

# Responsive Management™



## **ANGLERS' KNOWLEDGE OF AND ATTITUDES TOWARD MONOFILAMENT LINE RECYCLING**

**Conducted for BoatU.S. Foundation**

**by Responsive Management**

**2011**

# **ANGLERS' KNOWLEDGE OF AND ATTITUDES TOWARD MONOFILAMENT LINE RECYCLING**

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## **Acknowledgments**

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## **EXECUTIVE SUMMARY**

### **INTRODUCTION AND METHODOLOGY**

This study was conducted for BoatU.S. Foundation to assess anglers' awareness of and participation in the "Reel In and Recycle" monofilament line recycling program funded jointly by the NOAA Marine Debris Program and the National Fish and Wildlife Foundation and implemented by BoatU.S. Foundation. The purpose of the "Reel In and Recycle" program is to establish a nationwide monofilament recycling effort that makes recycling easy and convenient for anglers. Through this program, BoatU.S. Foundation partners with volunteers at local marinas, launch sites, and high traffic fishing areas nationwide to provide outdoor recycling bins for monofilament fishing lines. The collected line is monitored, tracked, and sent for recycling.

This study is designed to assess anglers' behaviors and attitudes regarding recycling monofilament line, to identify barriers and challenges to recycling monofilament line, and to determine messages and themes that resonate with anglers and encourage monofilament line recycling. Results from this study will assist future planning, education, outreach, and program evaluation. The study entailed a telephone survey of licensed anglers in three states in which BoatU.S. Foundation has made numerous monofilament line recycling bins available: California, New Jersey, and Virginia.

The telephone survey questionnaire was developed cooperatively by Responsive Management and BoatU.S. Foundation, based on the goals and objectives of BoatU.S. Foundation's monofilament line recycling program as well as the research team's familiarity with natural resource and environmental studies. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

Responsive Management conducted this survey in May 2011 and obtained 306 completed surveys of anglers in California who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as California anglers), 304 completed surveys of anglers in New Jersey who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as New Jersey anglers), and 306 completed surveys of

anglers in Virginia who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as Virginia anglers).

## KEY FINDINGS AND IMPLICATIONS

- The environment is an extremely important issue among anglers, and the top-named issue of concern among anglers is water quality/pollution. This suggests that messages that emphasize the importance of monofilament line recycling for improving water quality will resonate among anglers.
- Recycling is also an important issue among anglers. Overwhelming majorities of anglers in California, New Jersey, and Virginia indicate that they *frequently* recycle. These findings suggest that there is a considerable market that exists in anglers who already participate in recycling activities. These markets should be targeted with communications and outreach efforts because they are a receptive and captive audience.
- The findings also show that majorities of anglers view litter as a major or minor problem in their state, meaning they may be more inclined to support activities and efforts that encourage recycling and reduce litter.
- The findings suggest that discarded monofilament fishing line is a common problem among anglers since majorities say they *frequently* or *sometimes* see discarded line. Despite this, when asked what they typically do when their monofilament line gets tangled while fishing, anglers most commonly say that they cut it and keep it to throw away in the first trash bin that they find or they cut it and keep it to throw away at home. Similarly, when asked what they typically do when they see someone else's discarded monofilament line, majorities of anglers say they take it and throw it in a trash bin if they can reach or untangle it, by far the most common response among anglers. In any case, anglers are more likely to throw away used monofilament line than to recycle it, perhaps simply as a matter of convenience.
- Although majorities of anglers are concerned about discarded monofilament fishing line in the environment, many say they have not heard or seen anything about natural resource or

environmental issues related to discarded monofilament fishing line. These results suggest that there is a need for increased communications and outreach to improve awareness among anglers regarding the natural resource and environmental problems posed by discarded fishing line.

- In comparison to their ratings of the importance of recycling anglers generally rate the importance of recycling monofilament line substantially lower. This is an important comparison which suggests that communications and outreach efforts should focus on increasing anglers' levels of concern regarding discarded monofilament fishing line.
- Prior to this survey, majorities of anglers did not know that monofilament line can be recycled. Further, majorities of anglers say they know *nothing at all* about monofilament line recycling. Not only is it important to focus on the specific messages that encourage monofilament line recycling, but it is also equally important to expand distribution of the message to reach more anglers.
  - Note that, in general, anglers in New Jersey appear to be more informed and aware of monofilament line recycling than those in California or Virginia.
- The top named reasons anglers *sometimes, rarely, or never* recycle monofilament line (as opposed to *always* recycle) are because there is no convenient place to recycle, because they simply don't think about it, and because they don't know where to recycle. These reasons illustrate the importance of (1) making recycling opportunities available and convenient and (2) increasing anglers' awareness to make monofilament line recycling a top-of-mind issue.
- Majorities of anglers indicate that they have never seen a monofilament line recycling bin. However, among anglers who had never seen a monofilament line recycling bin, the majority say they are *very* likely to use these recycling bins if they are available in the areas where they typically fish. These findings provide further evidence of the need to increase recycling opportunities by making more bins available to anglers since most anglers are inclined to use monofilament line recycling bins if they are available where they fish.

- Because overwhelming majorities of anglers indicate that they know nothing at all or have never heard of the “Reel In and Recycle” program, there is clearly a need for additional communications and outreach efforts. The success of the “Reel In and Recycle” program depends on increasing anglers’ awareness of discarded monofilament fishing line, its impact on the environment, and the importance of recycling used line.
- Once they are made aware of the program, the data suggest that most anglers are likely to take actions to recycle monofilament line. Large majorities of anglers indicate that they are likely to take their used monofilament line home with them to recycle later when they find a bin, that they are likely to look for a monofilament line recycling bin, and that they are likely to ask a local marina operator or store owner to install a monofilament line recycling bin. Note, however, that anglers are much less likely to take actions that require their personal involvement in volunteer installation or maintenance of recycling bins.
- Overwhelming majorities of anglers agree with the following two statements: “When I see discarded line in the environment, I worry about the problems it may cause” and “recycling monofilament line should be a high priority for anglers.” Still, roughly a quarter of anglers in each state agree that throwing monofilament line in the trash is just as good as recycling it. Note that a previous question showed that anglers are more likely to throw away used monofilament line than they are to recycle it. Clearly, anglers care about the environmental impact of discarded monofilament fishing line, but many still need to be convinced that recycling is important and worthwhile.
- There is very little difference in the mean ratings of the effectiveness of positive or negative messages at encouraging anglers to recycle monofilament line or to recycle monofilament line more often. Although negative messages appear slightly more effective, it is not as important that the messages be positive or negative as it is that the messages emphasize the environmental/ecological impacts of discarded monofilament line. In general, the results suggest that environmental/ecological messages may be more effective than messages focusing on human benefits. The top four messages had a distinctly environmental/ecological focus:

- “Recycling monofilament line can prevent fish and wildlife injuries and death.”
  - “Recycling monofilament line is important to protect our water resources and marine life.”
  - “Recycling monofilament line keeps our waterways and fishing areas cleaner.”
  - “Recycling monofilament line contributes to the overall health of the environment.”
- Internet or email, magazines, direct mail, TV, and newspapers are the top ways for distributing information on monofilament line recycling to anglers.
- When asked to rate the effectiveness of four efforts for promoting monofilament line recycling, providing information with the purchase or renewal of a fishing license had the highest mean rating among anglers in California, while printing information on new packages or spools of fishing line had the highest mean rating among anglers in New Jersey and Virginia.

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## **INTRODUCTION AND METHODOLOGY**

This study was conducted for BoatU.S. Foundation to assess anglers' awareness of and participation in the "Reel In and Recycle" monofilament line recycling program funded jointly by the NOAA Marine Debris Program and the National Fish and Wildlife Foundation and implemented by BoatU.S. Foundation. The purpose of the "Reel In and Recycle" program is to establish a nationwide monofilament recycling effort that makes recycling easy and convenient for anglers. Through this program, BoatU.S. Foundation partners with volunteers at local marinas, launch sites, and high traffic fishing areas nationwide to provide outdoor recycling bins for monofilament fishing lines. The collected line is monitored, tracked, and sent for recycling.

This study is designed to assess anglers' behaviors and attitudes regarding recycling monofilament line, to identify barriers and challenges to recycling monofilament line, and to determine messages and themes that resonate with anglers and encourage monofilament line recycling. Results from this study will assist future planning, education, outreach, and program evaluation. The study entailed a telephone survey of anglers in three states in which BoatU.S. Foundation has made numerous monofilament line recycling bins available: California, New Jersey, and Virginia. Specific aspects of the research methodology are discussed below.

### **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 anglers. 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 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 BoatU.S. Foundation, based on the goals and objectives of BoatU.S. Foundation's monofilament line recycling program as well as the research team's familiarity with natural

resource and environmental studies. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

## **SURVEY SAMPLE**

Responsive Management worked closely with BoatU.S. Foundation to develop a sample frame of anglers. BoatU.S. Foundation provided Responsive Management the zip codes in which monofilament line recycling bins were located in each of three states: California, New Jersey, and Virginia. Using these zip codes, Responsive Management developed a random sample of licensed anglers who lived and/or fished within a 20-mile radius of these bins. Because the sample was selected based on the location of monofilament line recycling bins, the results have not been weighted and are not representative of licensed anglers statewide. *However, the results are representative of licensed anglers who lived and/or fished within a 20-mile radius of where monofilament line recycling bins were located in each state.*

Responsive Management conducted this survey in May 2011 and obtained 306 completed surveys of anglers in California who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as California anglers), 304 completed surveys of anglers in New Jersey who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as New Jersey anglers), and 306 completed surveys of anglers in Virginia who lived and/or fished within a 20-mile radius of monofilament line recycling bins (hereinafter referred to as Virginia anglers). For this report, sampling error could not be calculated because of the methodology and sample used, that being a random sample of anglers who lived and/or fished within a 20-mile radius of these bins. Because there are no data available to determine the total sample population of anglers within a 20-mile radius of each bin, it was not possible to calculate a sampling error.

## **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. Methods of instruction included lecture and role-playing. The Survey Center Managers and other professional staff conducted a project briefing with the interviewers prior to the administration of this survey. Interviewers were instructed on type of study, study 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 9:00 a.m. 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.

### **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 contains 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 916 completed interviews: 306 surveys of California anglers, 304 surveys of New Jersey anglers, and 306 surveys of Virginia anglers. The total sample size on some questions may be less because some follow-up questions did not apply to some respondents. For example, only those who knew that monofilament line can be recycled and indicated they sometimes, rarely, or never recycle fishing line were asked follow-up questions about their reasons for not always recycling their monofilament line.

## **DATA ANALYSIS**

The analysis of data was performed using Statistical Package for the Social Sciences as well as proprietary software developed by Responsive Management. On questions that asked respondents to provide a number (e.g., number of years), the graph shows 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 only shows ranges of numbers. Note that the calculation of means and medians used the precise numbers that the respondents provided.

## **NOTES ON READING 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.
- 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.”

- Many closed-ended questions (but not all) are in a scale, such as excellent-good-fair-poor.
- 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 questions in a series are shown on a single graph.

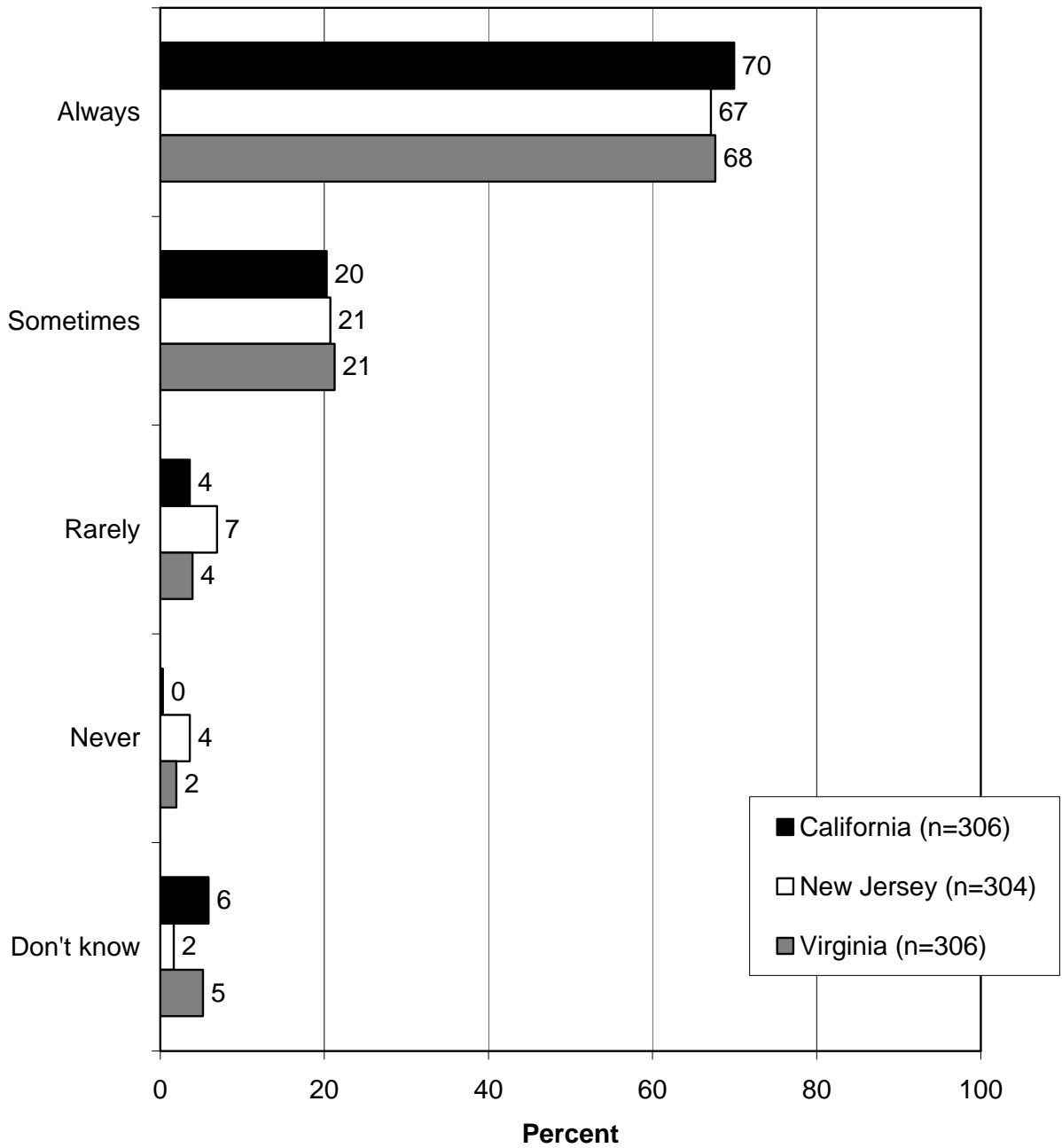
Some graphs show an average, either the mean or median (or both). The mean is simply the sum of all numbers divided by the number of respondents. Because outliers (extremely high or low numbers relative to most of the other responses) may skew the mean, the median may be shown. The median is the number at which half the sample is above and the other half is below. In other words, a median of 150 means that half the sample gave an answer of more than 150 and the other half gave an answer of less than 150.

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 agree” and “moderately agree” are summed to determine the total percentage in agreement).

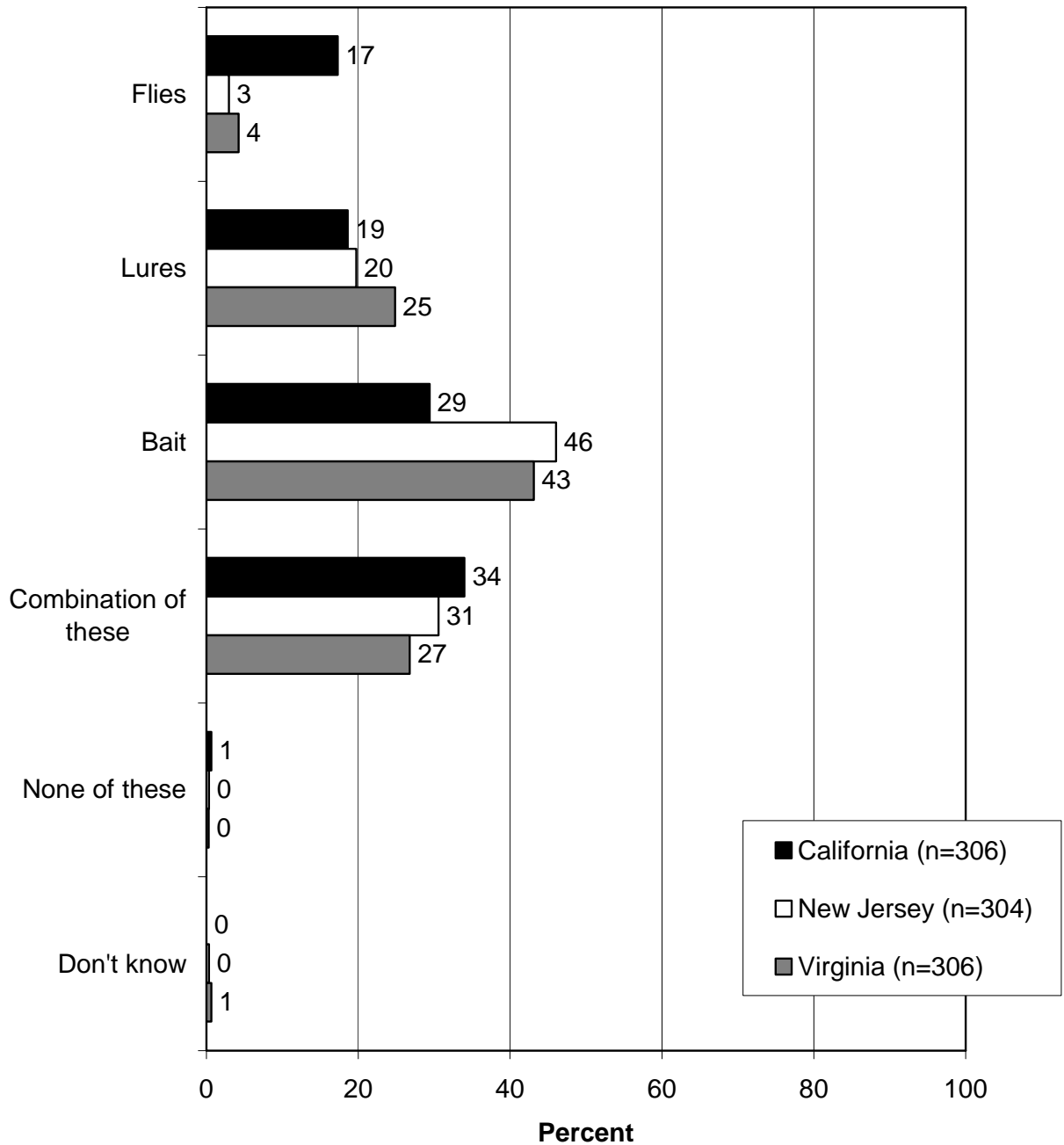
## USE OF MONOFILAMENT LINE

- When asked how often they use monofilament line when fishing, overwhelming majorities of anglers (90% in California, 88% in New Jersey, and 89% in Virginia) say they *always* or *sometimes* use monofilament line.
  
- Anglers were asked if they most often use flies, lures, baits, or a combination of these when fishing. California anglers more commonly indicate that they use a combination of these (34%), whereas anglers in New Jersey and Virginia more commonly indicate that they use bait (46% of anglers in New Jersey and 43% of anglers in Virginia say this).

### Q128. How often do you use monofilament line when fishing?



**Q16. Which of the following do you use most often when fishing?**



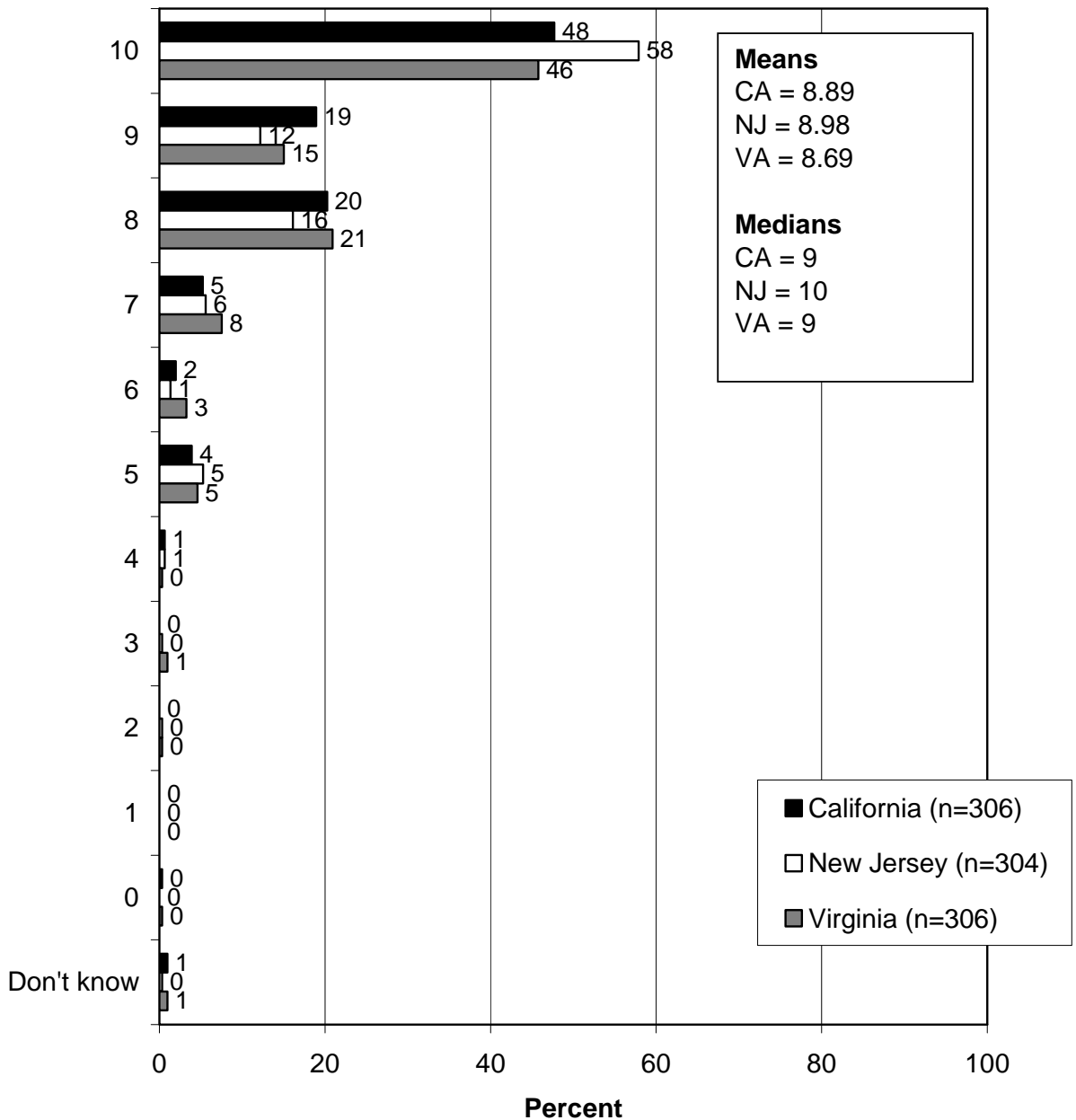
## GENERAL ATTITUDES TOWARD ENVIRONMENTAL ISSUES AND RECYCLING

- On a scale of 0 to 10 where 0 is not at all important and 10 is extremely important, the environment receives high ratings of importance among anglers compared to other issues. In each state the mean rating is higher than 8.50, with anglers in New Jersey more likely to give higher ratings than those in California and Virginia (8.89 in California, 8.98 in New Jersey, and 8.69 in Virginia).
  - Note that the majority of New Jersey anglers (58%) give a rating of 10, and nearly half of California anglers (48%) and Virginia anglers (46%) give this rating.
  
- In an open-ended question, anglers were asked to name the most important natural resource or environmental issues related to fishing today. By far, the top named issue by respondents in each state is water quality/pollution (51% in California, 61% in New Jersey, and 67% in Virginia gave an answer related to this issue).
  
- When asked to rate the importance of recycling on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important, majorities of anglers in each state give a rating of 8.00 or higher. There is a higher mean rating of importance among anglers in California (8.82) and New Jersey (8.92) than among those in Virginia (8.14).
  
- Among anglers in California and New Jersey, the overwhelming majority (96% in both states) say they *frequently* recycle. Among anglers in Virginia, a majority (79%) say they *frequently* recycle, and 12% say they *sometimes* recycle. Few anglers say they recycle rarely or never, although anglers in Virginia are more likely than anglers in California and New Jersey to say this: 8% of anglers in Virginia say they recycle *rarely* or *never* recycle, compared to none in California and only 1% in New Jersey.
  
- Although majorities of anglers in each state say they participate in curbside recycling, those in California and New Jersey appear the most likely to do so: 88% of anglers in California and 91% in New Jersey participate in curbside recycling, compared to just 58% in Virginia. Meanwhile, substantial percentages of anglers in each state take items to a drop-off recycling

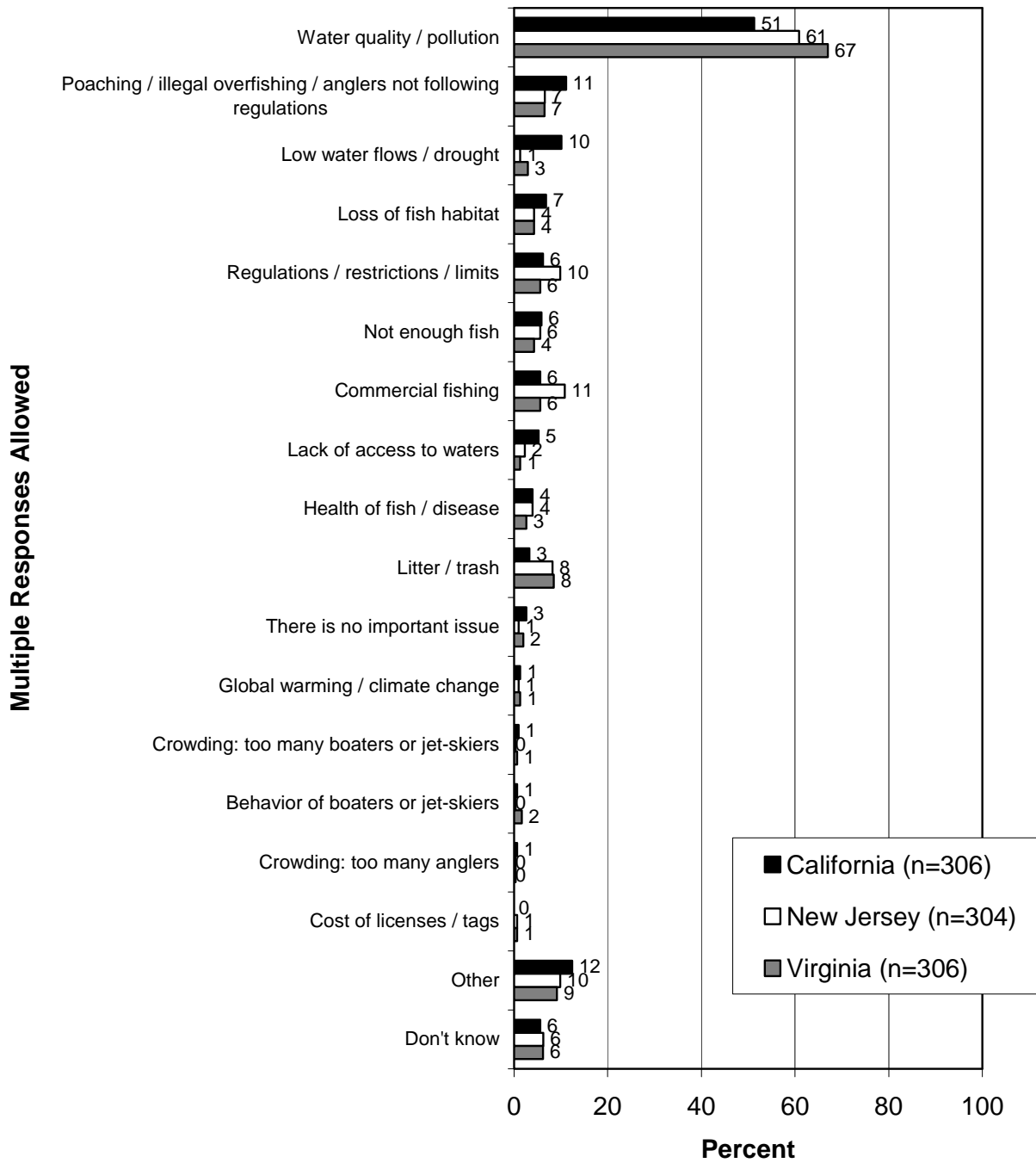
center or site (48% in California; 38% in New Jersey; 45% in Virginia) and use recycling bins in public areas such as shopping centers and recreational areas (47% in California; 43% in New Jersey; 27% in Virginia).

