

Responsive Management™



MARYLAND DEER HUNTERS' ATTITUDES TOWARD CHRONIC WASTING DISEASE AND ITS IMPACTS ON THEIR HUNTING PARTICIPATION

Conducted for the Maryland Department of Natural Resources

by Responsive Management

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EXECUTIVE SUMMARY

INTRODUCTION AND METHODOLOGY

This study was conducted for the Maryland Department of Natural Resources (hereinafter referred to as the DNR) to determine deer hunters' opinions on and attitudes toward Chronic Wasting Disease (CWD) and the effect CWD has on their deer hunting participation. In 2011, a white-tailed deer harvested by a hunter in Allegany County, Maryland, during the prior year tested positive for CWD. Allegany County borders Hampshire County, West Virginia, where CWD was detected in 2005. In Maryland, CWD has remained confined to a designated Chronic Wasting Disease Management Area (CWDMA) in eastern Allegany County because of the DNR's enforcement of several management strategies designed to prevent the spread of CWD throughout the state. These include a baiting and feeding ban on white-tailed deer and carcass transportation restrictions. In addition to measuring the overall effect of CWD on deer hunting participation, this study examined attitudes toward these regulations.

This study entailed a telephone survey of deer hunters who had checked a deer in one of four areas of varying proximity to the CWDMA within the last 5 years. The areas included Allegany County in the CWDMA; Allegany County outside of the CWDMA; Garrett County (adjacent to Allegany County and somewhat removed from the CWDMA); and Dorchester County (located far outside of the CWDMA on the opposite side of the state and selected for comparison purposes).

In the results, the four respondent groups are referred to as the following: "Allegany County hunters in the CWDMA" (those who harvested deer in Allegany County in the CWDMA); "Allegany County hunters outside the CWDMA" (those who harvested deer in Allegany County outside the CWDMA); "Garrett County hunters" (those who harvested deer in Garrett County); and "Dorchester County hunters" (those who harvested deer in Dorchester County).

As previously mentioned, each respondent sample was based on the area in which the hunter had checked a deer within the last 5 years. The designations above do *not* necessarily refer to the county or area of the hunter's residence, nor do they imply that the hunter hunted deer *only* in that county or area. Also note that each respondent group consisted of deer hunters, despite the

species not always being specified in the respondent designation (i.e., “Garret County hunters” instead of “Garrett County deer hunters”). The sample of deer hunters was obtained from the DNR and was representative of all hunters who had checked deer in the areas established for the study.

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones among the sample of deer hunters (both landlines and cell phones were called). 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.

The telephone survey questionnaire was developed cooperatively by Responsive Management and the DNR, based on the research team’s familiarity with surveys about hunting and natural resources. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

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. The survey was conducted in August 2013. The software used for data collection was Questionnaire Programming Language (QPL). Note that many survey questions referred specifically to the county in which the respondent had originally checked a deer; for these questions, QPL automatically substituted the appropriate county name as necessary. Responsive Management obtained a total of 1,524 completed interviews. The analysis of data was performed using Statistical Package for the Social Sciences as well as proprietary software developed by Responsive Management.

GENERAL DEER HUNTING PARTICIPATION IN ALLEGANY, GARRETT, AND DORCHESTER COUNTY

- Large majorities of hunters in the four areas had hunted deer all 5 of the previous 5 years, although Allegany County hunters in the CWDMA were the least likely to have done so (64% of Allegany hunters in the CWDMA said they had hunted all 5 years, compared to 75% to 80% of hunters in the three areas outside of the CWDMA) ($p \leq 0.001$). At least three-quarters of hunters in the four areas (from 76% to 91%) named 2012 as the last year they hunted deer in Allegany, Garrett, or Dorchester County.

- The survey asked respondents whether the deer population in Allegany, Garrett, or Dorchester County was too high, just right, or too low during the last year in which they hunted deer in the county. A majority of hunters in all areas except Dorchester County said that the deer population had been too low, with Allegany County hunters in the CWDMA being the most likely of the four groups to give this answer ($p \leq 0.001$).
 - Among **Allegany County hunters in the CWDMA**, 74% described the deer population as being too low during the last year in which they hunted deer in the county. Meanwhile, 23% said it was just right, and 1% said the population had been too high.
 - Among **Allegany County hunters outside the CWDMA**, two-thirds (66%) said the deer population was too low during the last year they hunted deer in the county, compared to 28% who said it was just right and 4% who said it was too high.
 - Among **Garrett County hunters**, just over half (56%) responded that the deer population had been too low, with 29% saying it was just right and 13% saying it was too high.
 - **Dorchester County hunters** had the highest overall satisfaction with the deer population in the county during the last year they hunted: the most common response among this group was that the deer population had been just right (46% gave this answer), compared to 20% who said the population had been too high and 29% who said it had been too low.

- Asked about their most important reason for hunting deer in Allegany, Garrett, or Dorchester County, hunters in the four areas most commonly say they go for the meat (between 36% and 42% give this response), followed by for the sport and recreation (from 24% to 31% name

this as their most important reason for deer hunting). Smaller percentages say they hunt deer to be with family and friends or to be close to nature, while relatively few hunters say they go deer hunting for a trophy.

- Allegany County hunters in the CWDMA were more likely to say that they hunt deer mostly on public land when hunting in that county ($p \leq 0.001$), while majorities of hunters in the three other areas were more likely to say that they hunt deer mostly on private land in Allegany, Garrett, or Dorchester County ($p \leq 0.001$).
 - Among **Allegany County hunters in the CWDMA**, 47% hunt deer mostly on public land, compared to 26% who hunt mostly on private land and 26% who hunt on public and private land about equally.
 - Among **Allegany County hunters outside the CWDMA**, more than half (58%) hunt deer mostly on private land in Allegany County, compared to 14% who hunt mostly on public land and 27% who hunt on both types of land about equally.
 - Among **Garrett County hunters**, a majority (59%) hunt deer mostly on private land in that county, while 14% hunt mostly on public land and 27% hunt on public and private land about equally.
 - **Dorchester County hunters** were the most likely to indicate hunting mostly on private land in that county, with 82% giving this answer ($p \leq 0.001$); meanwhile, just 9% hunt deer mostly on public land and 8% hunt on public and private land about equally.
- A large majority of hunters in the four areas (from 63% to 83%) said they considered Allegany, Garrett, or Dorchester County to be a primary deer hunting location, although Allegany County hunters in the CWDMA had the lowest percentage of respondents saying this.
- A question in the survey asked hunters whether they had hunted sika deer in Maryland in the past 5 years: while overwhelming majorities of hunters in Allegany County in and outside of the CWDMA and Garrett County had not, more than two-thirds of hunters in Dorchester County (69%) had done so.

LAND OWNERSHIP AND RELATED DEER HUNTING

- No more than a fifth of hunters in the four areas (from 5% to 20%) owned land of at least 50 acres or more in Allegany, Garrett, or Dorchester County; Allegany hunters in the CWDMA were the least likely to own land of this size in Allegany County ($p \leq 0.001$).
 - Hunters who owned land of at least 50 acres or more in Allegany, Garrett, or Dorchester County were asked whether they had harvested any deer on the land they owned in the past 2 years, and the overwhelming majority of landowners in each area said they had done so (between 83% and 92% of landowners gave this response).

CONSTRAINTS AFFECTING DEER HUNTING PARTICIPATION

- The survey asked respondents whether anything had taken away from their enjoyment of deer hunting or kept them from going as much as they wanted to in the past 5 years. While deer hunters in all four areas most often said that nothing had taken away from their enjoyment or kept them from going, low deer populations and time constraints were frequently mentioned in each area.
 - Among **Allegany County hunters in the CWDMA**, 48% said that nothing had taken away from their enjoyment of deer hunting or kept them from going, while 17% named not enough game or the deer population being too low. A further 8% named Chronic Wasting Disease or the CWDMA specifically.
 - Among **Allegany County hunters outside the CWDMA**, 50% indicated that nothing took away from their enjoyment; on the other hand, 16% named a low deer population/not enough game, while 9% cited time-related constraints. Note that 3% of respondents in this area mentioned Chronic Wasting Disease or the CWDMA specifically.
 - Among **Garrett County hunters**, 46% said nothing affected their enjoyment of deer hunting, while 16% named not enough time or other obligations, and 10% named not enough game or the deer population being too low.
 - **Dorchester County** was the only area in which a majority of hunters (58%) said that nothing had taken away from their enjoyment of deer hunting or kept them from going. Otherwise, 14% named not having enough time/other obligations.

CHANGES IN DEER HUNTING PARTICIPATION SINCE 2010

- Deer hunters who last hunted deer in Allegany, Garrett, or Dorchester County in 2011 or 2012 were asked whether their deer hunting participation in the county had increased, stayed the same, or decreased since 2010 (the year in which a deer with Chronic Wasting Disease was first harvested in Maryland). Just over half of the hunters in the two Allegany County areas and in Garrett County (from 52% to 59%) indicated that their deer hunting had stayed the same, while the remainder of hunters in each area more often said their deer hunting since 2010 had *decreased* (from 31% to 35%) rather than *increased* (from 7% to 11%). The exception was Dorchester County: while 54% said that their deer hunting had stayed the same, the remainder were about as likely to say that their deer hunting had increased (24%) as they were to say it had decreased (21%).
- In follow-up, hunters who said their deer hunting in Allegany, Garrett, or Dorchester County had *increased* since 2010 were asked about the single most important reason for their increased participation, and the most common response from hunters in all four areas was simply having more time or fewer obligations.
 - Another follow-up question measured reasons for *decreased* participation: hunters who last hunted deer in Allegany, Garrett, or Dorchester County in 2010 were asked about the single most important reason why they had not hunted deer in the county since then, while hunters whose deer hunting participation had decreased since 2010 were asked about the single most important reason for the decrease in their participation. While Allegany hunters in and outside of the CWDMA most commonly gave a resource-related answer, such as not enough game or the deer population being too low (27% of Allegany County hunters in the CWDMA and 28% of Allegany County hunters outside of the CDWMA said this), Garrett and Dorchester hunters most commonly gave an answer relating to social reasons, such as not enough time or having other obligations (30% of Garrett County hunters and 32% of Dorchester County hunters mentioned this). Note that 9% of Allegany County hunters in the CWDMA mentioned being aware of a known Chronic Wasting Disease location or the CWDMA specifically.
- A final question asked all hunters in the sample whether their deer hunting participation *outside* of Allegany, Garrett, or Dorchester County had increased, stayed the same, or

decreased since 2010. Interestingly, while hunters from all four areas most commonly said it had stayed the same (from 46% to 55%), Allegany County hunters in the CWDMA were more likely than hunters in the other three areas to say that their deer hunting participation outside of the county had *increased* (28% of Allegany County hunters in the CWDMA said this, compared to 16% to 17% of hunters in the other three areas) ($p \leq 0.001$). Meanwhile, between 17% and 22% of hunters in the four areas said their deer hunting participation outside of their respective counties had decreased since 2010.

GENERAL KNOWLEDGE OF CHRONIC WASTING DISEASE

- Deer hunters were asked how much they knew about Chronic Wasting Disease, and the results suggest that Allegany County hunters in and outside of the CWDMA, compared to Garrett County and Dorchester County hunters, are more likely to know *a great deal* or *moderate amount* about it ($p \leq 0.001$). By contrast, Garrett and Dorchester County hunters are more likely to know only *a little* or *nothing at all* about the disease ($p \leq 0.001$).
 - Among **Allegany County hunters in the CWDMA**, 63% know a great deal or moderate amount about Chronic Wasting Disease (17% know a great deal), while 37% know a little or nothing (just 4% say they know nothing).
 - Among **Allegany County hunters outside the CWDMA**, 59% know a great deal or moderate amount (including 19% who know a great deal), and 40% know a little or nothing (including 5% who know nothing).
 - Among **Garrett County hunters**, less than half (46%) know a great deal or moderate amount (12% know a great deal), while 54% know a little or nothing (13% say they know nothing).
 - Among **Dorchester County hunters**, 47% know a great deal or moderate amount about the disease (11% know a great deal), and more than half (53%) know a little or nothing (including 12% who know nothing).
- While large majorities of hunters in all four areas were aware, prior to the survey, that a deer tested positive for Chronic Wasting Disease in Allegany County in 2011, Allegany County hunters in and outside of the CWDMA were more likely to be aware of this than were

hunters in Garrett or Dorchester County (from 80% to 83% of Allegany hunters were aware, compared to 63% to 67% of Garrett and Dorchester hunters) ($p \leq 0.001$).

- Around a quarter of hunters from the four areas (ranging from 22% to 26%) *agree* that humans can contract or be infected by Chronic Wasting Disease. Meanwhile, Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, are more likely to *disagree* that humans can contract or be infected by Chronic Wasting Disease: 47% of Allegany hunters in the CWDMA and 50% of Allegany hunters outside of the CWDMA disagree with this, compared to 29% of Garrett and Dorchester County hunters ($p \leq 0.001$). Note that Garrett and Dorchester County hunters are more likely to be unsure whether humans can contract Chronic Wasting Disease (38% and 42% of them, respectively, gave this response, compared to 24% of Allegany County hunters) ($p \leq 0.001$).
- There is strong overall awareness among deer hunters from the four areas that the DNR tests deer samples each year for Chronic Wasting Disease, although Allegany County hunters in and outside of the CWDMA are again more likely than their counterparts in the other areas to be aware of this: 81% of Allegany County hunters in and outside of the CWDMA indicated being aware of such testing prior to the survey, compared to 72% of Garrett County hunters and 69% of Dorchester County hunters ($p \leq 0.001$).
- Allegany County hunters in the CWDMA, compared to hunters in the other three groups, are the most likely to have read printed or online information about Chronic Wasting Disease from the Maryland DNR: a majority of them (61%) have read printed, online, or both types of information, while around half of Allegany County hunters outside the CWDMA (52%) and Dorchester County hunters (50%) have done so ($p \leq 0.001$). Meanwhile, just 40% of Garrett County hunters have read printed, online, or both types of information.
- Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, are more likely to know that there are specific ways of processing or butchering deer to minimize exposure to Chronic Wasting Disease: about three-quarters of hunters from Allegany County (both in and outside of the CWDMA) are

aware of this, compared to 63% of Garrett County hunters and just 51% of Dorchester County hunters ($p \leq 0.001$).

