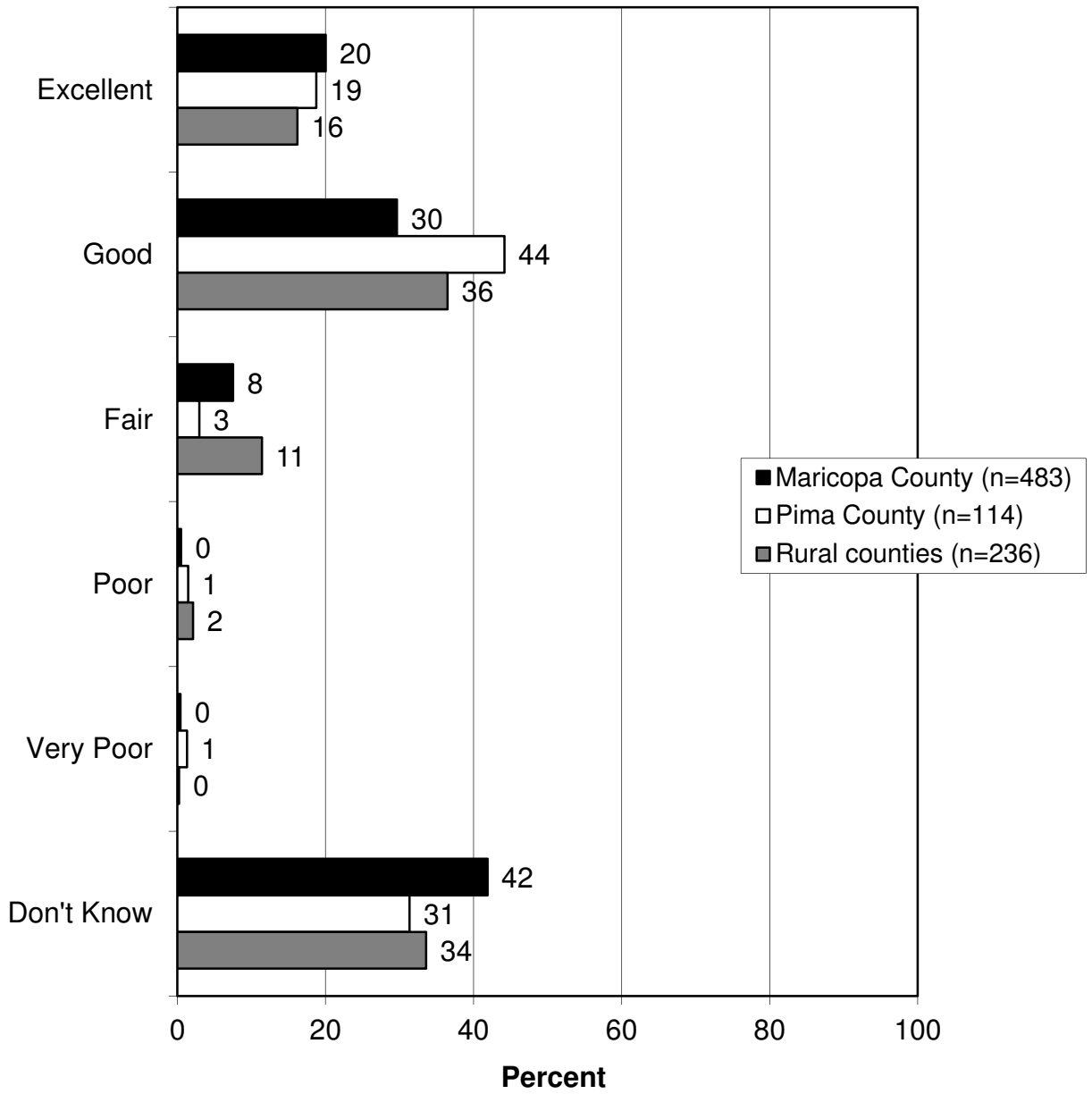
Q100. How would you rate the Department in off-highway vehicle management?



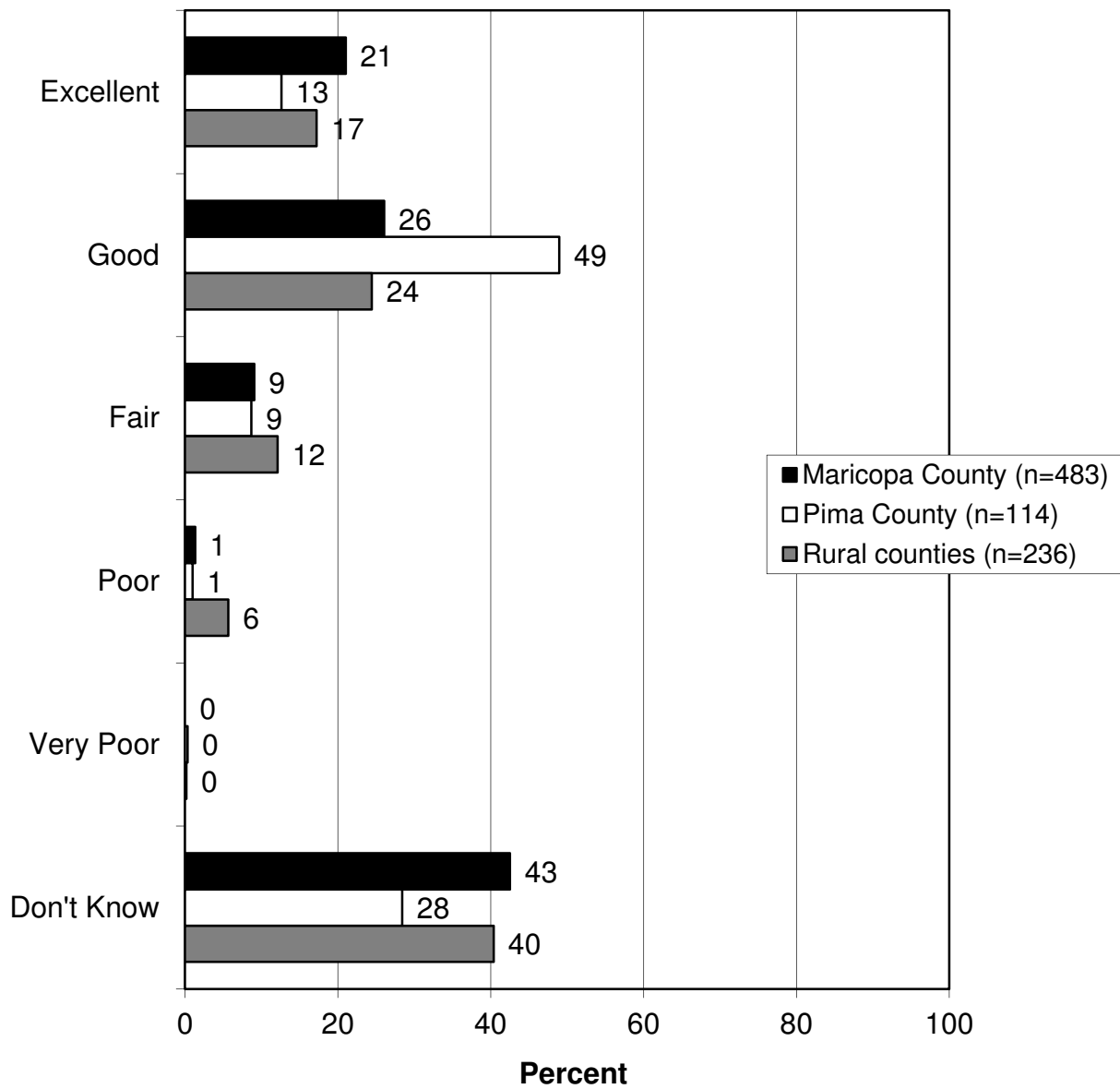
Q101. How would you rate the Department in recreational shooting sports?



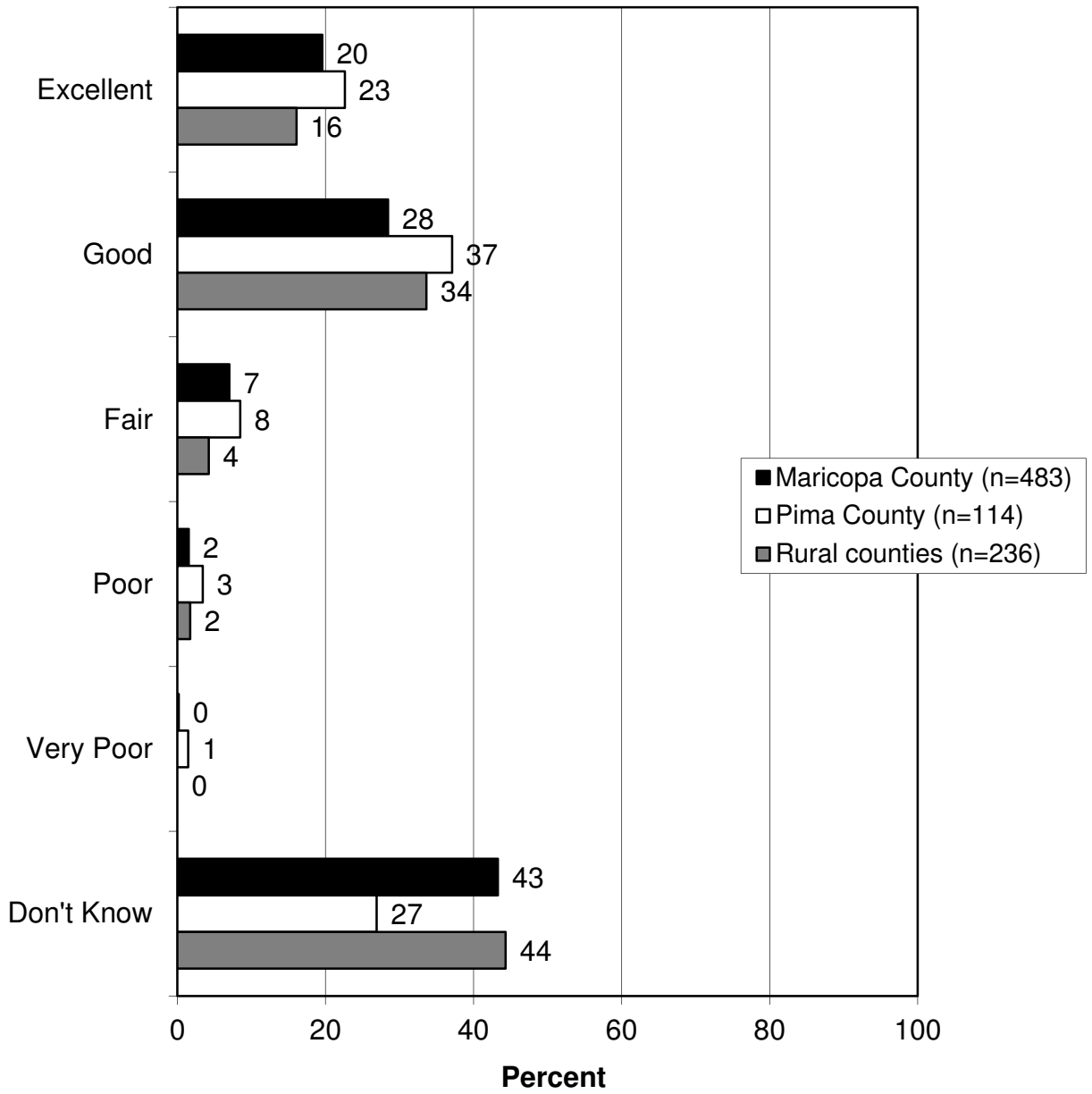
Q102. How would you rate the Department in game management?