- Overwhelming majorities of anglers (93% in California, 94% in New Jersey, and 93% in Virginia) say that litter is a *major* or *minor* problem. Note that anglers in Virginia are slightly more likely to say that litter is a *minor* problem than are those in California or New Jersey.
  
- In a follow-up question, anglers more often say they see litter *frequently* or *sometimes* when they are fishing (76% in California, 78% in New Jersey, and 75% in Virginia) than say they *rarely* or *never* do (23% in California, 21% in New Jersey, and 25% in Virginia).

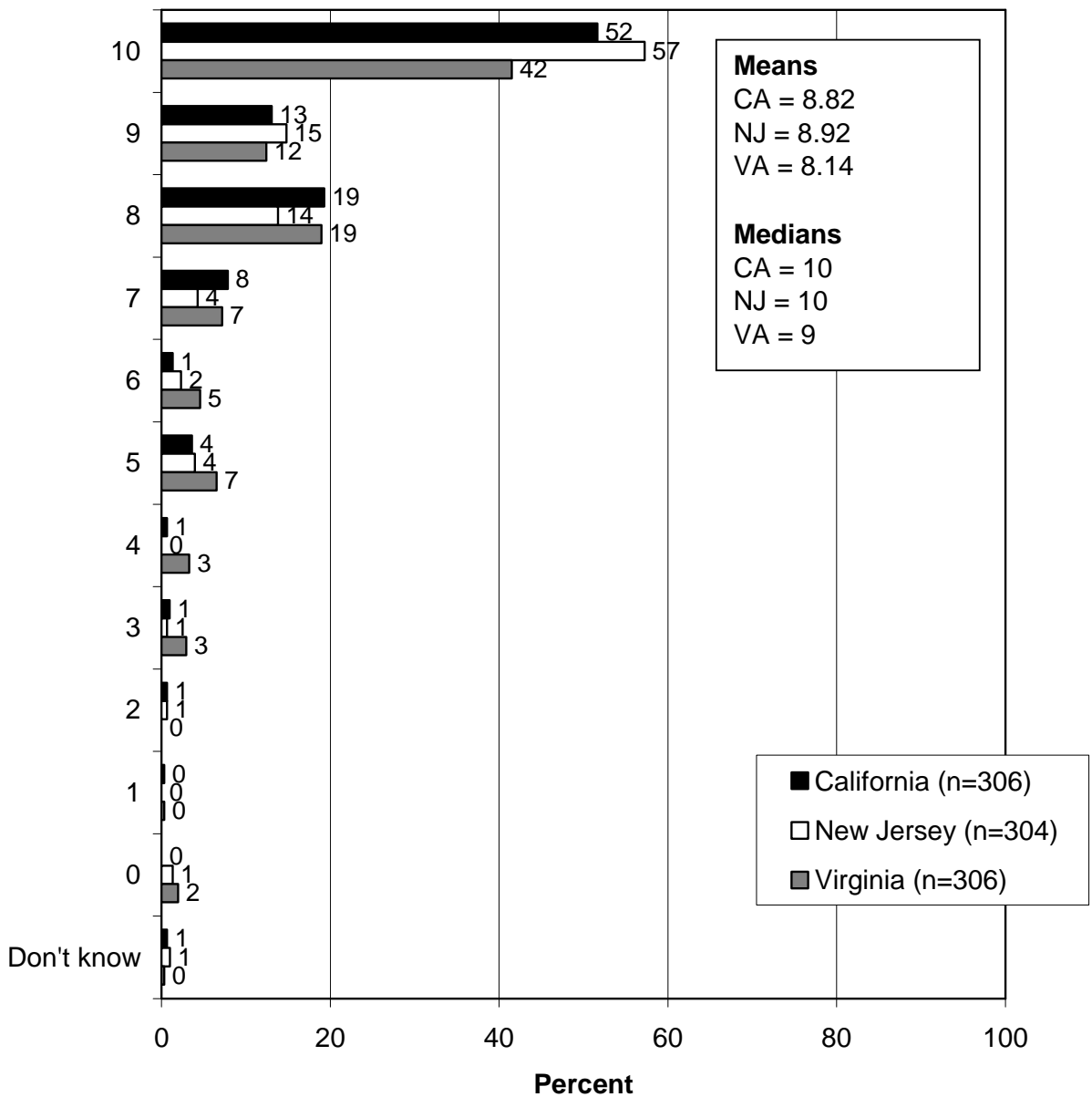
**Q17. Compared to other issues, how important to you, personally, is the environment on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important?**



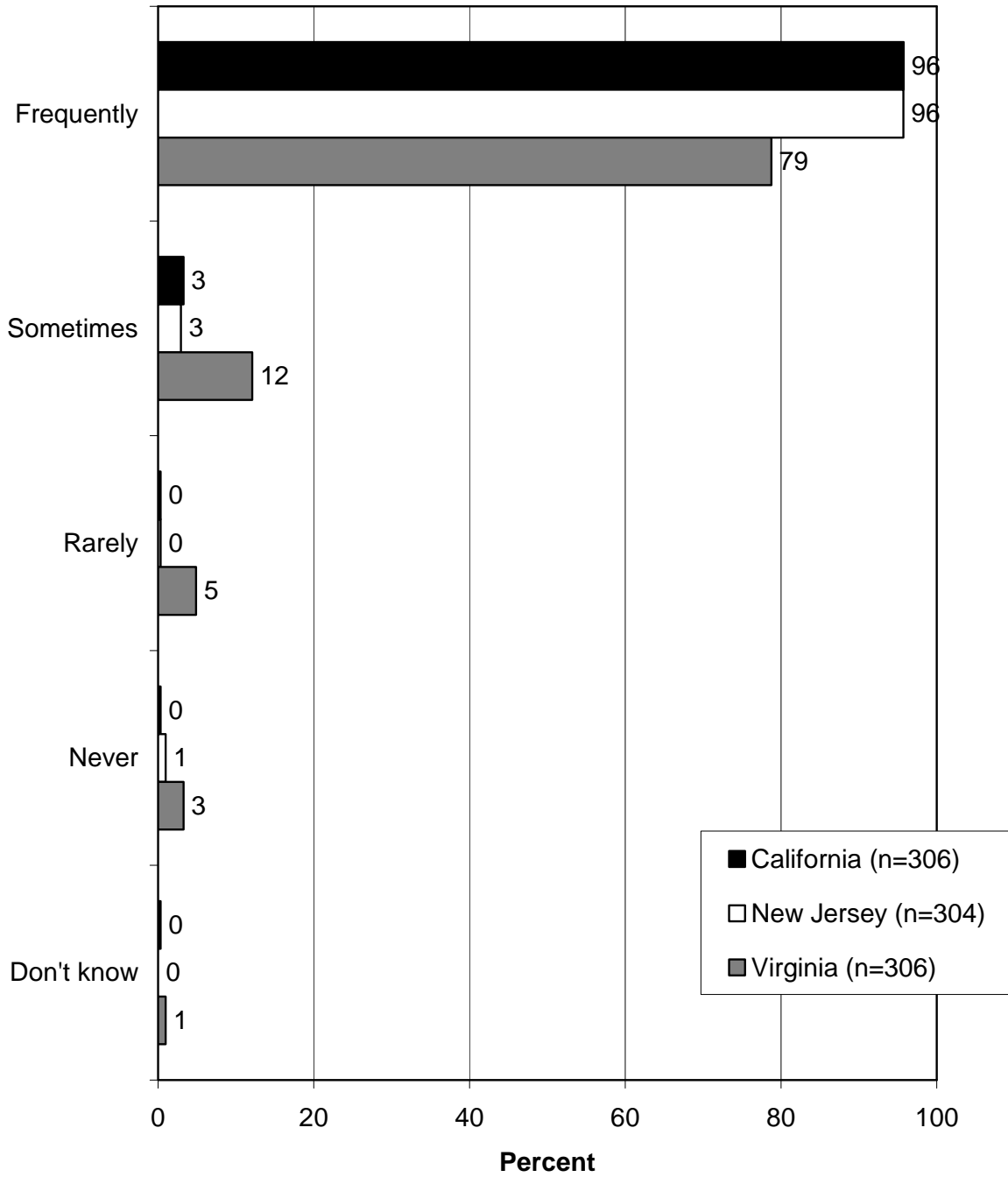
### Q21. In your opinion, what are the most important natural resource or environmental issues related to fishing today?



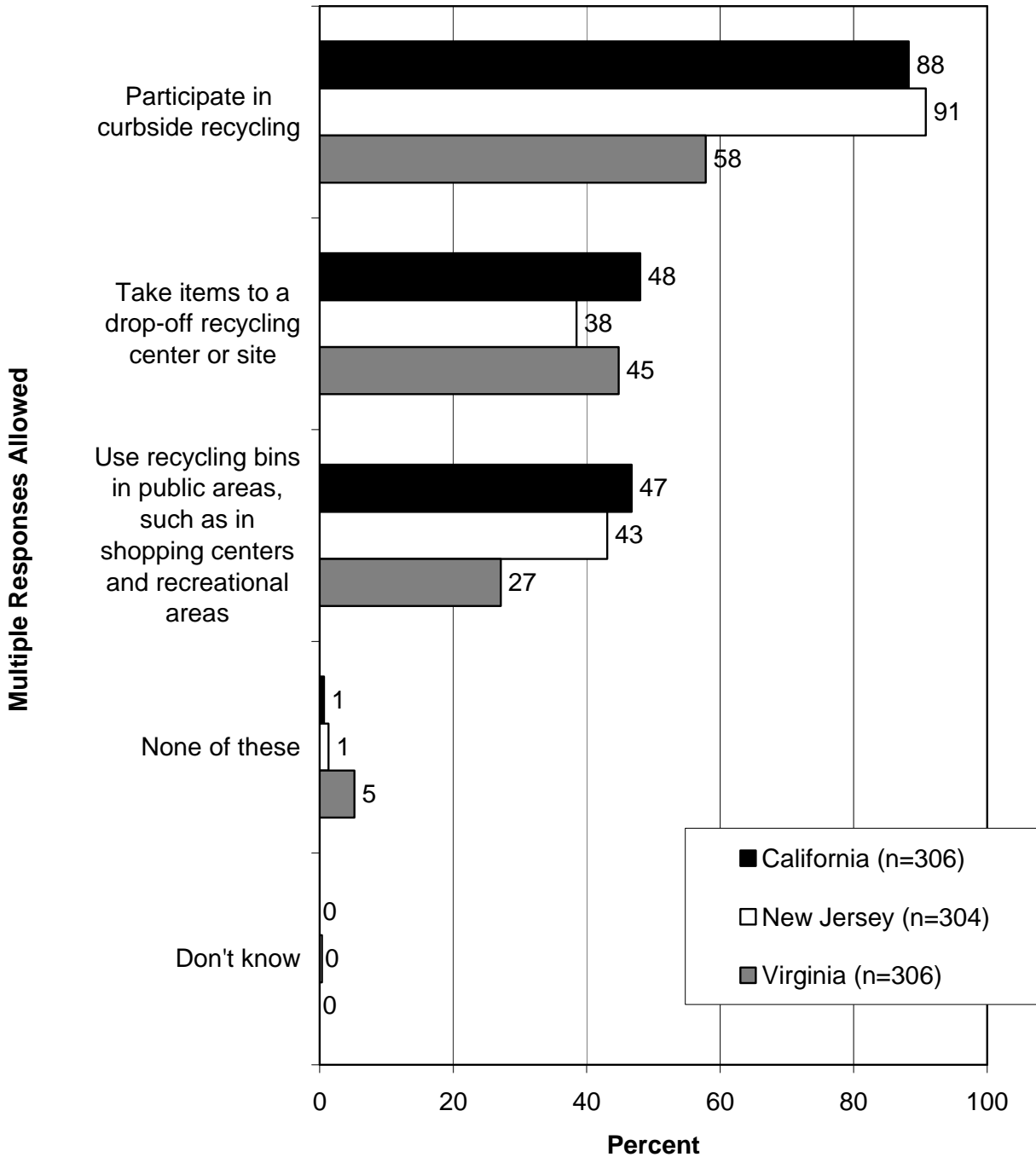
**Q24. Compared to other issues, how important to you, personally, is recycling on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important?**



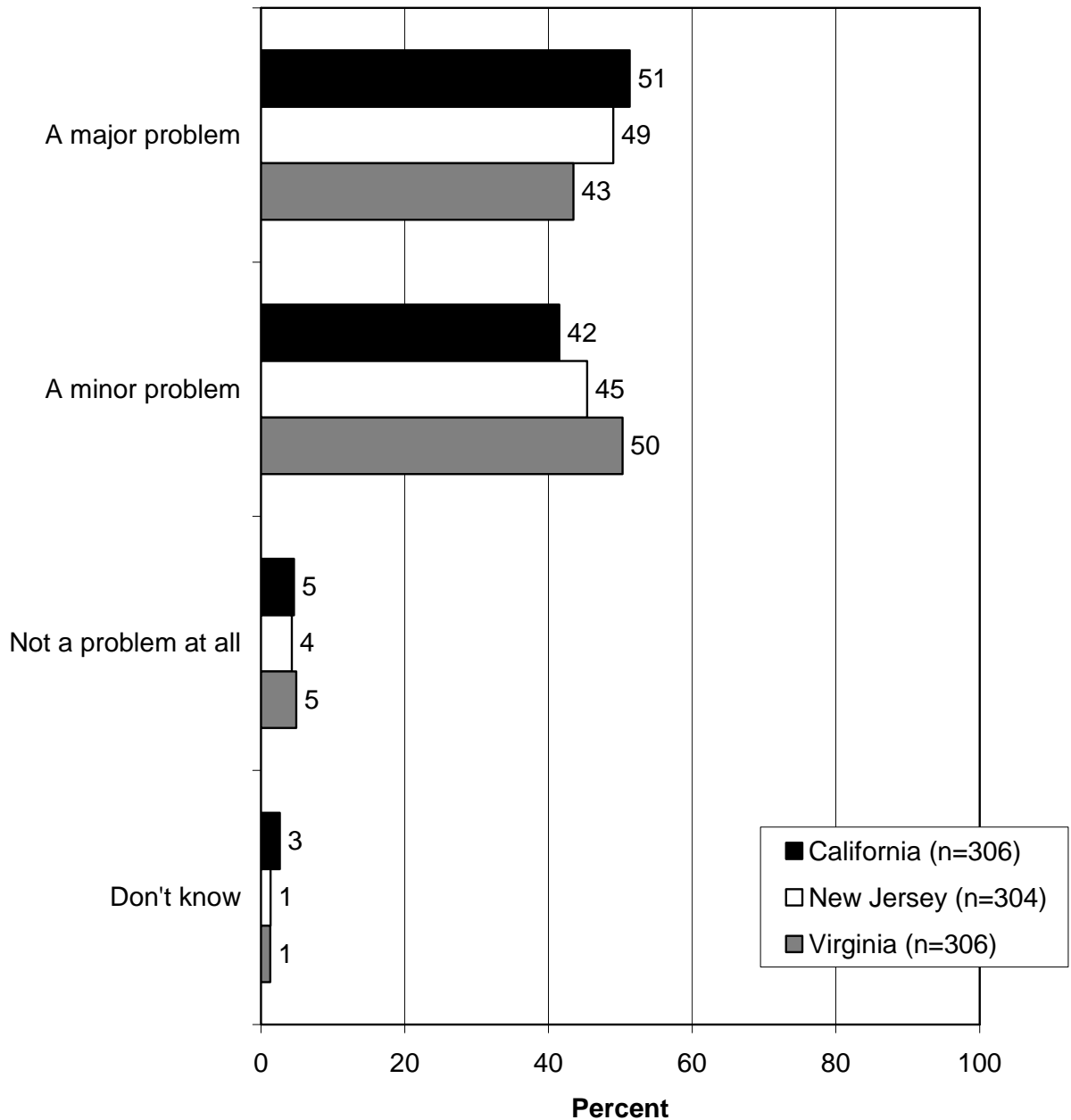
**Q26. How often would you say you recycle?**



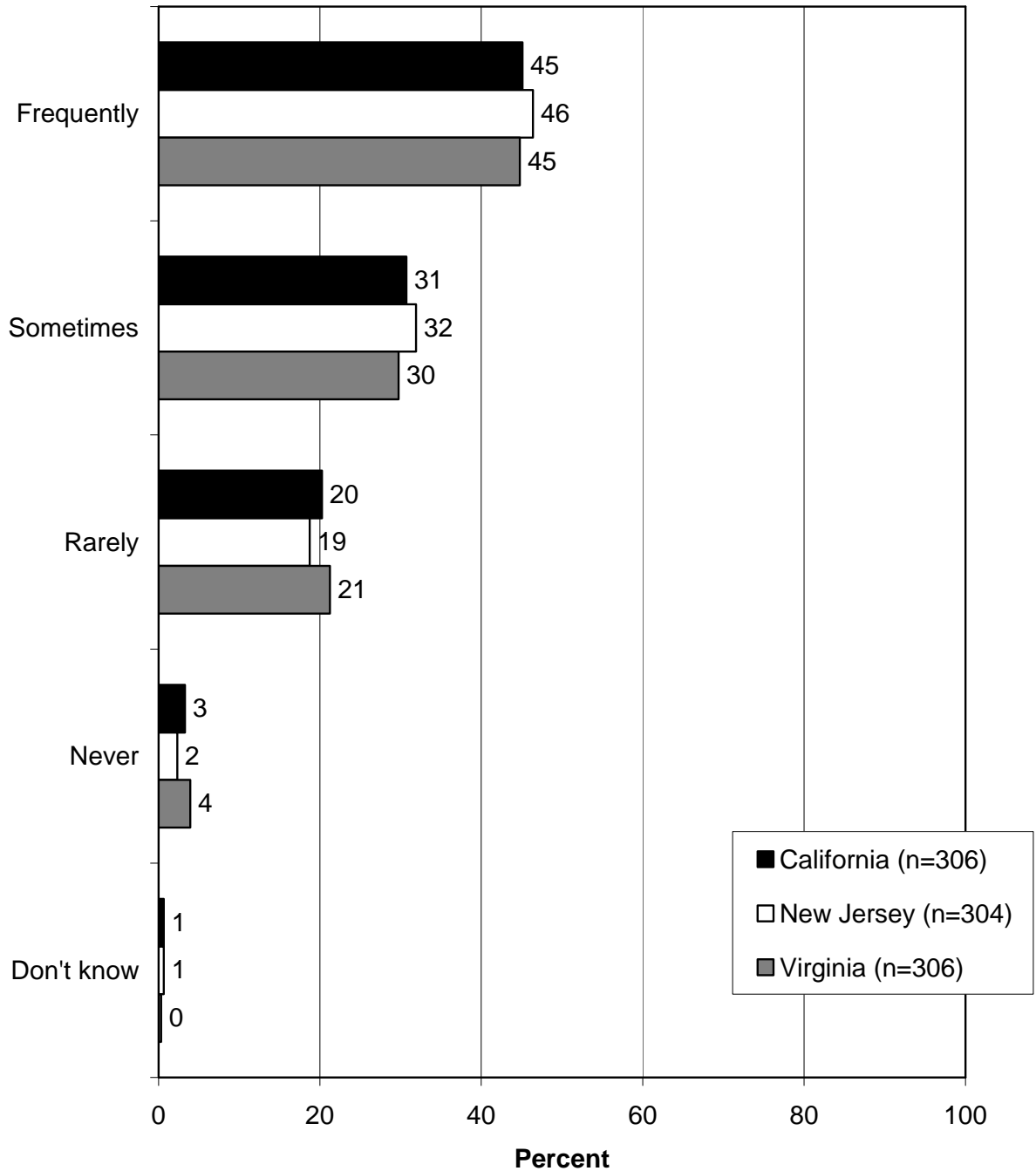
**Q29. Which of the following do you do on a regular basis?**



**Q23. In general, would you say litter is a major problem, a minor problem, or not a problem at all in [STATE]?**



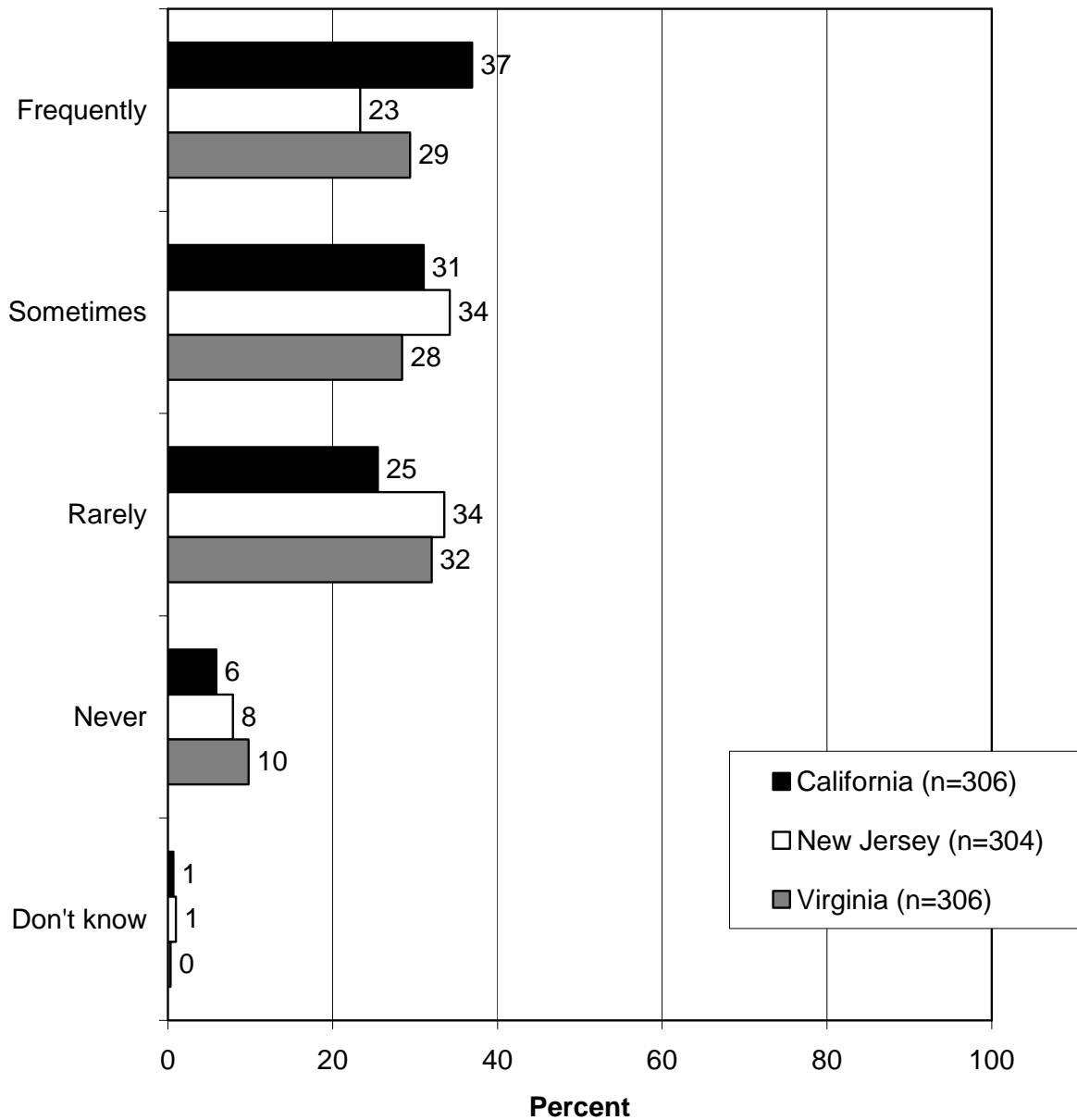
**Q30. When fishing, how often do you see litter?**



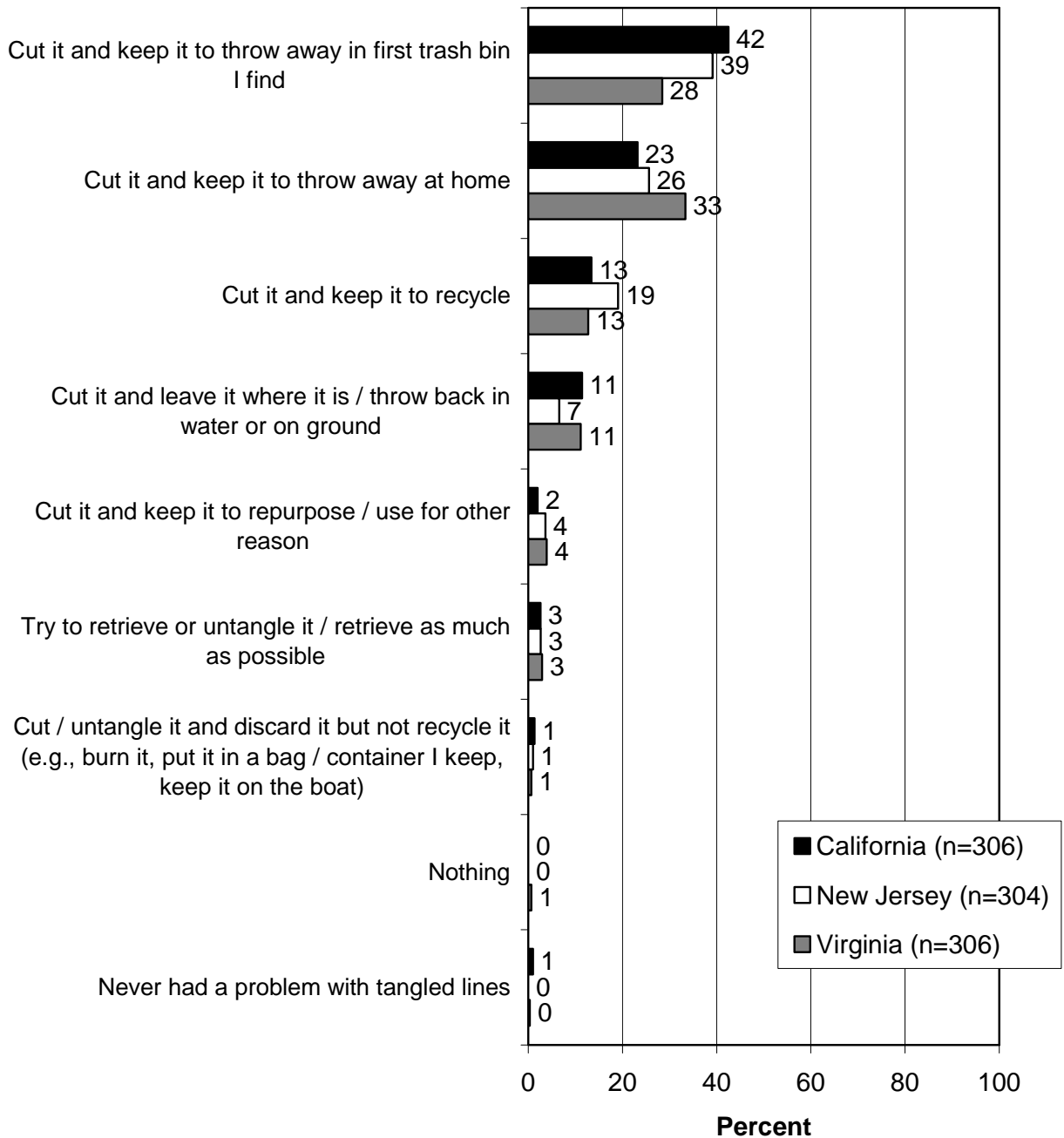
## FREQUENCY OF AND CONCERN FOR DISCARDED MONOFILAMENT LINE

- When asked how often they see discarded monofilament fishing line, majorities of anglers (68% in California, 57% in New Jersey, and 57% in Virginia) say they *frequently* or *sometimes* see discarded line. Note that anglers in California (37%) are more likely to say they *frequently* see discarded line than are anglers in New Jersey (23%) or Virginia (29%).
  