AWARENESS OF AND PROXIMITY TO THE CHRONIC WASTING DISEASE MANAGEMENT AREA

- Deer hunters were read a description of the CWDMA and asked whether they had been aware of the CWDMA prior to the survey. The results indicate that Allegany County deer hunters in and outside of the CWDMA, compared to Garrett and Dorchester County deer hunters, were more likely to be aware of the CWDMA prior to the survey: 76% of Allegany County hunters in the CWDMA and 70% of Allegany County hunters outside the CWDMA were aware of this, compared to just 39% of Garrett County hunters and 26% of Dorchester County hunters ($p \leq 0.001$).
- A follow-up question asked Allegany County *residents* in the sample if they lived within the CWDMA (that is, the portion of Allegany County known as Private Land Code 233 in the annual hunting guide): 41% of Allegany County hunters in the CWDMA, 12% of Allegany County hunters outside the CWDMA, and 21% of Garrett County hunters indicated currently living within the CWDMA. (Note that no Dorchester County deer hunters in the sample were Allegany County residents; therefore, no Dorchester County deer hunters received the follow-up questions pertaining to residence within the CWDMA.)
- Another question asked Allegany County residents who did *not* live within the CWDMA how far, in miles, they lived from the area: Allegany hunters in the CWDMA lived a mean distance of 19.43 miles from the area (median of 15 miles); Allegany hunters outside the CWDMA lived a mean distance of 20.90 miles from the area (median of 20 miles); and Garrett hunters (who live in Allegany County but not in the CWDMA) lived a mean distance of 27.54 miles from the area (median of 25 miles).
- Finally, Allegany deer hunters who owned land of 50 acres or more in Allegany County were asked whether any portion of the land was located within the CWDMA: 62% of landowner Allegany hunters in the CWDMA said that at least a portion of their land was located within the CWDMA, compared to just 10% among landowner Allegany hunters outside the CWDMA.

HUNTING PARTICIPATION IN AND NEAR THE CHRONIC WASTING DISEASE MANAGEMENT AREA

- Deer hunters were asked whether they had hunted deer in the CWDMA *prior to* the discovery of Chronic Wasting Disease in 2011, and Allegany County hunters in the CWDMA were, by far, the group most likely to have done so: roughly three-quarters of them (74%) hunted deer in the area during this time period, compared to a third of Allegany County hunters outside the CWDMA (33%), 7% of Garrett County hunters, and 10% of Dorchester County hunters ($p \leq 0.001$).
 - From 88% to 97% of deer hunters from the four areas who hunted deer in the CWDMA prior to the discovery of CWD hunted bucks, while 58% to 83% hunted does (note that Dorchester County had the lowest percentage of those who hunted does in the area during this time period).

- The survey asked deer hunters whether they had hunted deer in the CWDMA *since* the discovery of Chronic Wasting Disease in 2011 (i.e., during the 2011 or 2012 hunting season), and responses generally showed a notable drop in participation following the discovery of CWD. Allegany County hunters in the CWDMA were again the group most likely to have hunted in the CWDMA, with slightly more than half of them (56%) hunting deer in the CWDMA during the 2011 or 2012 hunting season (recall that 74% had hunted deer in the area *prior to* the discovery of CWD) ($p \leq 0.001$). Meanwhile, 21% of Allegany County hunters outside the CWDMA hunted deer in the CWDMA during the 2011 or 2012 hunting season (33% of them had hunted deer in the area *prior to* the discovery of CWD), 4% of Garrett County hunters (7% hunted deer in the area *prior to* the discovery of CWD), and 3% of Dorchester County hunters (10% hunted deer in the area *prior to* the discovery of CWD). (Note that a total of only 16 Garrett County hunters and 11 Dorchester County hunters hunted deer in the CWDMA after the discovery of CWD in 2011; these numbers should be kept in mind when interpreting the results below.)
 - Regarding the type of land deer hunters hunted on when hunting in the CWDMA after the discovery of CWD in 2011, Allegany County hunters in the CWDMA most often hunted on public land (55%), while 22% hunted mostly on private land and 23% hunted on both types of land about equally. Allegany County hunters outside the CWDMA were

divided rather evenly: 35% hunted mostly on public land, 32% hunted mostly on private land, and 33% hunted on both types about equally. Garrett County hunters most often hunted on private land (56%), while the remaining 44% hunted mostly on public land. Finally, Dorchester County hunters most commonly hunted on public land (36%), followed by 27% who hunted mostly on private land and 27% who hunted on both types about equally.

- Among those who hunted deer in the CWDMA after the discovery of CWD in 2011, 97% of Allegany County hunters in the CWDMA and 85% of Allegany County hunters outside the CWDMA said they hunted bucks, while 56% of Garrett County hunters and 73% of Dorchester County hunters indicated the same. Meanwhile, 77% of Allegany County hunters in the CWDMA, 69% of Allegany County hunters outside the CWDMA, 56% of Garrett County hunters, and 64% of Dorchester County hunters hunted does in the CWDMA following the discovery of CWD in 2011.
 - Those who hunted deer in the CWDMA after the discovery of CWD in 2011 were asked whether they had personally harvested any deer in the area: 66% of Allegany County hunters in the CWDMA, 47% of Allegany County hunters outside the CWDMA, 38% of Garrett County hunters, and 9% of Dorchester County hunters indicated that they had done so.
- Deer hunters in the sample who last hunted deer in Allegany, Garrett, or Dorchester County in 2011 or 2012 were asked whether they had personally harvested any deer in the county since the discovery of CWD (Allegany hunters, both in and outside of the CWDMA, were asked whether they had harvested deer in Allegany County *outside* of the CWDMA). While only about a third of Allegany County hunters in the CWDMA (36%) indicated that they had harvested a deer in Allegany County outside of the CWDMA, at least two-thirds of each of the other three groups had done the same in their respective counties, including 66% of Allegany County hunters outside the CWDMA, 77% of Garrett County hunters, and 87% of Dorchester County hunters.
- A question asked deer hunters in the four areas how close, in miles, to the CWDMA they were willing to hunt deer. In general, the results suggest that while Allegany County hunters

are willing to hunt deer fairly close to the CWDMA (particularly those from the group that previously harvested a deer within the CWDMA), their Garrett and Dorchester County counterparts prefer to hunt a greater distance from the area. A majority of Allegany County hunters in the CWDMA (63%) indicated being willing to hunt less than a mile from the CWDMA, while 41% of Allegany County hunters outside the CWDMA, 22% of Garrett County hunters, and 31% of Dorchester County hunters gave the same answer. At the same time, 14% of Allegany County hunters in the CWDMA, 22% of Allegany County hunters outside the CWDMA, 36% of Garrett County hunters, and 33% of Dorchester County hunters were unsure how close to the CWDMA they would be willing to hunt deer. The median distance deer hunters in each area would be willing to hunt from the CWDMA illustrates the differences between Allegany County hunters and Garrett and Dorchester County hunters: Allegany County hunters in and outside of the CWDMA had a median distance of 0 miles, compared to a median distance of 5 miles for Garrett County hunters and 4 miles for Dorchester County hunters.

- It was hypothesized that the closer Allegany and Garrett County hunters lived to the CWDMA, the closer these hunters would be willing to hunt deer to the CWDMA. However, when the two data points (i.e., number of miles the respondent's residence was located from the CWDMA and number of miles the respondent was willing to hunt to the CWDMA) were plotted, it was determined that no relationship existed between the two—this held true for both Allegany and Garrett County hunters. (Note that the correlation could not be tested for Dorchester County hunters, as none of these individuals were residents of Allegany County and so did not provide a response for the first data point.)
- Two questions, asked of those who hunted in the CWDMA *since* the discovery of CWD, measured awareness and use of deer carcass disposal dumpsters located in the area. The results indicate that Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, were more likely to be aware of the dumpsters prior to the survey: more than three-quarters of Allegany County hunters in the CWDMA (80%) and two-thirds of Allegany County hunters outside the CWDMA (67%) were aware of the carcass disposal dumpsters prior to the survey, compared to 50% of Garrett County hunters and 45% of Dorchester County hunters ($p \leq 0.005$). The follow-up question found that about

a third of Allegany County hunters in the CWDMA (33%) and Allegany County hunters outside the CWDMA (30%) had used one of the dumpsters before, compared to just 13% of Garrett County hunters. (No Dorchester County hunters had ever used a carcass disposal dumpster.)

OPINIONS ON THE IMPACT OF CHRONIC WASTING DISEASE ON DEER HUNTING PARTICIPATION

The survey included seven questions measuring the extent to which CWD had impacted deer hunters' hunting participation in Maryland as a whole, as well as in Allegany, Garrett, or Dorchester County (note that, as in previous questions, the survey inserted the specific county name into each question depending on the respondent's deer harvest area). Respondents were asked whether they agreed or disagreed with the following statements:

- Chronic Wasting Disease has caused you to change where you hunt deer in Maryland.
 - Chronic Wasting Disease has caused you to deer hunt less in Maryland in general.
 - Chronic Wasting Disease has caused you to stop deer hunting completely in Maryland.
 - Chronic Wasting Disease has caused you to deer hunt less in [county name] County.
 - Chronic Wasting Disease has caused you to stop deer hunting completely in [county name] County.
 - Chronic Wasting Disease has caused you to stop hunting bucks in [county name] County.
 - Chronic Wasting Disease has caused you to stop hunting does in [county name] County.
- Overall, the results suggest that CWD has had little impact on deer hunters' overall participation, as overwhelming majorities of deer hunters in the four areas strongly or moderately disagreed with each of the seven statements (also recall that large majorities of hunters in each of the four areas indicated in an earlier question having hunted deer all five of the previous five years). Indeed, the results indicate that the greatest impact CWD has had on deer hunters is in causing some of them to change where they hunt deer in Maryland:
- In looking at the results by the percentage of each deer hunter group in *strong* or *moderate* agreement with each statement, the statement with the most overall agreement is that CWD has caused hunters to change where they hunt deer in Maryland: 19% of Allegany County hunters in the CWDMA, 14% of Allegany County hunters outside the CWDMA, and 10% of Garrett and Dorchester County hunters agree with this.
 - Additionally, 12% of Allegany County hunters in the CWDMA *strongly* or *moderately* agree that CWD has caused them to hunt deer less in Allegany County.

- No other statement in the series had more than 9% of hunters from any area in agreement. Also note that for each statement, the most agreement (though generally slight) came from Allegany County hunters in the CWDMA.
- Those who hunted in the CWDMA prior to or since the discovery of CWD were asked two questions measuring the effect of management regulations within the CWDMA on their deer hunting participation in the area. The results suggest that these deer hunters do not view the regulations as having caused them to stop hunting deer within the CWDMA.
- The first question asked these deer hunters whether they agreed or disagreed that the *carcass movement restriction* within the CWDMA has caused them to stop deer hunting in the area: overwhelming majorities of deer hunters from each of the four areas (between 80% and 86%) disagree with this, with most disagreement being *strong*; meanwhile, between 5% and 19% of deer hunters from each area were in agreement (the most agreement was from Allegany County hunters outside the CWDMA).
 - The second question asked deer hunters who had hunted in the CWDMA prior to or since the discovery of CWD whether they agreed or disagreed that *the prohibition of baiting deer* within the CWDMA had caused them to stop deer hunting in the area: as before, overwhelming majorities of hunters from each area (from 84% to 92%) were in disagreement, with most *strongly* disagreeing; at the other end of the spectrum, only between 3% and 9% of respondents from each area agree that the regulation caused them to stop hunting deer in the CWDMA (the most agreement was from Allegany County hunters in the CWDMA).
- The survey included three questions exploring hypothetical reactions from deer hunters to the discovery of CWD in an area where they hunt deer. These questions found that while the discovery of CWD itself would cause less than a third of respondents from each area to stop hunting deer in the area, greater percentages of hunters would stop hunting in the area given the prohibition of deer baiting and whole deer carcass removal. In general, the results indicate that Allegany County hunters in the CWDMA are the least likely of the four groups to agree that they would stop deer hunting in an area upon the discovery of CWD ($p \leq 0.005$)

and the introduction of related regulations ($p \leq 0.001$).

The results below consider the percentage of hunters in each area who *strongly* or *moderately* agree that they would stop hunting deer in the area given each scenario:

- Among **Allegany County hunters in the CWDMA**, 16% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 18% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 30% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Allegany County hunters outside the CWDMA**, 22% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 28% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 39% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Garrett County hunters**, 27% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 37% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 49% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Dorchester County hunters**, 27% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 33% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 44% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.

MEMBERSHIP IN HUNTING CLUBS AND LAND LEASES

- Dorchester County hunters, compared to hunters in the other three areas, were the most likely to have belonged to a deer hunting club or land lease for the purpose of hunting deer in the county *in the past 2 years*: 48% of Dorchester County hunters belonged to such a club or lease, compared to 14% of Allegany County hunters in the CWDMA, 26% of Allegany County hunters outside the CWDMA, and 19% of Garrett County hunters ($p \leq 0.001$).

- Results followed the same pattern regarding membership in deer hunting clubs or land lease for the purpose of hunting deer in the county *prior to 2011*, with Dorchester County hunters being the most likely of the four groups to belong to such clubs and land leases: 53% of Dorchester County hunters belonged to such a club or lease prior to 2011, compared to 18% of Allegany County hunters in the CWDMA, 31% of Allegany County hunters outside the CWDMA, and 21% of Garrett County hunters ($p \leq 0.001$).

- Deer hunters who said they had been members of such clubs or land leases were asked whether they had been members of clubs or land leases for the purpose of hunting deer in the CWDMA *in the past 2 years*, as well as *prior to the discovery of CWD in 2011*.
 - Regarding the time period in the past 2 years: 50% of Allegany County hunters in the CWDMA, 22% of Allegany County hunters outside the CWDMA, and 9% of Garrett County hunters who had been members of deer hunting clubs or land leases said they belonged to such clubs/leases for the purpose of hunting deer in the CWDMA.
 - Regarding the time period prior to the discovery of CWD in 2011: 46% of Allegany County hunters in the CWDMA, 25% of Allegany County hunters outside the CWDMA, 36% of Garrett County hunters, and 22% of Dorchester County hunters who had been members of deer hunting clubs or land leases said they belonged to such clubs/leases for the purpose of hunting deer in the CWDMA.