Q103. How would you rate the Department in watchable wildlife information and opportunities?

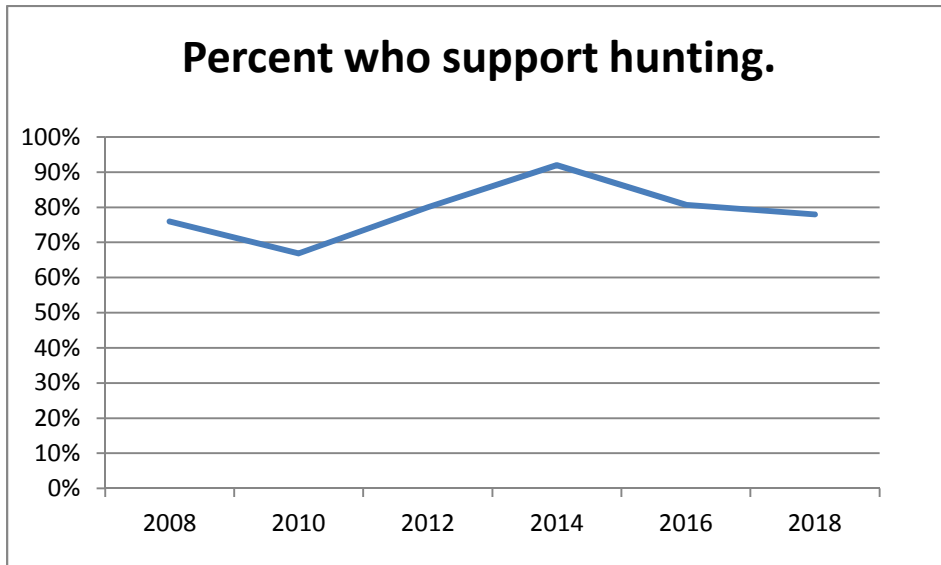


Q104. How would you rate the Department in nongame wildlife?

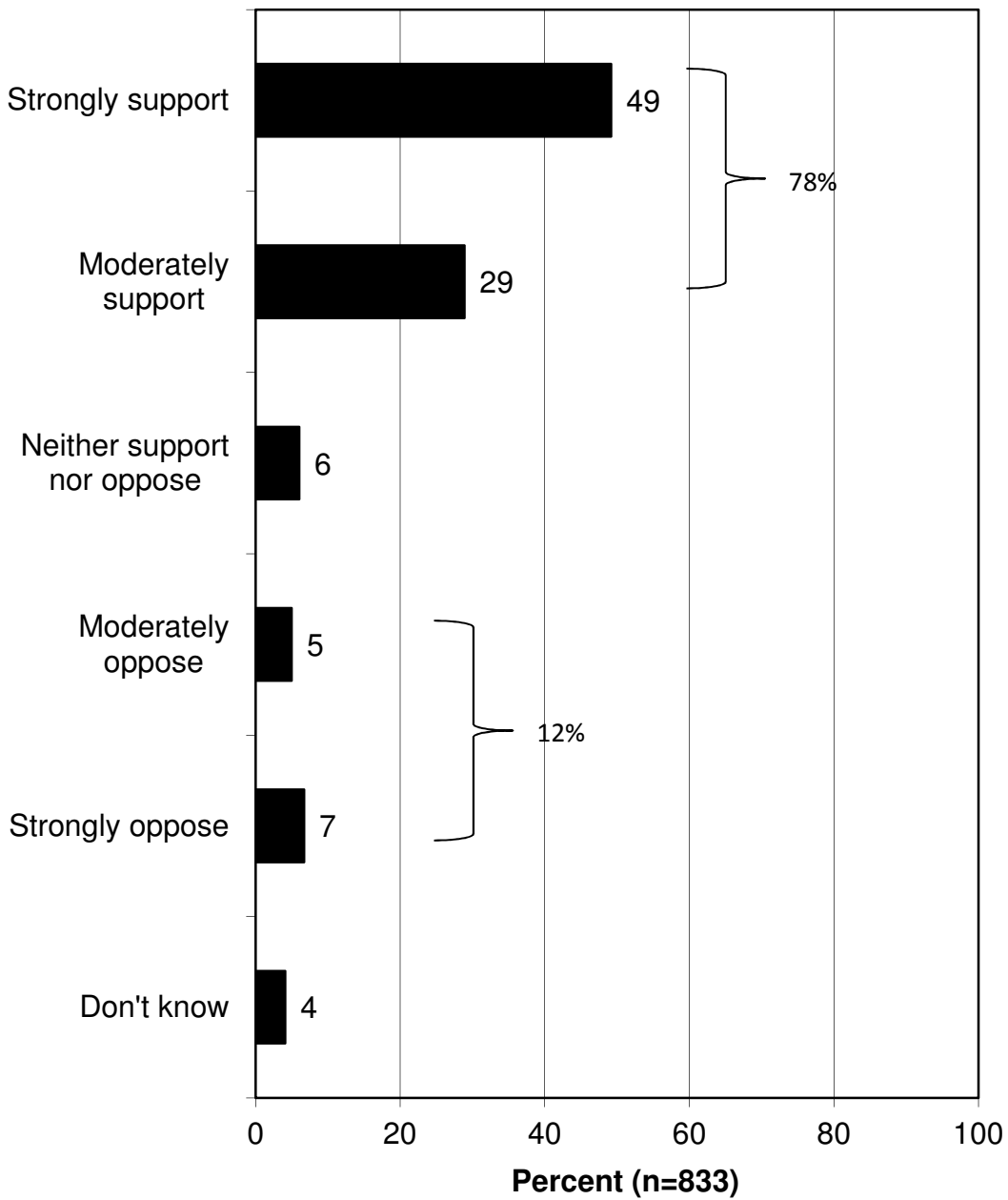


SUPPORT FOR AND OPPOSITION TO HUNTING

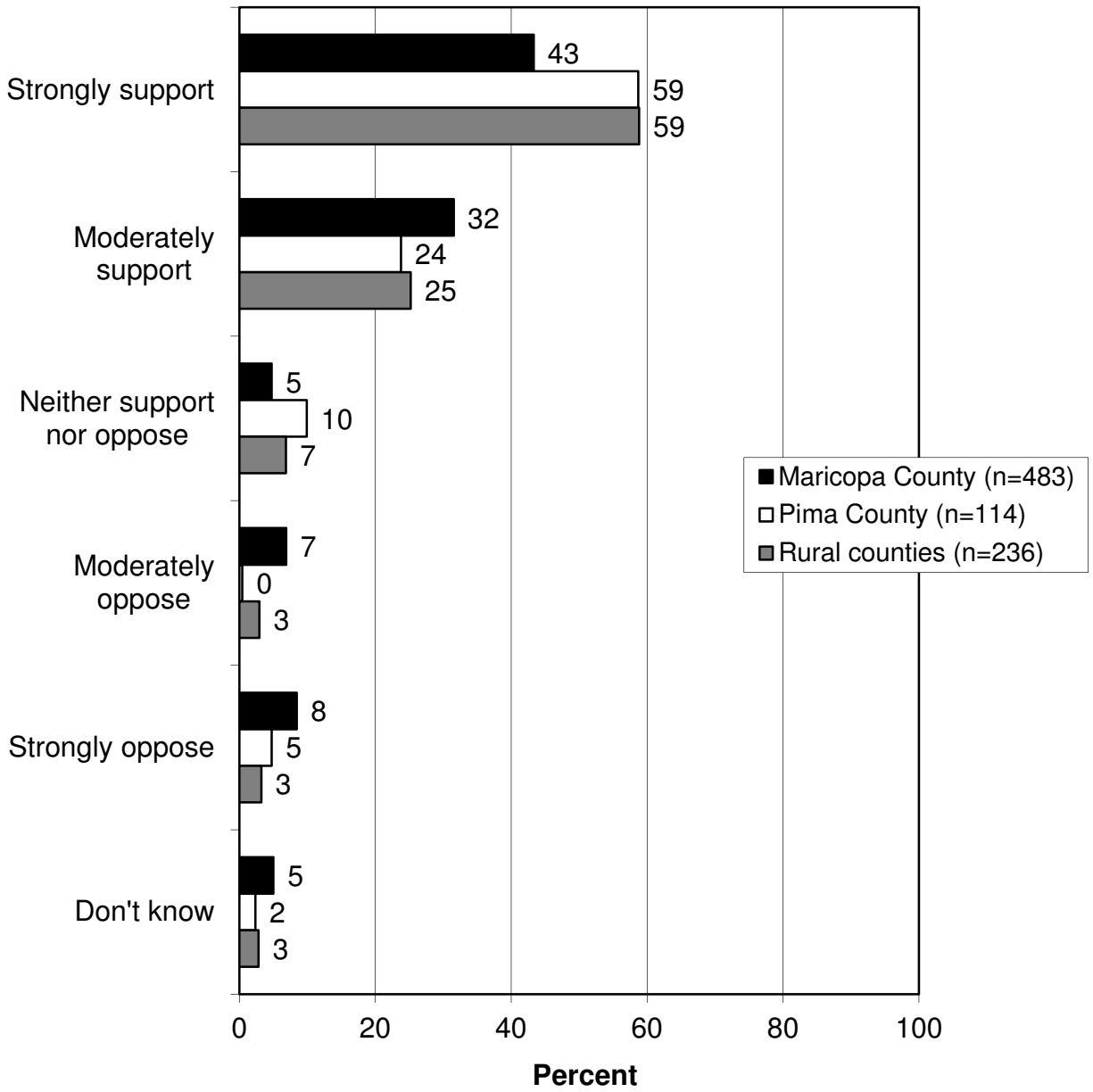
- As in past years, the large majority of Arizona residents (78%) support legal, regulated hunting; meanwhile, 12% oppose it.
 - The percentages in support in 2016 (80.7%) and 2018 (78.1%) show no statistically significant difference. A graph of long-term trends is included. Over the years, support has varied, ranging from approximately 70% to 90%.
 - Opposition is highest among Maricopa County residents.
 - Follow-up questions asked why those who support it do so and why those who oppose it do so.
 - The top reasons given for supporting legal, regulated hunting are wildlife management/overpopulation control, stopping the dangers that would be created by a lack of regulations, and for food.
 - The top reason given for opposing legal, regulated hunting is concern about hurting or killing individual animals.



Q106. In general, do you support or oppose legal, regulated hunting?