- Anglers were asked what they typically do when their monofilament line gets tangled while fishing. Anglers in California (42%) and New Jersey (39%) most commonly say they cut it and keep it to throw away in the first trash bin they find, whereas anglers in Virginia (33%) most commonly say they cut it and keep it to throw away at home.
  
- When asked what they typically do when they see someone else's discarded monofilament line, majorities of anglers (59% in California, 50% in New Jersey, and 56% in Virginia) say they take it and throw it in a trash bin if they can reach or untangle it, by far the most common response among anglers.
  
- Majorities of anglers (87% in California, 91% in New Jersey, and 86% in Virginia) are *very* or *somewhat* concerned about discarded monofilament fishing line in the environment; still, 11% of anglers in California, 8% in New Jersey, and 13% in Virginia are *not at all* concerned.
  
- Majorities of anglers (60% in California, 57% in New Jersey, and 66% in Virginia) say they have not heard or seen anything about natural resource or environmental issues related to discarded monofilament fishing line.
  - Substantial percentages of anglers in each state say they have heard or seen information regarding discarded monofilament fishing line and fish and wildlife entanglement, injuries, or death (34% in California, 33% in New Jersey, and 29% in Virginia).

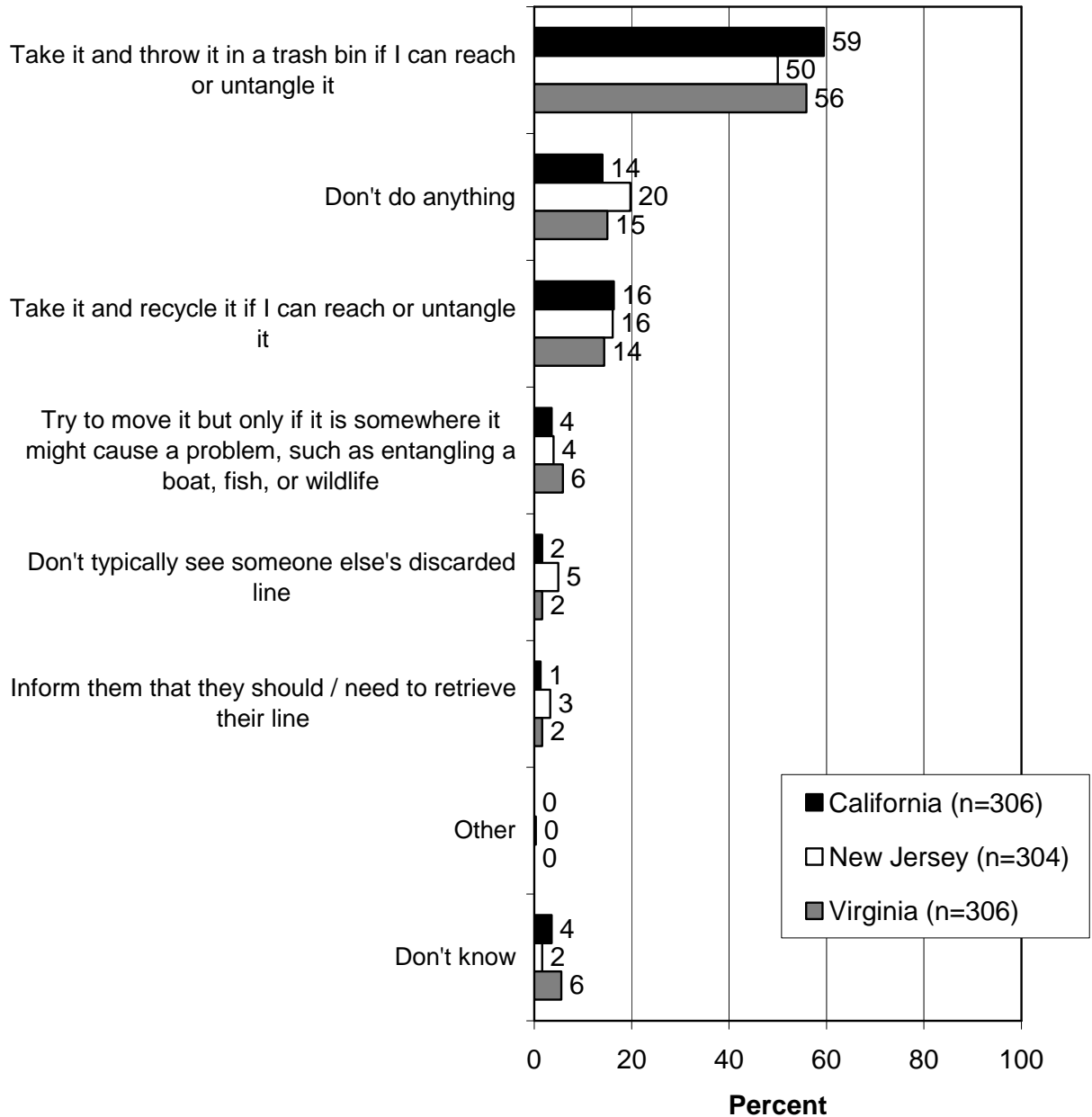
**Q31. When fishing, how often do you see discarded monofilament fishing line, that is, line that has been left in the water, on the ground, on a boat ramp, on a dock, or other area rather than being disposed of in a trash bin or recycled?**



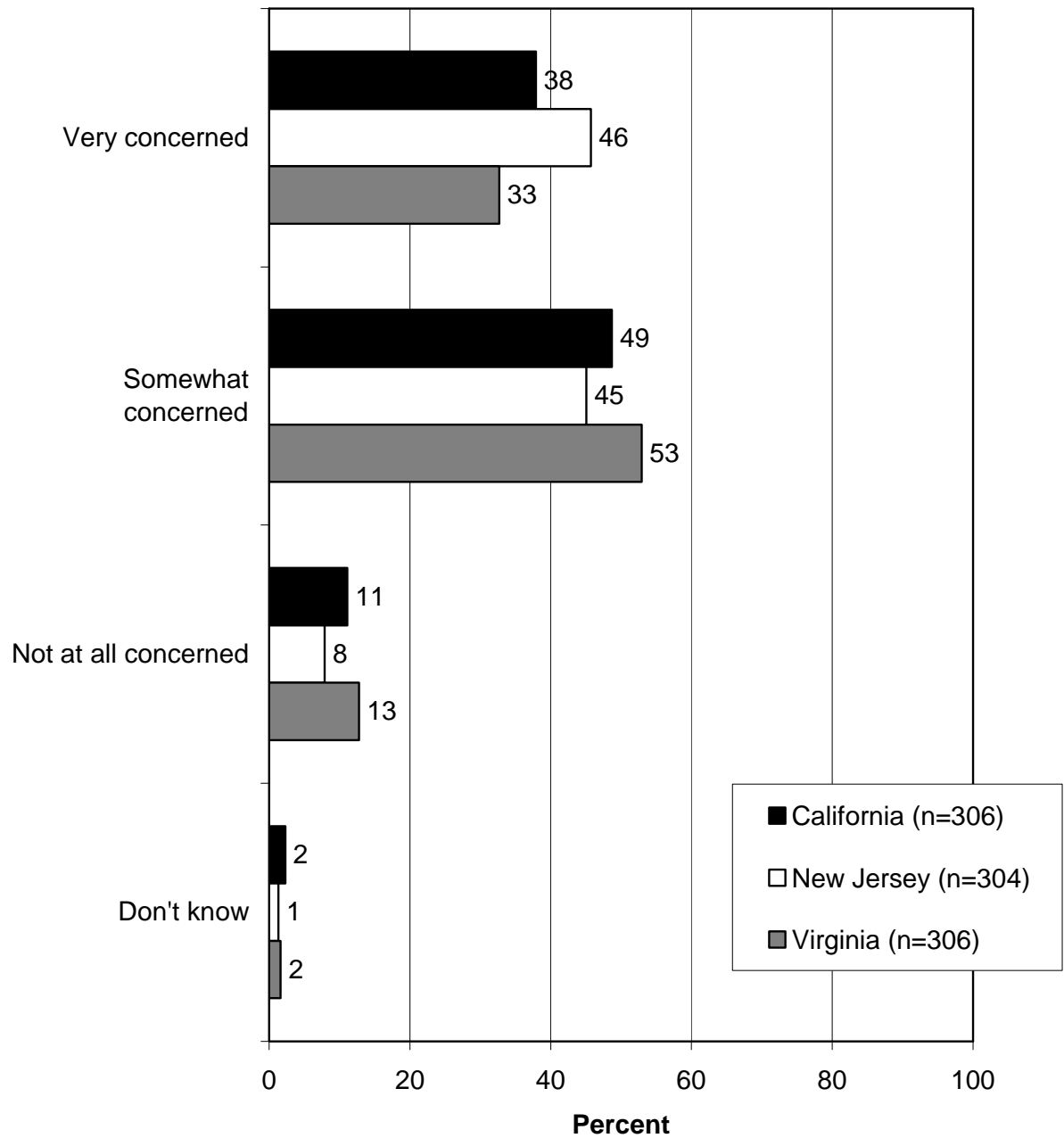
### Q32. What do you typically do when your monofilament line gets tangled while fishing?



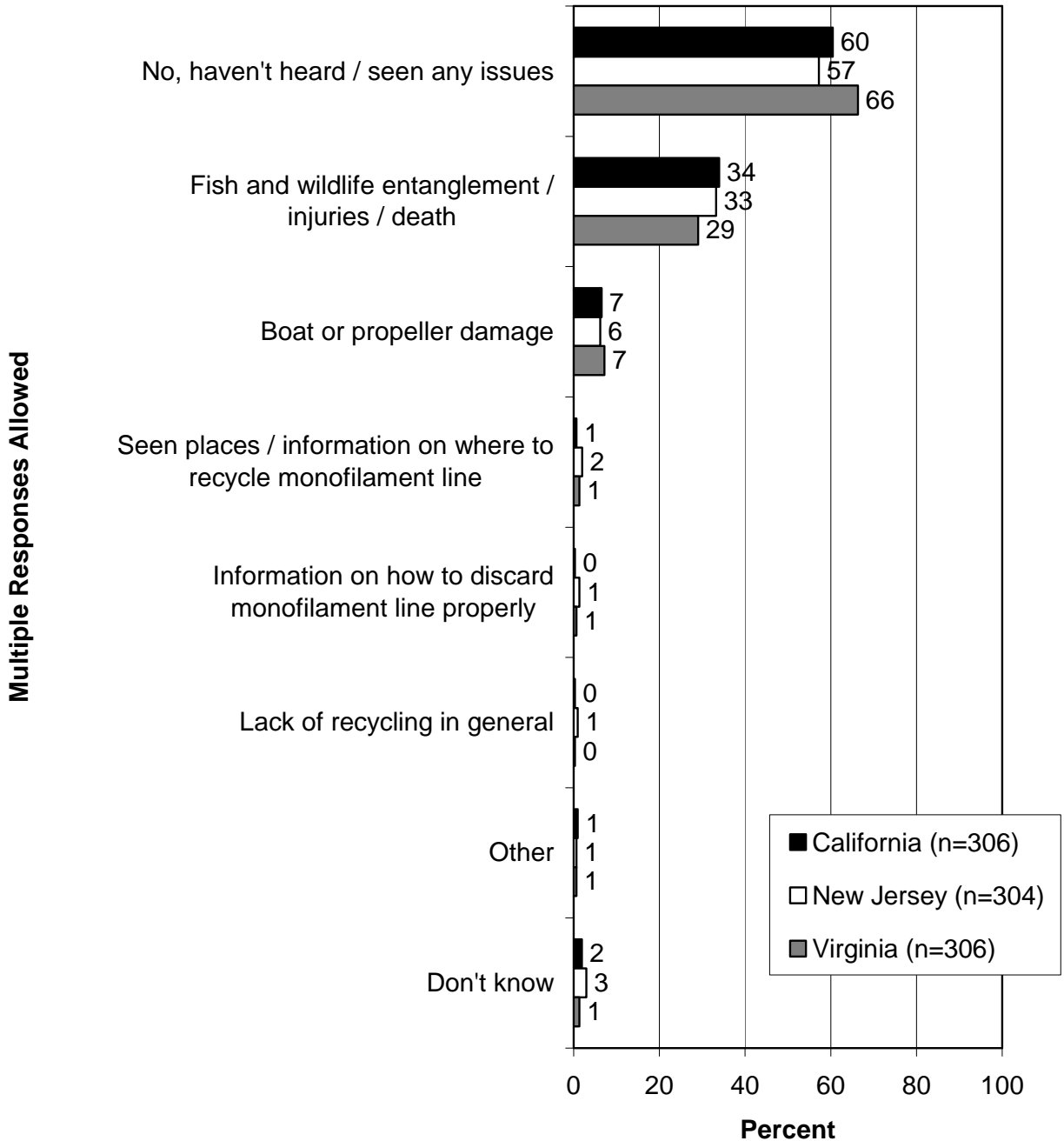
**Q34. What do you typically do when you see someone else's discarded monofilament line in a fishing area?**



**Q36. How concerned are you about discarded monofilament fishing line in the environment?**



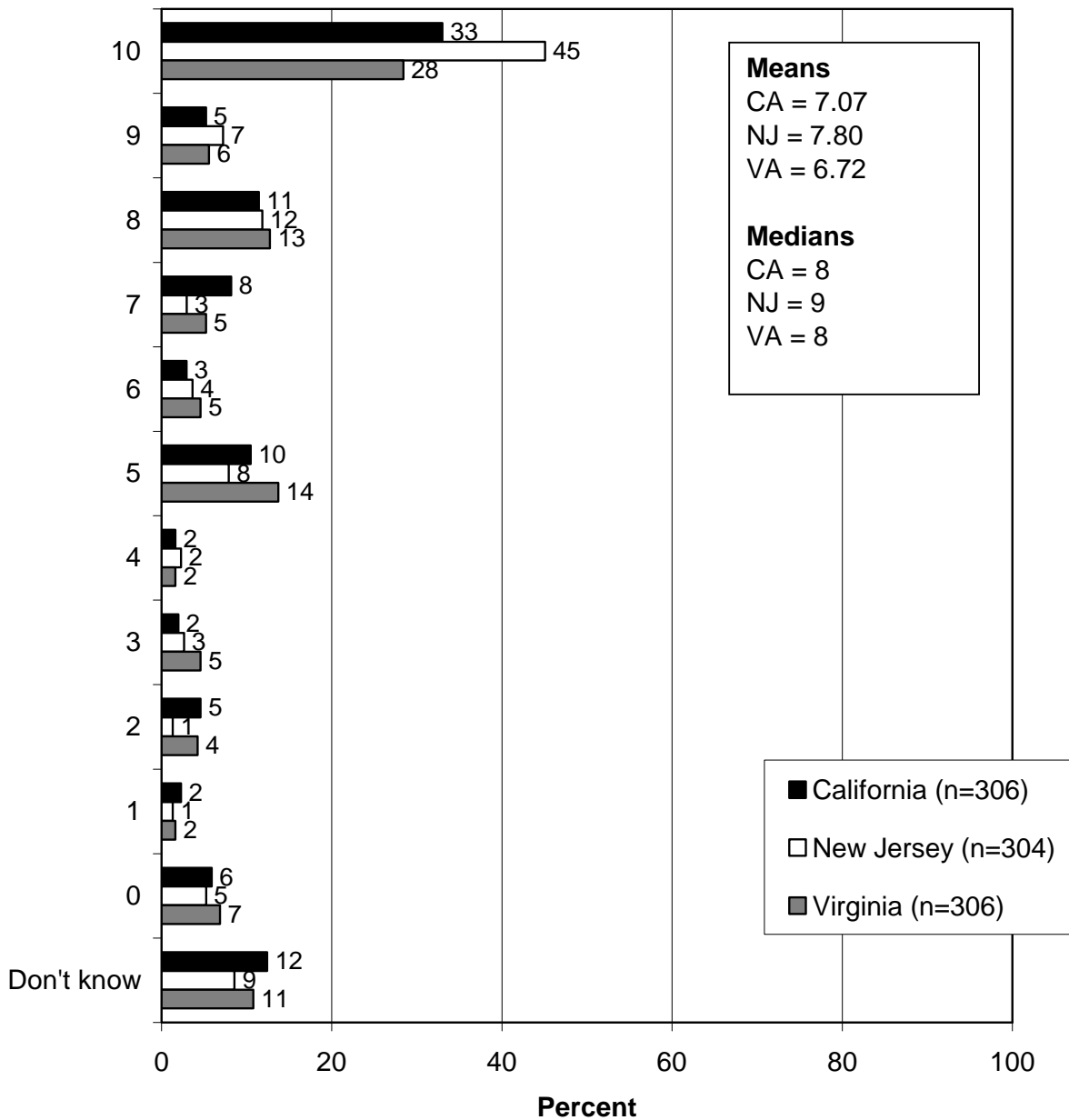
**Q39. Have you heard or seen anything about natural resource or environmental issues related to discarded monofilament fishing line?**



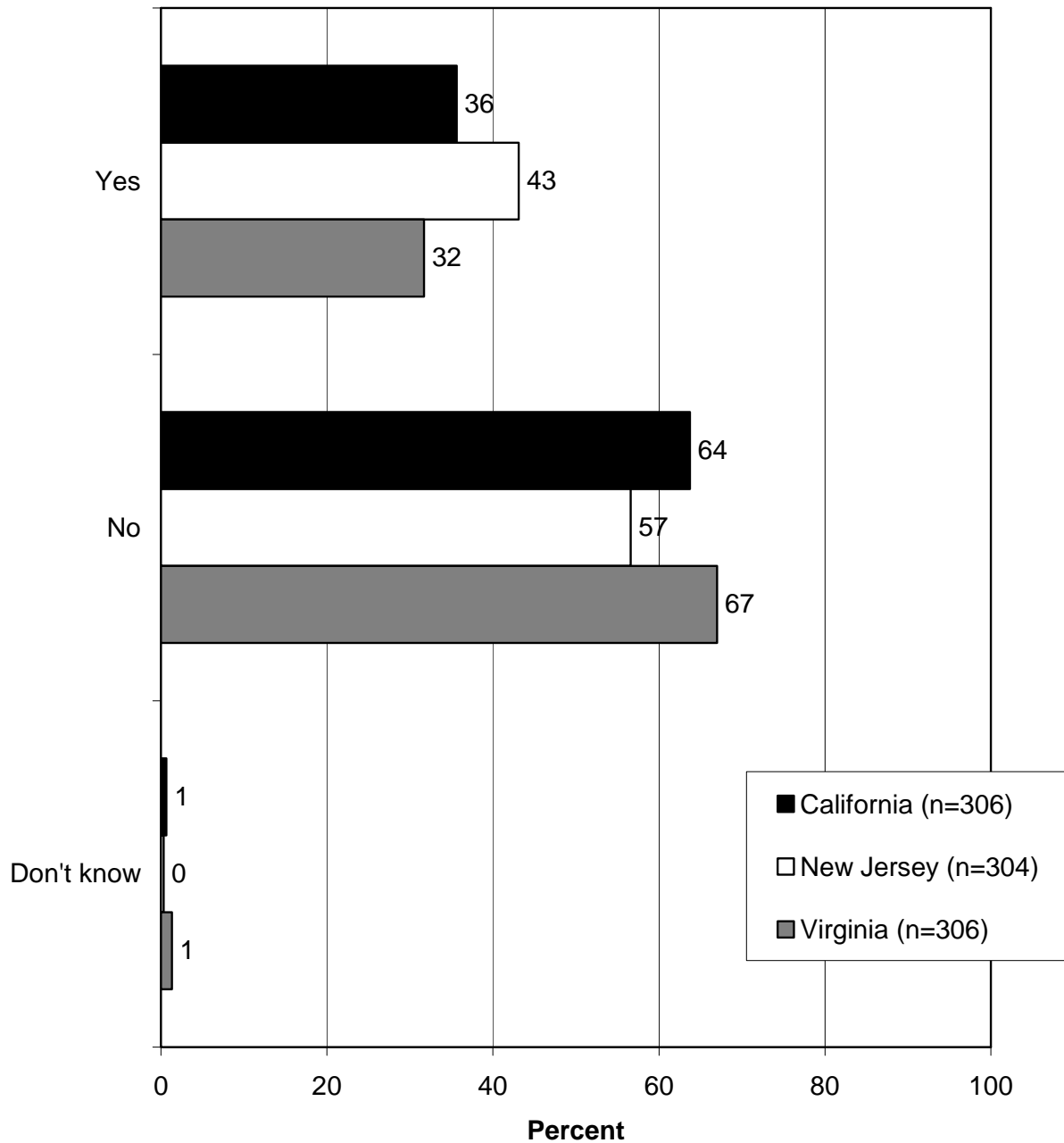
## **AWARENESS OF AND PARTICIPATION IN MONOFILAMENT LINE RECYCLING**

- When asked to rate the importance of recycling monofilament line on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important, majorities of anglers in each state give a rating of 6.50 or higher. There is a higher mean rating of importance among anglers in New Jersey (7.80) than among those in California (7.07) and Virginia (6.72).
  - Note that the mean ratings for the importance of recycling monofilament line are substantially lower than the mean ratings given for the importance of recycling in general (8.82 in California, 8.92 in New Jersey, and 8.14 in Virginia).
  
- Majorities of anglers (64% in California, 57% in New Jersey, and 67% in Virginia) were not aware, prior to this survey, that monofilament fishing line can be recycled.
  - Anglers in New Jersey (43%) were more likely to know that monofilament fishing line can be recycled than were anglers in California (36%) and Virginia (32%).
  
- Majorities of anglers in each state (67% of anglers in California, 60% in New Jersey, and 72% in Virginia) say they know *nothing at all* about monofilament line recycling.
  
- When asked how often they personally recycle monofilament line, anglers in California (24%) and New Jersey (24%) are more likely than anglers in Virginia (13%) to say they *always* recycle their line. Still, large majorities of anglers in each state (70% in California, 68% in New Jersey, and 74% in Virginia) say they *never* recycle their line.
  
- In a follow-up question, anglers who indicated that they sometimes, rarely, or never recycled monofilament line were asked about the reasons they don't *always* recycle their line. The top named reasons are because there is no convenient place to recycle, because they simply don't think about it, and because they don't know where to recycle.