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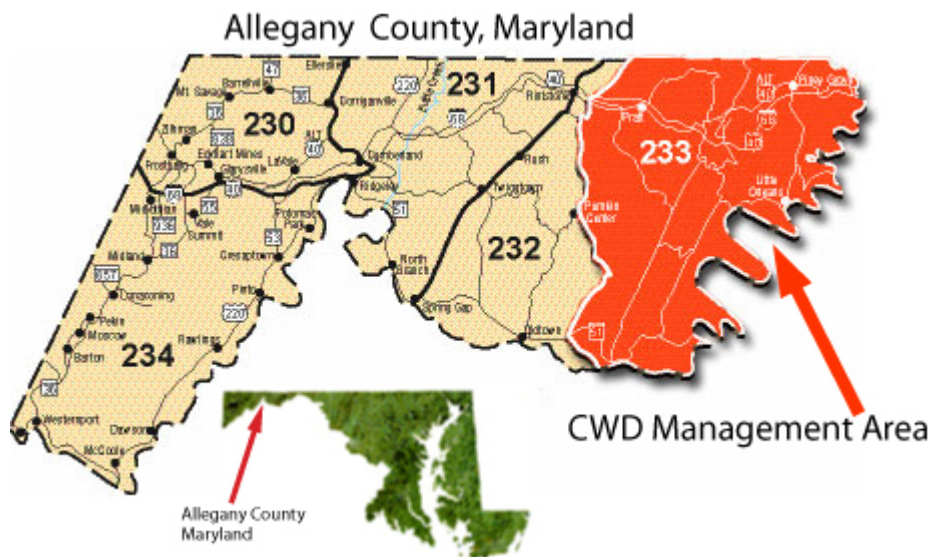
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INTRODUCTION AND METHODOLOGY

This study was conducted for the Maryland Department of Natural Resources (hereinafter referred to as the DNR) to determine deer hunters' opinions on and attitudes toward Chronic Wasting Disease (CWD) and the effect CWD has on their deer hunting participation. In 2011, a white-tailed deer harvested by a hunter in Allegany County, Maryland, during the prior year tested positive for CWD. Allegany County borders Hampshire County, West Virginia, where CWD was detected in 2005. In Maryland, CWD has remained confined to a designated Chronic Wasting Disease Management Area (CWDMA) in eastern Allegany County because of the DNR's enforcement of several management strategies designed to prevent the spread of CWD throughout the state (see the map below detailing the CWDMA). These include a baiting and feeding ban on white-tailed deer and carcass transportation restrictions. In addition to measuring the overall effect of CWD on deer hunting participation, this study examined attitudes toward these regulations.

For more information about CWD in Maryland, the DNR has created a webpage offering information on its Response Plan, associated regulations, and a map of the affected area at the following address: www.dnr.state.md.us/wildlife/Hunt_Trap/deer/disease/cwdinformation.asp.

CWD in Allegany County, Maryland



Source: Maryland Department of Natural Resources website, available at www.dnr.state.md.us/wildlife/Hunt_Trap/deer/disease/cwd_Mgt_Zone.asp

This study entailed a telephone survey of deer hunters who had checked a deer in one of four areas of varying proximity to the CWDMA within the last 5 years. The areas included Allegany County in the CWDMA; Allegany County outside of the CWDMA; Garrett County (adjacent to Allegany County and somewhat removed from the CWDMA); and Dorchester County (located far outside of the CWDMA on the opposite side of the state and selected for comparison purposes). Additional aspects of the research methodology are detailed 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 the sample of deer hunters (both landlines and cell phones were called). 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 the DNR, based on the research team's familiarity with surveys about hunting and natural resources. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

SURVEY SAMPLE

The sample of deer hunters was obtained from the DNR and was representative of all hunters who had checked deer in the areas established for the study. The number of interviews completed in each of the four areas is shown in the tabulation below.

Deer Harvest Area	Total
Allegany County in CWDMA	280
Allegany County outside CWDMA	410
Garrett County	422
Dorchester County	412

Note that, for the sake of readability, the four respondent groups are referred to in slightly different ways on the graph legends and in the discussion of results throughout the report:

Designation on Graph Legend	Designation in Discussion of Survey Results
Harvested deer in Allegany County (in CWDMA)	"Allegany County hunters in the CWDMA"
Harvested deer in Allegany County (outside CWDMA)	"Allegany County hunters outside the CWDMA"
Harvested deer in Garrett County	"Garrett County hunters"
Harvested deer in Dorchester County	"Dorchester County hunters"

As previously mentioned, each respondent sample was based on the area in which the hunter had checked a deer within the last 5 years. The designations above do *not* necessarily refer to the county or area of the hunter's residence, nor do they imply that the hunter hunted deer *only* in that county or area. Also note that each respondent group consisted of deer hunters, despite the species not always being specified in the respondent designation (i.e., "Garret County hunters" instead of "Garrett County deer hunters").

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. The survey was conducted in August 2013.

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. Note that many survey questions referred specifically to the county in which the respondent had originally checked a deer; for these questions, QPL automatically substituted the appropriate county name as necessary.

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 1,524 completed interviews. The total sample size on some questions is less than 1,524 because the survey asked some questions only of specific respondents in the survey. In particular, this was done when a follow-up question did not apply to some respondents. For instance, only those who hunted deer in the Chronic Wasting Disease Management Area were asked follow-up questions about the types of deer (i.e., bucks and does) they hunted in the area.

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., the number of miles from the CWDMA they would be willing to hunt deer), 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.

SAMPLING ERROR

Throughout this report, findings of the telephone survey are reported at a 95% confidence interval. For the overall sample of Maryland deer hunters who harvested a deer in one of the four areas in the past 5 years, the sampling error is at most plus or minus 2.37 percentage points; individual sampling errors were calculated separately for each of the four respondent groups based on the respective sample and population sizes. These are shown in the tabulation below, with the formula used for calculating the sampling errors following.

Group	Sampling Error	Sample Size	Population Size
Harvested deer in Allegany County (in CWDMA)	± 5.49 percentage points	280	2,276
Harvested deer in Allegany County (outside CWDMA)	± 4.57 percentage points	410	3,838
Harvested deer in Garrett County	± 4.50 percentage points	422	3,883
Harvested deer in Dorchester County	± 4.57 percentage points	412	3,919

Sampling Error Equation

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

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

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

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

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 a great deal - a moderate amount - a little - nothing at all.
- 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 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).

Finally, some graphs pertain to more than one section of the report, so these graphs are discussed in more than one section of the report. In these instances when the graph is discussed in more than one section, the graph is only shown in one section with a call-out in the other section indicating where the graph is located.

SURVEY RESULTS

GENERAL DEER HUNTING PARTICIPATION IN ALLEGANY, GARRETT, AND DORCHESTER COUNTY

- Large majorities of hunters in the four areas had hunted deer all 5 of the previous 5 years, although Allegany County hunters in the CWDMA were the least likely to have done so (64% of Allegany hunters in the CWDMA said they had hunted all 5 years, compared to 75% to 80% of hunters in the three areas outside of the CWDMA) ($p \leq 0.001$). At least three-quarters of hunters in the four areas (from 76% to 91%) named 2012 as the last year they hunted deer in Allegany, Garrett, or Dorchester County.

- A graph shows the other Maryland counties in which hunters in the four areas had hunted deer in the past 5 years, as well as the percentage of hunters in each area who did not hunt in any other counties in the past 5 years.
 - Among **Allegany County hunters in the CWDMA**, the top other counties in which hunters had hunted deer in the past 5 years included Washington (32% had hunted here), Garrett (16%), Frederick (14%), Worcester (13%), and Montgomery (10%). Meanwhile, 31% of Allegany County hunters in the CWDMA did not hunt in any other counties in the past 5 years.
 - Among **Allegany County hunters outside the CWDMA**, 53% did not hunt in any other counties in the past 5 years. Otherwise, the top counties in which hunters had hunted deer in the past 5 years were Garrett (19%) and Washington (15%).
 - Among **Garrett County hunters**, two-thirds (67%) did not hunt in any other counties in the past 5 years, while small percentages hunted deer in Allegany (10%), Washington (7%), and Worcester (5%).
 - Among **Dorchester County hunters**, hunters most commonly said they had not hunted in any other counties in the past 5 years (44% gave this answer). However, notable percentages named Wicomico (16%), Worcester (15%), Caroline (12%), Anne Arundel (10%), and Baltimore (10%) as the other counties in which they had hunted deer in the past 5 years.

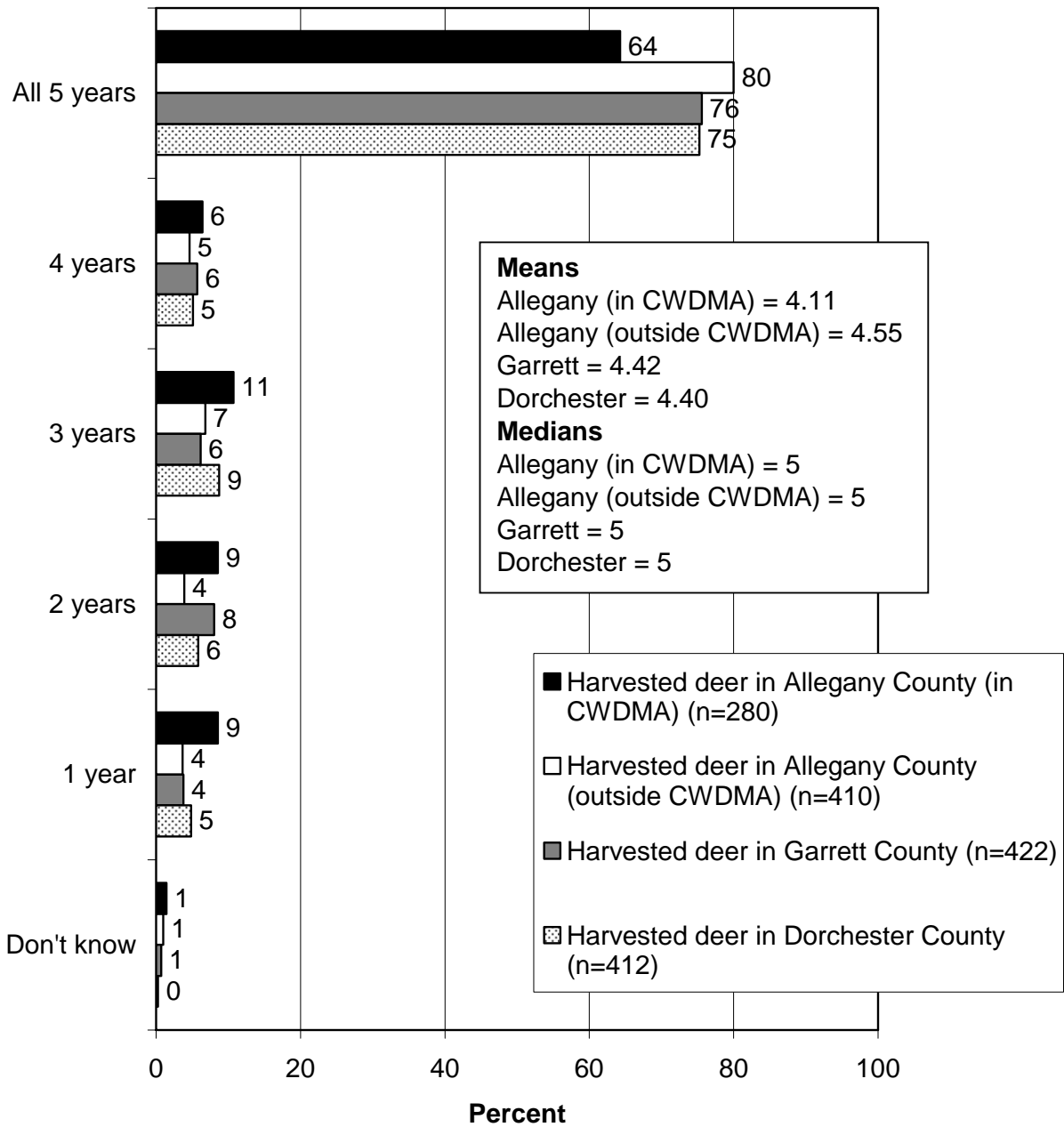
- The survey asked respondents whether the deer population in Allegany, Garrett, or Dorchester County was too high, just right, or too low during the last year in which they hunted deer in the county. A majority of hunters in all areas except Dorchester County said that the deer population had been too low, with Allegany County hunters in the CWDMA being the most likely of the four groups to give this answer ($p \leq 0.001$).
- Among **Allegany County hunters in the CWDMA**, 74% described the deer population as being too low during the last year in which they hunted deer in the county. Meanwhile, 23% said it was just right, and 1% said the population had been too high.
 - Among **Allegany County hunters outside the CWDMA**, two-thirds (66%) said the deer population was too low during the last year they hunted deer in the county, compared to 28% who said it was just right and 4% who said it was too high.
 - Among **Garrett County hunters**, just over half (56%) responded that the deer population had been too low, with 29% saying it was just right and 13% saying it was too high.
 - **Dorchester County hunters** had the highest overall satisfaction with the deer population in the county during the last year they hunted: the most common response among this group was that the deer population had been just right (46% gave this answer), compared to 20% who said the population had been too high and 29% who said it had been too low.
- Asked about their most important reason for hunting deer in Allegany, Garrett, or Dorchester County, hunters in the four areas most commonly say they go for the meat (between 36% and 42% give this response), followed by for the sport and recreation (from 24% to 31% name this as their most important reason for deer hunting). Smaller percentages say they hunt deer to be with family and friends or to be close to nature, while relatively few hunters say they go deer hunting for a trophy.
- Allegany County hunters in the CWDMA were more likely to say that they hunt deer mostly on public land when hunting in that county ($p \leq 0.001$), while majorities of hunters in the three other areas were more likely to say that they hunt deer mostly on private land in Allegany, Garrett, or Dorchester County ($p \leq 0.001$).

- Among **Allegany County hunters in the CWDMA**, 47% hunt deer mostly on public land, compared to 26% who hunt mostly on private land and 26% who hunt on public and private land about equally.
 - Among **Allegany County hunters outside the CWDMA**, more than half (58%) hunt deer mostly on private land in Allegany County, compared to 14% who hunt mostly on public land and 27% who hunt on both types of land about equally.
 - Among **Garrett County hunters**, a majority (59%) hunt deer mostly on private land in that county, while 14% hunt mostly on public land and 27% hunt on public and private land about equally.
 - **Dorchester County hunters** were the most likely to indicate hunting mostly on private land in that county, with 82% giving this answer ($p \leq 0.001$); meanwhile, just 9% hunt deer mostly on public land and 8% hunt on public and private land about equally.
- Two graphs are shown describing the typical number of days hunters hunt deer each year in each county and the number of miles hunters travel one-way to hunt deer in each county:
- Among **Allegany County hunters in the CWDMA**, the mean number of days hunters hunt deer in the county in a year is 13.47 days, while the median is 10 days. Hunters in this area travel a mean distance of 68.32 miles one-way from home; the median travel distance one-way is 50 miles.
 - Among **Allegany County hunters outside the CWDMA**, the mean number of days hunters hunt deer in the county in a year is 18.90 days, while the median is 15 days. Hunters in this area travel a mean distance of 33.91 miles one-way from home; the median travel distance one-way is 10 miles.
 - Among **Garrett County hunters**, the mean number of days hunters hunt deer in the county in a year is 18.04 days, while the median is 10 days. Hunters in this area travel a mean distance of 49.21 miles one-way from home; the median travel distance one-way is 14 miles.
 - Among **Dorchester County hunters**, the mean number of days hunters hunt deer in the county in a year is 20.67 days, while the median is 15 days. Hunters in this area travel a mean distance of 65.09 miles one-way from home; the median travel distance one-way is 60 miles.