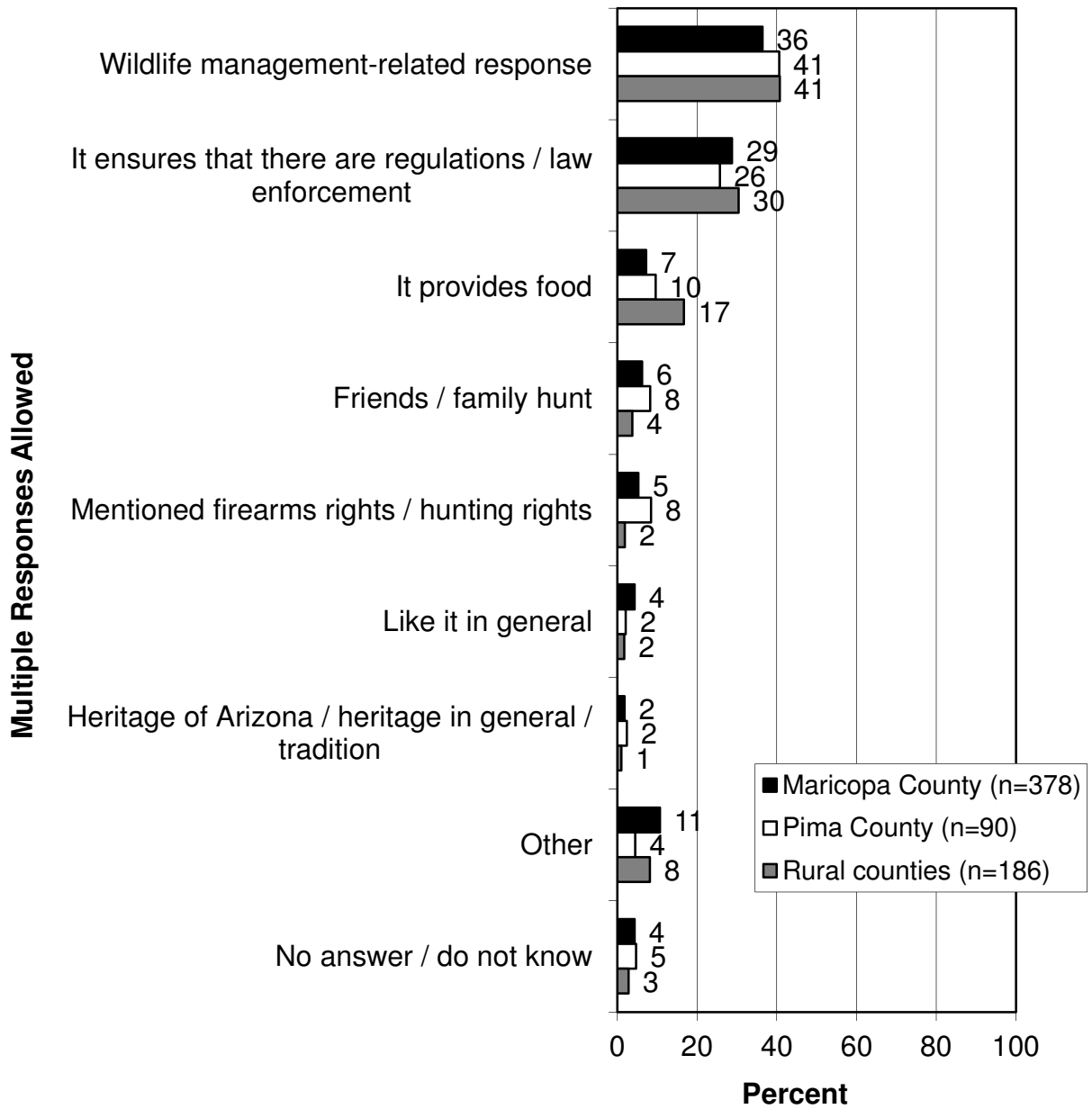
Q106. In general, do you support or oppose legal, regulated hunting?



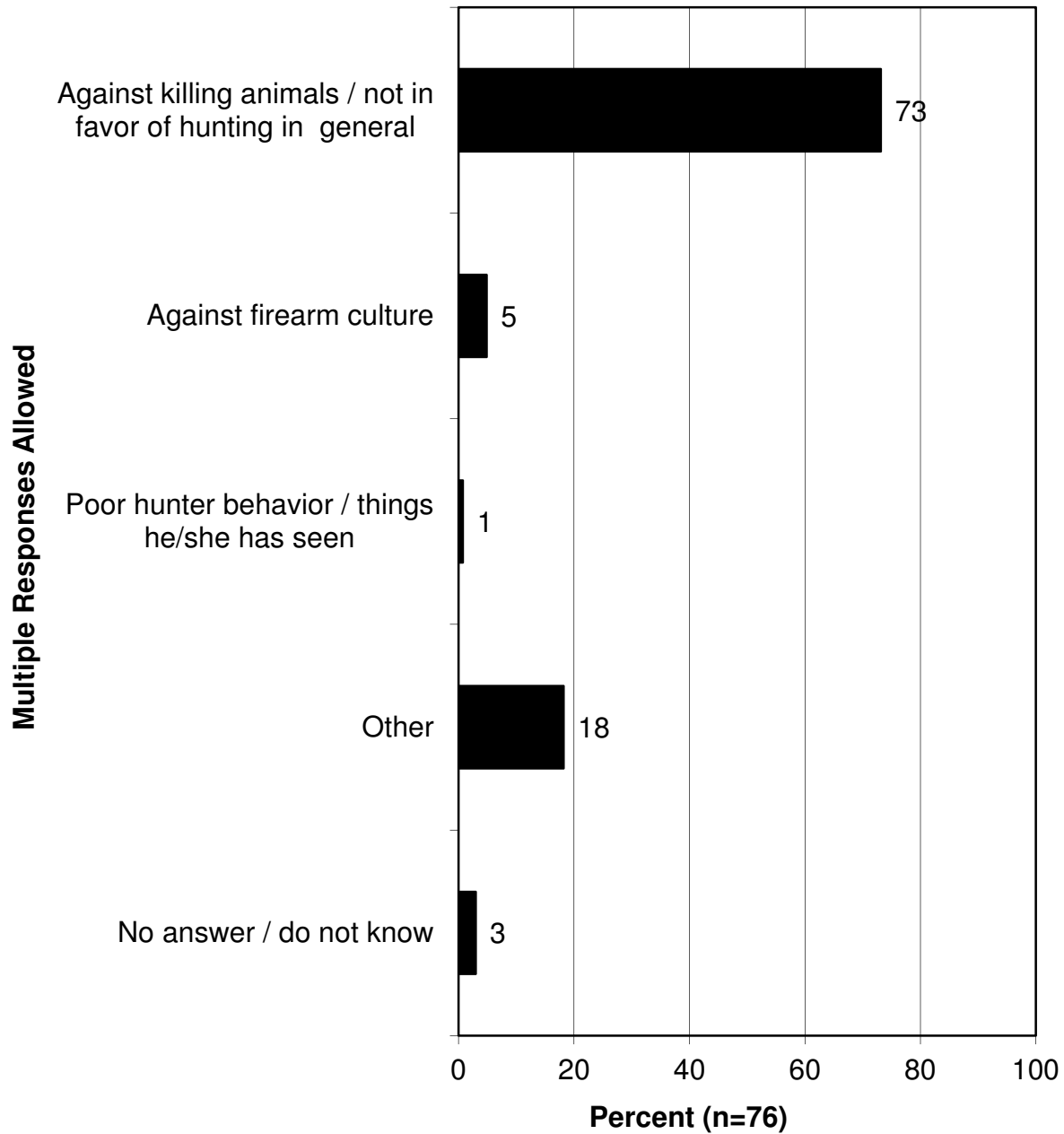
Q107. Why do you support legal, regulated hunting? (Asked of those who support legal, regulated hunting.)



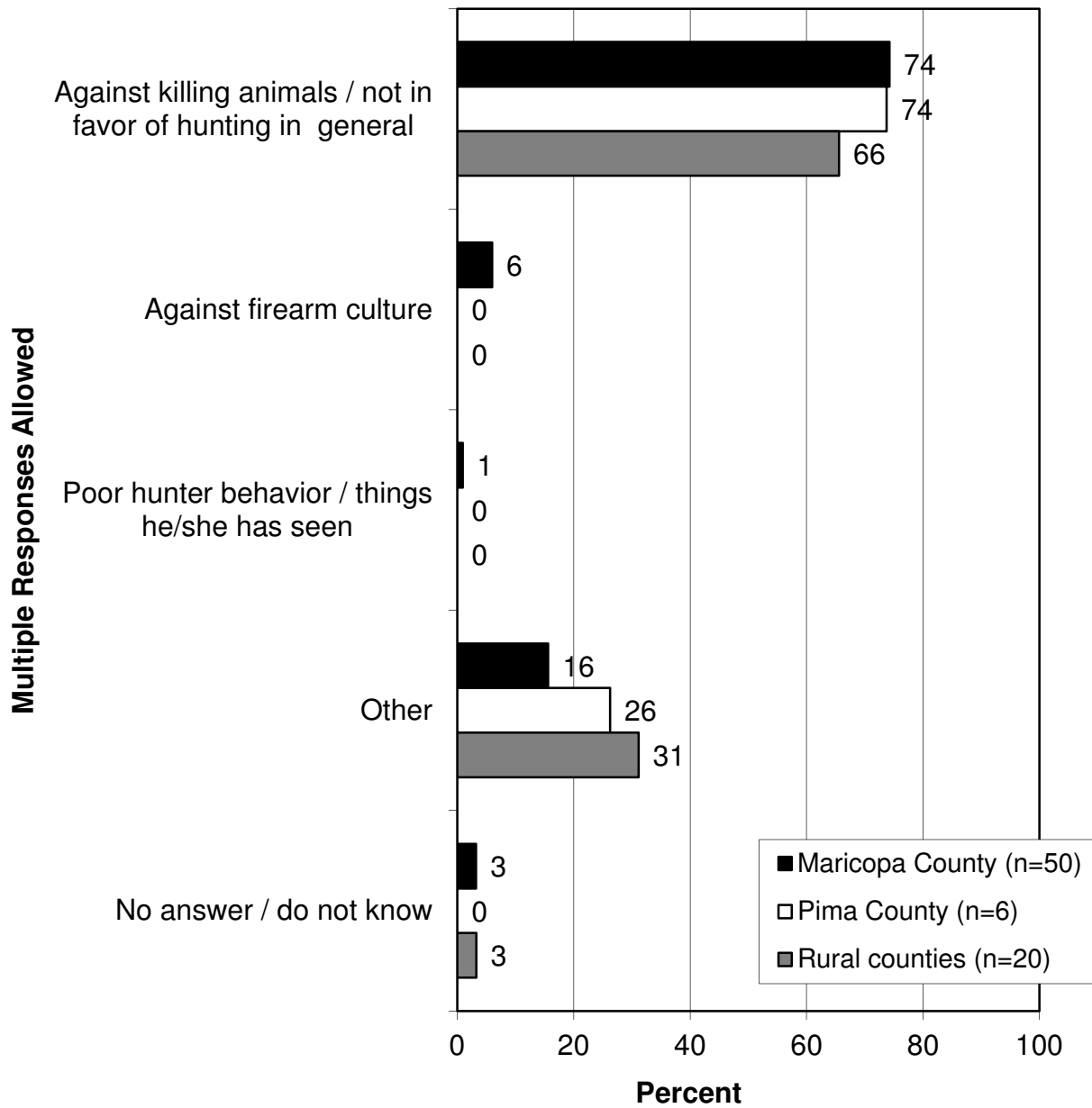
Q107. Why do you support legal, regulated hunting? (Asked of those who support legal, regulated hunting.)