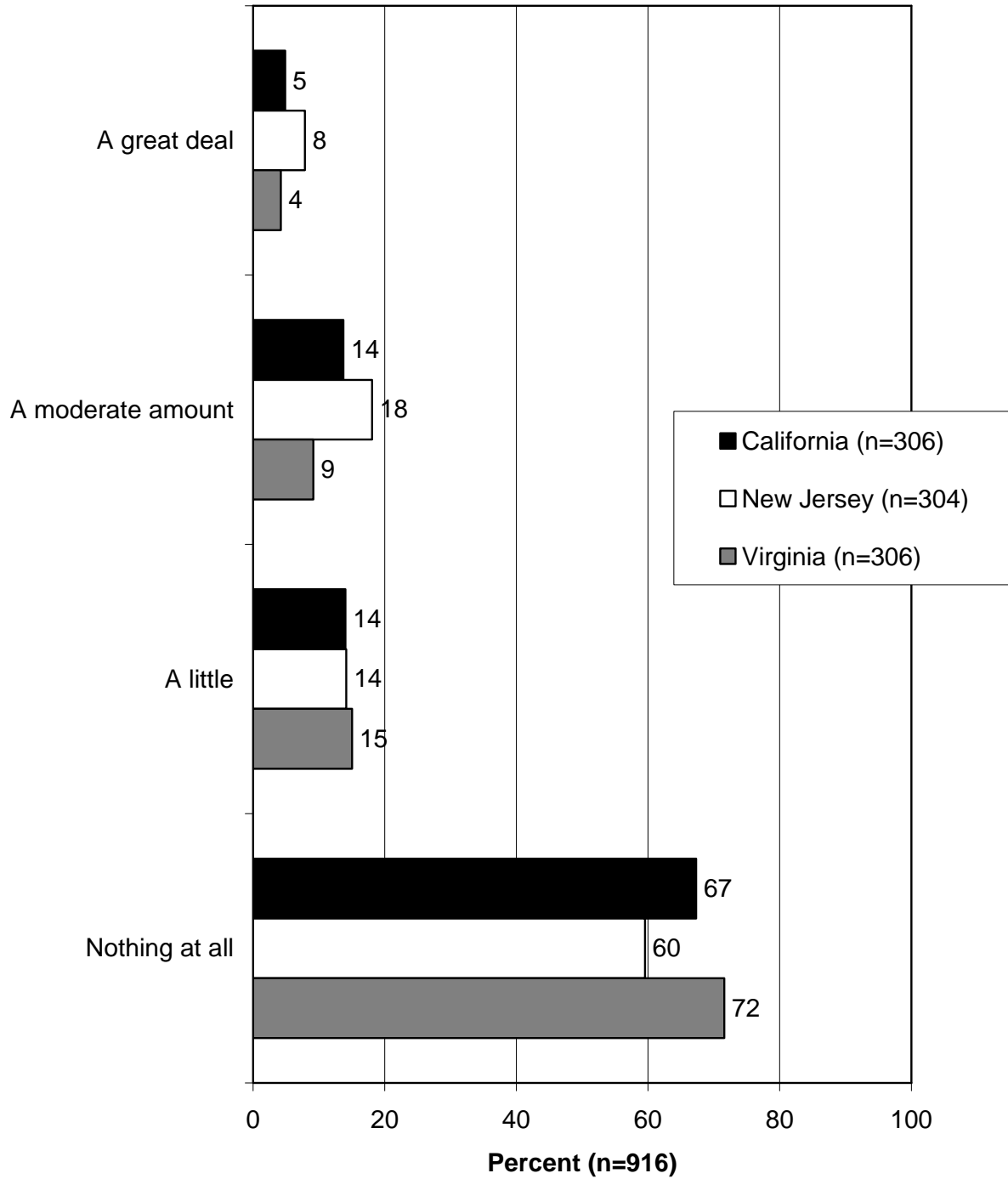
**Q41. In your opinion, how important is it to recycle monofilament line, on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important?**



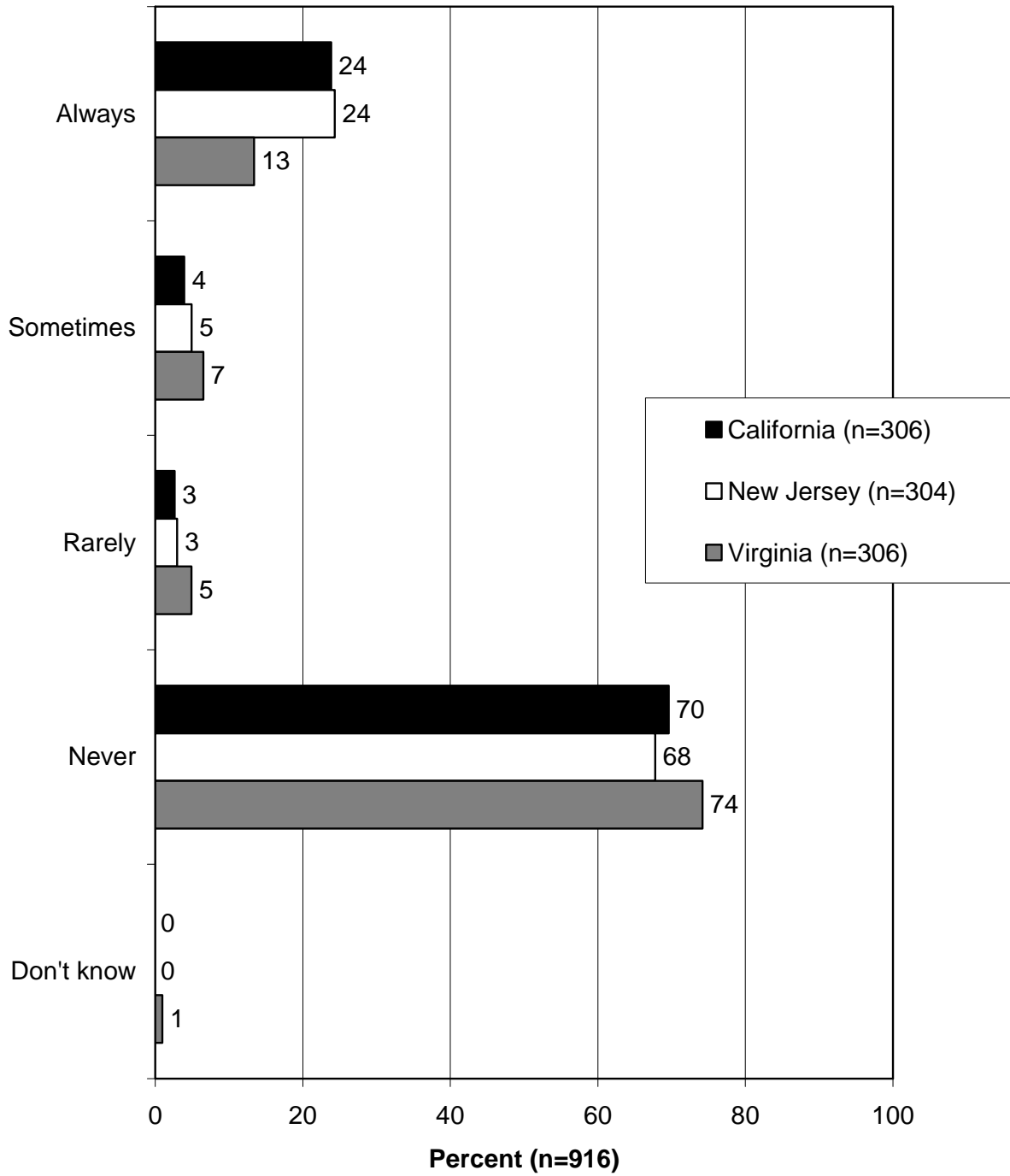
**Q43. Prior to this survey, did you know monofilament fishing line can be recycled?**



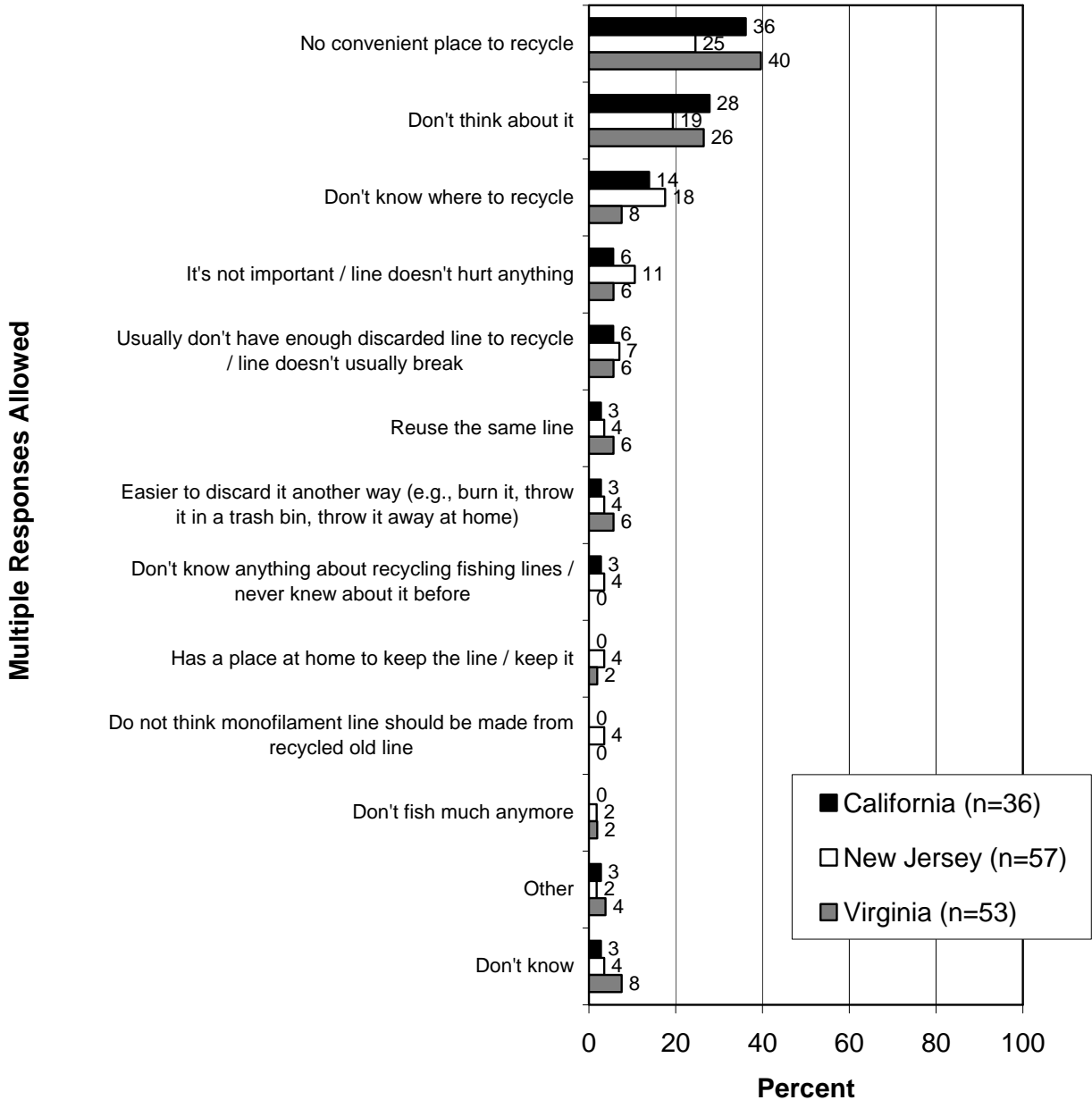
### Q44. How much would you say you know about monofilament line recycling?



### Q46. How often do you personally recycle monofilament fishing line?



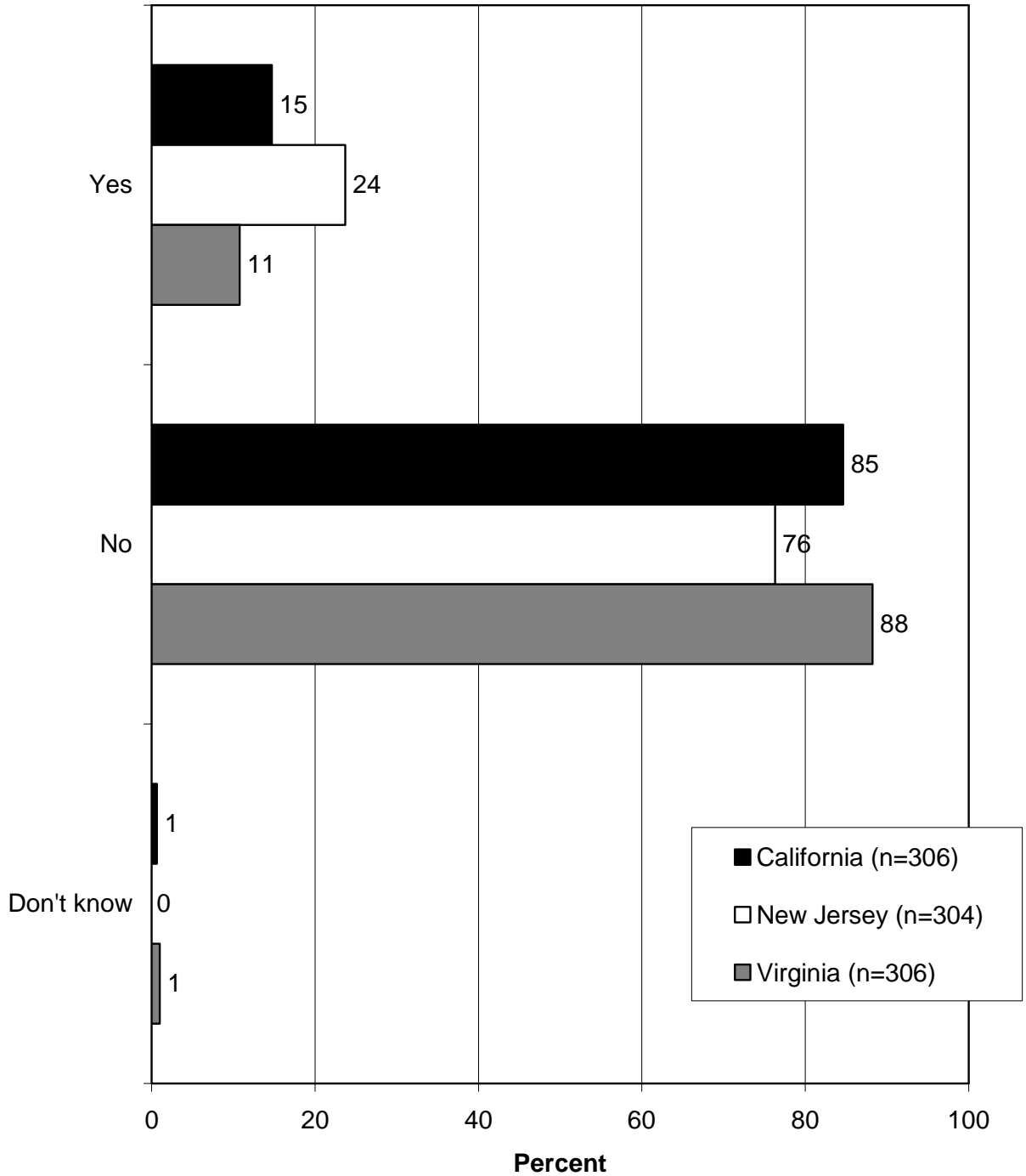
**Q49. What are the reasons you don't always recycle your monofilament fishing line? (Asked of those who knew that monofilament fishing line can be recycled, and sometimes, rarely, or never personally recycle fishing line.)**



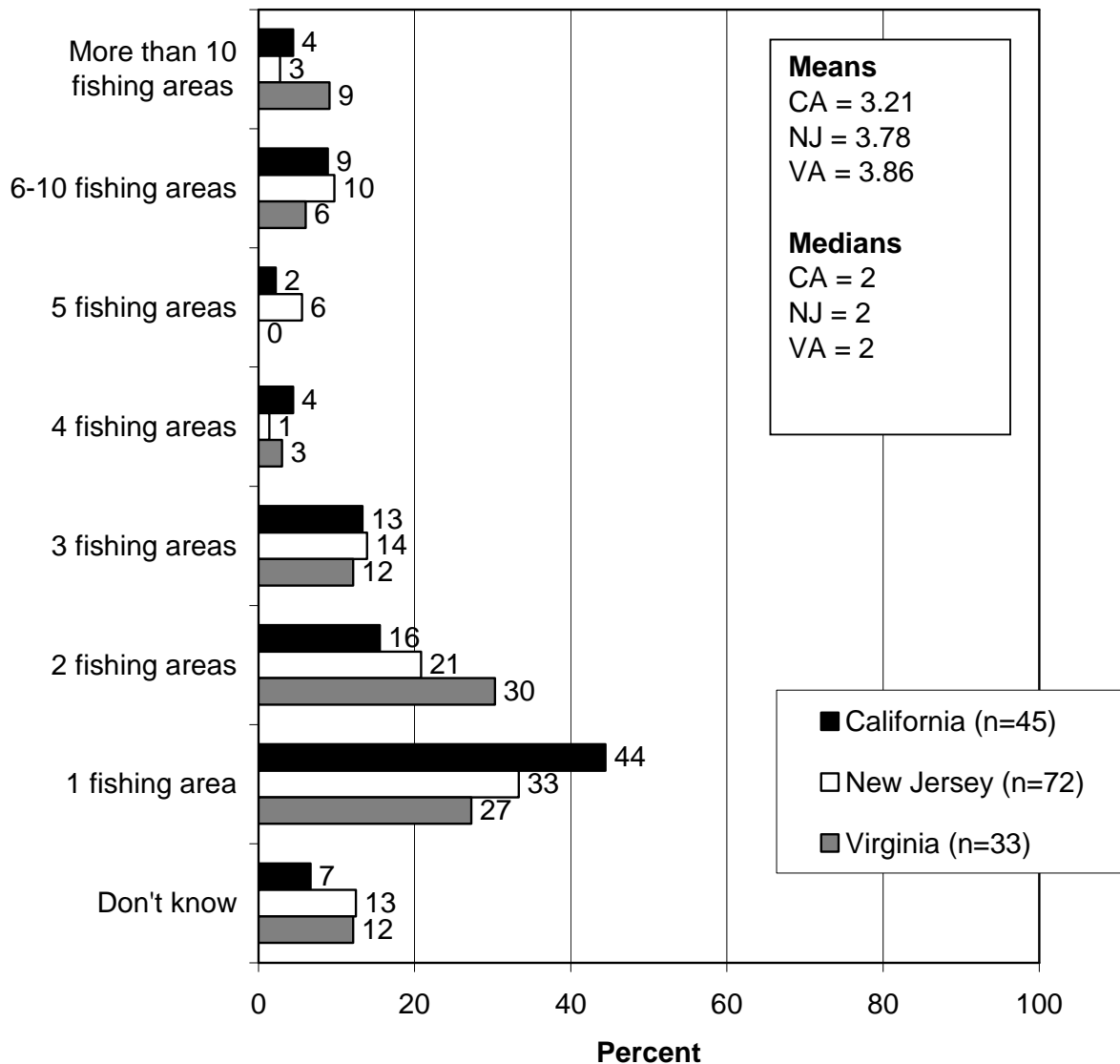
## **AWARENESS OF AND USE OF MONOFILAMENT LINE RECYCLING BINS**

- Overwhelming majorities of anglers in California (85%), New Jersey (76%), and Virginia (88%) indicate that they have never seen a monofilament line recycling bin. Note that anglers in New Jersey are more likely to have seen a bin than are those in California or Virginia; almost a quarter of anglers in New Jersey (24%) have seen a bin, compared to just 15% in California and 11% in Virginia.
- Respondents who indicated that they had seen a monofilament line recycling bin were asked about how many fishing areas they had seen a monofilament line recycling bin in during the past 12 months. Anglers in California (44%) and New Jersey (33%) had more commonly seen bins in one fishing area, whereas anglers in Virginia (30%) had more commonly seen bins in two fishing areas.
- Among anglers who have seen a monofilament line recycling bin, when asked how often they personally use a monofilament line recycling bin, majorities of anglers (69% in California, 61% in New Jersey, and 63% in Virginia) say they *frequently* or *sometimes* do. Still, substantial percentages (22% in California, 29% in New Jersey, and 12% in Virginia) of anglers who have seen a monofilament recycling say they *never* personally use one.
- Among anglers who had never seen a monofilament line recycling bin, the majority say they would be *very* likely to use monofilament line recycling bins if they were available in the areas where they typically fish (79% of anglers in California, 78% of anglers in New Jersey, and 75% of anglers in Virginia).

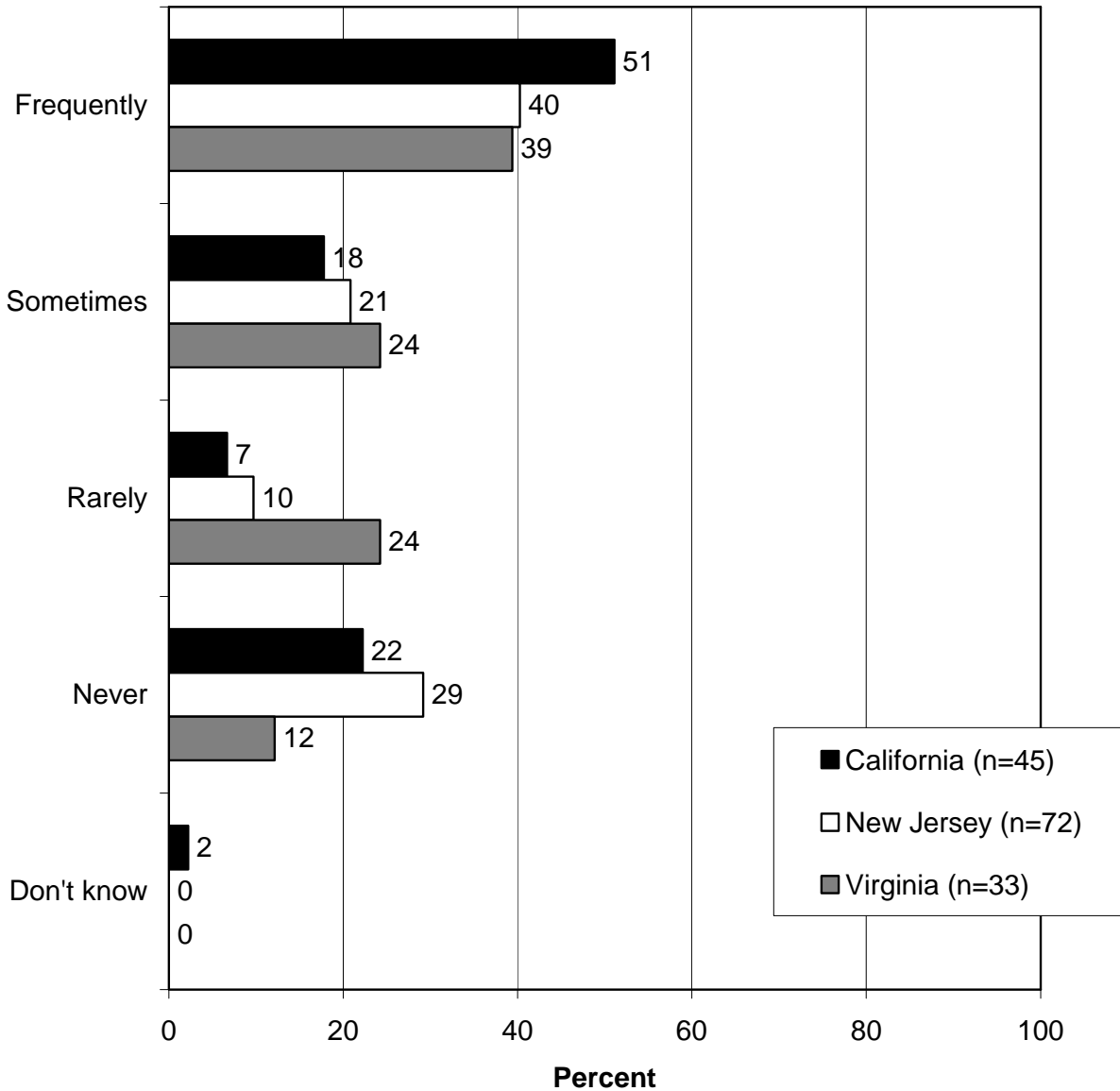
### Q51. Have you ever seen a monofilament line recycling bin?



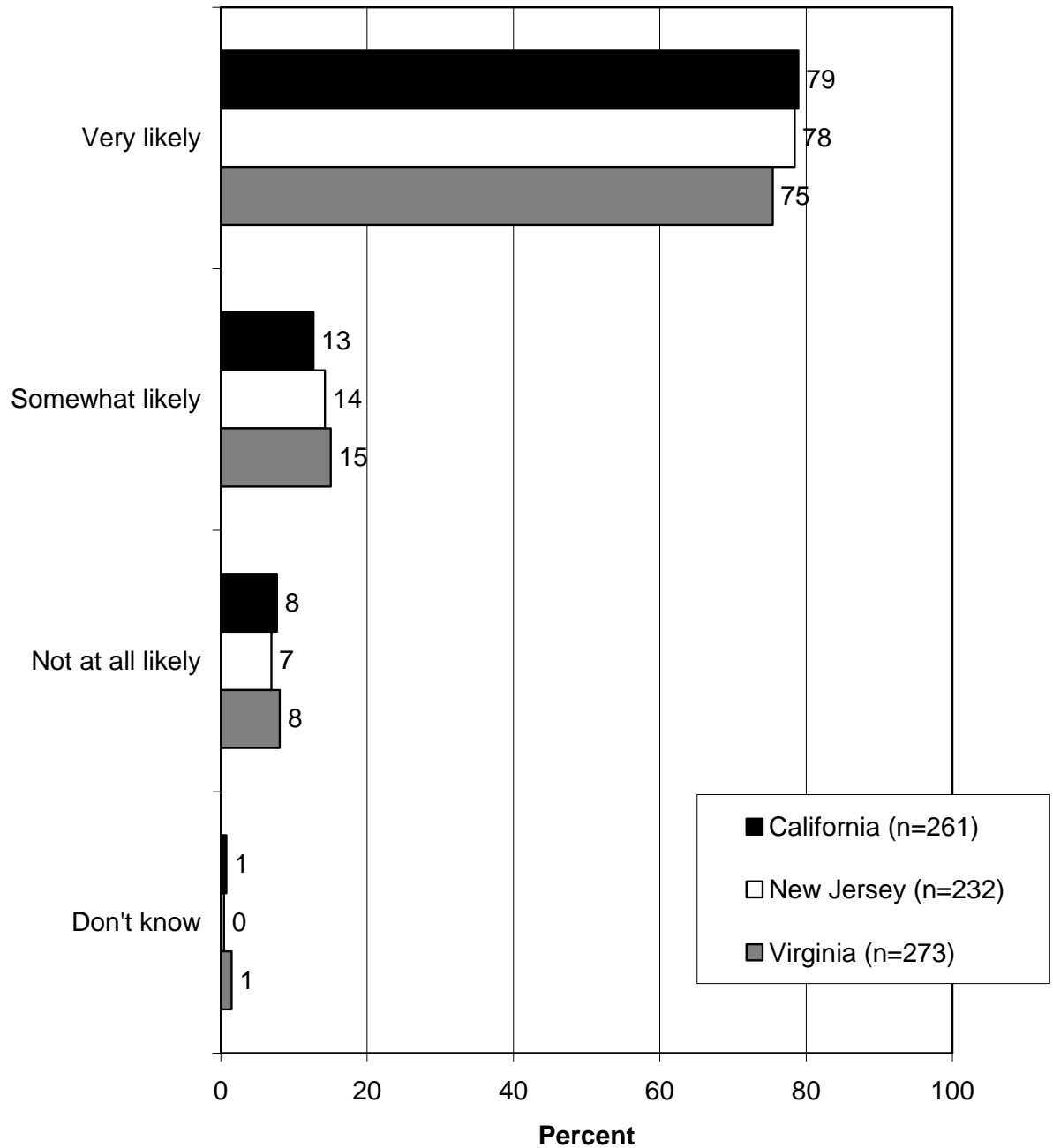
**Q52. In how many fishing areas have you seen a monofilament line recycling bin in the past 12 months? (Asked of those who have seen a monofilament line recycling bin.)**



**Q55. How often do you personally use a monofilament line recycling bin? (Asked of those who have seen a monofilament line recycling bin.)**