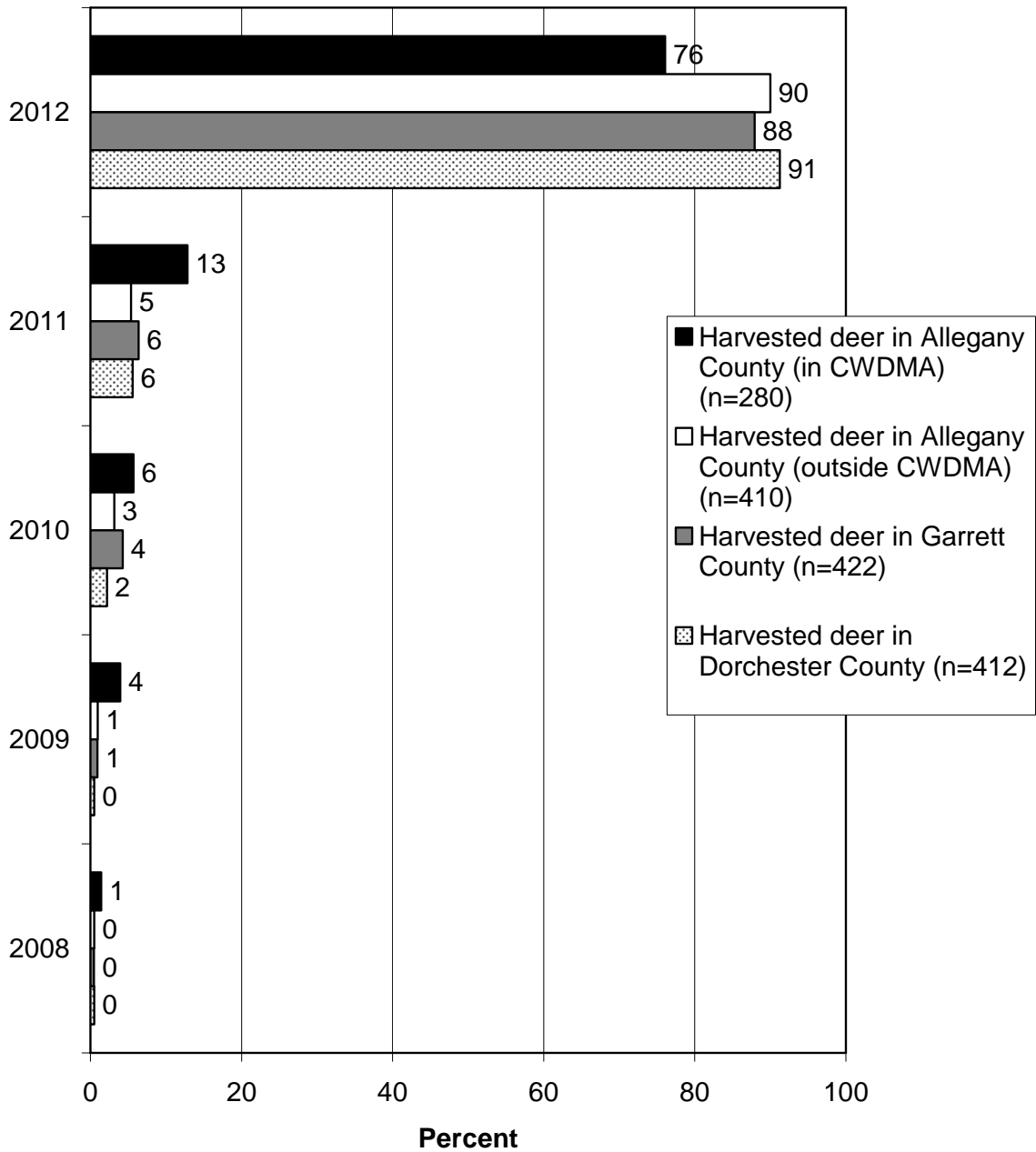
- A large majority of hunters in the four areas (from 63% to 83%) said they considered Allegany, Garrett, or Dorchester County to be a primary deer hunting location, although Allegany County hunters in the CWDMA had the lowest percentage of respondents saying this.

- A question in the survey asked hunters whether they had hunted sika deer in Maryland in the past 5 years: while overwhelming majorities of hunters in Allegany County in and outside of the CWDMA and Garrett County had not, more than two-thirds of hunters in Dorchester County (69%) had done so.

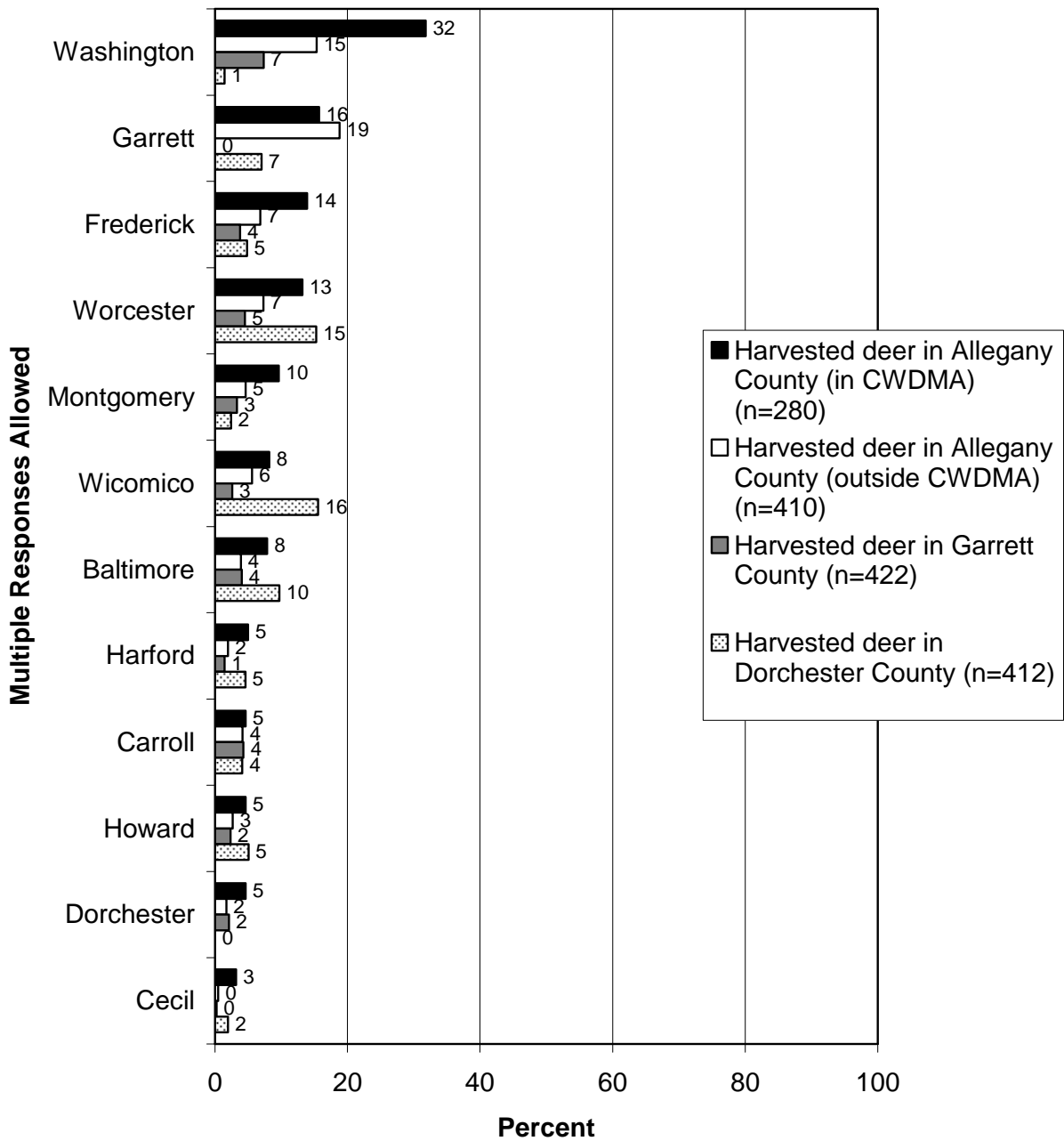
Q18. How many of the past 5 years have you hunted deer in [Allegany/Garrett/Dorchester] County?



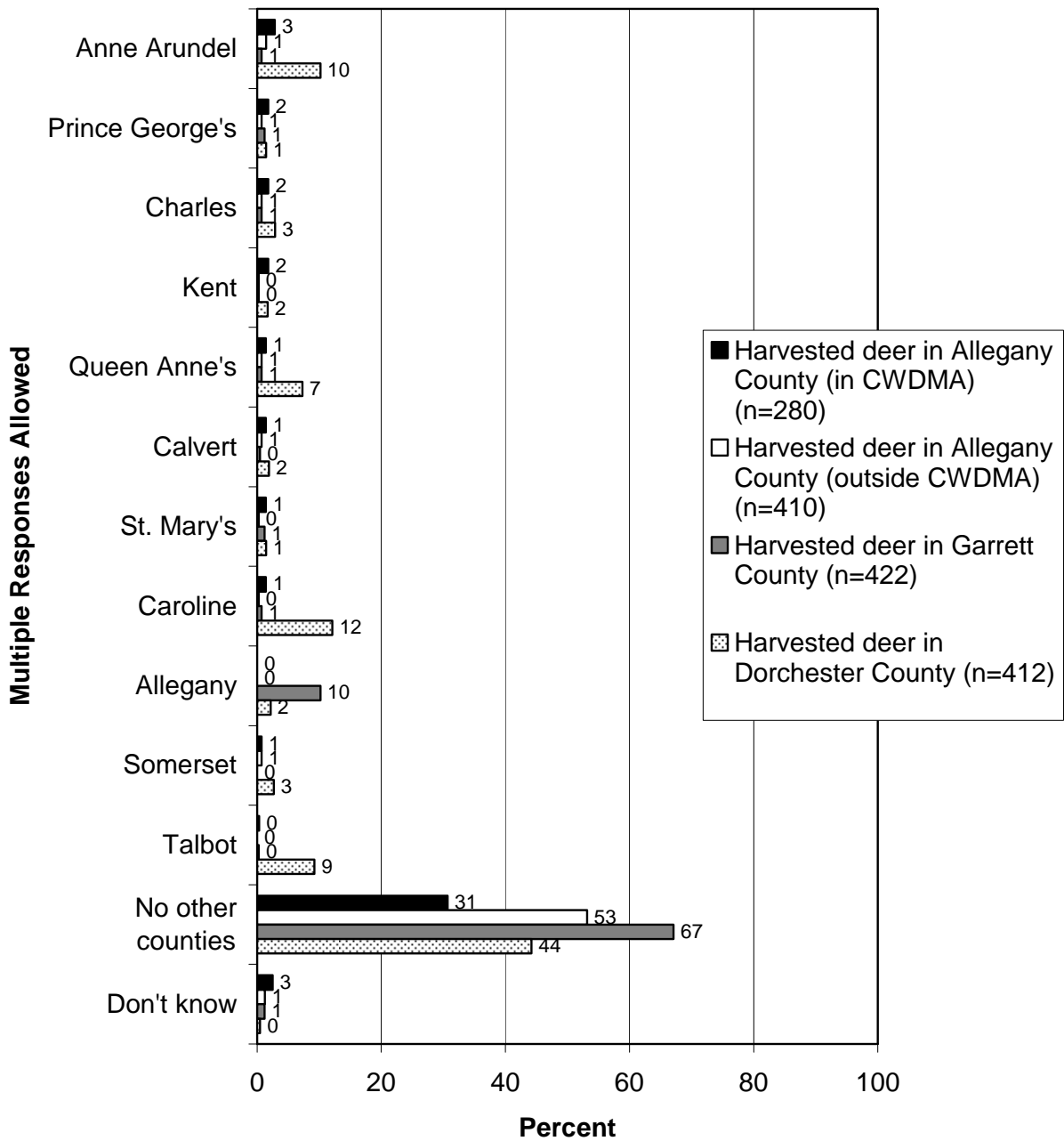
Q21. What was the last year that you hunted deer in [Allegany/Garrett/Dorchester] County?