Q108. Why do you oppose legal, regulated hunting? (Asked of those who oppose legal, regulated hunting.)



Q108. Why do you oppose legal, regulated hunting? (Asked of those who oppose legal, regulated hunting.)



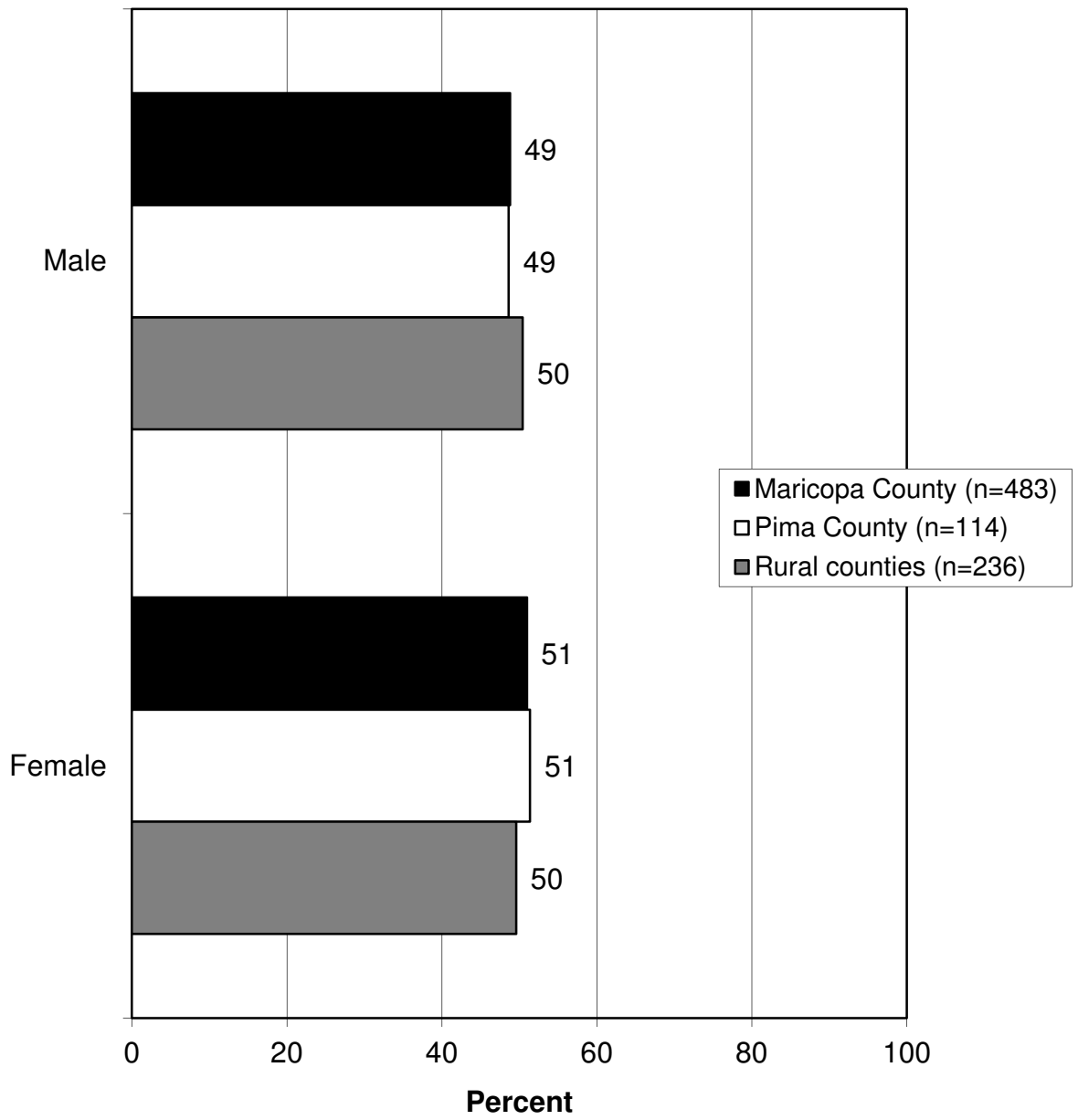
DEMOGRAPHIC DATA

- The following demographic data were gathered:
 - Gender.
 - Age. Note that the results are among adults; children were not interviewed for the survey. Mean and median represent the mean and median *adult* age.
 - Ethnicity.
 - Education.
 - Income.
 - Residential character (rural or urban).
 - County of residence.
 - Years lived in Arizona.

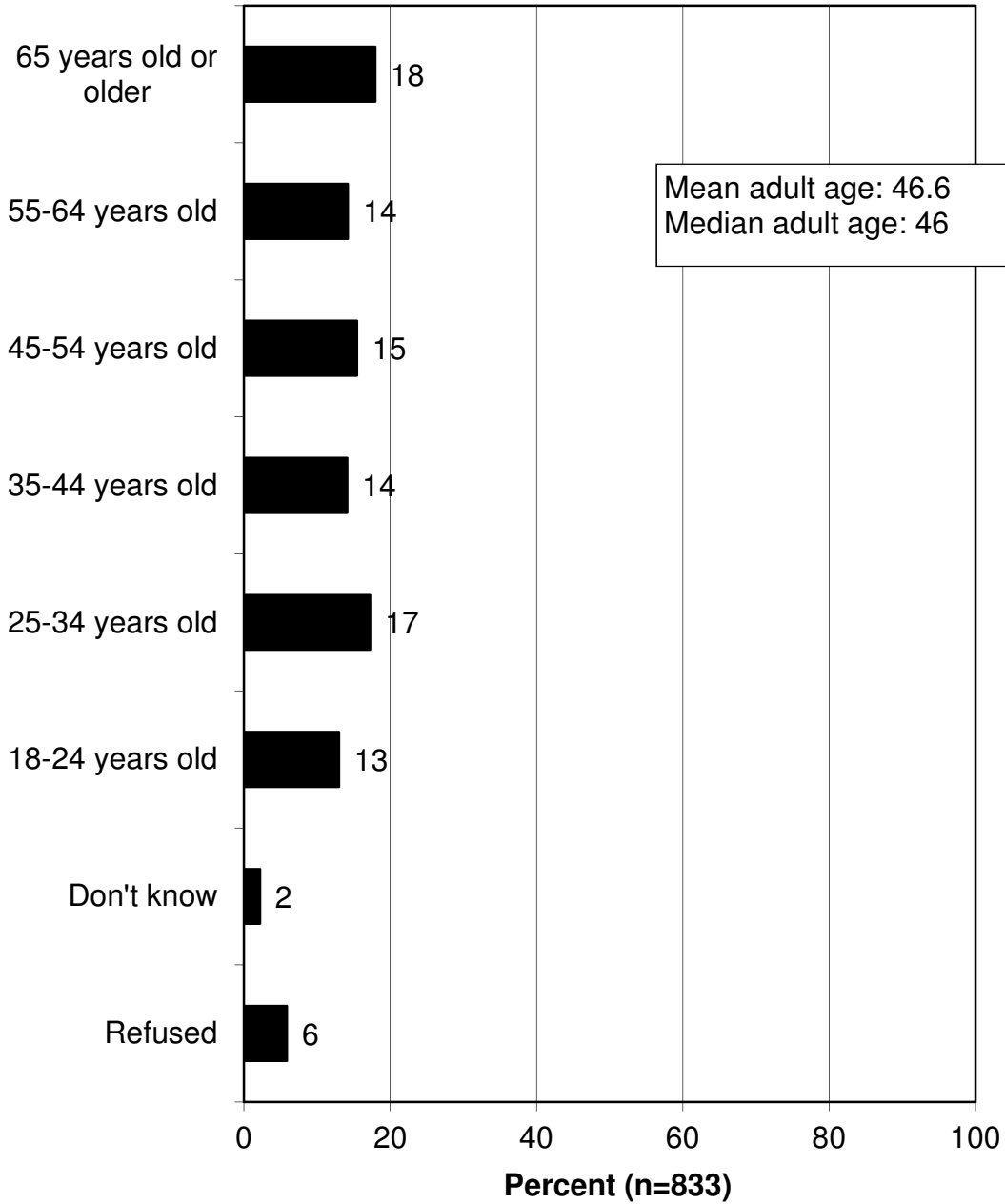
Q130. Respondent's gender (not asked; observed by interviewer).



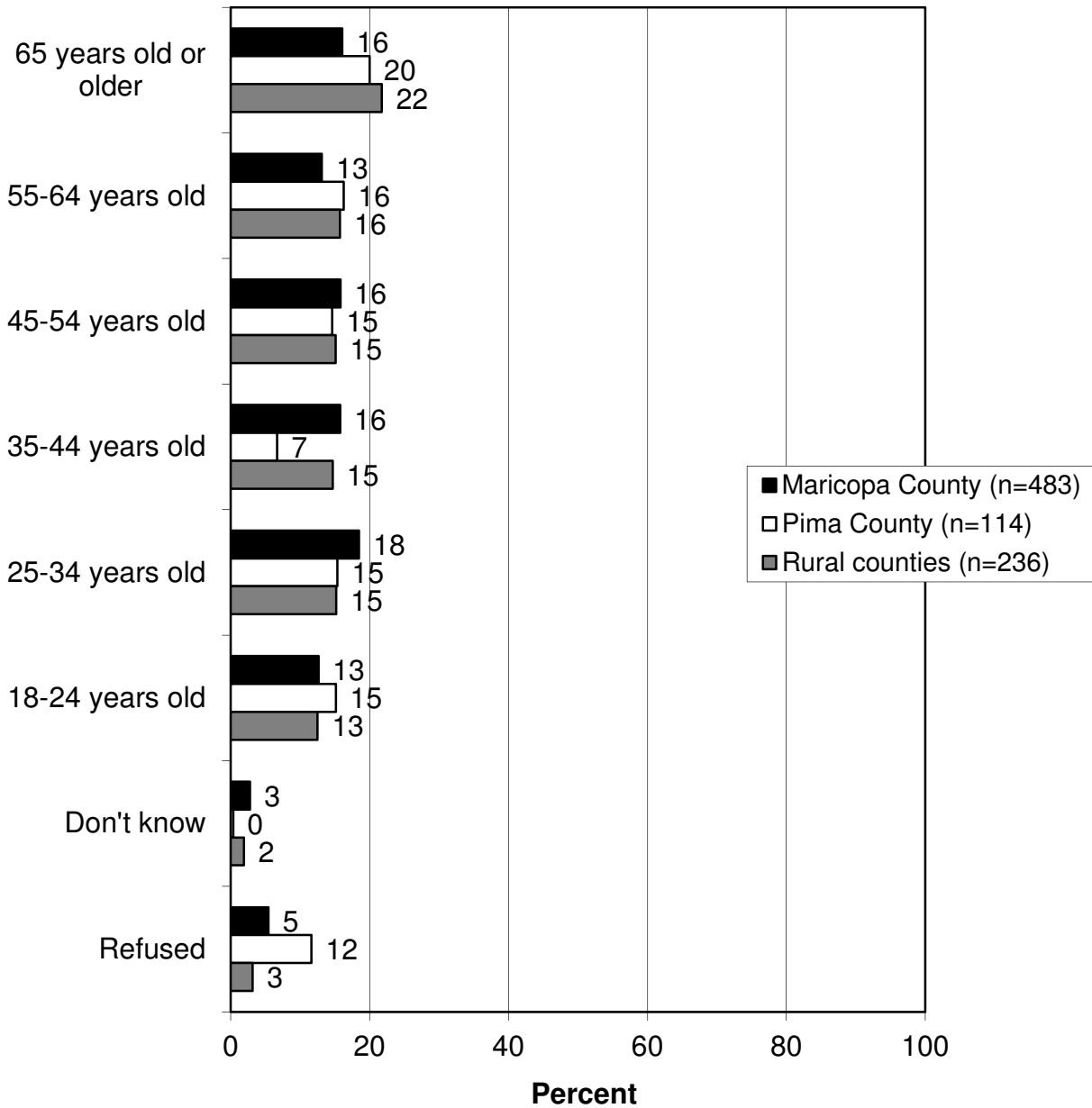
Q130. Respondent's gender (not asked; observed by interviewer).