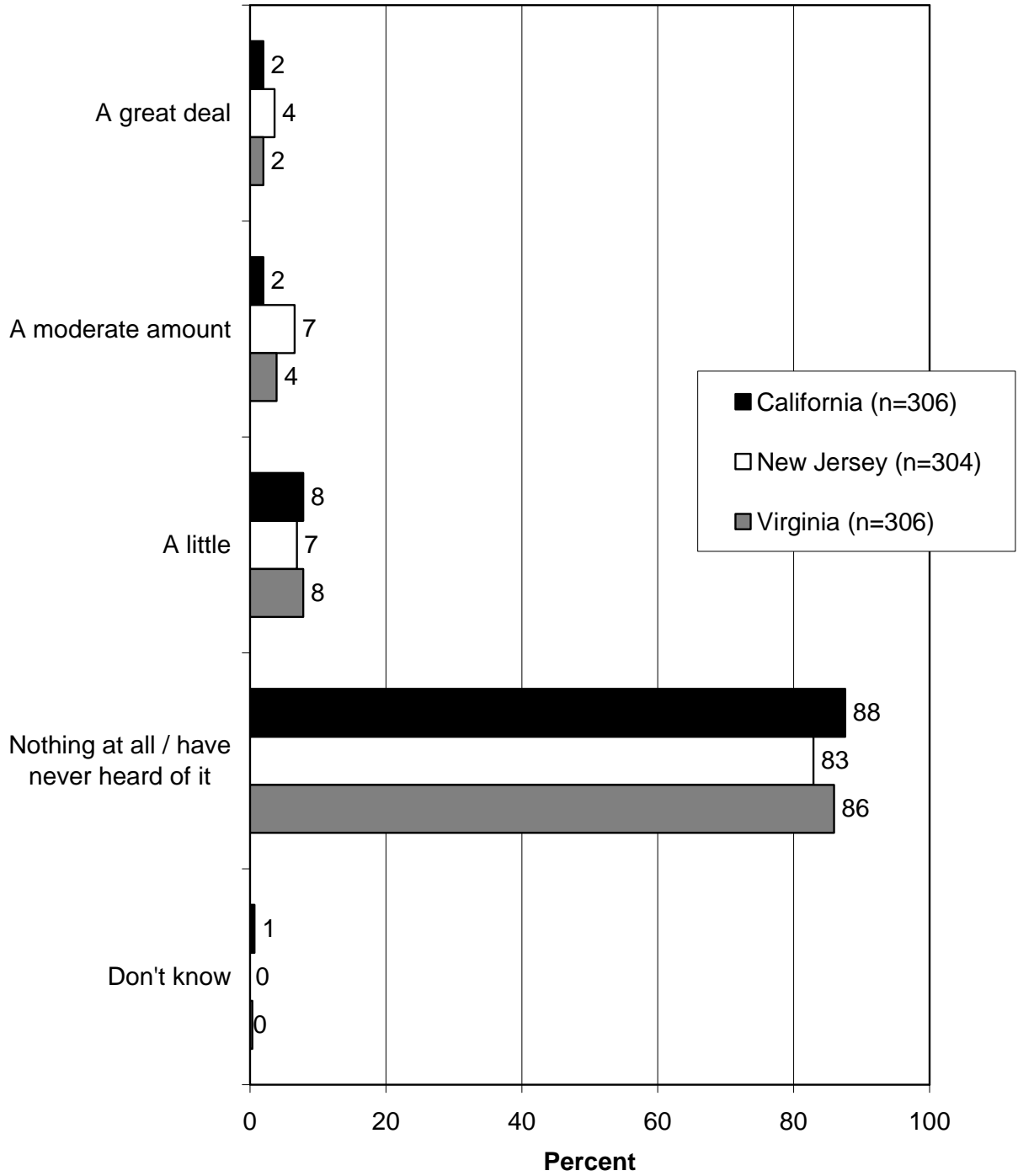
**Q57. If there were monofilament line recycling bins in the areas where you typically fish, how likely would you be to use it to recycle your line? (Asked of those who had never seen a monofilament line recycling bin.)**



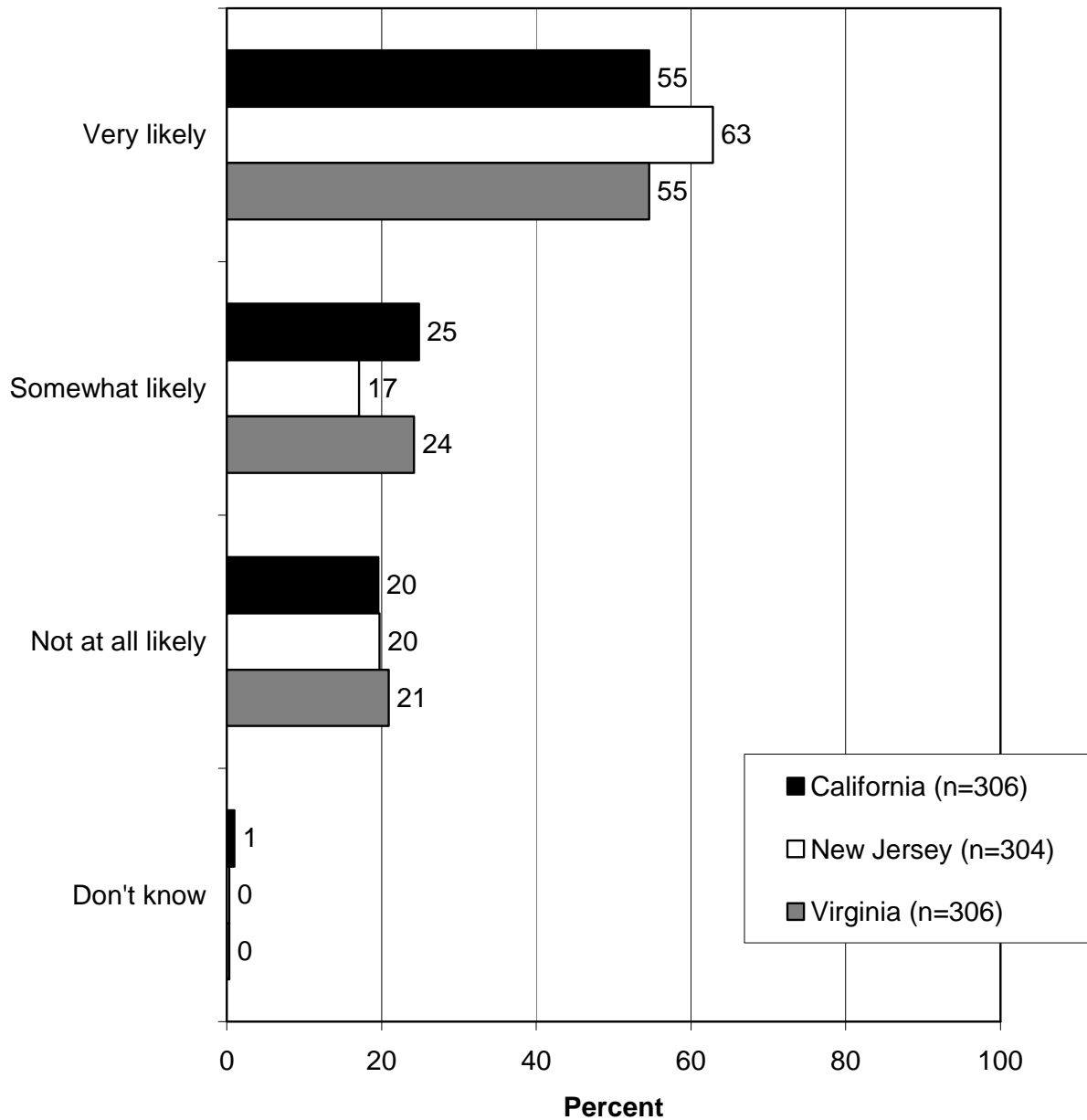
## **AWARENESS AND KNOWLEDGE OF THE “REEL IN AND RECYCLE” PROGRAM**

- Small percentages of anglers in each state (12% in California, 18% in New Jersey, and 14% in Virginia) say they know *a great deal*, *a moderate amount*, or *a little* about the program. Still, majorities of anglers (88% in California, 83% in New Jersey, and 86% in Virginia) have never heard of the “Reel In and Recycle” program or know nothing about it.
  
- Knowing that the “Reel In and Recycle” program is available, large majorities of anglers (80% in California, 80% in New Jersey, and 79% in Virginia) indicate being *very* or *somewhat* likely to take their used monofilament line home with them to recycle later when they find a bin, with most being *very* likely to do so. Similarly, large majorities of anglers (79% in California, 77% in New Jersey, and 77% in Virginia) say they are *very* or *somewhat* likely to look for a monofilament line recycling bin.
  - Majorities of anglers in each state also say they are *very* or *somewhat* likely to ask a local marina operator or store owner to install a monofilament line recycling bin.
  - Conversely, majorities of anglers in each state say they are *not at all* likely to volunteer to maintain a monofilament line recycling bin or to volunteer to personally install a monofilament recycling bin.

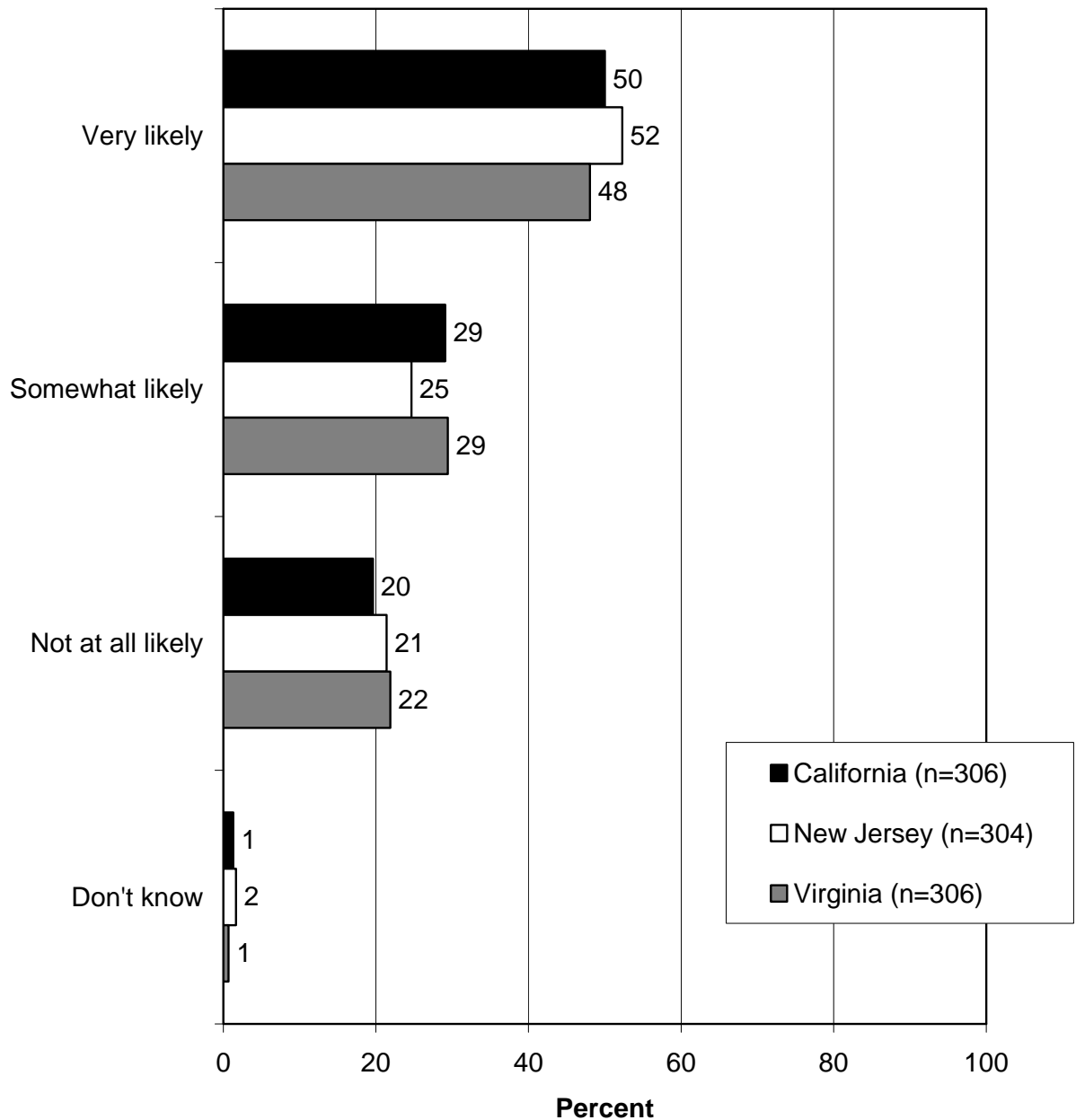
**Q45. How much would you say you know about the "Reel In and Recycle" program?**



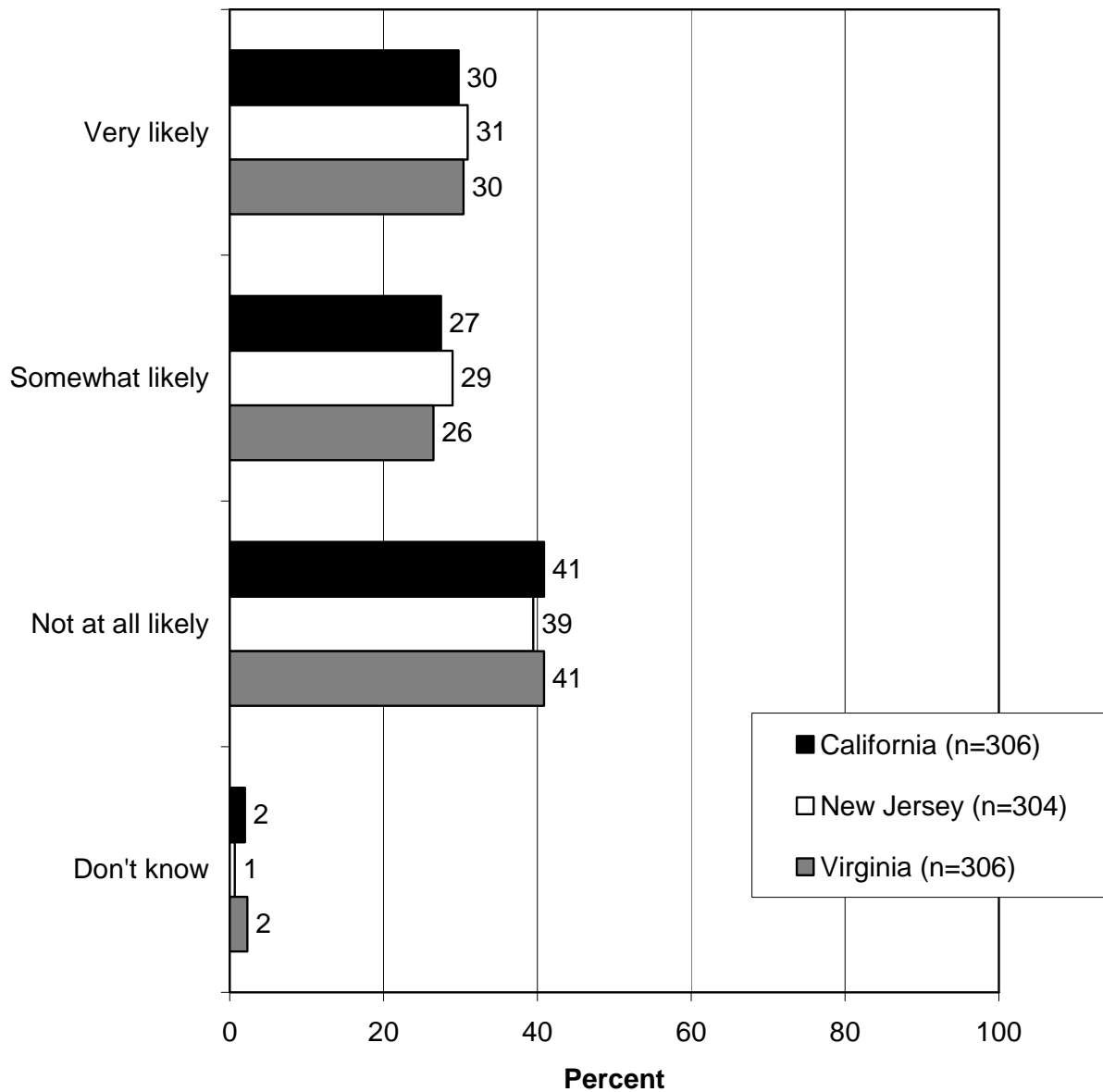
**Q61. How about take my used monofilament line home with me to recycle later when I find a bin?  
(How likely are you to do this in the next 12 months?)**



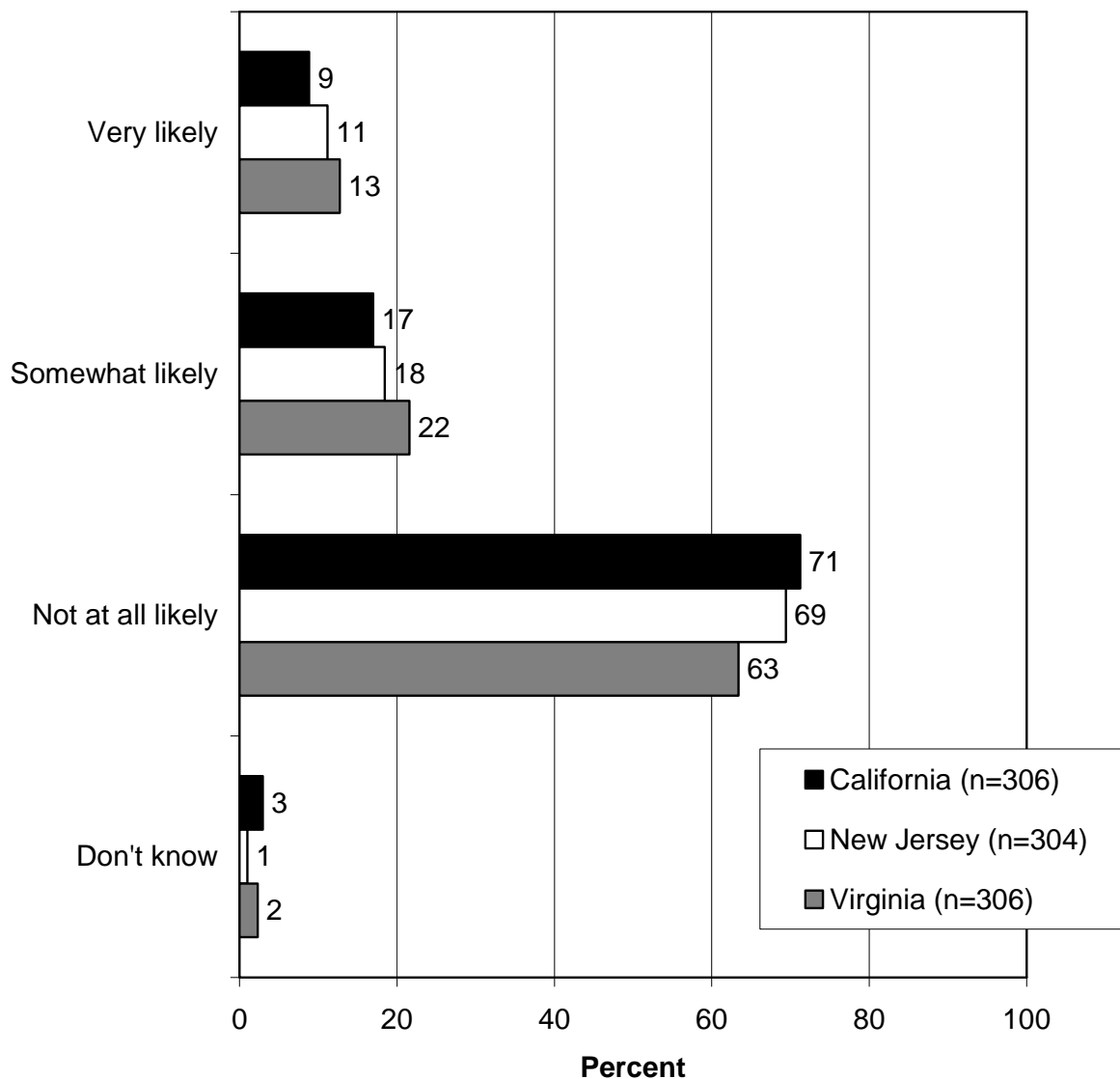
**Q60. How about look for a monofilament line recycling bin? (How likely are you to do this in the next 12 months?)**



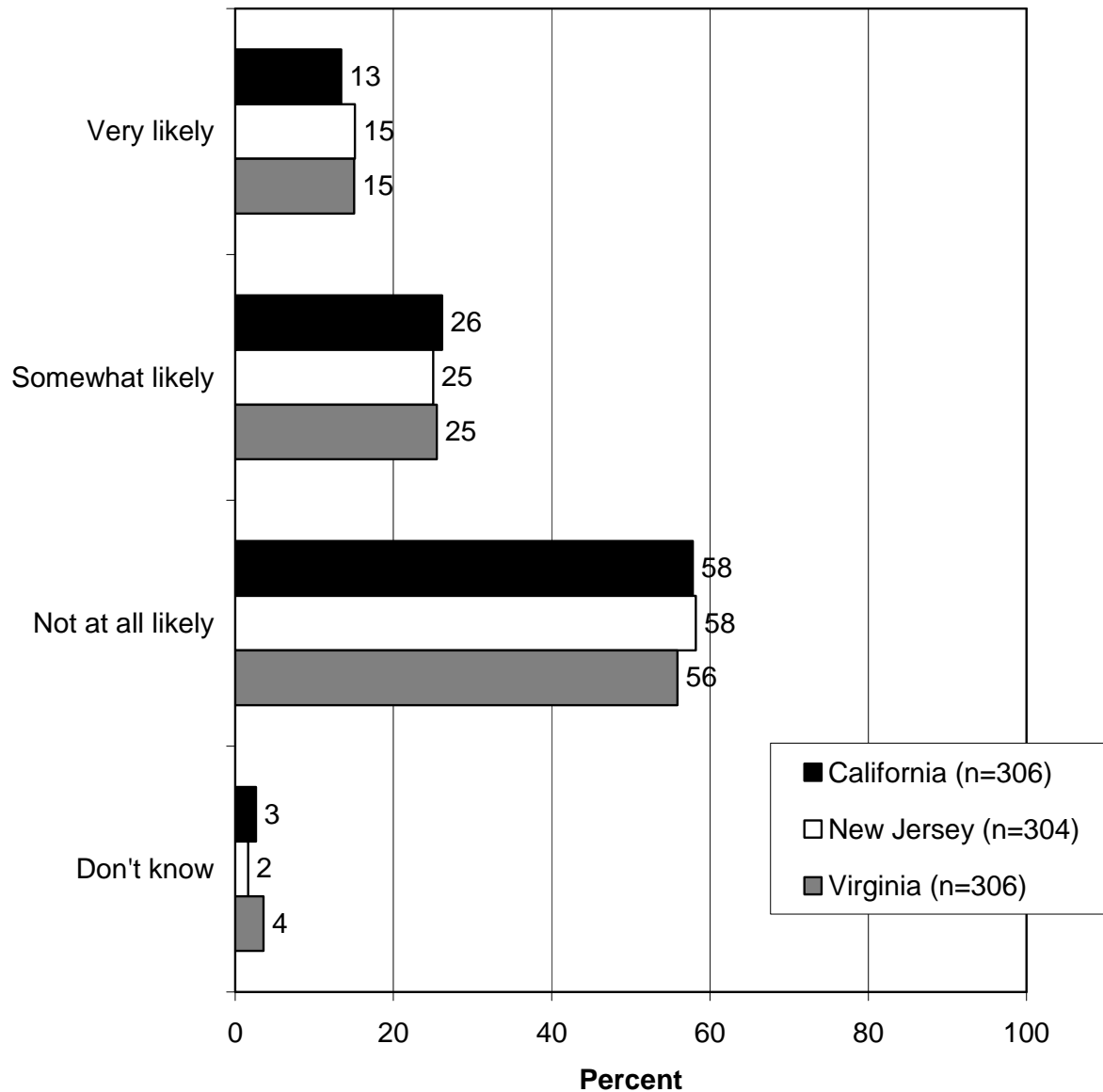
**Q62. How about ask a local marina operator or store owner to install a monofilament line recycling bin? (How likely are you to do this in the next 12 months?)**



**Q64. How about volunteer to maintain a monofilament line recycling bin by regularly checking the bin, emptying the bin, and sending the collected fishing line for recycling? (How likely are you to do this in the next 12 months?)**



**Q63. How about volunteer to personally install a monofilament line recycling bin provided and paid for by the Reel In and Recycle program? (How likely are you to do this in the next 12 months?)**



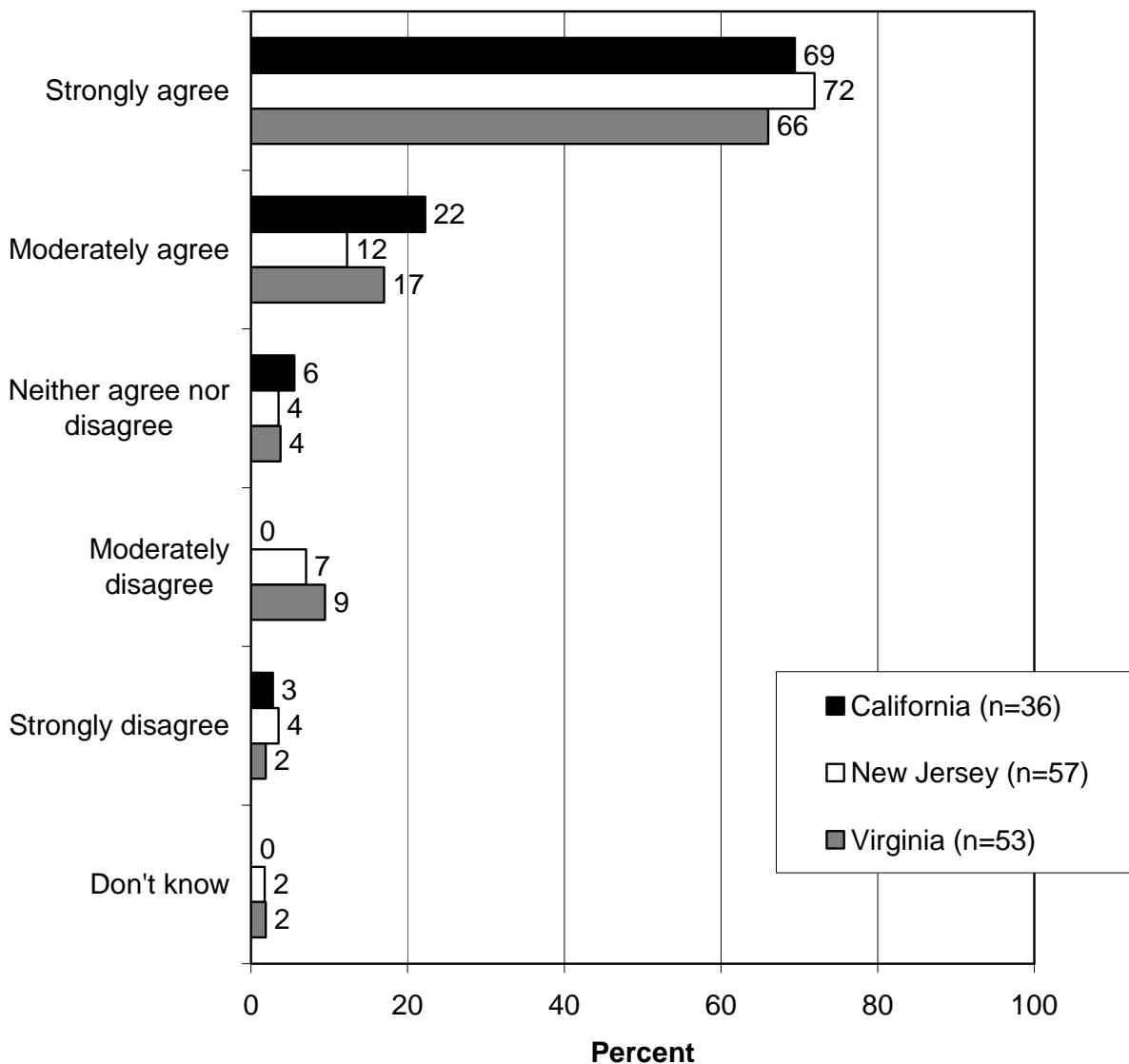
## ATTITUDES TOWARD AND KNOWLEDGE OF RECYCLING MONOFILAMENT LINE

- Respondents who indicated that they sometimes, rarely, or never personally recycle fishing line were asked whether they would recycle more often if there was a monofilament line recycling bin where they fished. Majorities of anglers in each state (69% in California, 72% in New Jersey, and 66% in Virginia) *strongly* agree that they would.
- Overwhelming majorities of anglers *strongly* or *moderately* agree (with majorities *strongly* agreeing) with the following two statements:
  - When I see discarded line in the environment, I worry about the problems it may cause (81% in California, 87% in New Jersey, and 85% in Virginia).
  - Recycling monofilament line should be a high priority for anglers (80% in California, 86% in New Jersey, and 85% in Virginia).