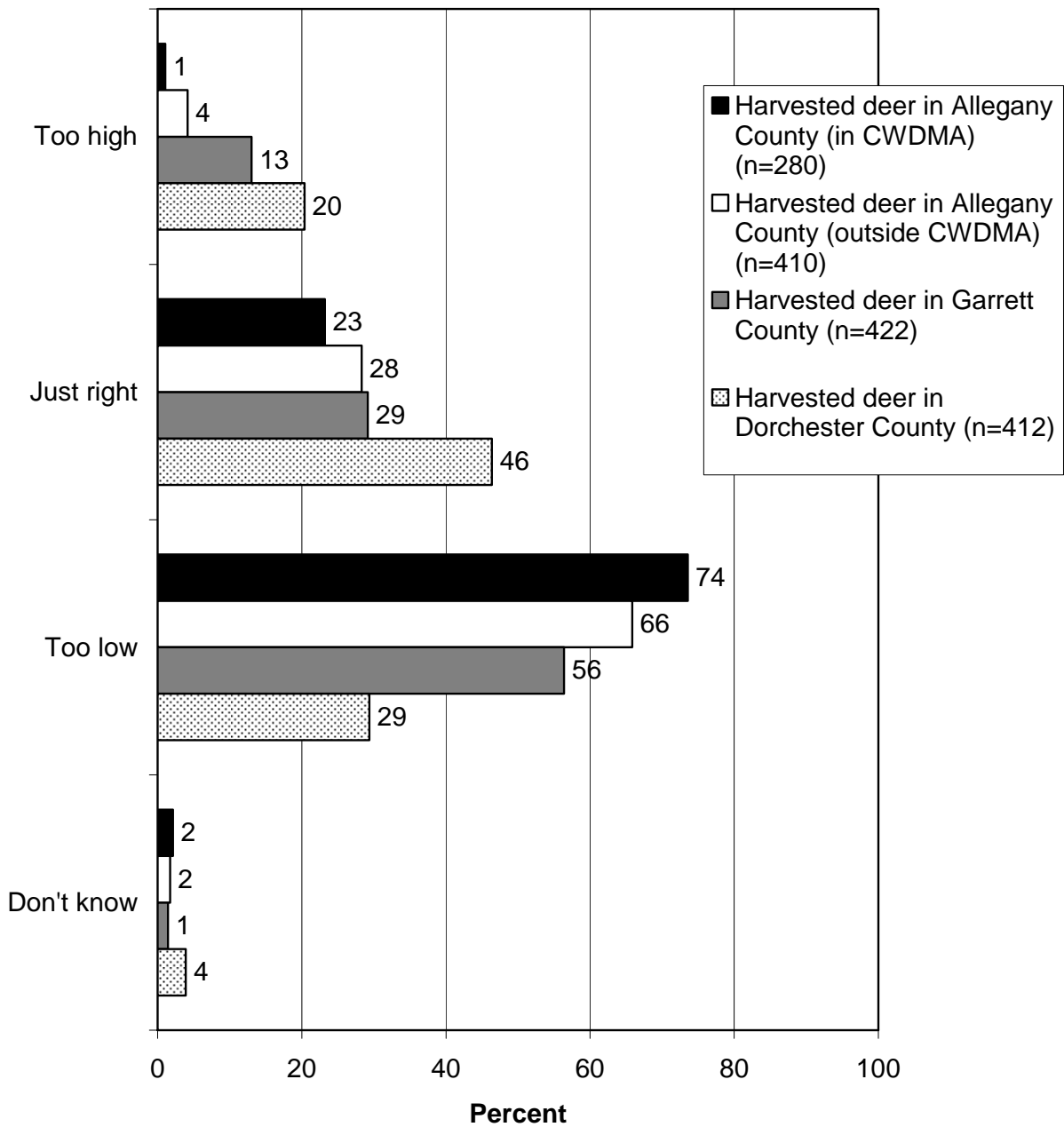
Q22-26. What other counties have you hunted deer in Maryland in the past 5 years? (Part 1)



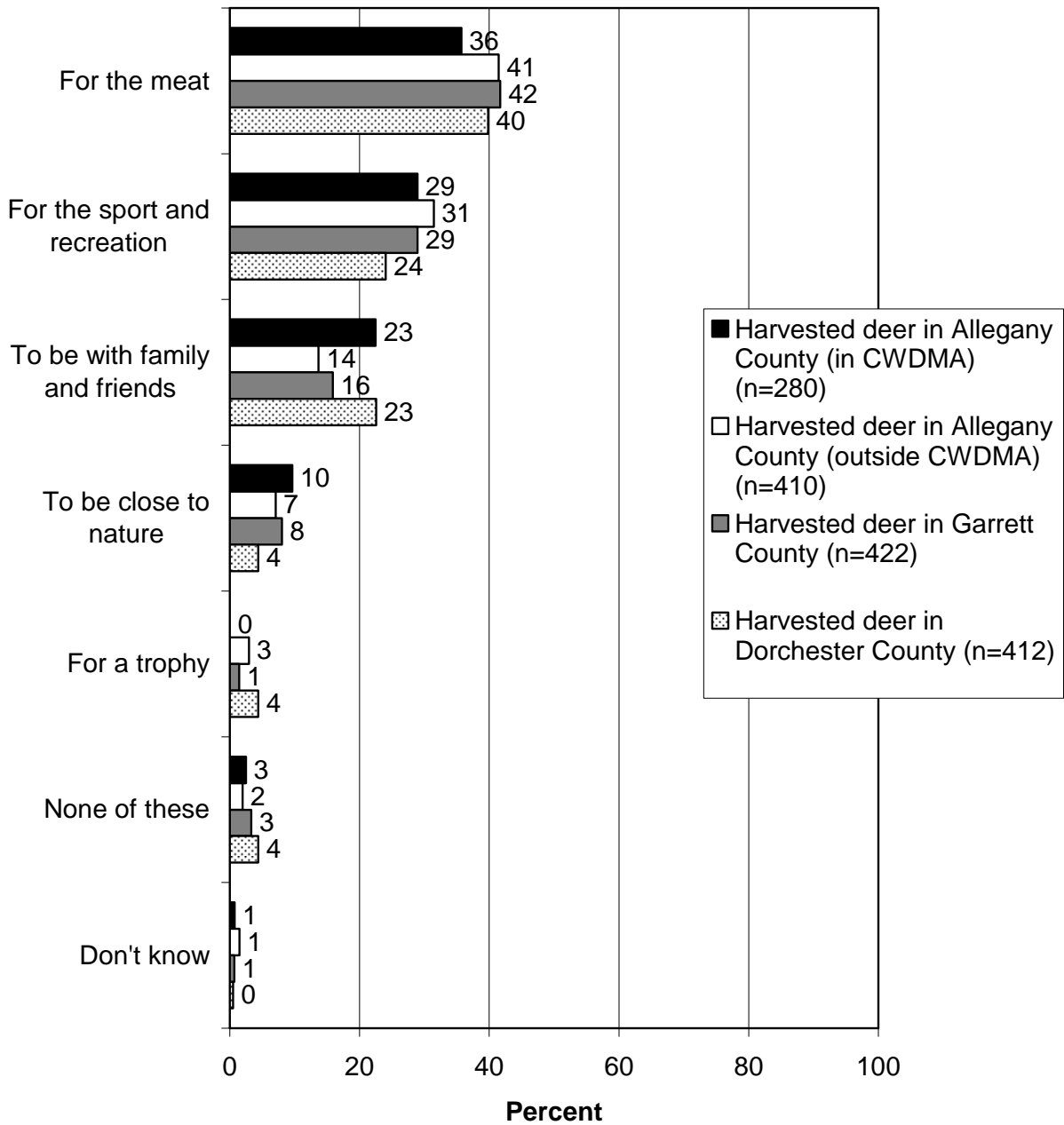
**Q22-26. What other counties have you hunted deer in Maryland in the past 5 years?
(Part 2)**



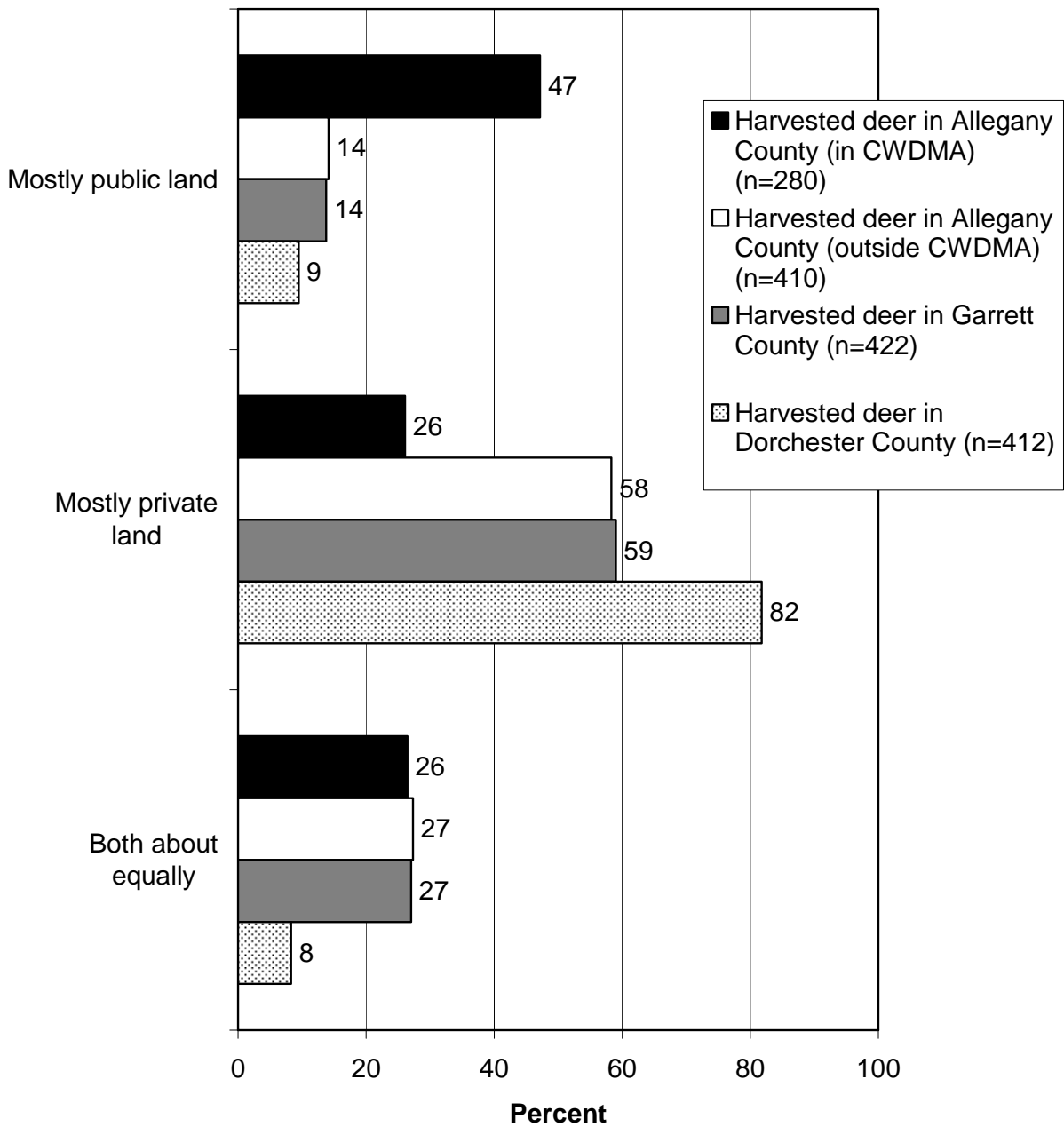
Q30. In your opinion, was the deer population in [Allegany/Garrett/Dorchester] County too high, just right, or too low the last year that you hunted deer in [Allegany/Garrett/Dorchester] County?



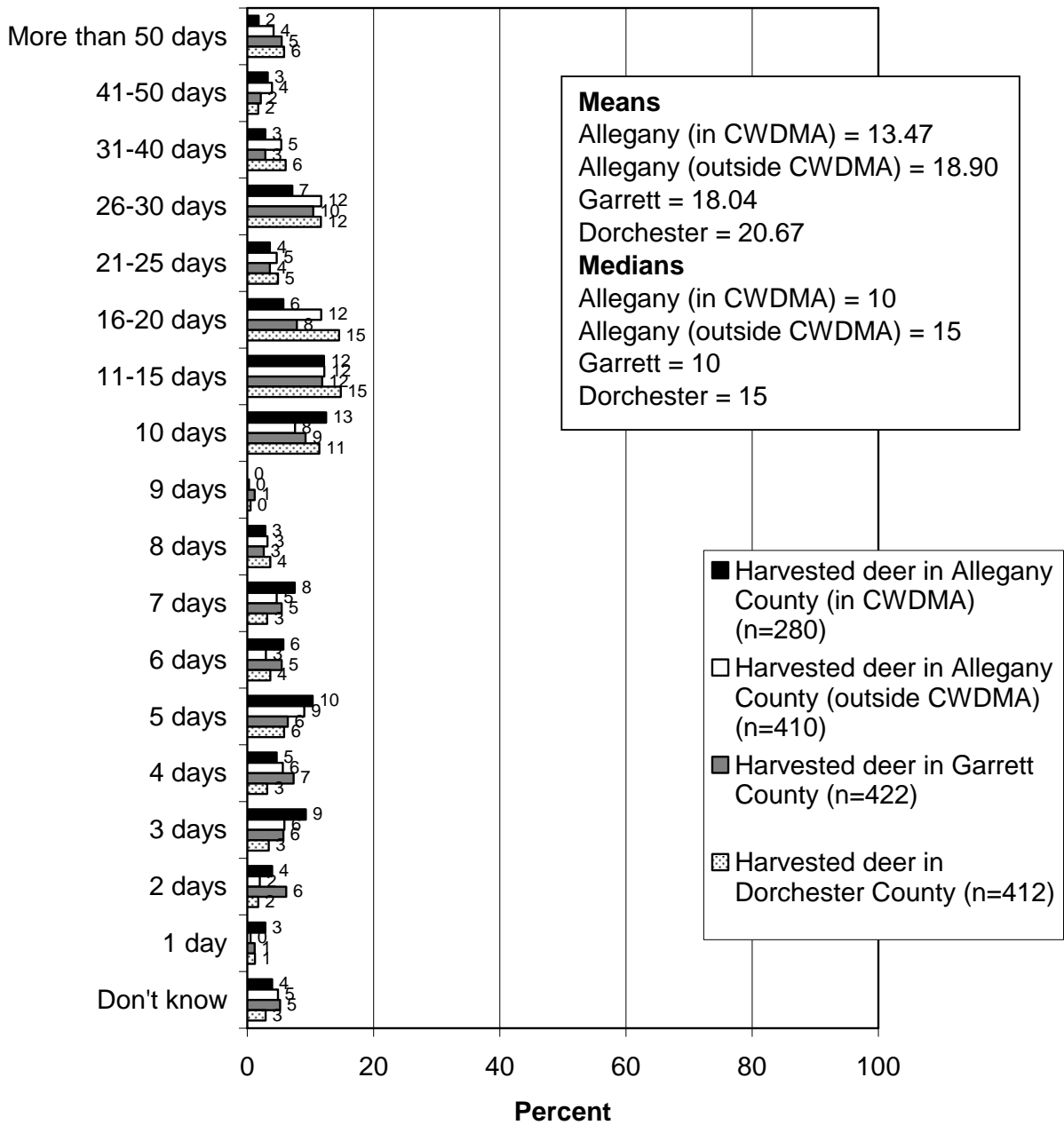
Q31. What is your most important reason for hunting deer in [Allegany/Garrett/Dorchester] County?