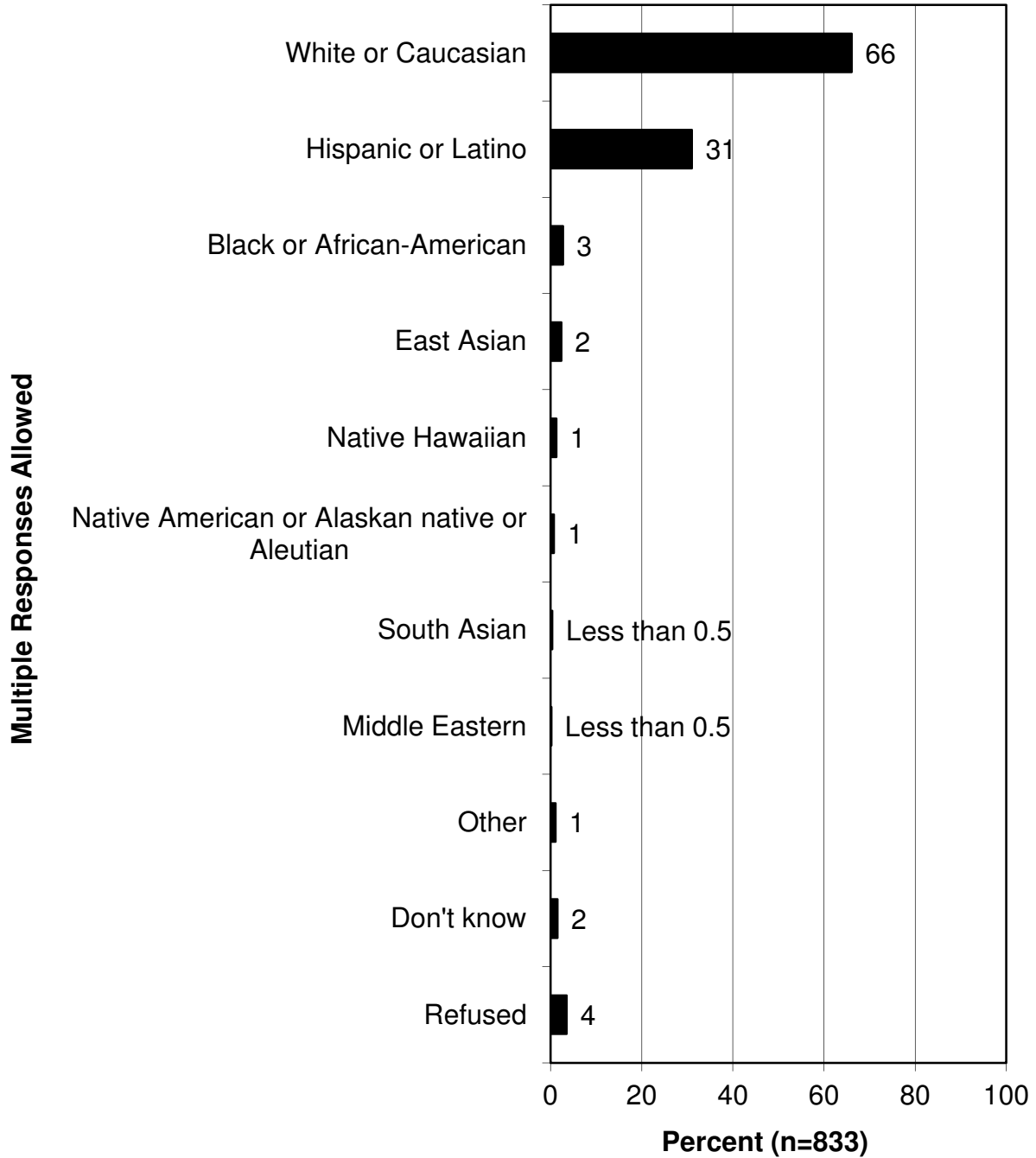
Q136. Respondent's age.



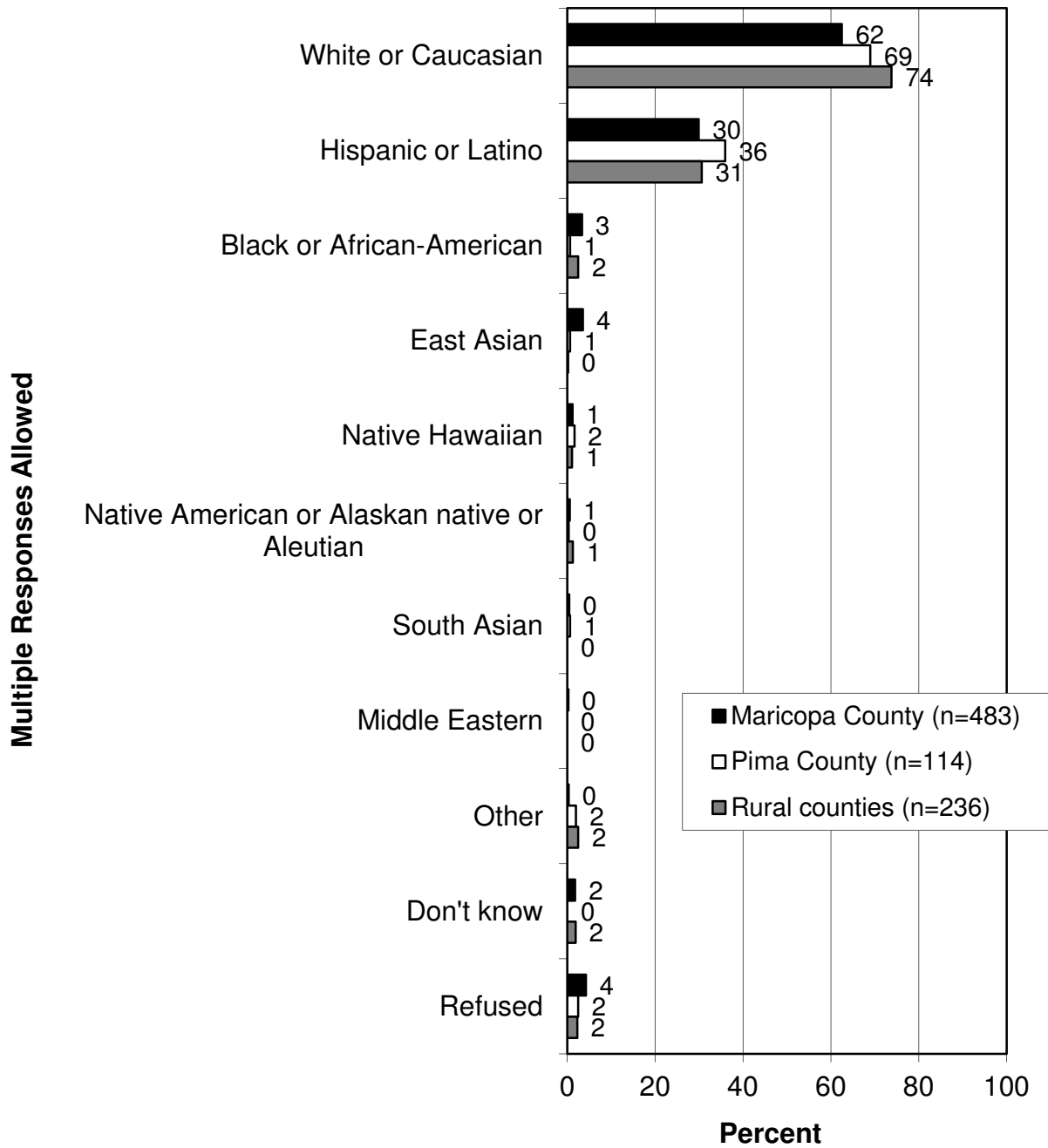
Q136. Respondent's age.



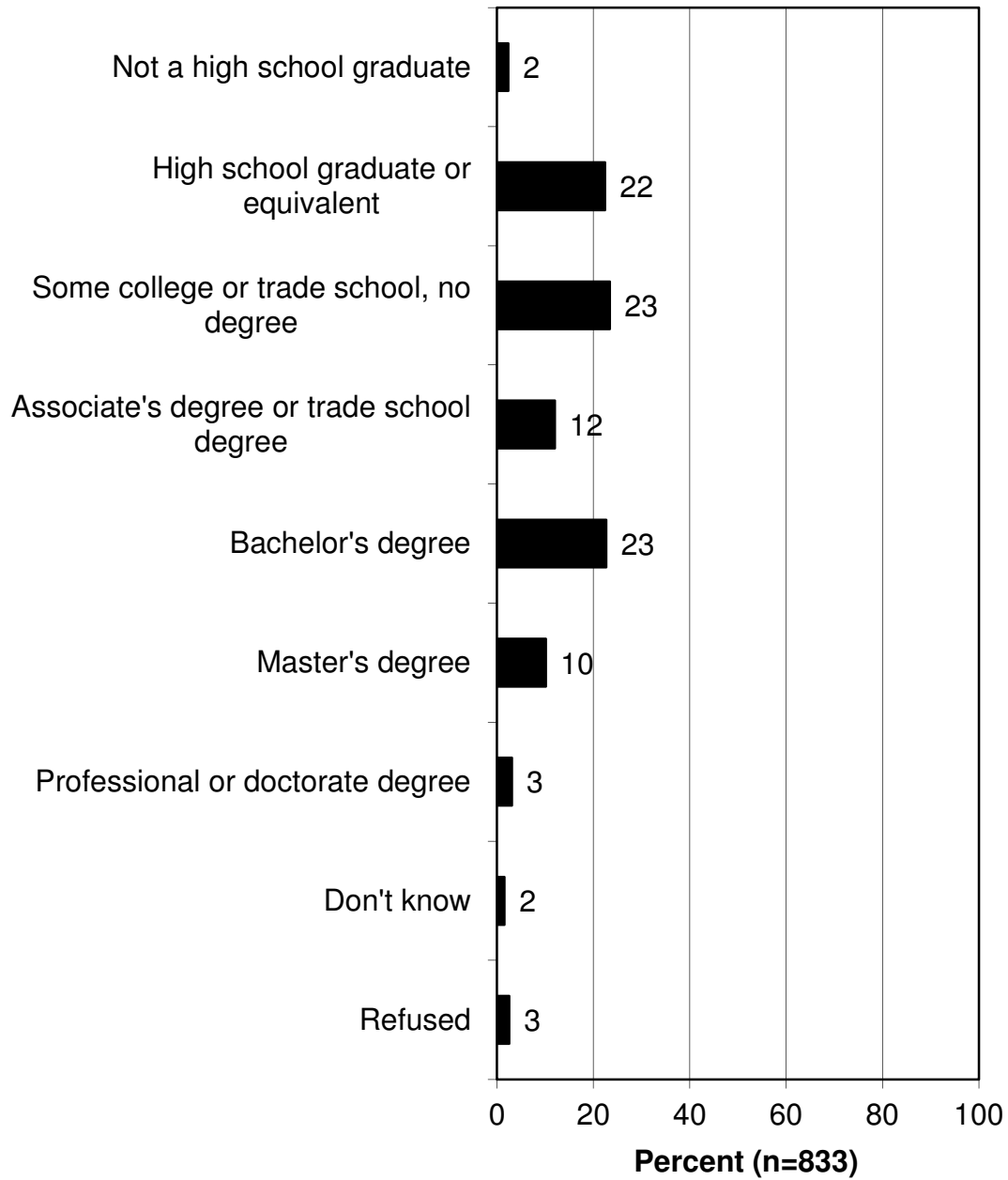
Q116. What races or ethnic backgrounds do you consider yourself? Please mention all that apply.