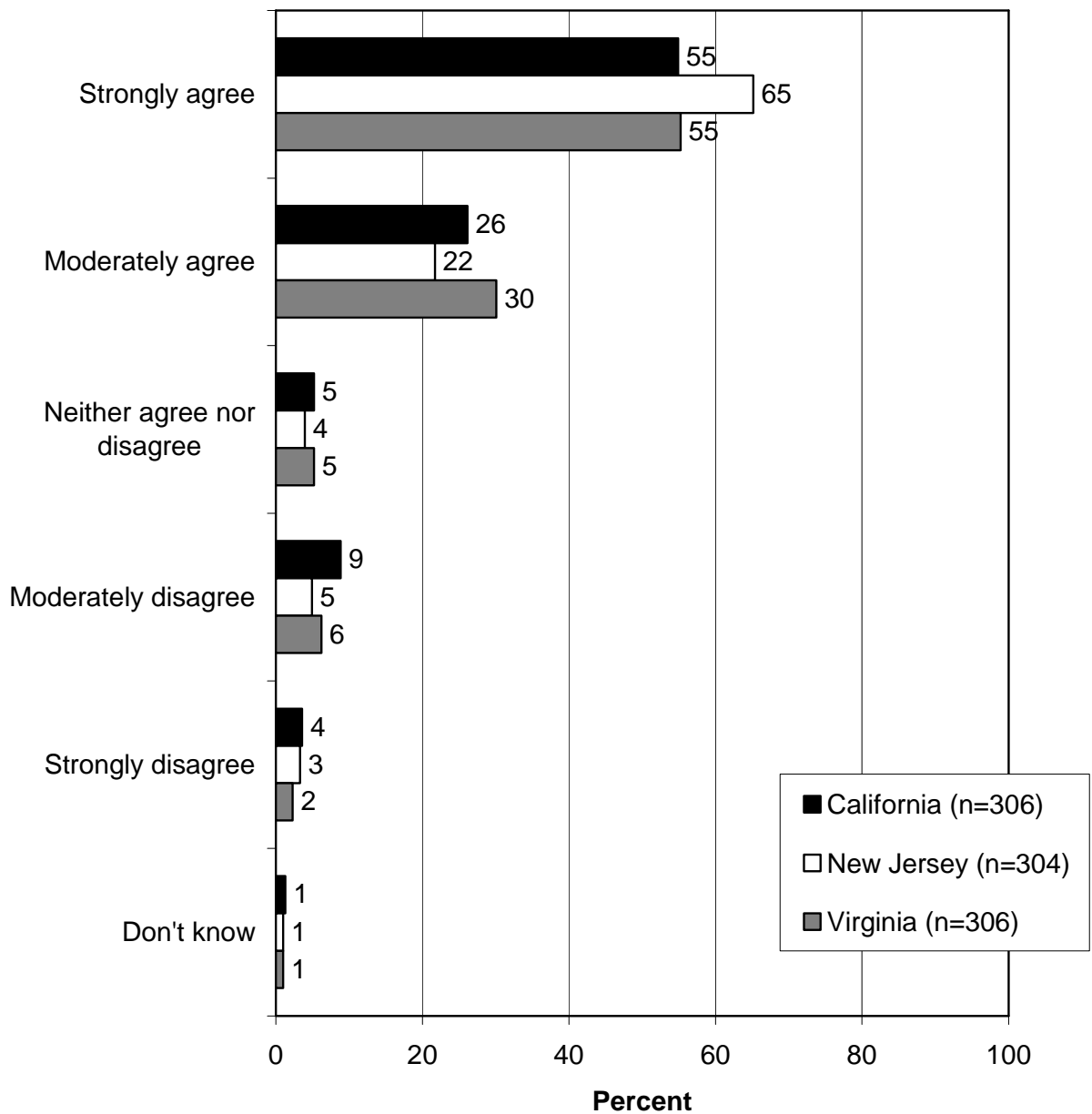
For comparison, series graphs are shown, followed by separate graphs for each question.

- Anglers were asked whether they believed four statements regarding monofilament fishing line were true or false. For comparison, series graphs are shown, followed by separate graphs for each question.
  - Majorities of anglers in each state (63% in California, 66% in New Jersey, and 58% in Virginia) say they are *absolutely* or *pretty sure* monofilament line takes more than 500 years to decompose. (This statement is true.)
  - About half of anglers in each state (50% in California, 52% in New Jersey, and 54% in Virginia) say they are *absolutely* or *pretty sure* monofilament line can be included for recycling with household plastics. (This statement is false.)
  - Less than half of anglers in each state (39% in California, 42% in New Jersey, and 48% in Virginia) say they are *absolutely* or *pretty sure* recycled monofilament line is used to make new monofilament line. (This statement is false.)
  - Less than a quarter of anglers in each state (20% in California, 19% in New Jersey, and 19% in Virginia) say they are *absolutely* or *pretty sure* if a boat comes into contact with tangled or discarded monofilament line, the line will simply break without causing any damage to the boat. (This statement is false.)

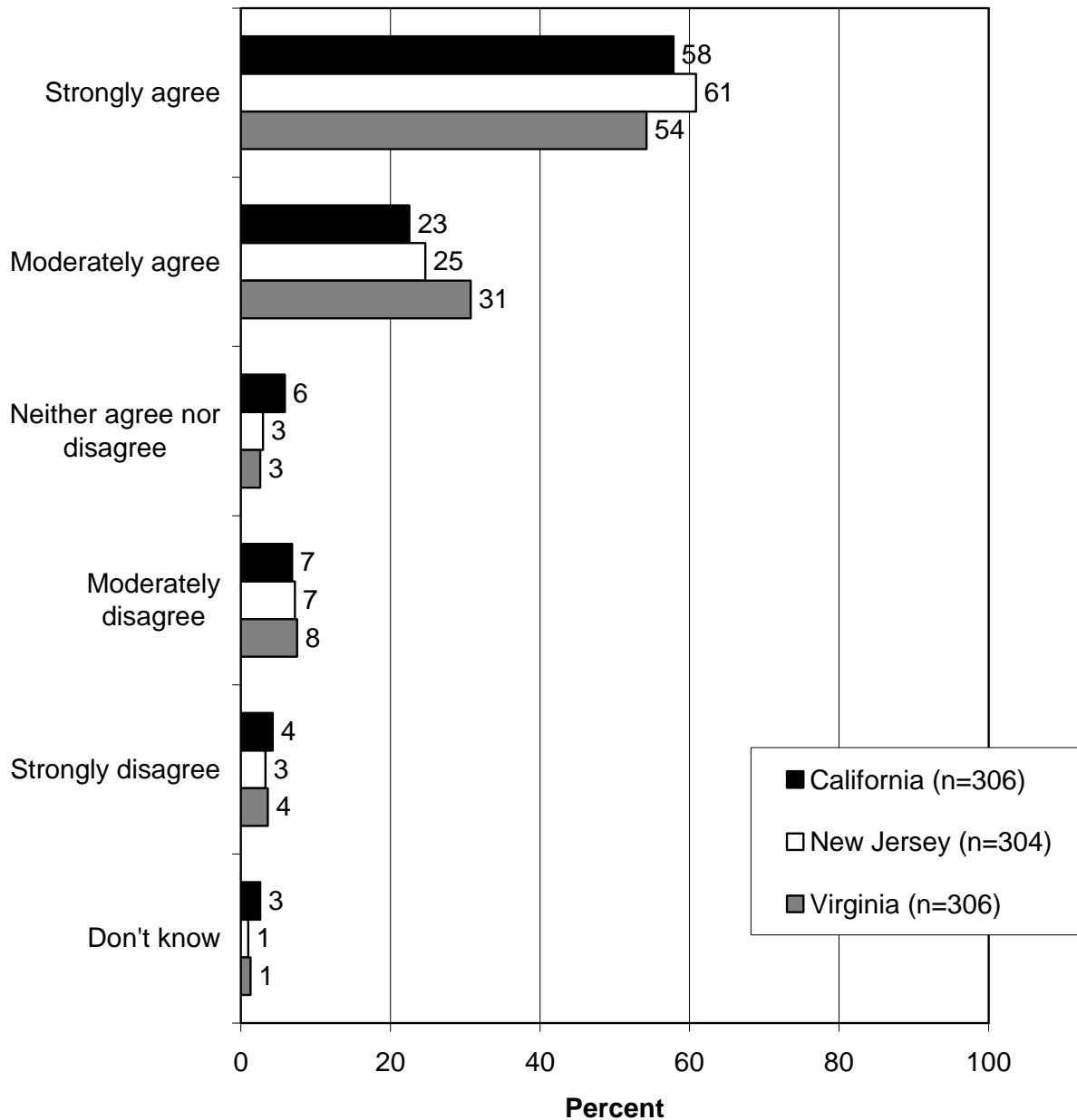
**Q74. I would recycle the monofilament line I use [more often] if there was a line recycling bin where I fish. (Do you agree or disagree with this statement?) (Asked of those who sometimes, rarely, or never personally recycle fishing line.)**



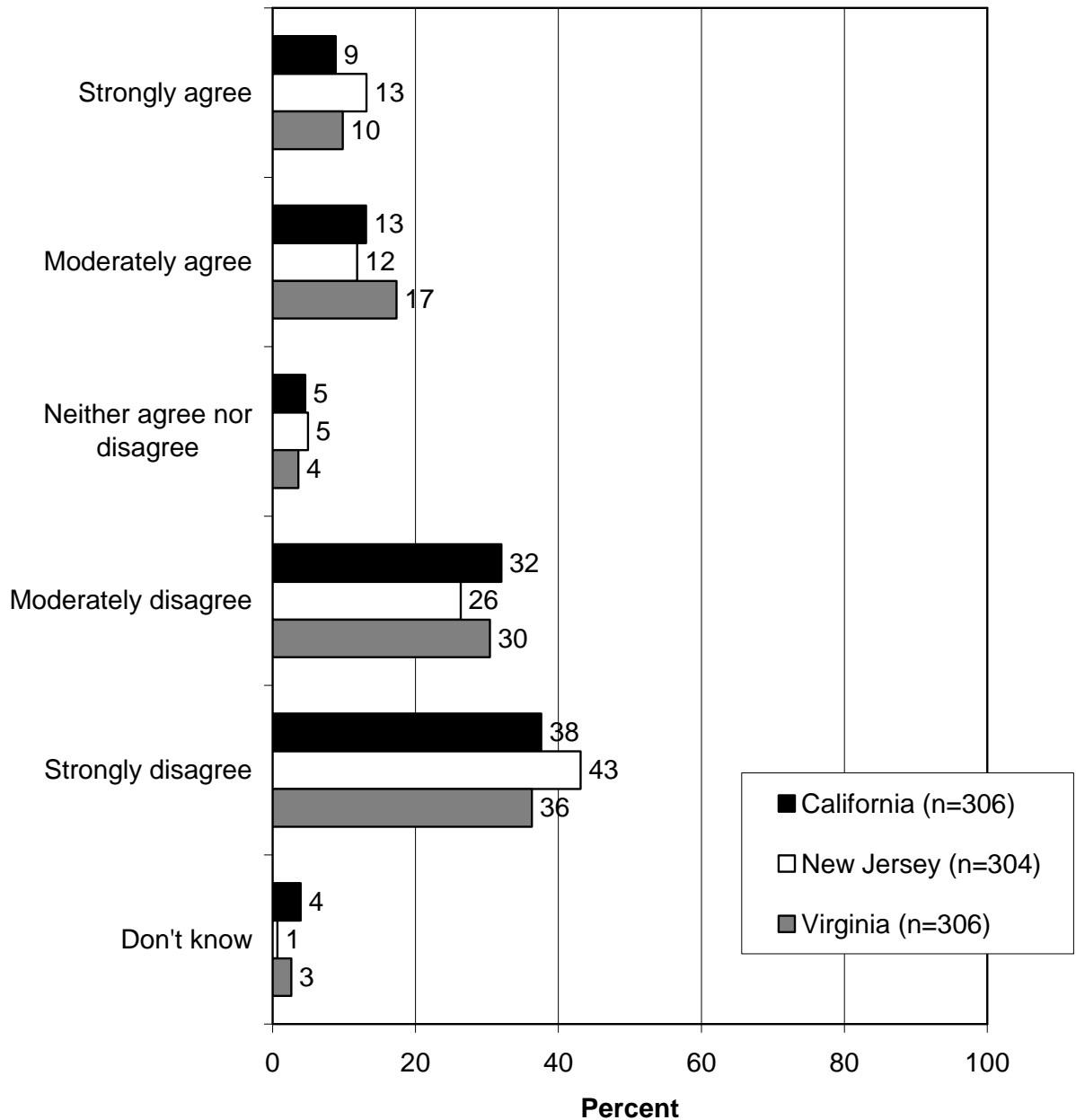
**Q75. When I see discarded monofilament line in the environment, I worry about the problems it may cause. (Do you agree or disagree with this statement?)**



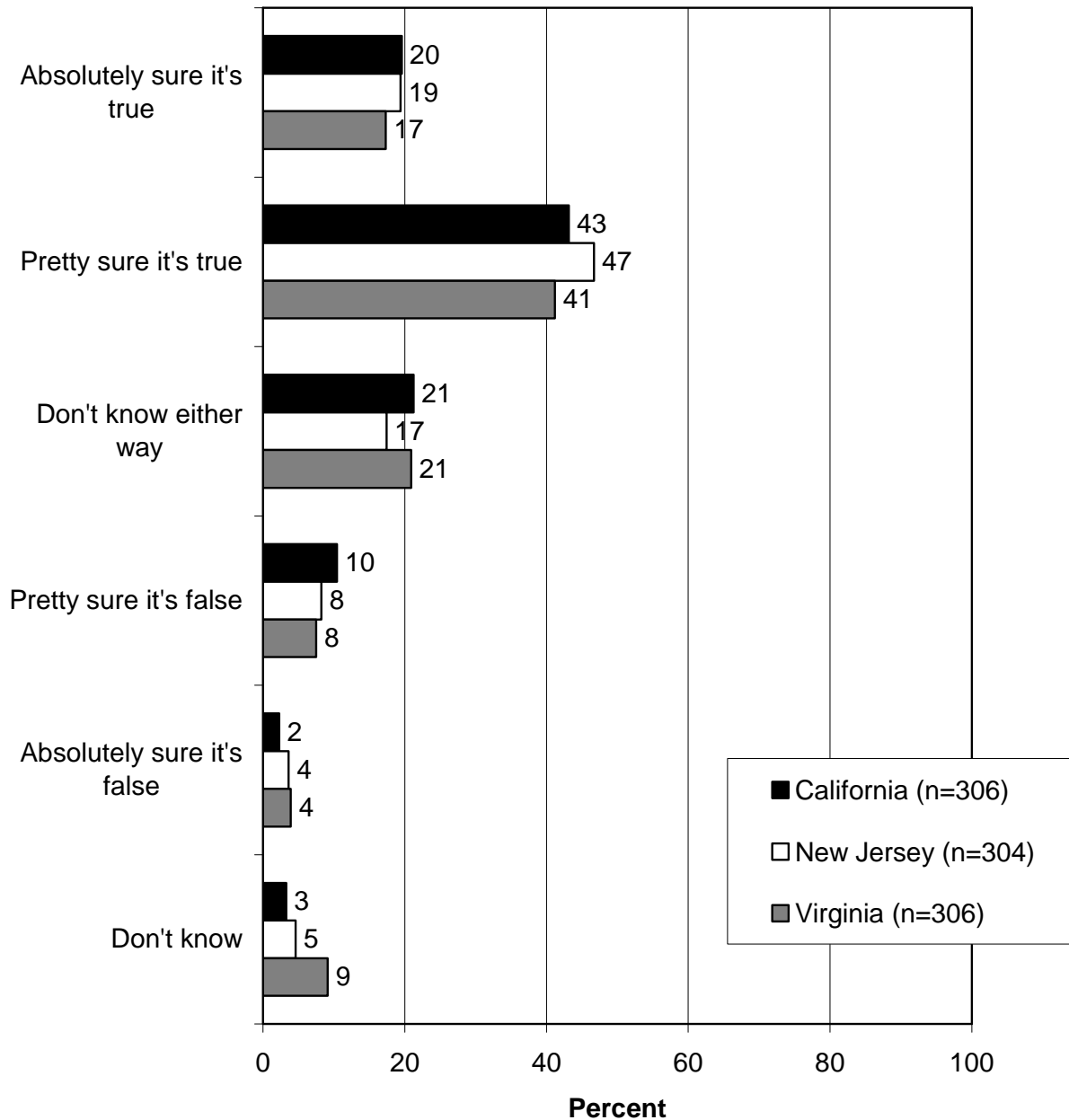
**Q72. Recycling monofilament line should be a high priority for anglers. (Do you agree or disagree with this statement?)**



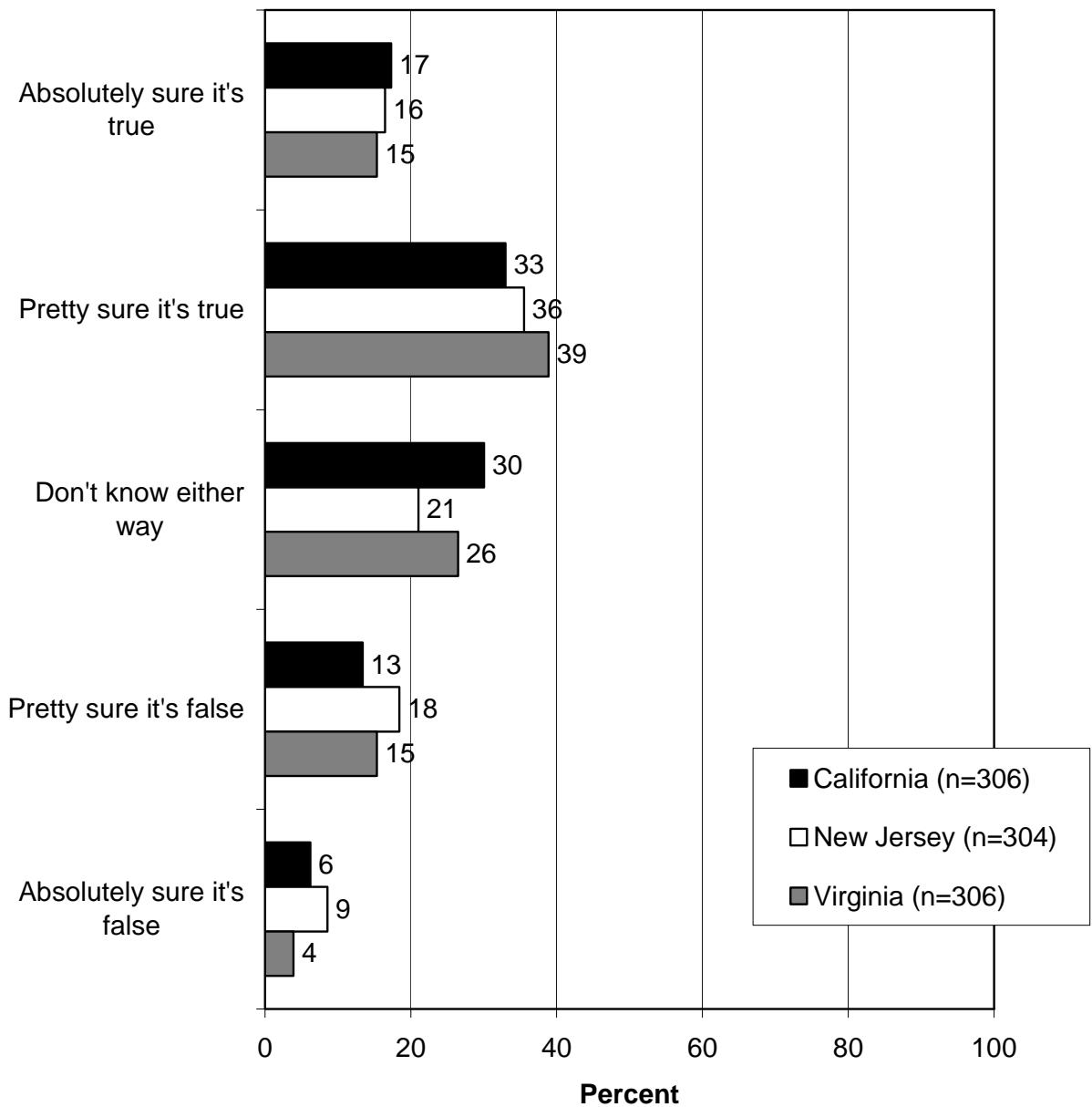
**Q76. Throwing monofilament line in the trash is just as good as recycling it. (Do you agree or disagree with this statement?)**



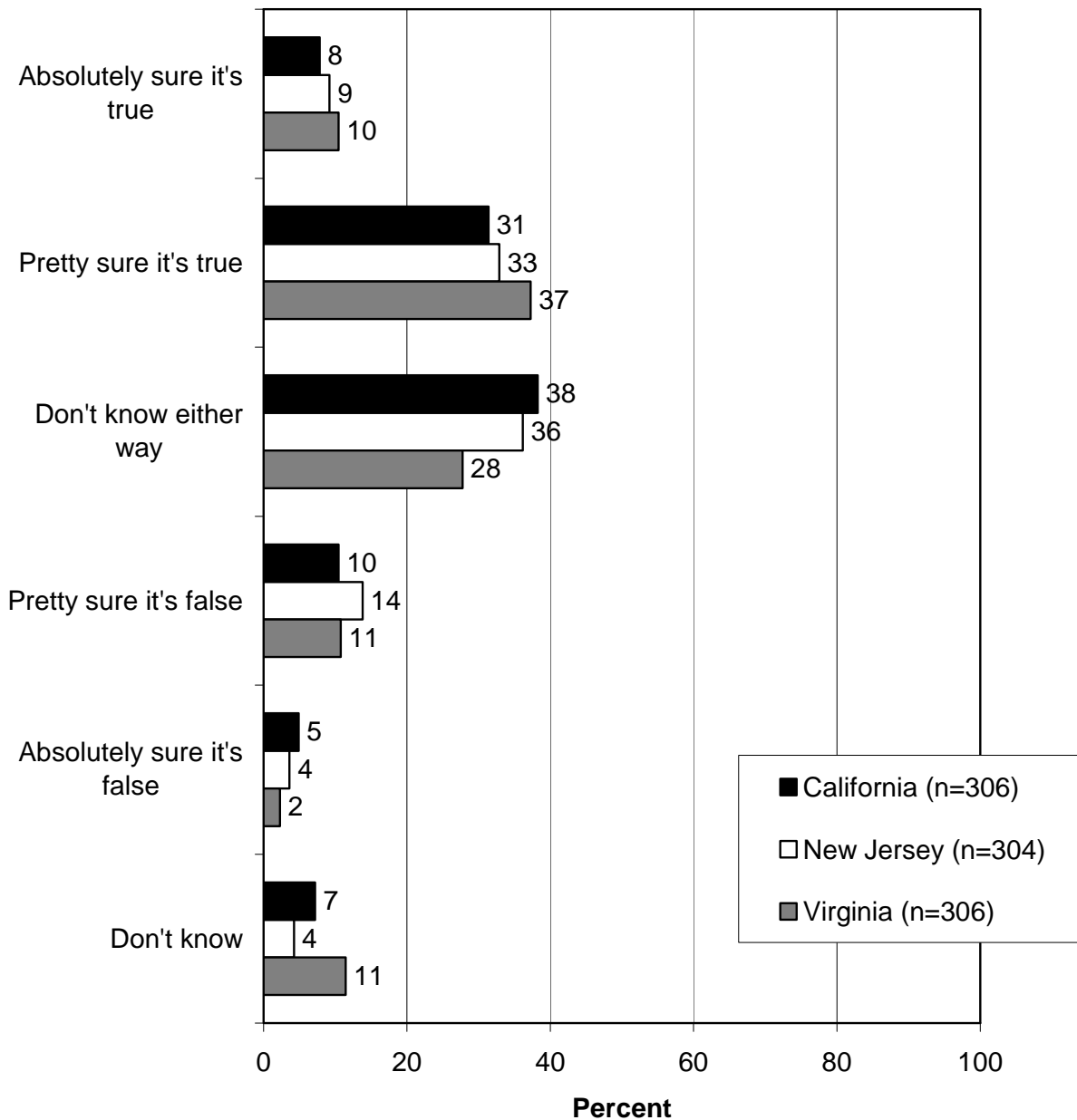
**Q81. Monofilament line takes more than 500 years to decompose. (Do you think this statement is true or false?)**