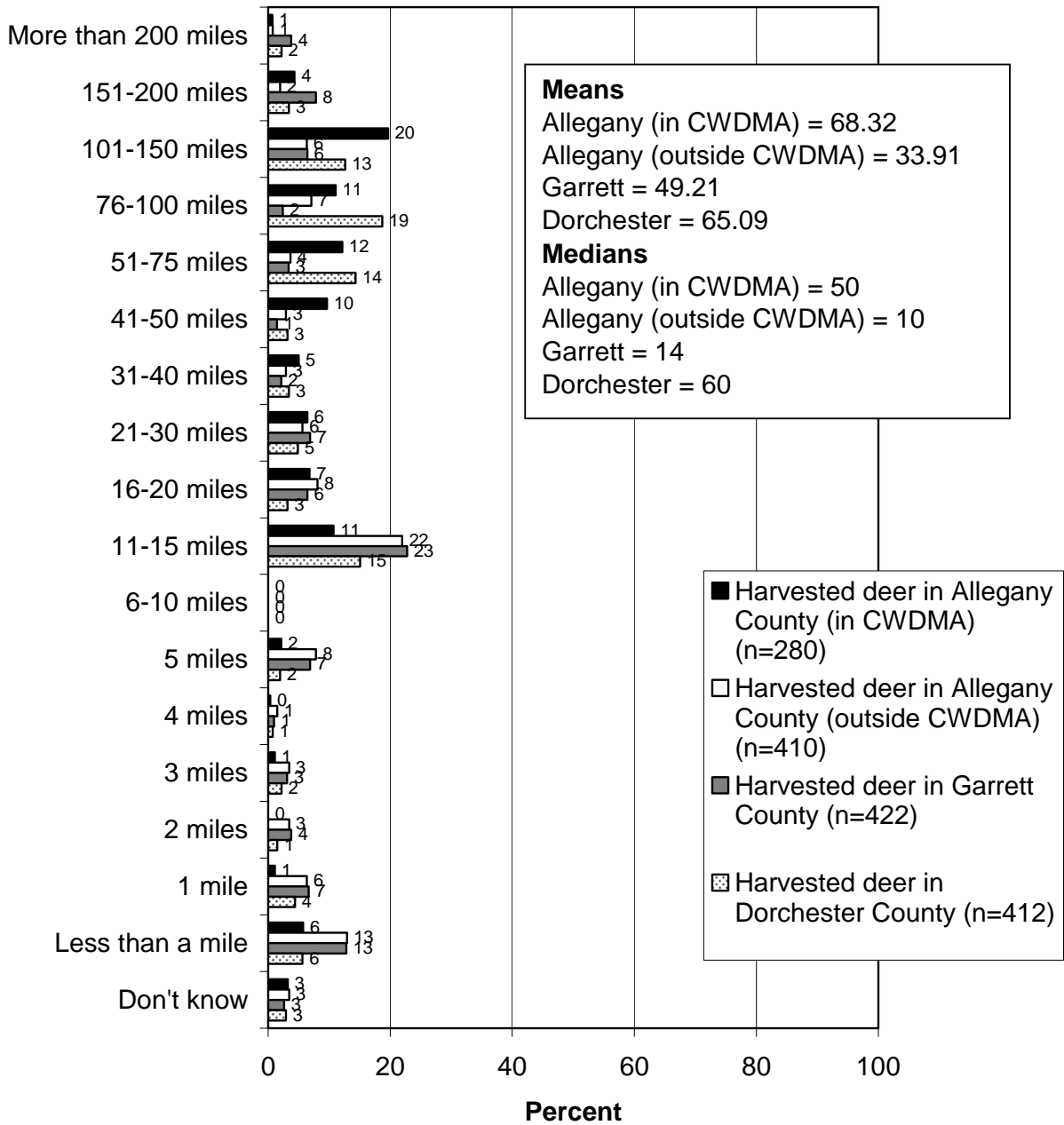
Q32. When you hunt in [Allegany/Garrett/Dorchester] County, do you hunt deer mostly on public land, mostly on private land, or both about equally?



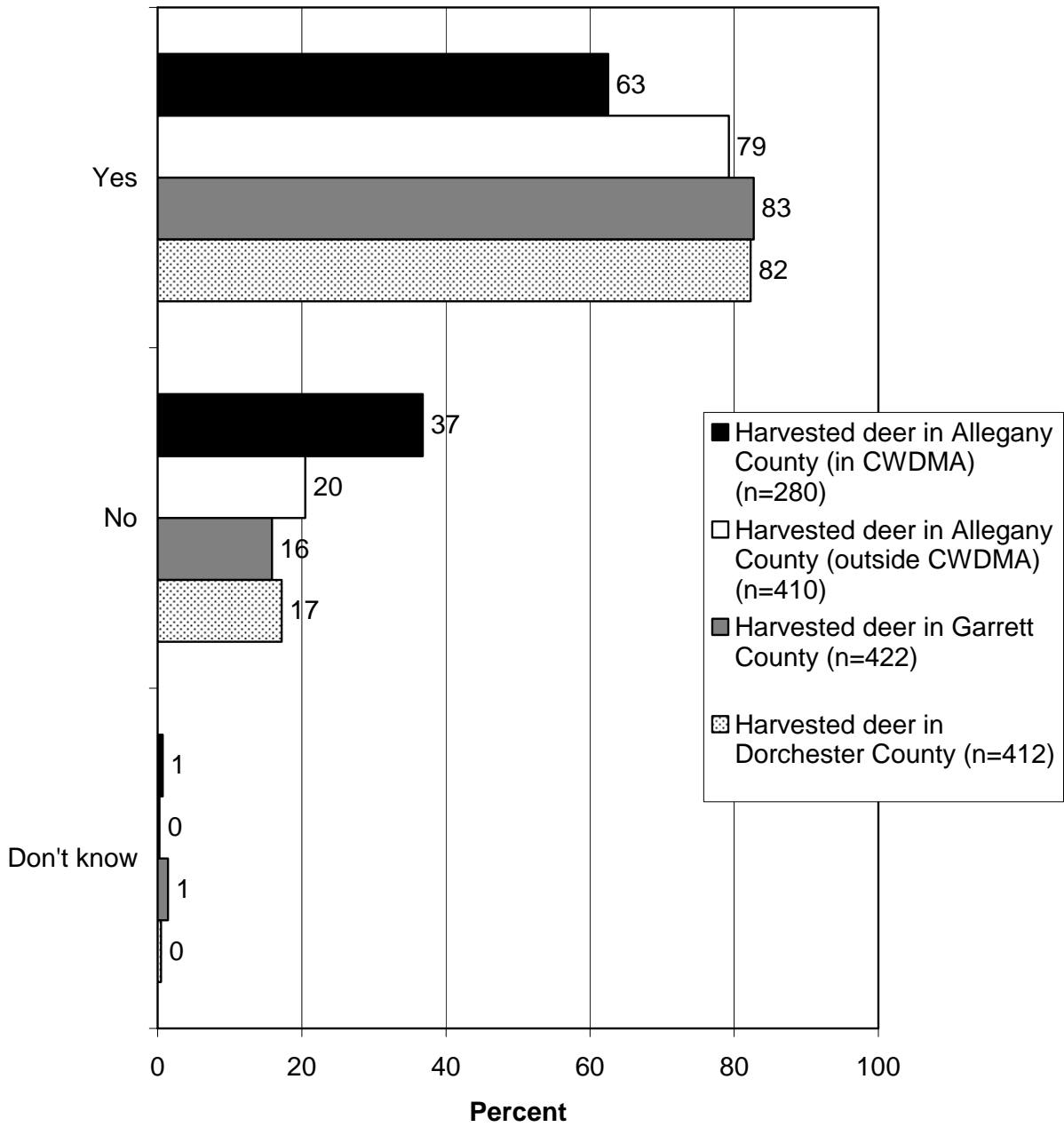
Q33. When you hunt in [Allegany/Garrett/Dorchester] County, about how many days do you typically hunt deer in a year?



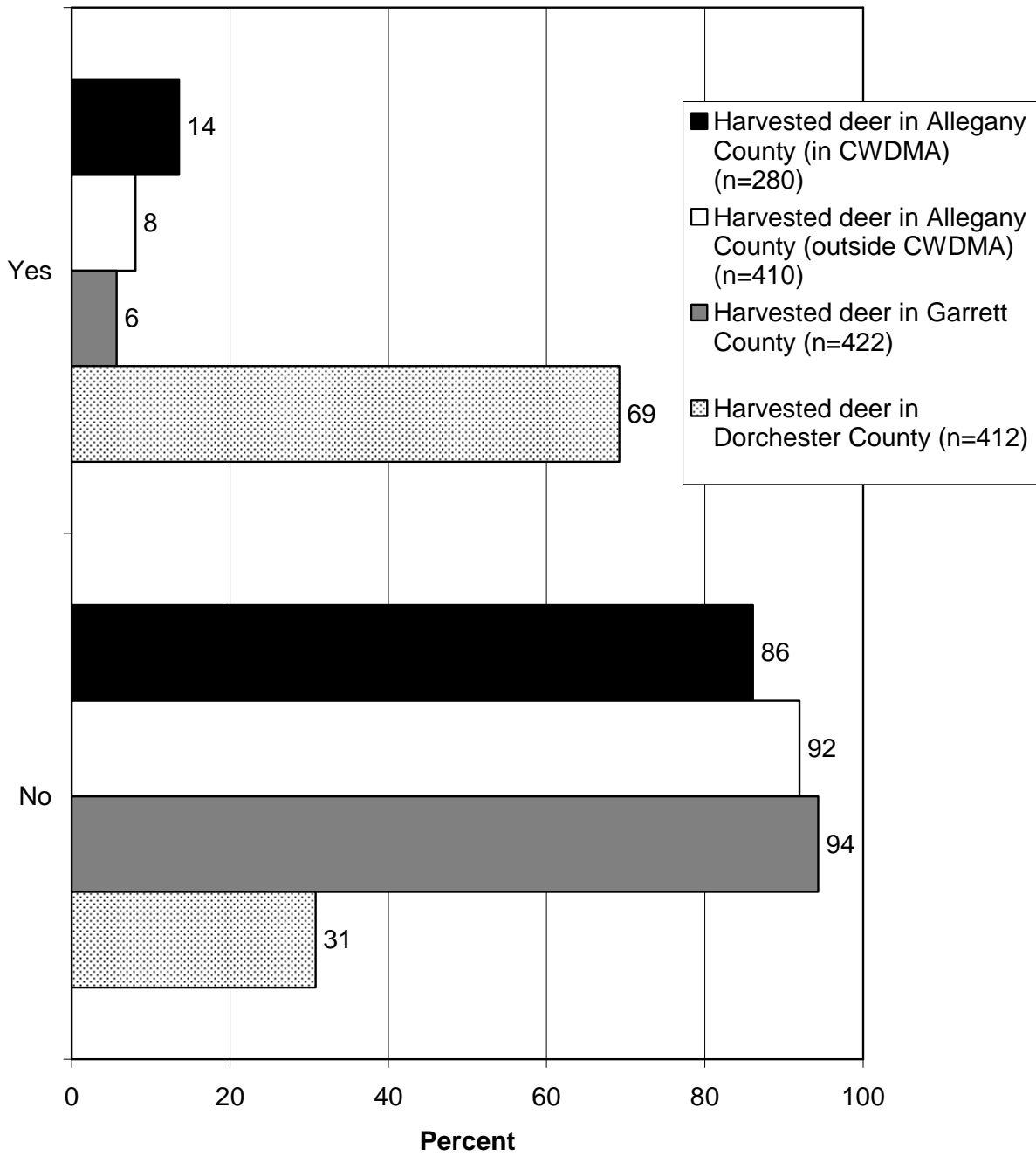
Q36. When you hunt in [Allegany/Garrett/Dorchester] County, how far, in miles, do you typically travel one-way from home to hunt deer in [Allegany/Garrett/Dorchester] County?



Q39. Would you say [Allegany/Garrett/Dorchester] County is a primary deer hunting location for you?



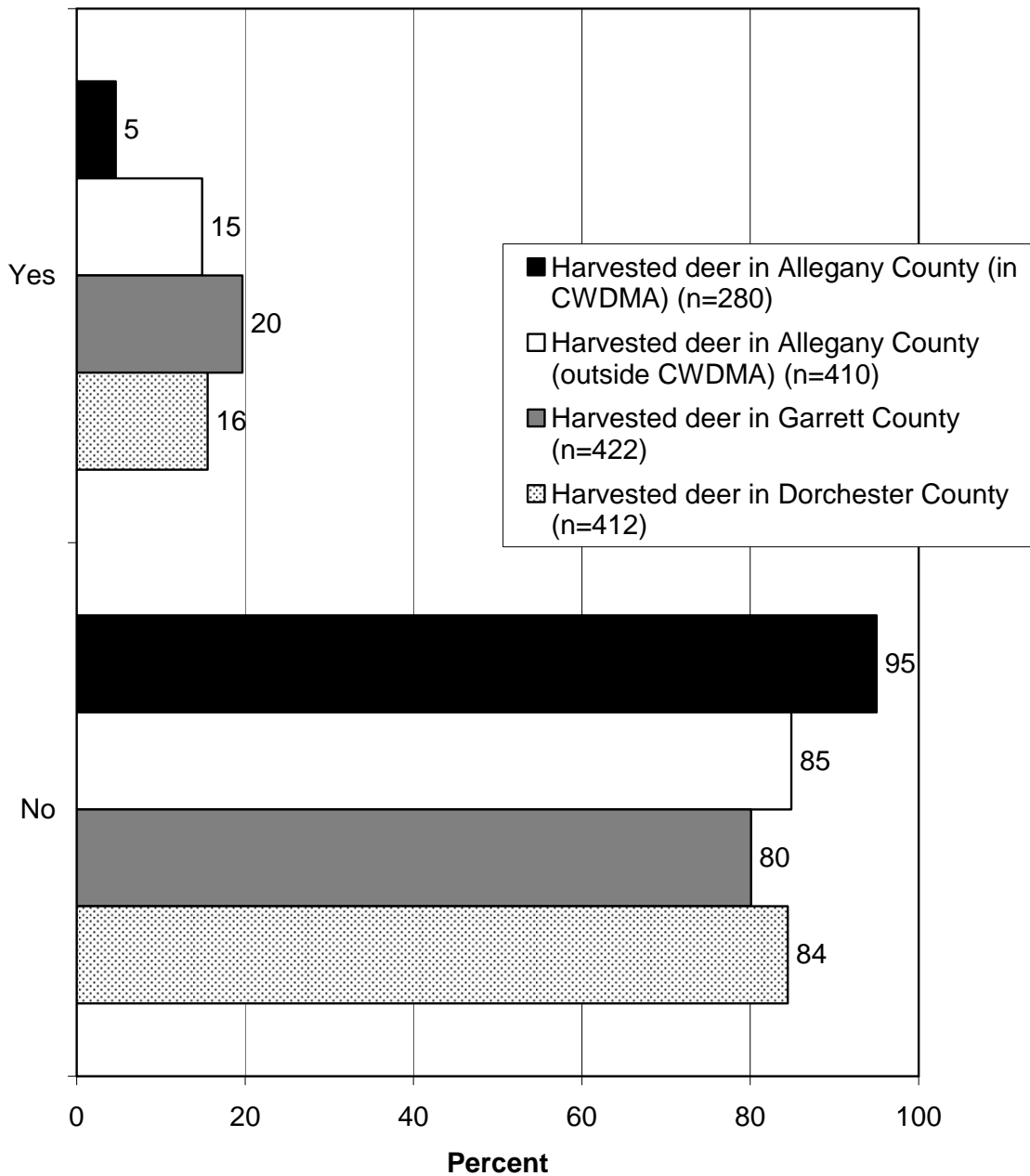
Q106. Did you hunt sika deer in Maryland in the past 5 years?