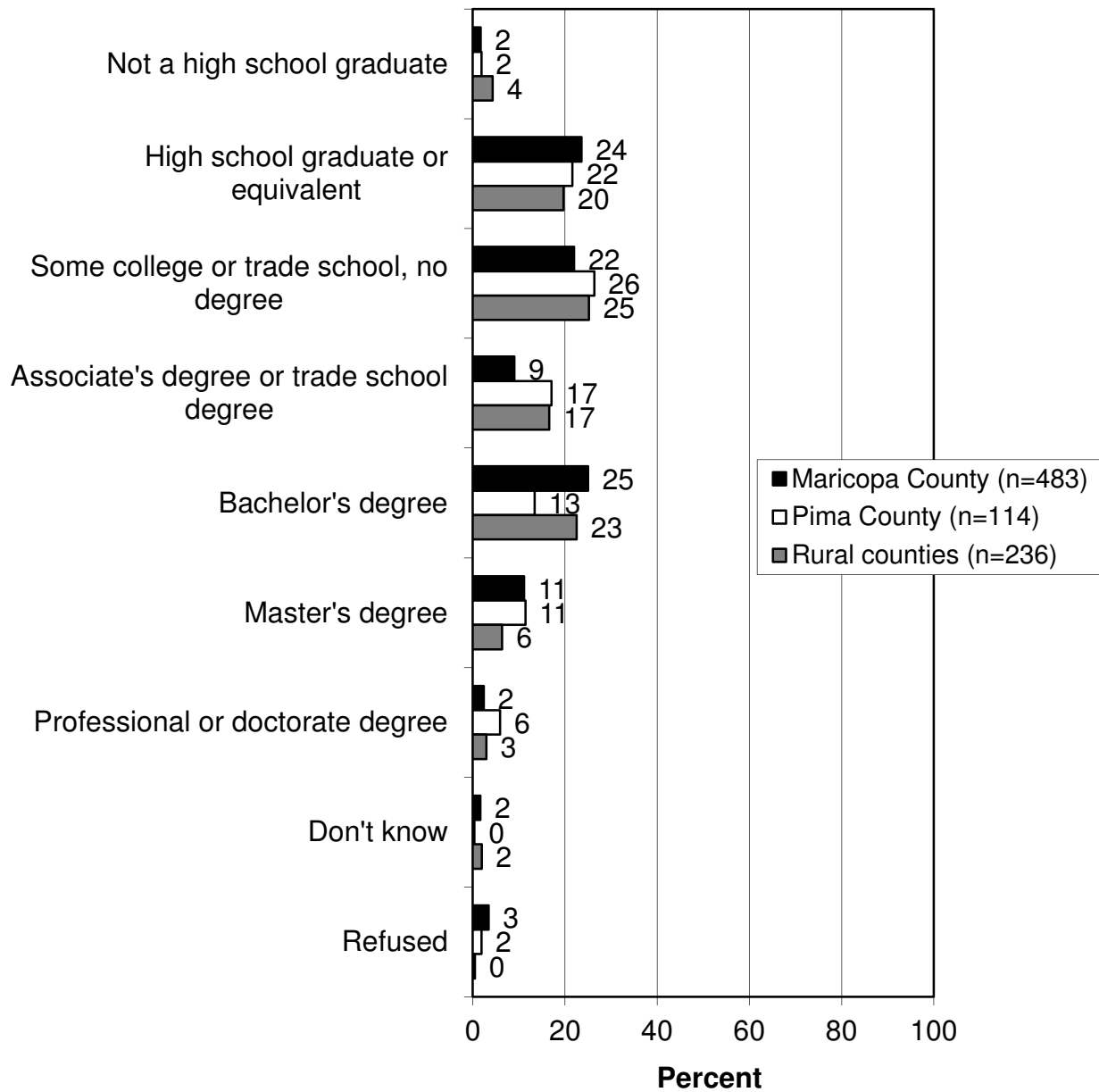
Q116. What races or ethnic backgrounds do you consider yourself? Please mention all that apply.



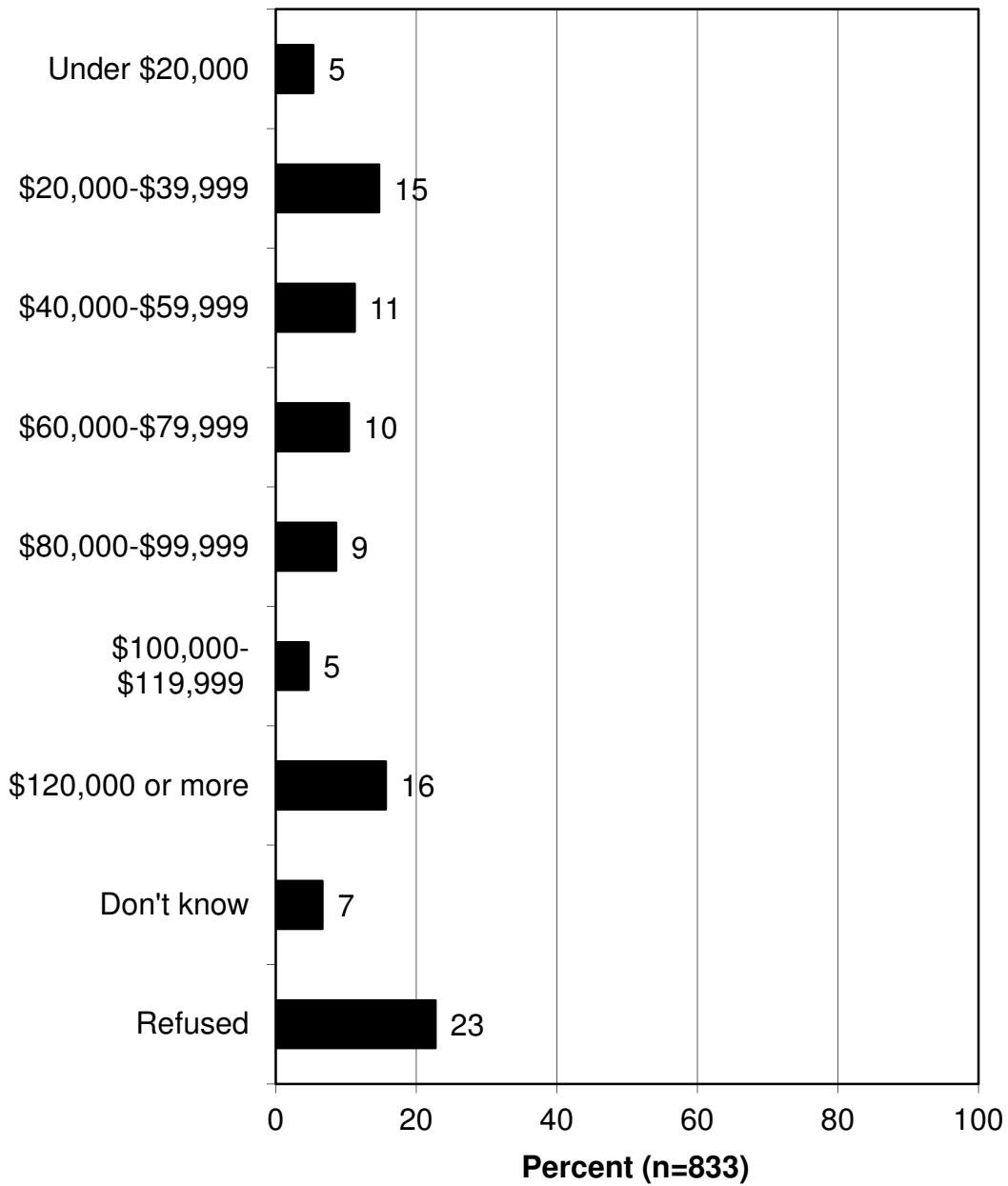
Q113. What is the highest level of education you have completed?



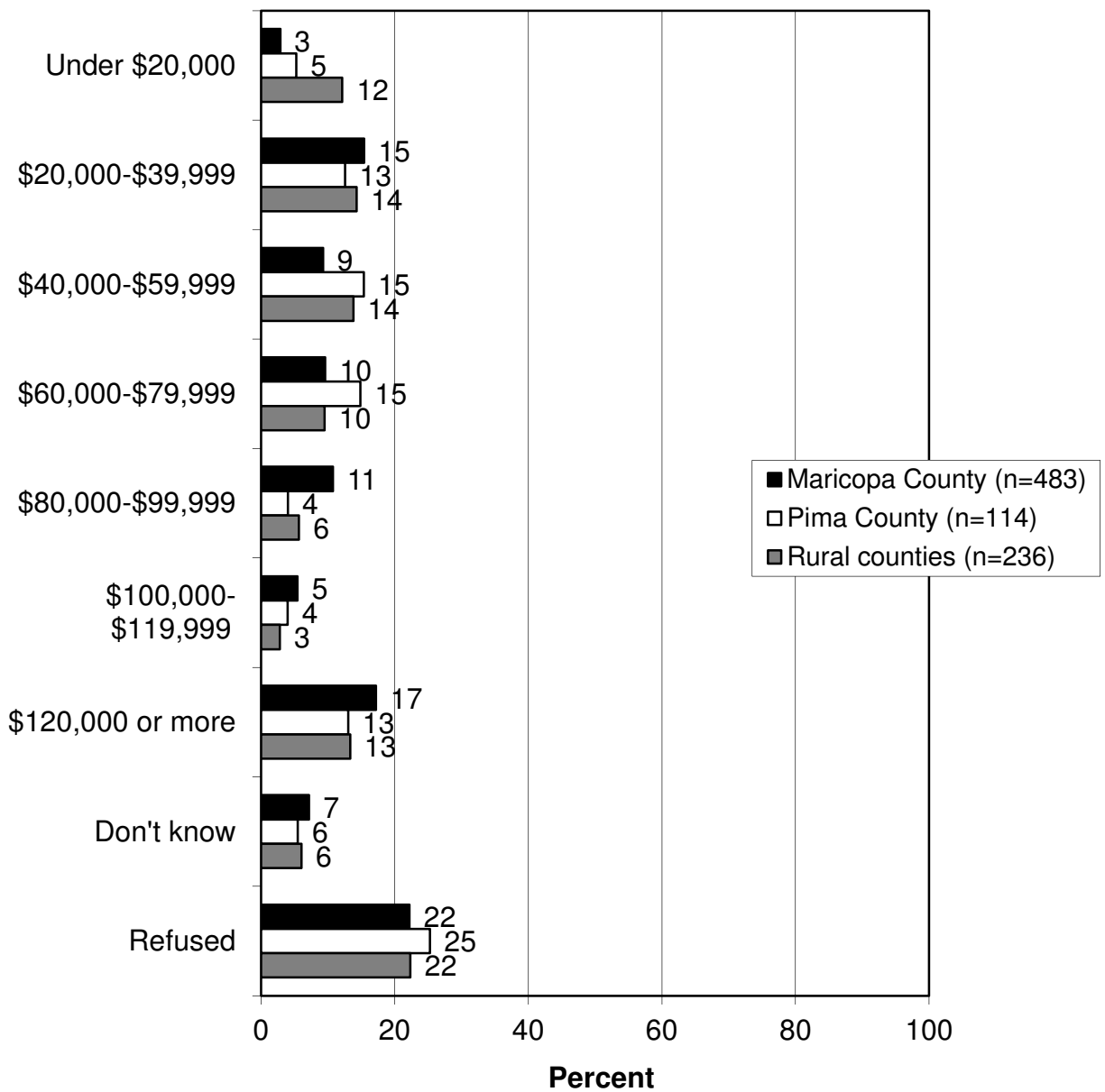
Q113. What is the highest level of education you have completed?