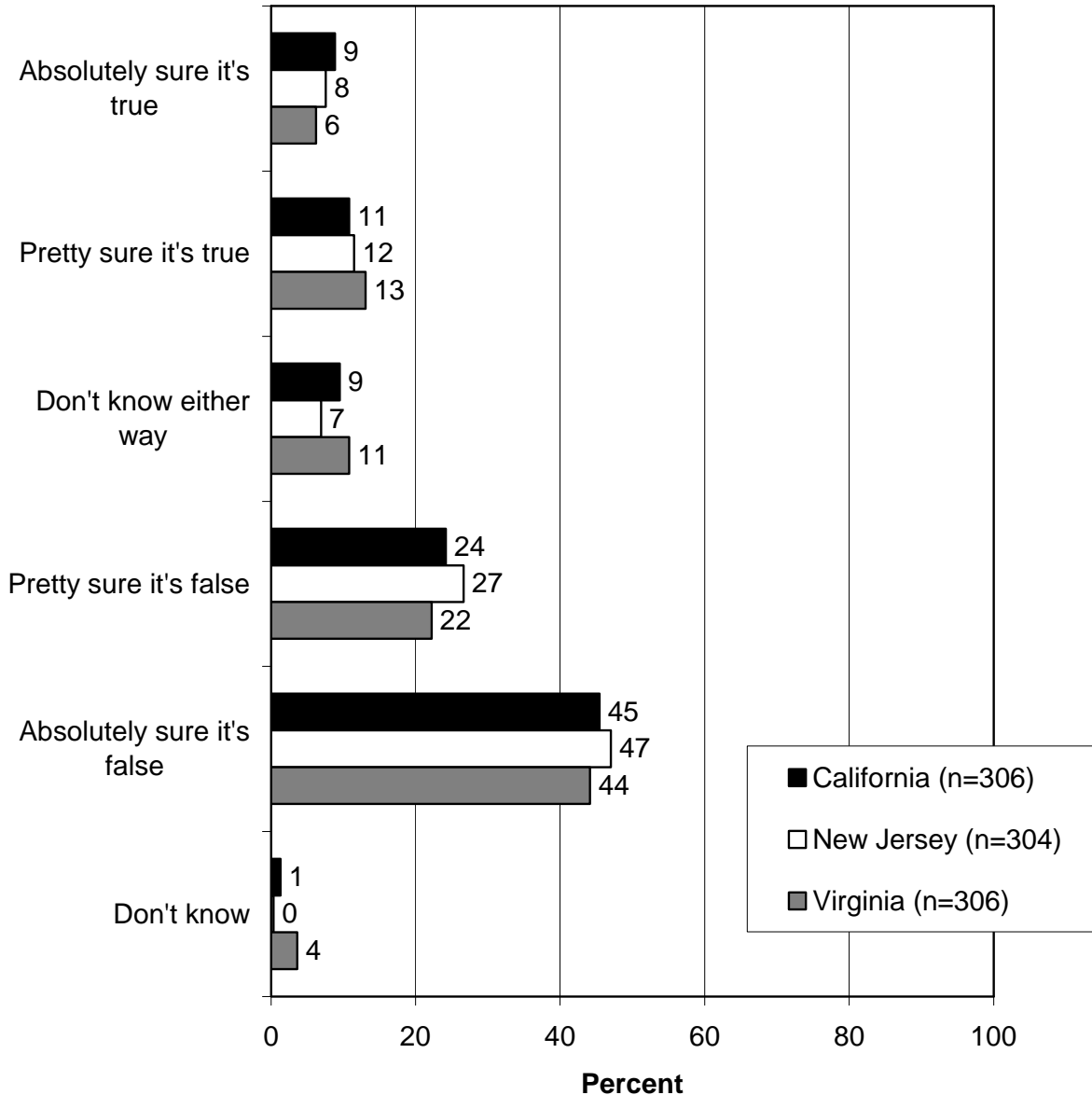
**Q79. Monofilament line can be included for recycling with household plastics, such as plastic drink bottles. (Do you think this statement is true or false?)**



**Q80. Recycled monofilament line is used to make new monofilament line. (Do you think this statement is true or false?)**



**Q82. If a boat comes into contact with tangled or discarded monofilament line, the line will simply break without causing any damage to the boat. (Do you think this statement is true or false?)**

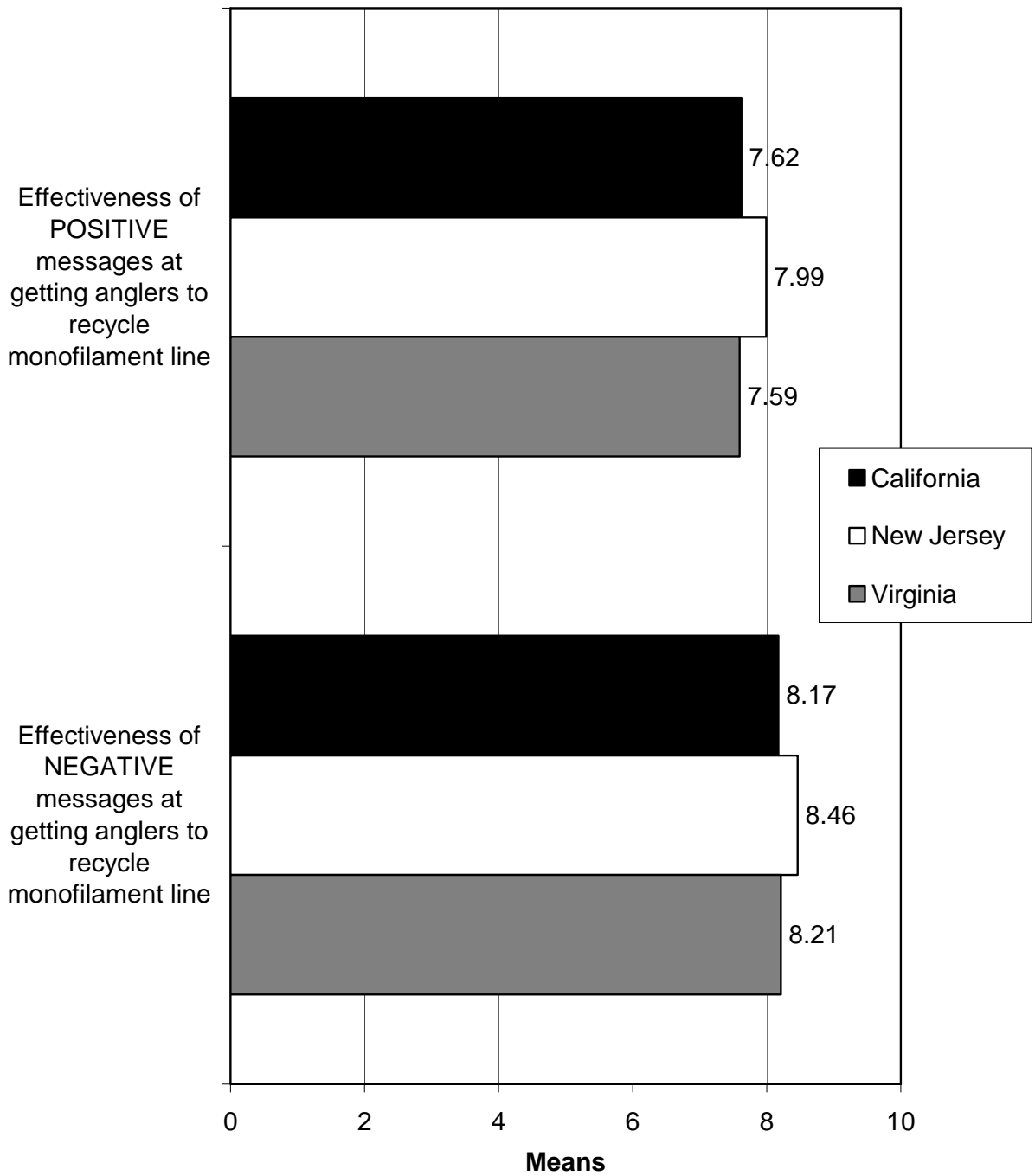


## OPINIONS ON POTENTIAL MESSAGES ABOUT MONOFILAMENT LINE RECYCLING

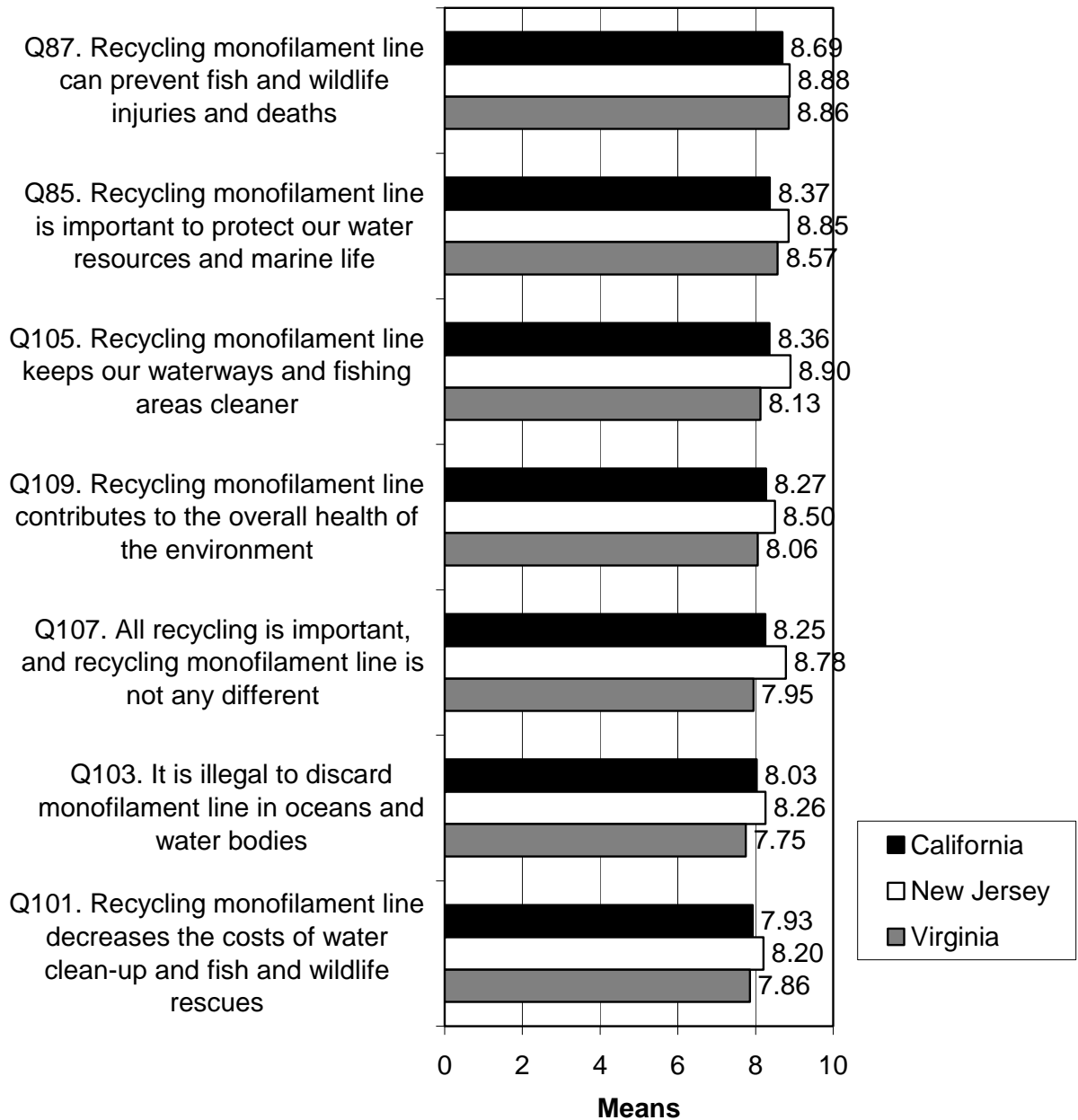
- In examining the mean rating of effectiveness of positive or negative messages at getting anglers to recycle monofilament line or to recycle monofilament line more often, the survey findings suggest that negative messages are slightly more effective at getting anglers to recycle monofilament line.
  - The mean rating of the effectiveness of *positive* messages is 7.62 in California, 7.99 in New Jersey, and 7.59 in Virginia.
  - The mean rating of the effectiveness of *negative* messages is 8.17 in California, 8.46 in New Jersey, and 8.21 in Virginia.
  
- On a scale of 0 to 10 where 0 is not at all effective and 10 is extremely effective, anglers were asked to rate the effectiveness of 14 specific messages at getting them to recycle monofilament line. All the messages, with the exception of one, had a mean rating of 7.00 or higher among anglers in each of the states surveyed; however, several messages stand out as particularly effective among anglers. In general, the results show that environmental/ecological messages appear more effective than messages focusing on human benefits. The top four messages, each with a mean rating of at least 8.00 among anglers in each of the three states, had a distinctly environmental/ecological focus:
  - “Recycling monofilament line can prevent fish and wildlife injuries and death” had the highest mean rating among anglers in California (8.69) and Virginia (8.86) and the second-highest mean rating among anglers in New Jersey (8.88).
  - “Recycling monofilament line is important to protect our water resources and marine life” had a mean rating of 8.37 among anglers in California, 8.85 among anglers in New Jersey, and 8.57 among anglers in Virginia.
  - “Recycling monofilament line keeps our waterways and fishing areas cleaner” had the highest mean rating among anglers in New Jersey (8.90) and was also rated highly in California (8.36) and Virginia (8.13).
  - “Recycling monofilament line contributes to the overall health of the environment” had a mean rating of 8.27 among anglers in California, 8.50 among anglers in New Jersey, and 8.06 among anglers in Virginia.

- 
- At the other end of the spectrum, only one message received substantially lower mean ratings among anglers in each state: “Recycled monofilament line is not used to make new monofilament line” had a mean rating of 4.88 among anglers in California, 5.78 among anglers in New Jersey, and 5.21 among anglers in Virginia.
  
  - In examining the results, it is useful to compare the results for positive and negative messages. Most of the messages tested in the survey were positive; however, among the 14 messages tested, three negative messages were rated by respondents. For the reader’s convenience, a separate graph showing *only* the negative messages and their mean ratings has been shown. Two of these messages had a mean rating of 7.50 or higher among anglers in all states.
    - “It is illegal to discard monofilament line in oceans and water bodies” had a mean rating of 8.03 among anglers in California, 8.26 among anglers in New Jersey, and 7.75 among anglers in Virginia.
    - “Monofilament line takes more than 500 years to decompose” had a mean rating 7.80 among anglers in California, 8.25 among anglers in New Jersey, and 8.02 among anglers in Virginia.

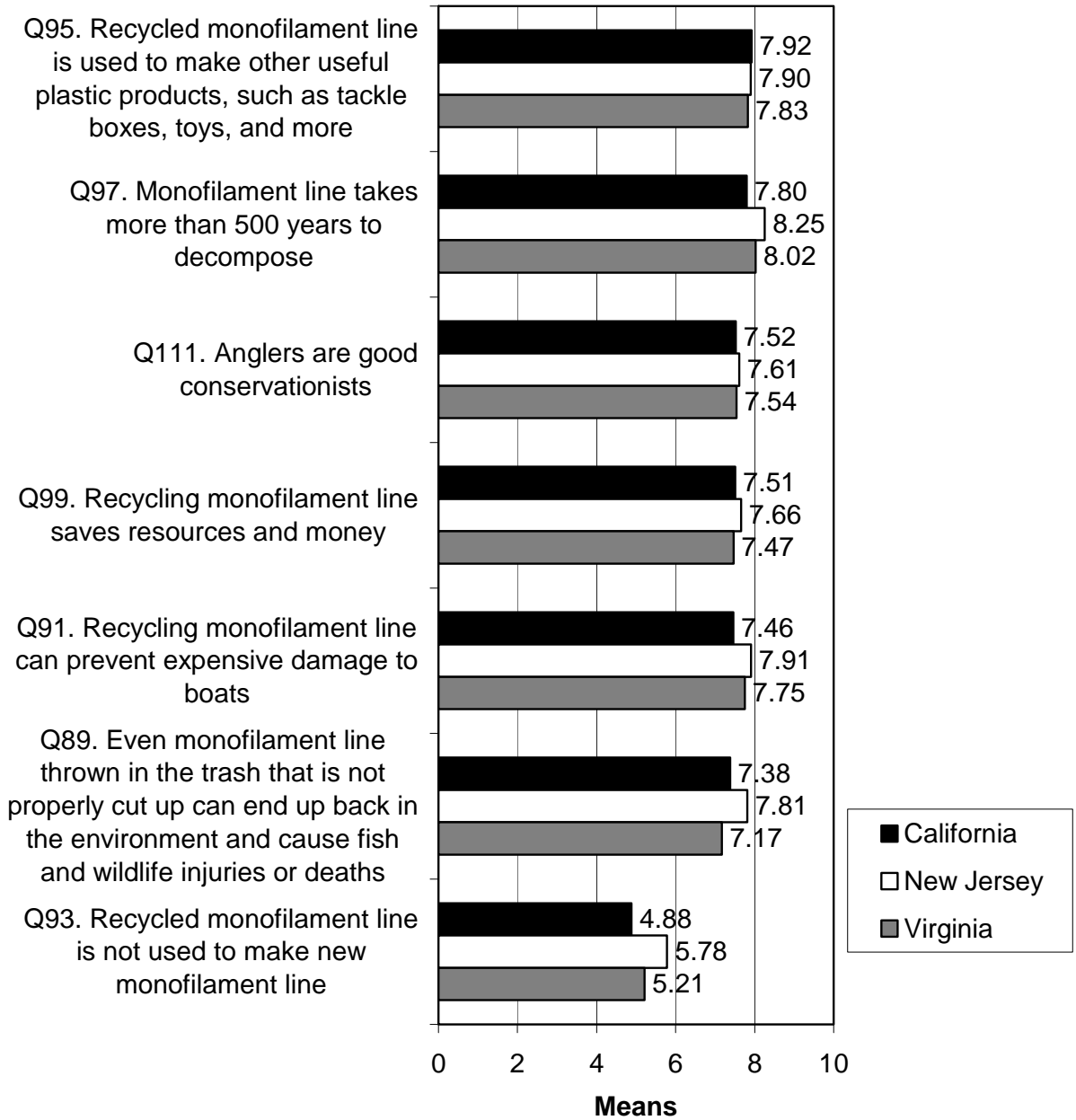
**Mean rating of effectiveness of positive or negative messages at getting anglers to recycle monofilament line or to recycle monofilament line more often.**



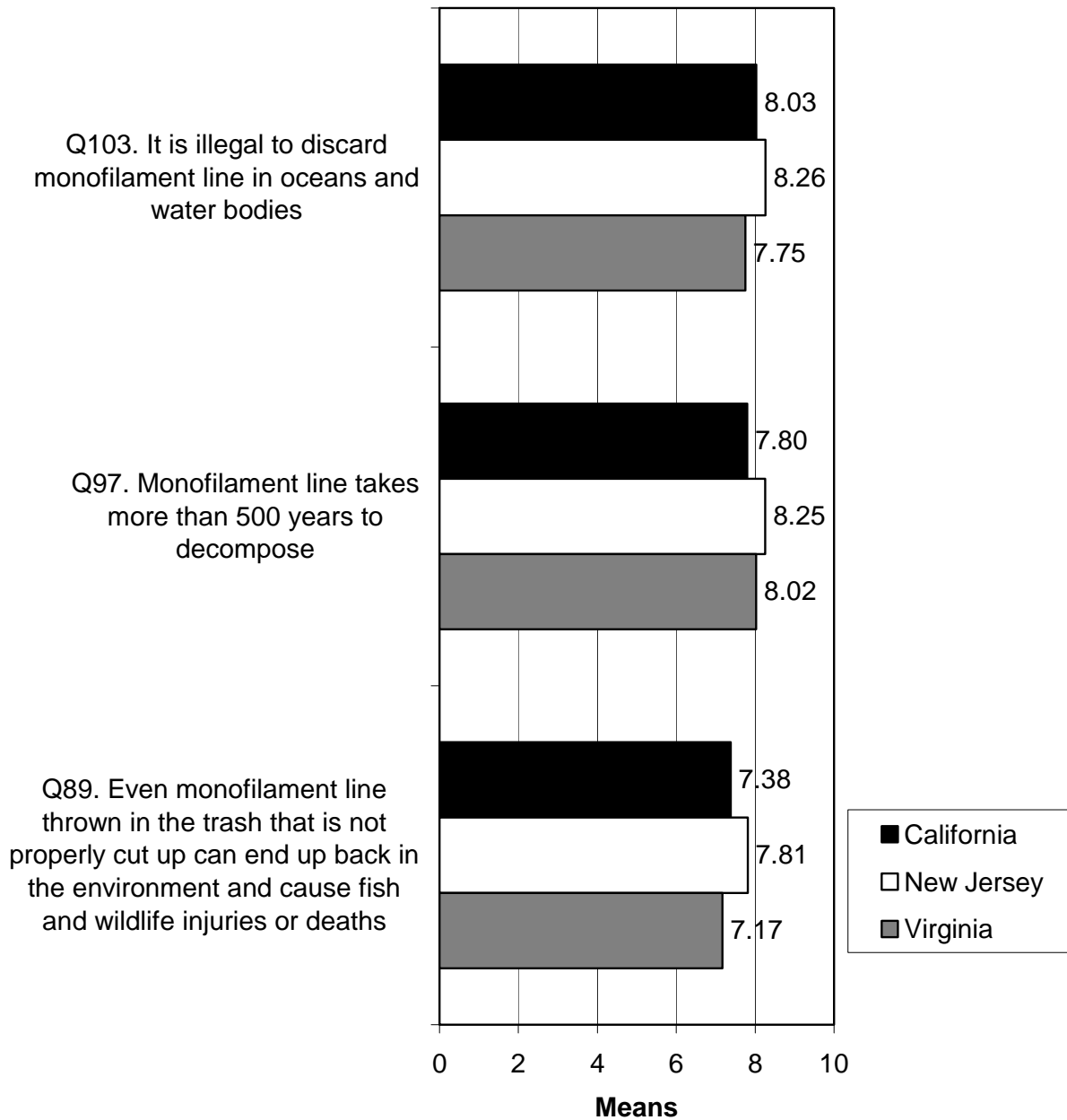
**On a scale of 0 - 10 where 0 is not at all effective and 10 is extremely effective, the mean rating of effectiveness that the following information would be at getting them to recycle monofilament line.  
(Part 1.)**



**On a scale of 0 - 10 where 0 is not at all effective and 10 is extremely effective, the mean rating of effectiveness that the following information would be at getting them to recycle monofilament line.  
(Part 2.)**



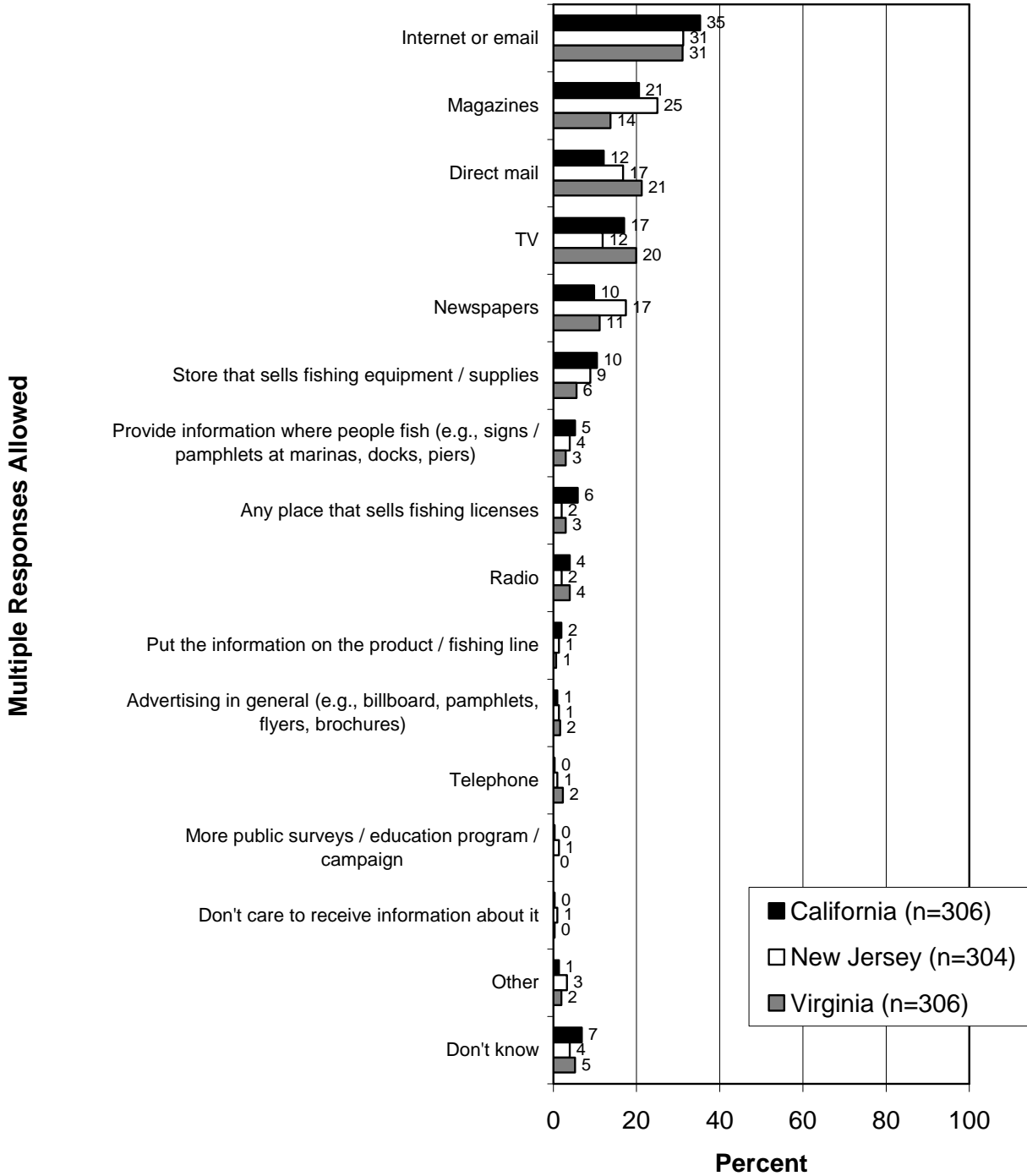
**On a scale of 0 - 10 where 0 is not at all effective and 10 is extremely effective, the mean rating of effectiveness that the following information would be at getting them to recycle monofilament line.  
(Negative Messages.)**



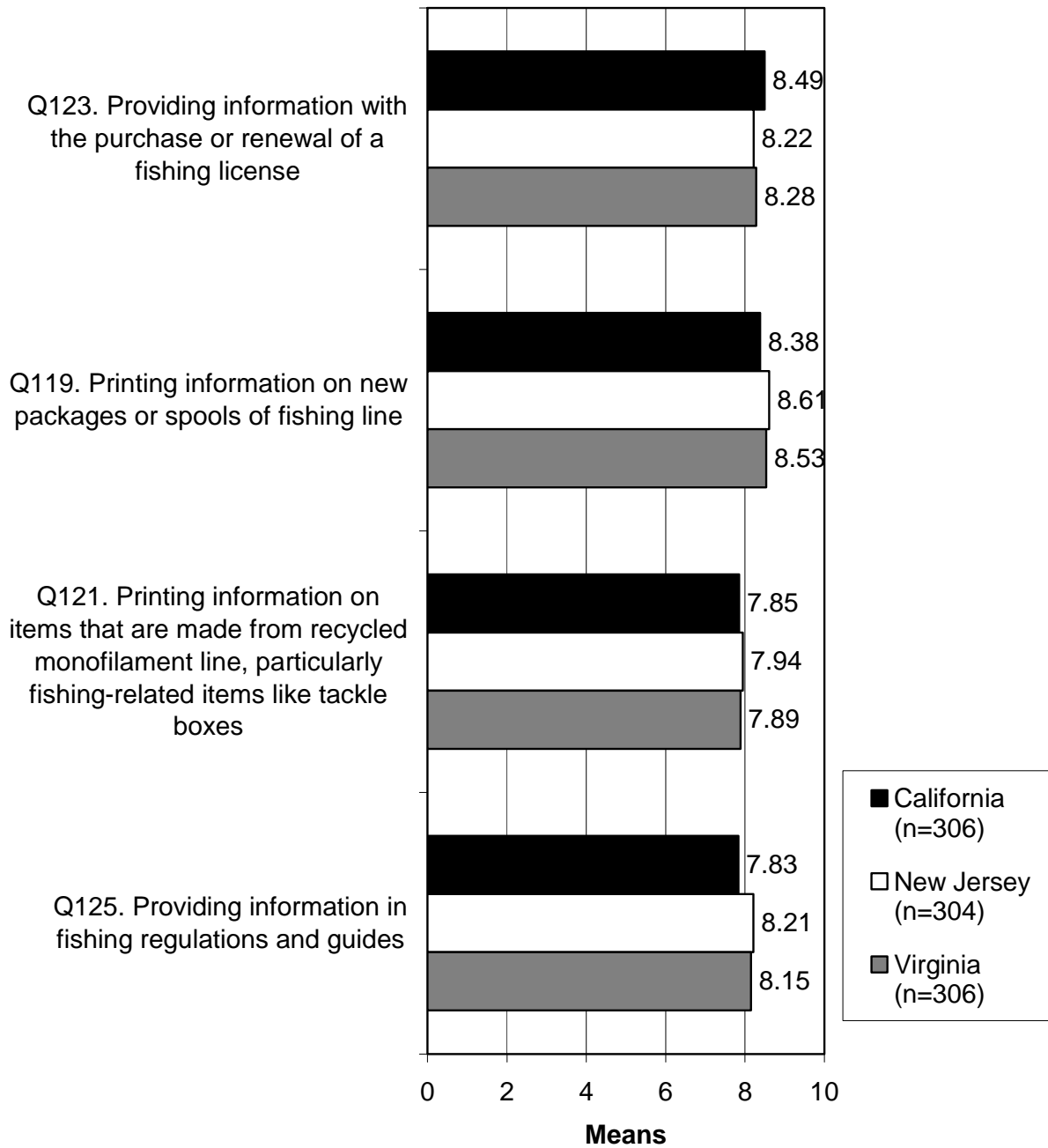
## **SOURCES OF INFORMATION**

- Internet or email, magazines, direct mail, TV, and newspapers are the top ways for distributing information on monofilament line recycling to anglers. No more than 10% of anglers in any state named any other source of information.
  