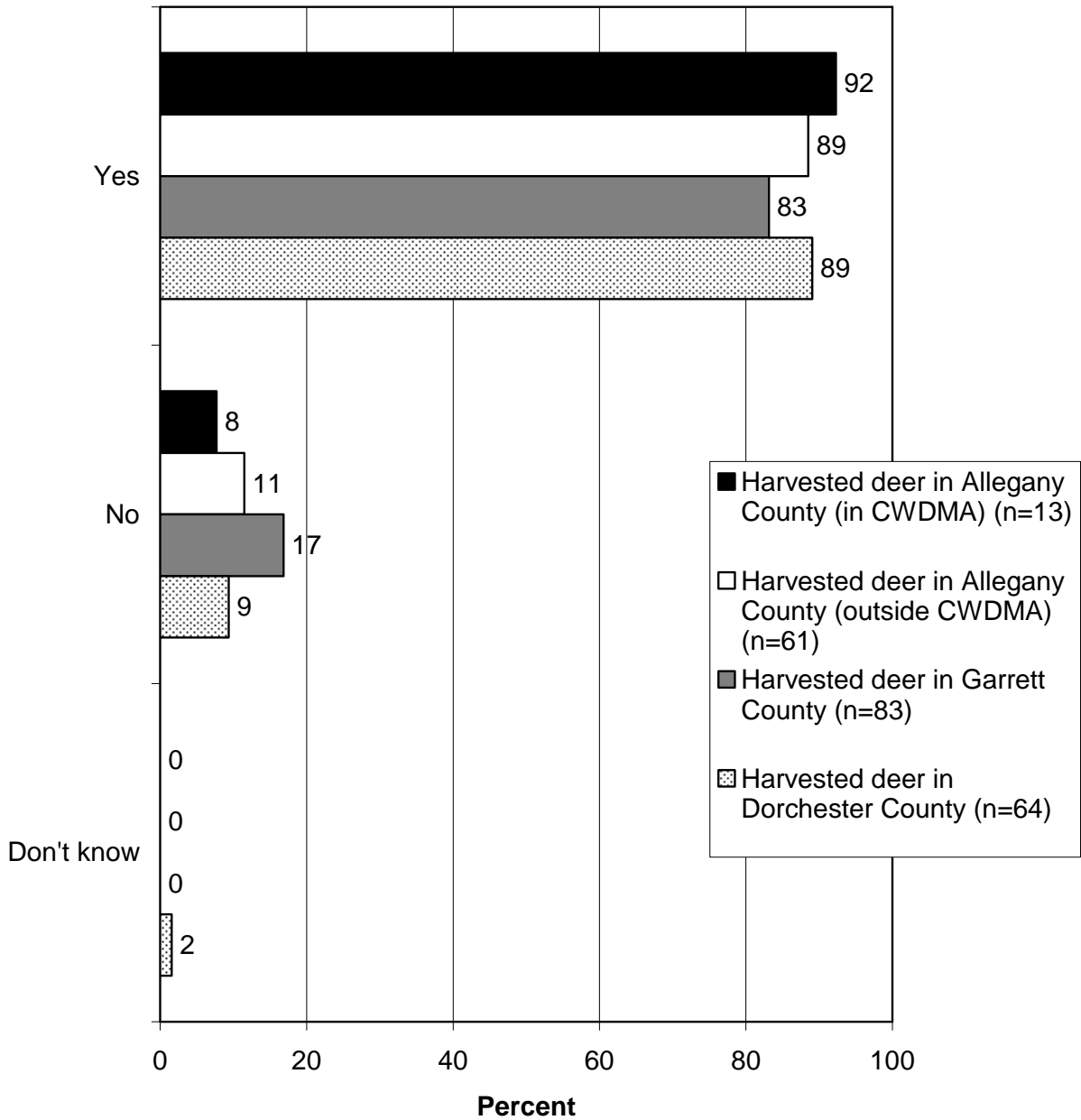
LAND OWNERSHIP AND RELATED DEER HUNTING

- No more than a fifth of hunters in the four areas (from 5% to 20%) owned land of at least 50 acres or more in Allegany, Garrett, or Dorchester County; Allegany hunters in the CWDMA were the least likely to own land of this size in Allegany County ($p \leq 0.001$).
 - Hunters who owned land of at least 50 acres or more in Allegany, Garrett, or Dorchester County were asked whether they had harvested any deer on the land they owned in the past 2 years, and the overwhelming majority of landowners in each area said they had done so (between 83% and 92% of landowners gave this response).

Q57. Do you own land of at least 50 acres or more in [Allegany/Garrett/Dorchester] County?



Q58. Did you harvest any deer on the land you own in [Allegany/Garrett/Dorchester] County in the past 2 years? (Asked of those who own land of at least 50 acres or more in [Allegany/Garrett/Dorchester] County.)

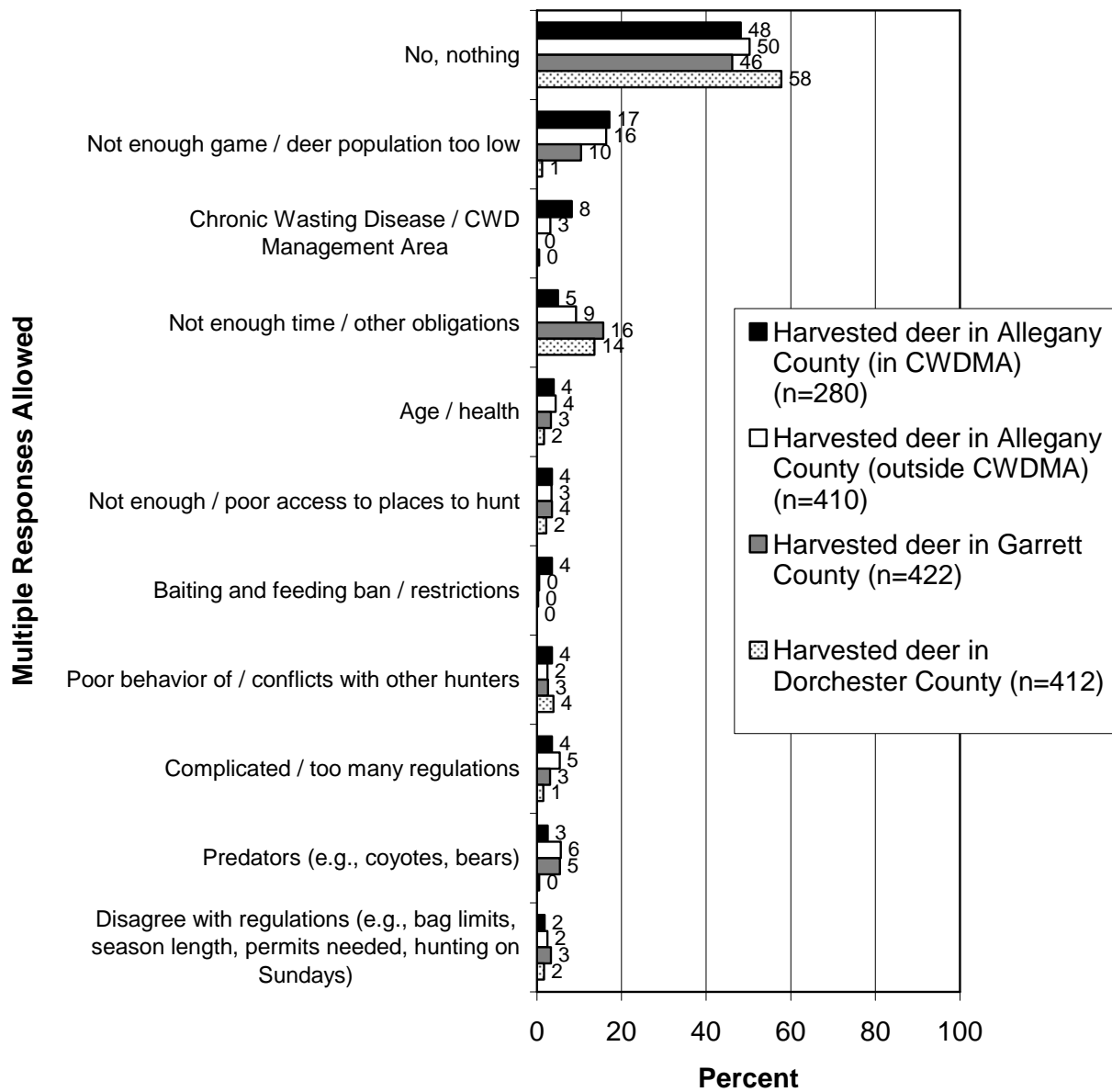


CONSTRAINTS AFFECTING DEER HUNTING PARTICIPATION

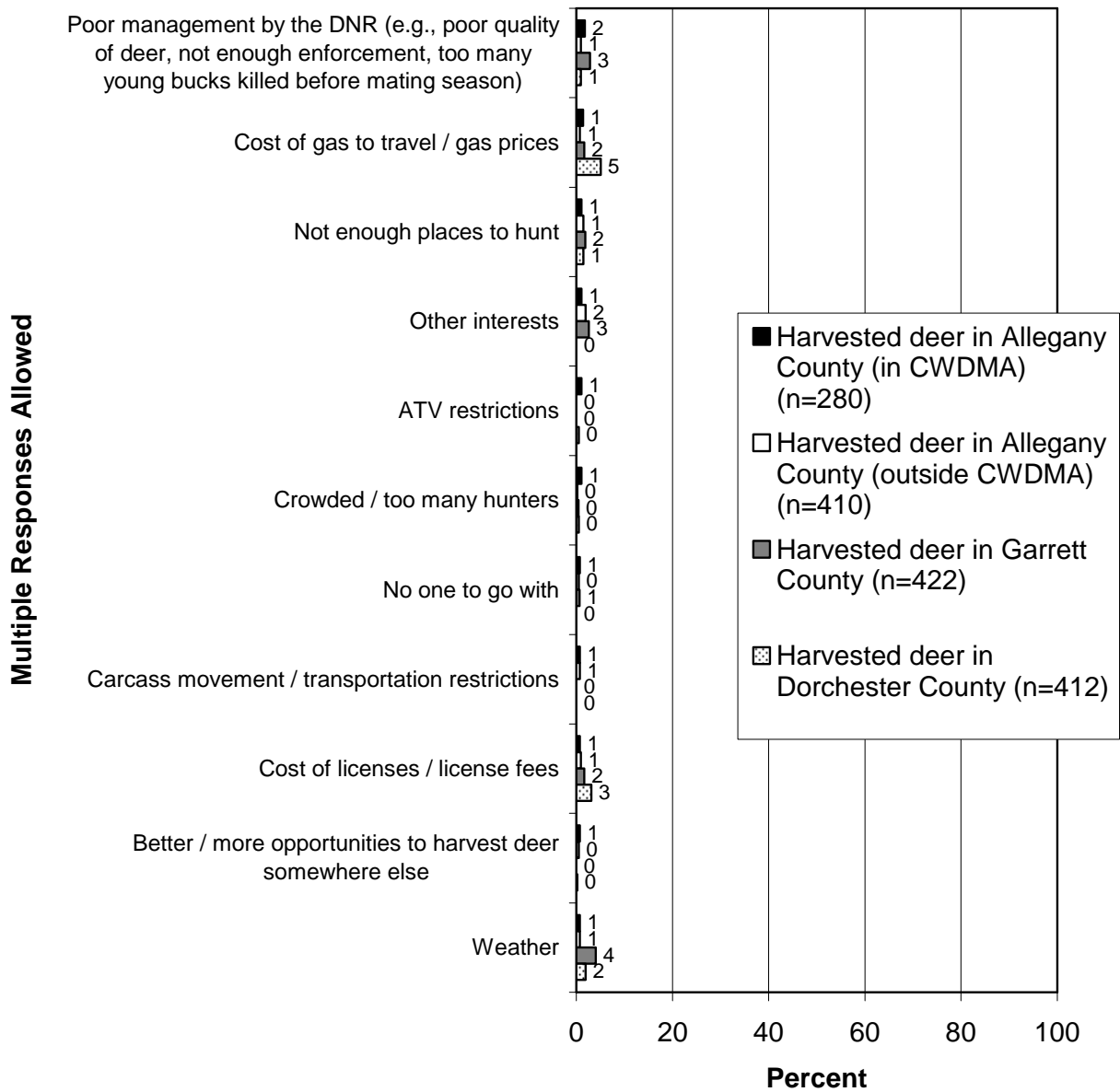
- The survey asked respondents whether anything had taken away from their enjoyment of deer hunting or kept them from going as much as they wanted to in the past 5 years. While deer hunters in all four areas most often said that nothing had taken away from their enjoyment or kept them from going, low deer populations and time constraints were frequently mentioned in each area.
- Among **Allegany County hunters in the CWDMA**, 48% said that nothing had taken away from their enjoyment of deer hunting or kept them from going, while 17% named not enough game or the deer population being too low. A further 8% named Chronic Wasting Disease or the CWDMA specifically.
 - Among **Allegany County hunters outside the CWDMA**, 50% indicated that nothing took away from their enjoyment; on the other hand, 16% named a low deer population/not enough game, while 9% cited time-related constraints. Note that 3% of respondents in this area mentioned Chronic Wasting Disease or the CWDMA specifically.
 - Among **Garrett County hunters**, 46% said nothing affected their enjoyment of deer hunting, while 16% named not enough time or other obligations, and 10% named not enough game or the deer population being too low.
 - **Dorchester County** was the only area in which a majority of hunters (58%) said that nothing had taken away from their enjoyment of deer hunting or kept them from going. Otherwise, 14% named not having enough time/other obligations.

The graphs on the following pages show the full range of responses.