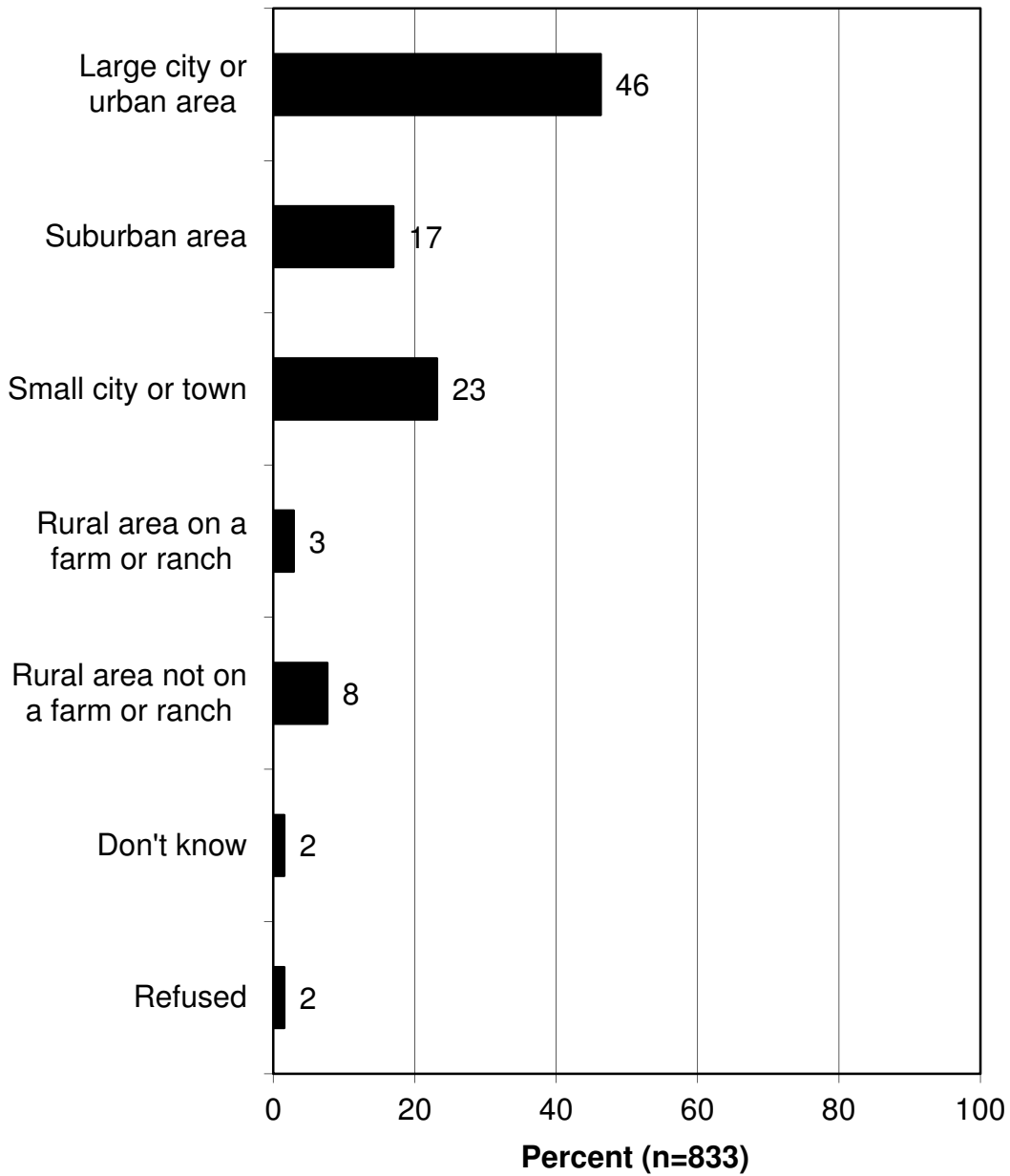
Q118. Which of these categories best describes your total household income before taxes last year?



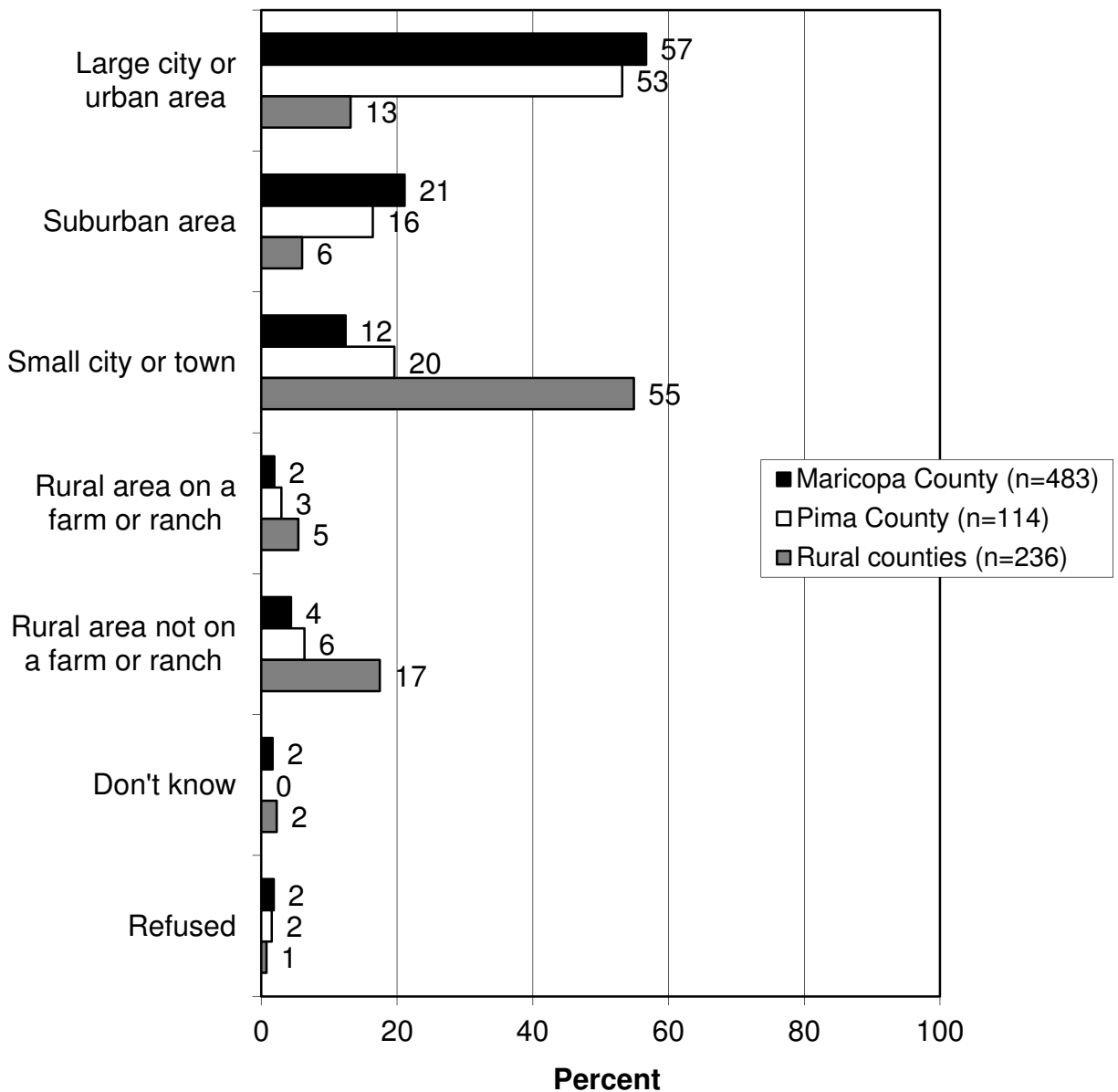
Q118. Which of these categories best describes your total household income before taxes last year?