- Anglers were asked to rate the effectiveness of four efforts for promoting monofilament line recycling. Providing information with the purchase or renewal of a fishing license had the highest mean rating among anglers in California (8.49), while printing information on new packages or spools of fishing line had the highest mean rating among anglers in New Jersey (8.61) and Virginia (8.53).

### Q115. What is the best way to get you information on recycling monofilament line?



**On a scale of 0 - 10 where 0 is not at all effective and 10 is extremely effective, the mean rating of effectiveness that the following would be for promoting monofilament line recycling.**



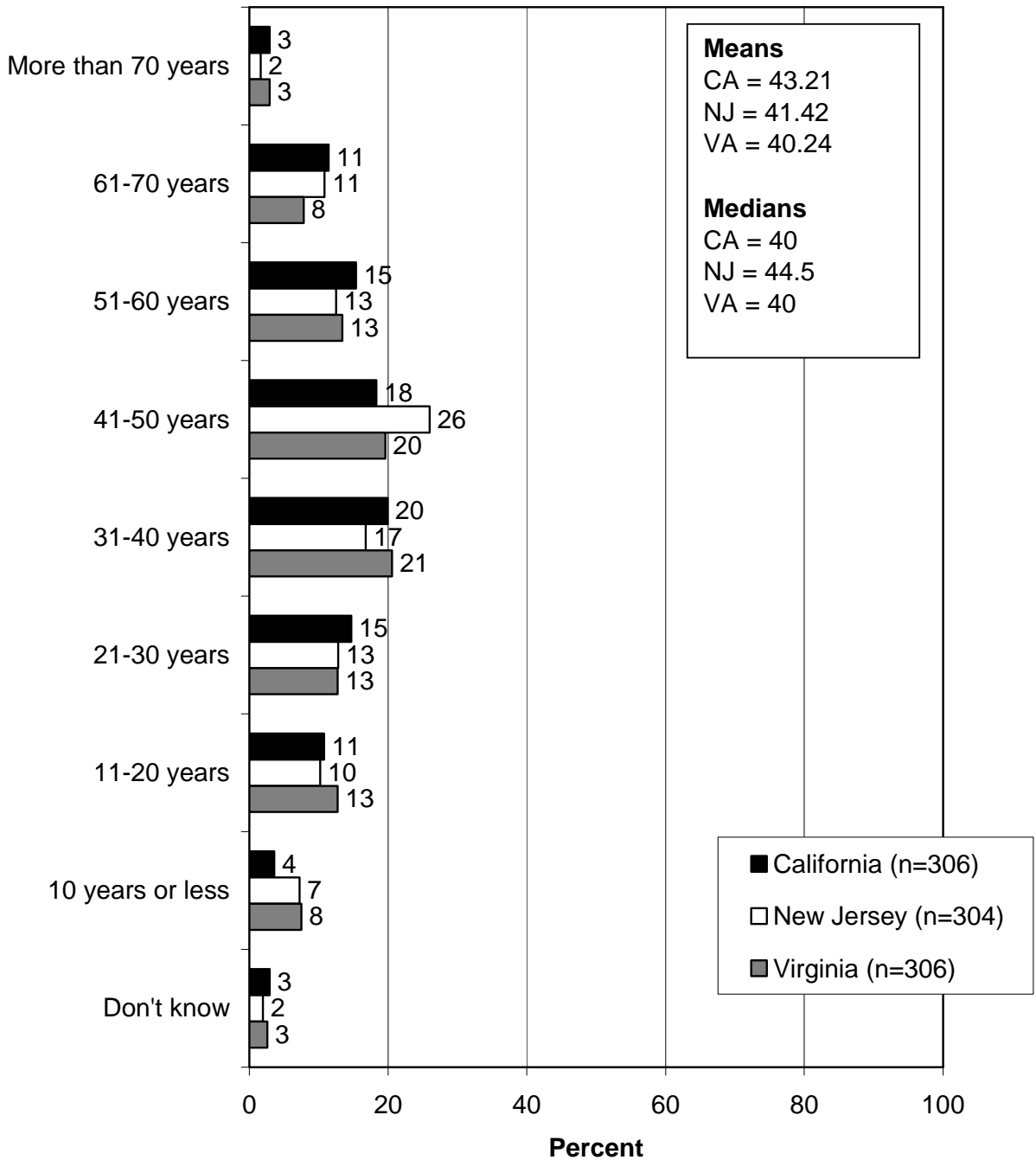
## DEMOGRAPHICS

- Majorities of respondents in each state were long-time anglers who have fished for more than 30 years. The mean number of years anglers have been fishing is 43.21 in California, 41.42 in New Jersey, and 40.24 in Virginia.
- The mean number of days anglers spend fishing each year is 30.32 in California, 35.02 in New Jersey, and 33.90 in Virginia.
- When asked whether they considered themselves to be primarily freshwater or saltwater anglers, there are marked differences among anglers in each state.
  - In California, anglers more commonly consider themselves freshwater anglers (44%) than saltwater anglers (27%); a substantial percentage consider themselves equally freshwater and saltwater anglers (28%).
  - In New Jersey, the majority of anglers (67%) consider themselves saltwater anglers; 19% consider themselves freshwater anglers, and 14% considered themselves equally freshwater and saltwater anglers.
  - In Virginia, nearly half of anglers (47%) consider themselves saltwater anglers, whereas 34% consider themselves freshwater anglers, and 19% consider themselves equally freshwater and saltwater anglers.
- The majority of anglers in California (67%) live in a large city or urban area or suburban area. The majority of anglers in New Jersey (71%) live in a suburban area or a small city or town. The majority of anglers in Virginia (66%) live in a large city or urban area, suburban area, or small city or town.
- The mean age of licensed anglers who completed this survey is 61.42 years old in California, 60.33 in New Jersey, and 58.74 in Virginia. Note that these results are not representative of anglers statewide. Licensed anglers who lived near waterways and within a 20-mile radius of a monofilament line recycling bin were randomly selected to complete this survey. Because this is a subset of statewide anglers (i.e., only those who live in close proximity to waterways were included in the sample), they are more likely than statewide anglers to be well-

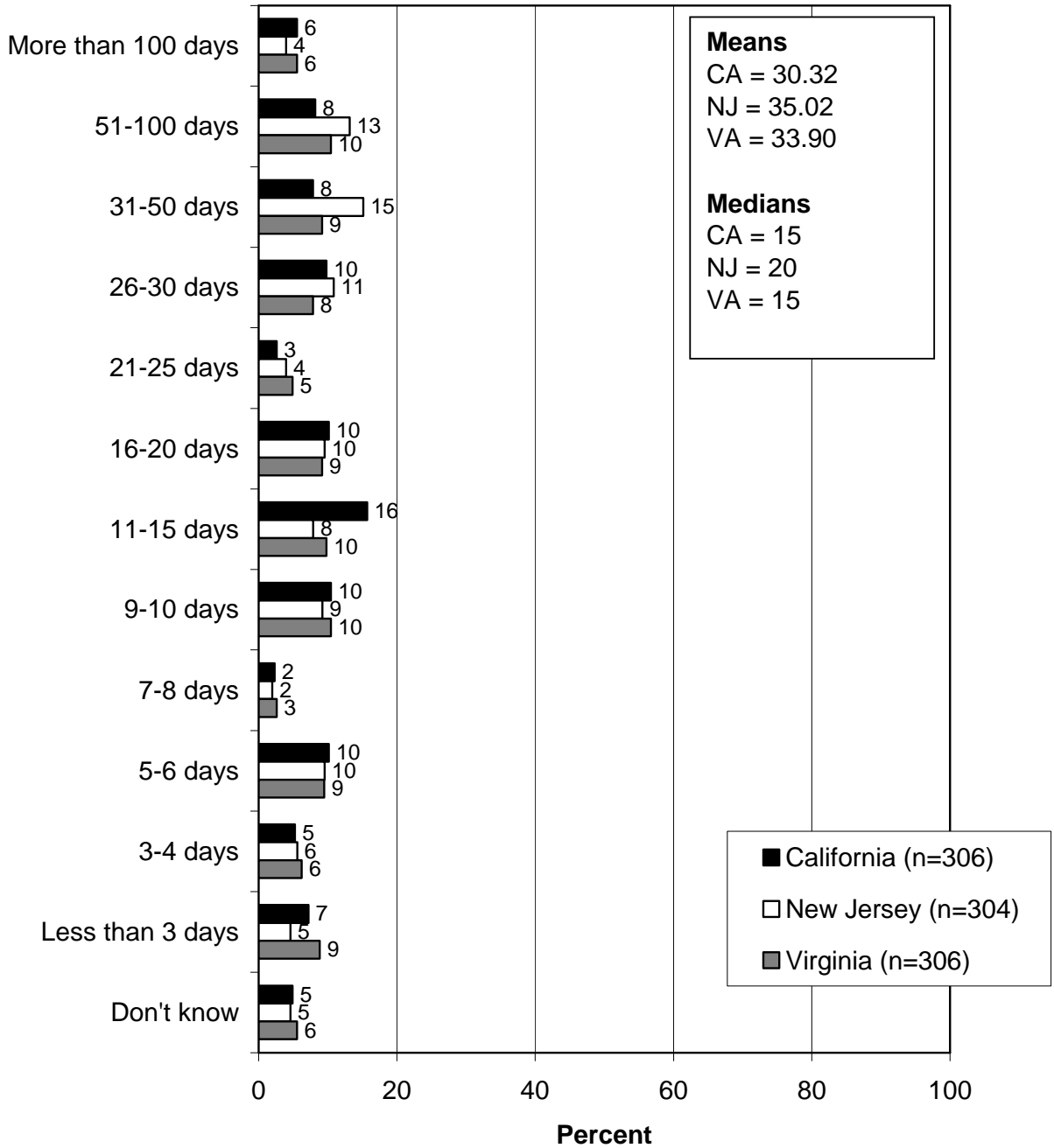
established, avid anglers because they live closer to water and have better access to fishing opportunities.

- Overwhelming majorities of respondents to the survey (91% in California, 93% in New Jersey, and 88% in Virginia) were male.

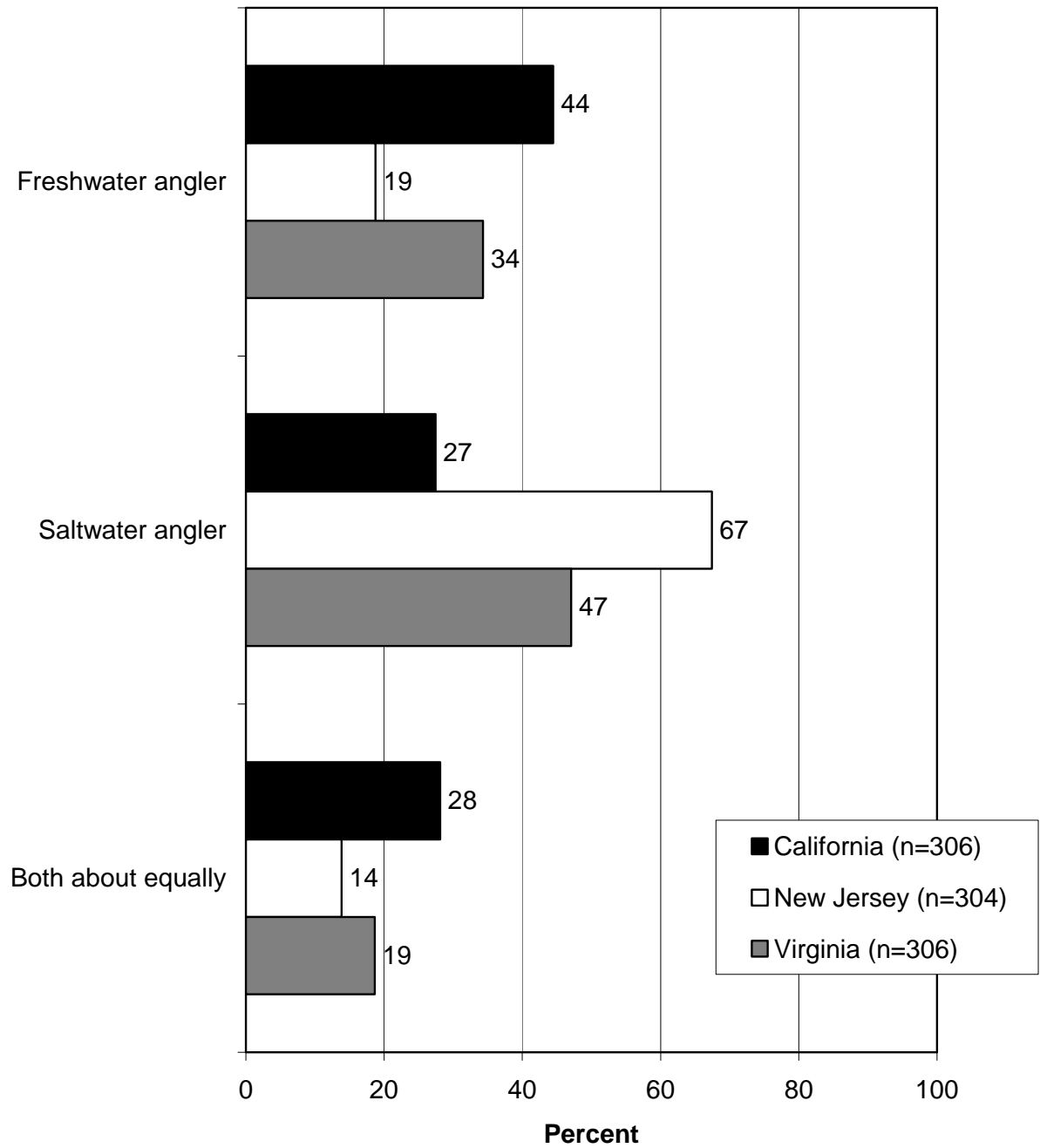
### Q11. How many years have you been fishing?



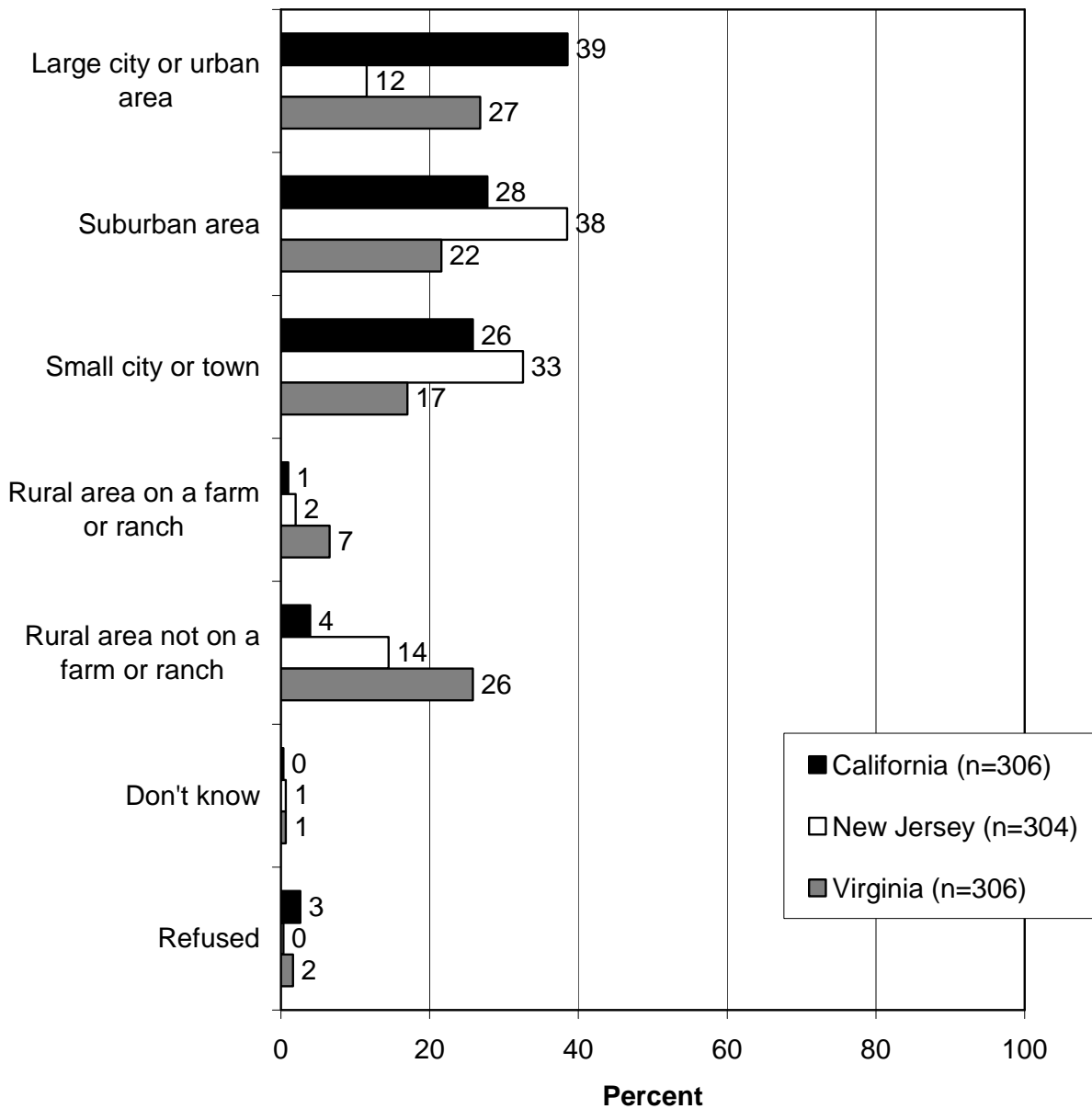
**Q13. About how many days do you usually fish each year?**



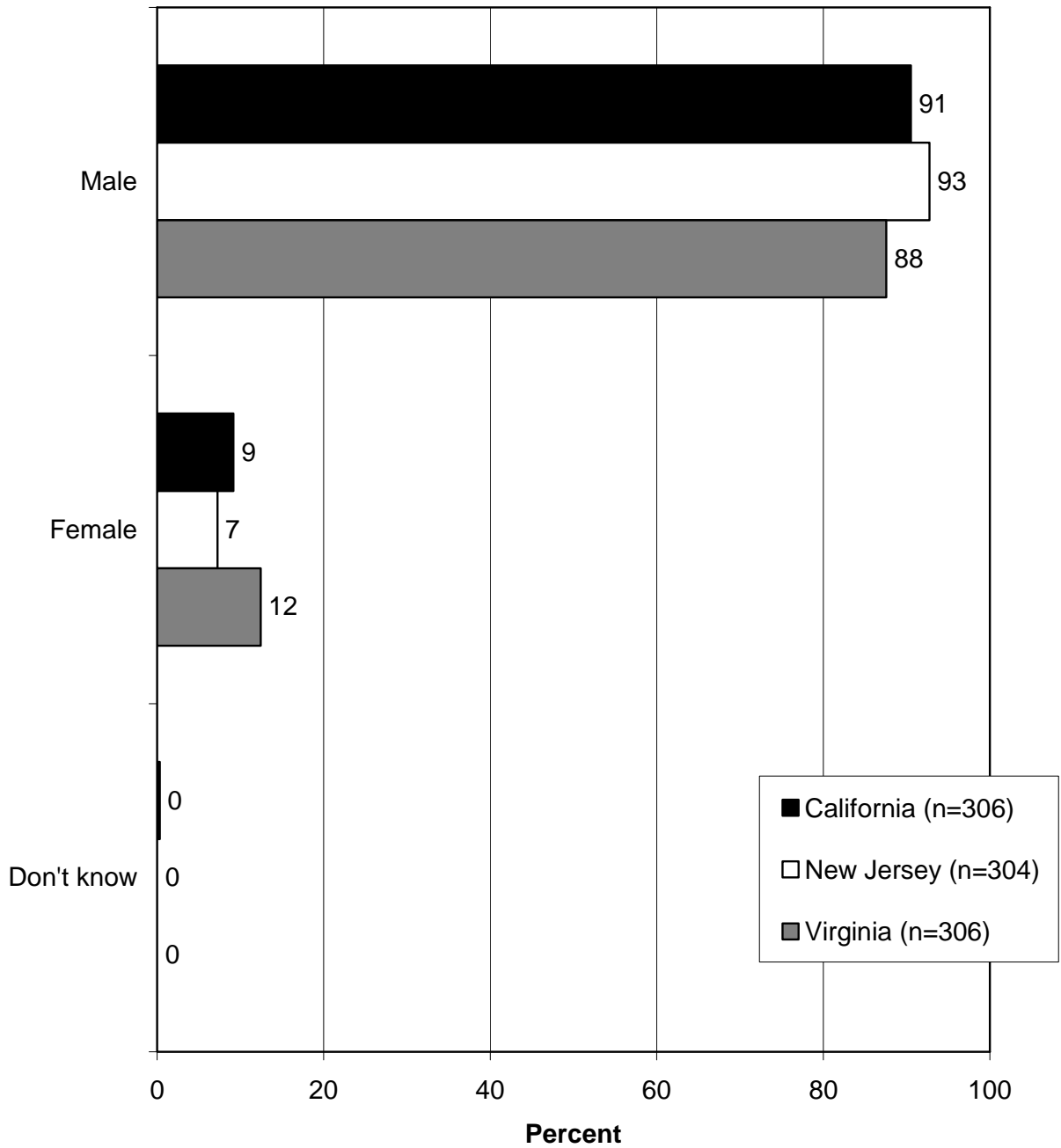
**Q15. In general, do you consider yourself to be primarily a freshwater angler or a saltwater angler?**



**Q129. 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?**



**Q136. Respondent's gender (observed, not asked, by interviewer).**



## **ABOUT RESPONSIVE MANAGEMENT**

Responsive Management is a nationally recognized public opinion and attitude survey research firm specializing in natural resource and outdoor recreation issues. Its mission is to help natural resource and outdoor recreation agencies and organizations better understand and work with their constituents, customers, and the public.

Utilizing its in-house, full-service, computer-assisted telephone and mail survey center with 45 professional interviewers, Responsive Management has conducted more than 1,000 telephone surveys, mail surveys, personal interviews, and focus groups, as well as numerous marketing and communications plans, need assessments, and program evaluations on natural resource and outdoor recreation issues.

Clients include most of the federal and state natural resource, outdoor recreation, and environmental agencies, and most of the top conservation organizations. Responsive Management also collects attitude and opinion data for many of the nation's top universities, including the University of Southern California, Virginia Tech, Colorado State University, Auburn, Texas Tech, the University of California—Davis, Michigan State University, the University of Florida, North Carolina State University, Penn State, West Virginia University, and others.

Among the wide range of work Responsive Management has completed during the past 20 years are studies on how the general population values natural resources and outdoor recreation, and their opinions on and attitudes toward an array of natural resource-related issues. Responsive Management has conducted dozens of studies of selected groups of outdoor recreationists, including anglers, boaters, hunters, wildlife watchers, birdwatchers, park visitors, historic site visitors, hikers, and campers, as well as selected groups within the general population, such as landowners, farmers, urban and rural residents, women, senior citizens, children, Hispanics, Asians, and African-Americans. Responsive Management has conducted studies on environmental education, endangered species, waterfowl, wetlands, water quality, and the reintroduction of numerous species such as wolves, grizzly bears, the California condor, and the Florida panther.

Responsive Management has conducted research on numerous natural resource ballot initiatives and referenda and helped agencies and organizations find alternative funding and increase their memberships and donations. Responsive Management has conducted major agency and organizational program needs assessments and helped develop more effective programs based upon a solid foundation of fact. Responsive Management has developed websites for natural resource organizations, conducted training workshops on the human dimensions of natural resources, and presented numerous studies each year in presentations and as keynote speakers at major natural resource, outdoor recreation, conservation, and environmental conferences and meetings.

Responsive Management has conducted research on public attitudes toward natural resources and outdoor recreation in almost every state in the United States, as well as in Canada, Australia, the United Kingdom, France, Germany, and Japan. Responsive Management routinely conducts surveys in Spanish and has also conducted surveys and focus groups in Chinese, Korean, Japanese, and Vietnamese.

Responsive Management's research has been featured in most of the nation's major media, including CNN, ESPN, *The Washington Times*, *The New York Times*, *Newsweek*, *The Wall Street Journal*, and on the front pages of *The Washington Post* and *USA Today*.

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