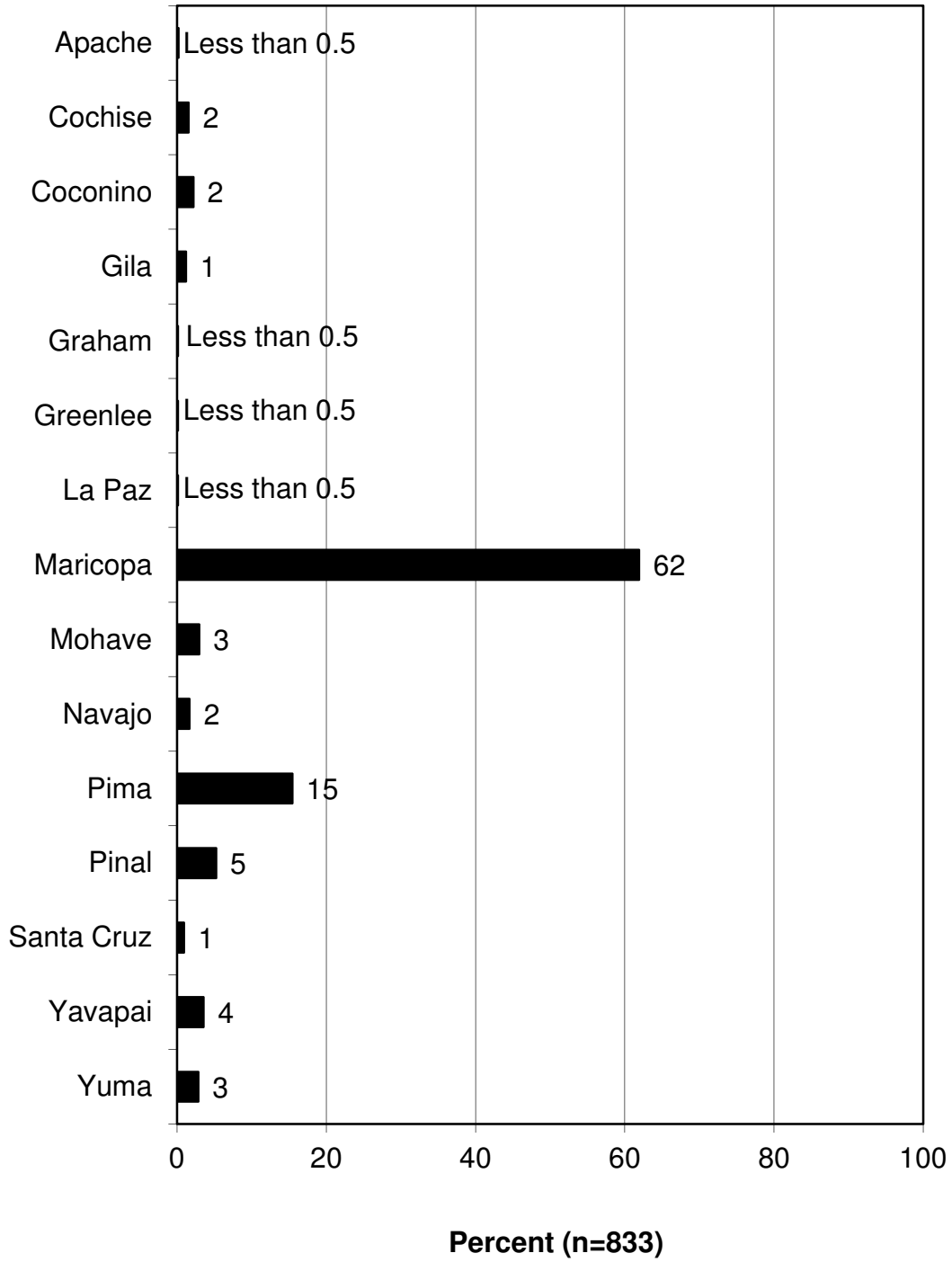
Q112. Do you consider your place of residence to be a large city or urban area, a suburban area, a small city or town, a rural area on a farm or ranch, or a rural area not on a farm or ranch?



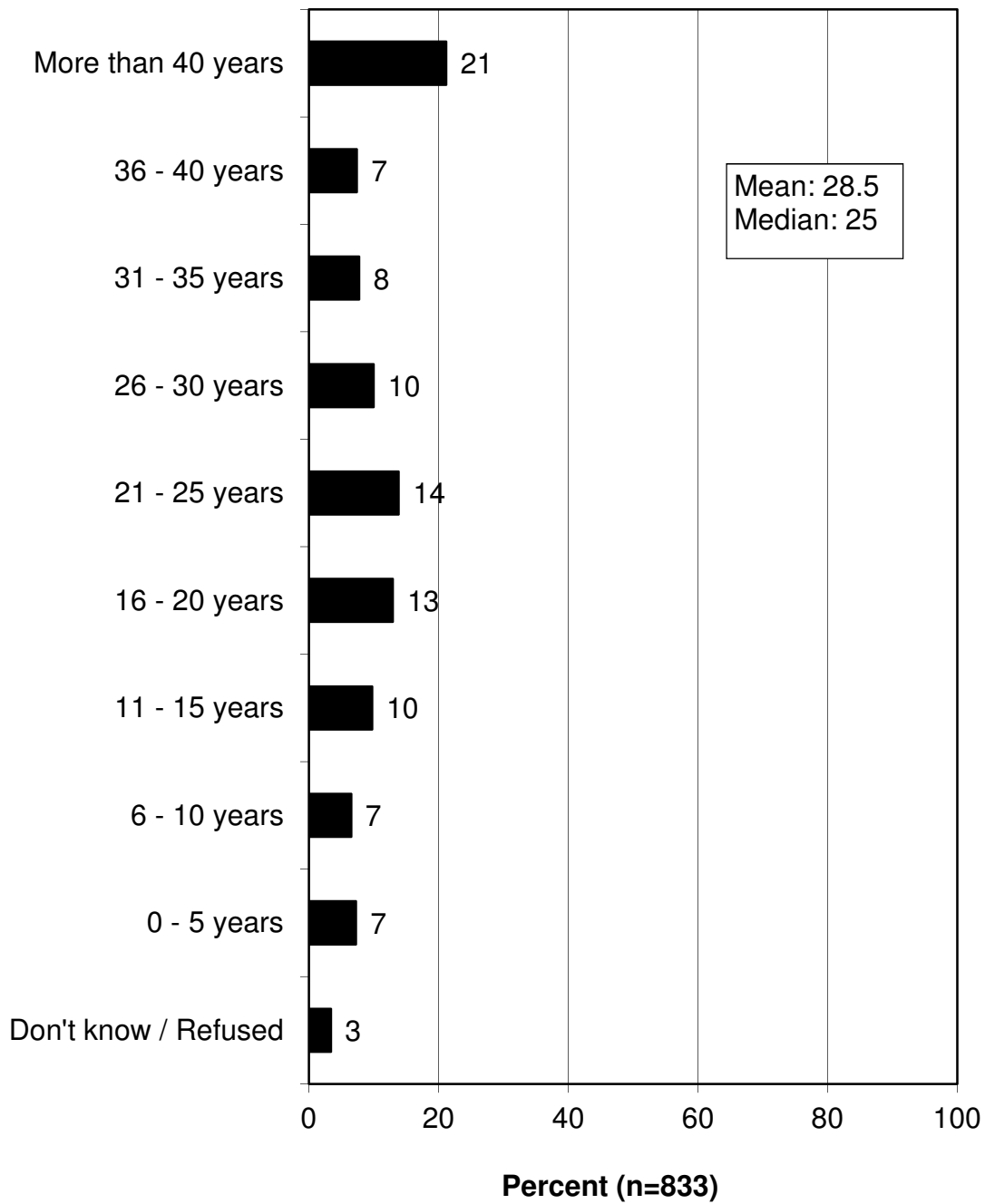
Q112. Do you consider your place of residence to be a large city or urban area, a suburban area, a small city or town, a rural area on a farm or ranch, or a rural area not on a farm or ranch?



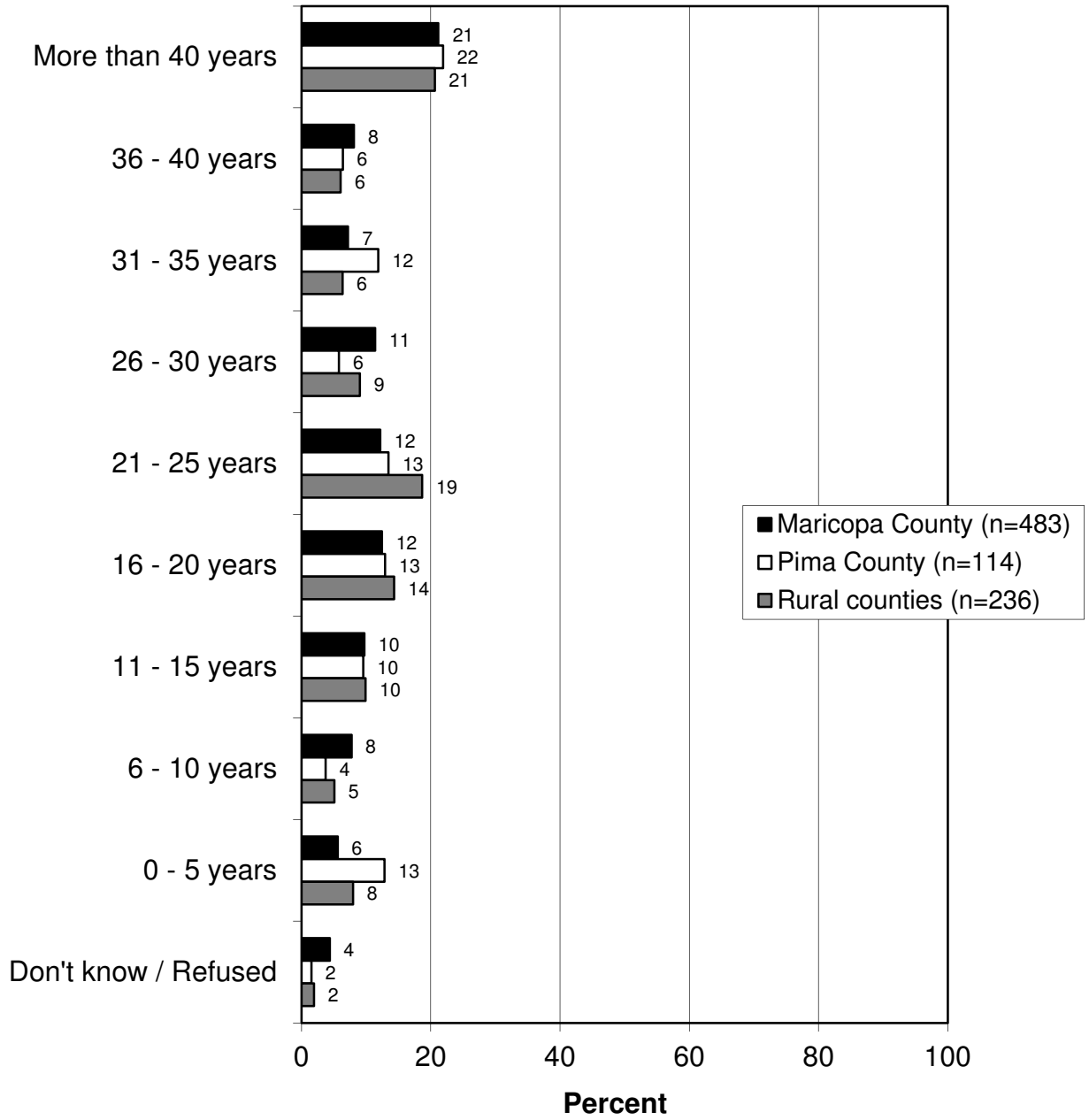
Q111. In what county do you live?



Q110. How many years have you lived in Arizona?



Q110. How many years have you lived in Arizona?



ABOUT RESPONSIVE MANAGEMENT

Responsive Management is an internationally recognized survey research firm specializing in attitudes toward 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.

Since 1985, 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 research measuring public opinions and attitudes. 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 projects and almost \$60 million in research.

Responsive Management has conducted research for every state fish and wildlife agency and most of the federal resource agencies, including the U.S. Fish and Wildlife Service, the National Park Service, the U.S. Forest Service, the Bureau of Land Management, the U.S. Coast Guard, and the National Marine Fisheries Service.

We have also provided research for many nonprofit and nongovernmental organizations, including the National Wildlife Federation, the National Shooting Sports Foundation, the National Rifle Association, the Archery Trade Association, the Izaak Walton League, the Rocky Mountain Elk Foundation, Ducks Unlimited, SCI, and Dallas Safari Club. Other nonprofit and NGO clients include Trout Unlimited, the Sierra Club, the American Museum of Natural History, the Ocean Conservancy, the National Association of State Boating Law Administrators, and the BoatUS Foundation.

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, 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, 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, and on the front pages of *The Washington Post* and *USA Today*.

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