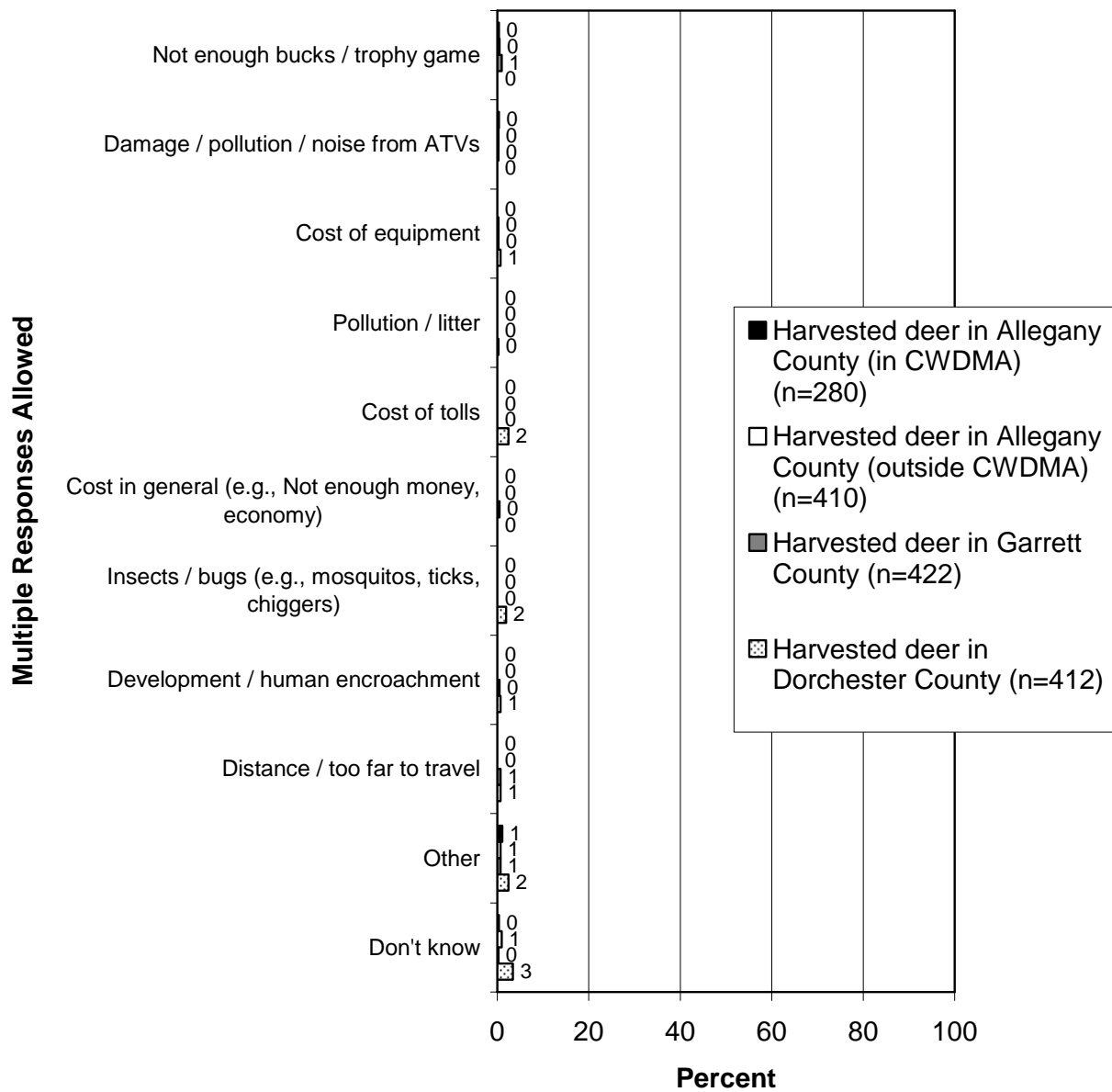
**Q42. Are there any things that have taken away from your enjoyment of deer hunting or kept you from going deer hunting as much you would like in [Allegany/Garrett/Dorchester] County in the past 5 years?
(Part 1)**



**Q42. Are there any things that have taken away from your enjoyment of deer hunting or kept you from going deer hunting as much you would like in [Allegany/Garrett/Dorchester] County in the past 5 years?
(Part 2)**



**Q42. Are there any things that have taken away from your enjoyment of deer hunting or kept you from going deer hunting as much you would like in [Allegany/Garrett/Dorchester] County in the past 5 years?
(Part 3)**

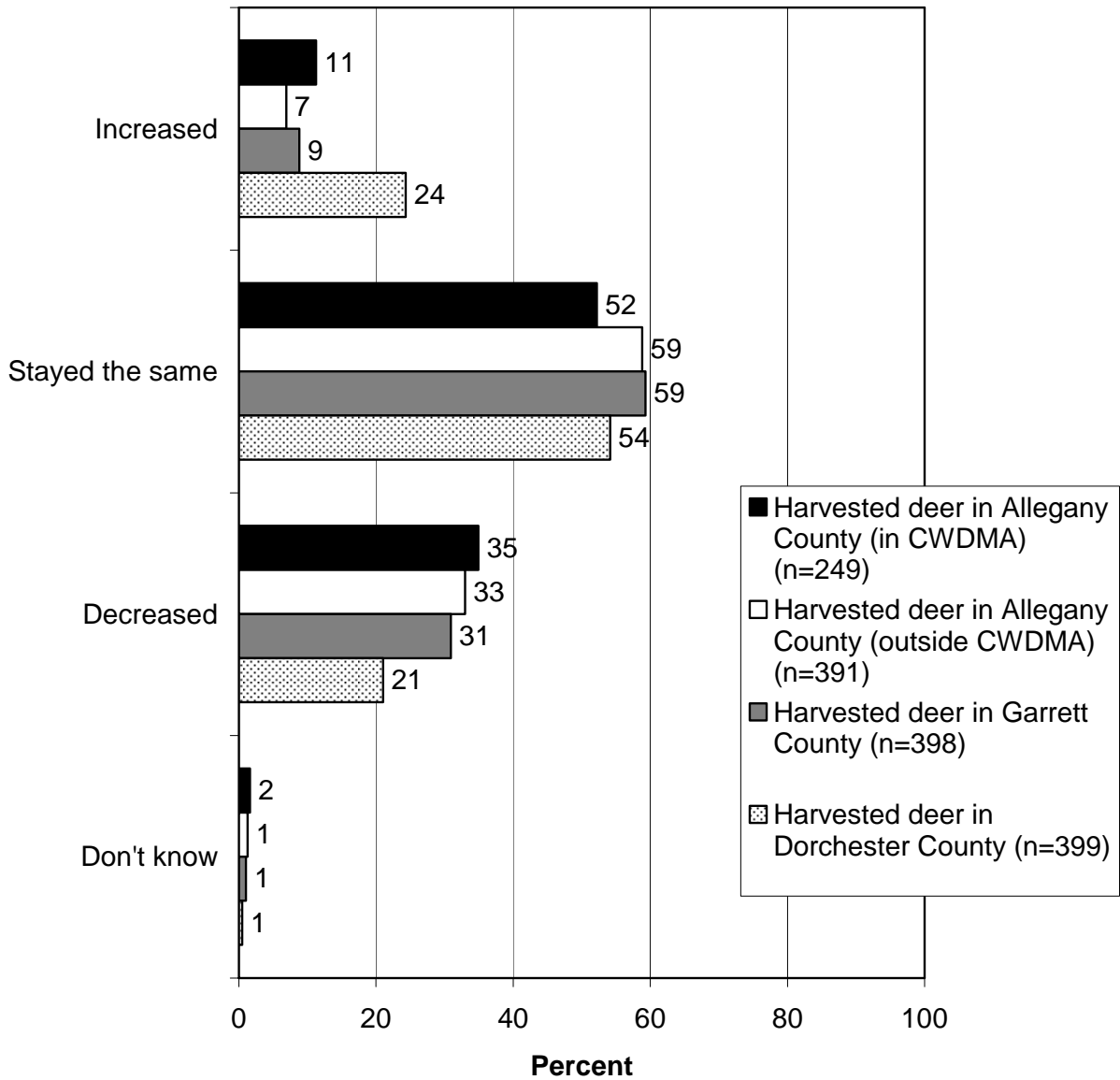


CHANGES IN DEER HUNTING PARTICIPATION SINCE 2010

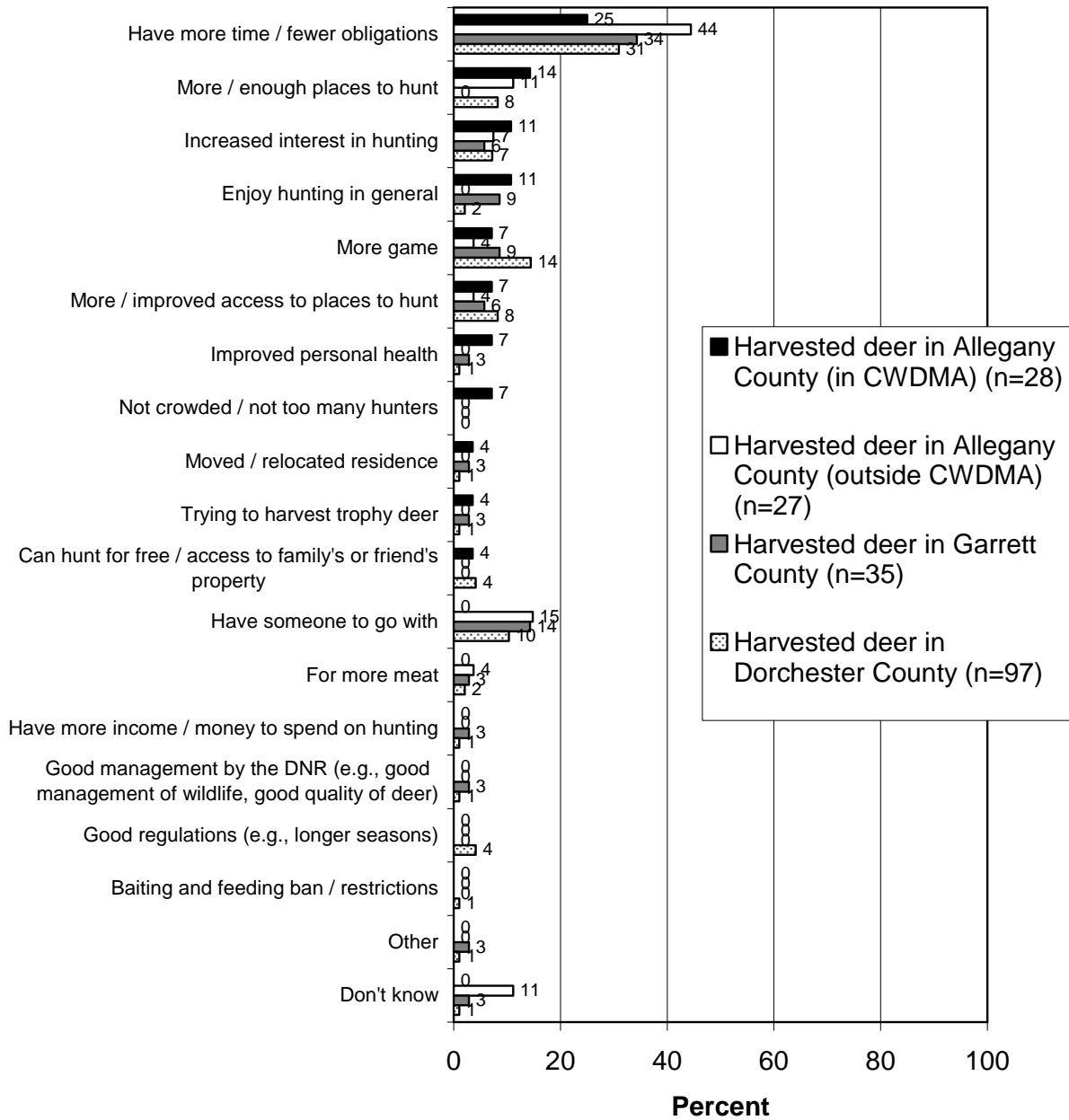
- Deer hunters who last hunted deer in Allegany, Garrett, or Dorchester County in 2011 or 2012 were asked whether their deer hunting participation in the county had increased, stayed the same, or decreased since 2010 (the year in which a deer with Chronic Wasting Disease was first harvested in Maryland). Just over half of the hunters in the two Allegany County areas and in Garrett County (from 52% to 59%) indicated that their deer hunting had stayed the same, while the remainder of hunters in each area more often said their deer hunting since 2010 had *decreased* (from 31% to 35%) rather than *increased* (from 7% to 11%). The exception was Dorchester County: while 54% said that their deer hunting had stayed the same, the remainder were about as likely to say that their deer hunting had increased (24%) as they were to say it had decreased (21%).
- In follow-up, hunters who said their deer hunting in Allegany, Garrett, or Dorchester County had *increased* since 2010 were asked about the single most important reason for their increased participation. The most common response from hunters in all four areas was simply having more time or fewer obligations. Other top responses included having more places to hunt, increased interest in hunting, enjoying hunting in general, having more game to hunt, improved access to hunting lands, or having someone to go with.
 - Another follow-up question measured reasons for *decreased* participation: hunters who last hunted deer in Allegany, Garrett, or Dorchester County in 2010 were asked about the single most important reason why they had not hunted deer in the county since then, while hunters whose deer hunting participation had decreased since 2010 were asked about the single most important reason for the decrease in their participation. While Allegany hunters in and outside of the CWDMA most commonly gave a resource-related answer, such as not enough game or the deer population being too low (27% of Allegany County hunters in the CWDMA and 28% of Allegany County hunters outside of the CWDMA said this), Garrett and Dorchester hunters most commonly gave an answer relating to social reasons, such as not enough time or having other obligations (30% of Garrett County hunters and 32% of Dorchester County hunters mentioned this). Note that 9% of Allegany County hunters in the CWDMA mentioned being aware of a known Chronic Wasting Disease location or the CWDMA specifically. The graph shows the full range of responses.

- A final question asked all hunters in the sample whether their deer hunting participation *outside* of Allegany, Garrett, or Dorchester County had increased, stayed the same, or decreased since 2010. Interestingly, while hunters from all four areas most commonly said it had stayed the same (from 46% to 55%), Allegany County hunters in the CWDMA were more likely than hunters in the other three areas to say that their deer hunting participation outside of the county had *increased* (28% of Allegany County hunters in the CWDMA said this, compared to 16% to 17% of hunters in the other three areas) ($p \leq 0.001$). Meanwhile, between 17% and 22% of hunters in the four areas said their deer hunting participation outside of their respective counties had decreased since 2010.

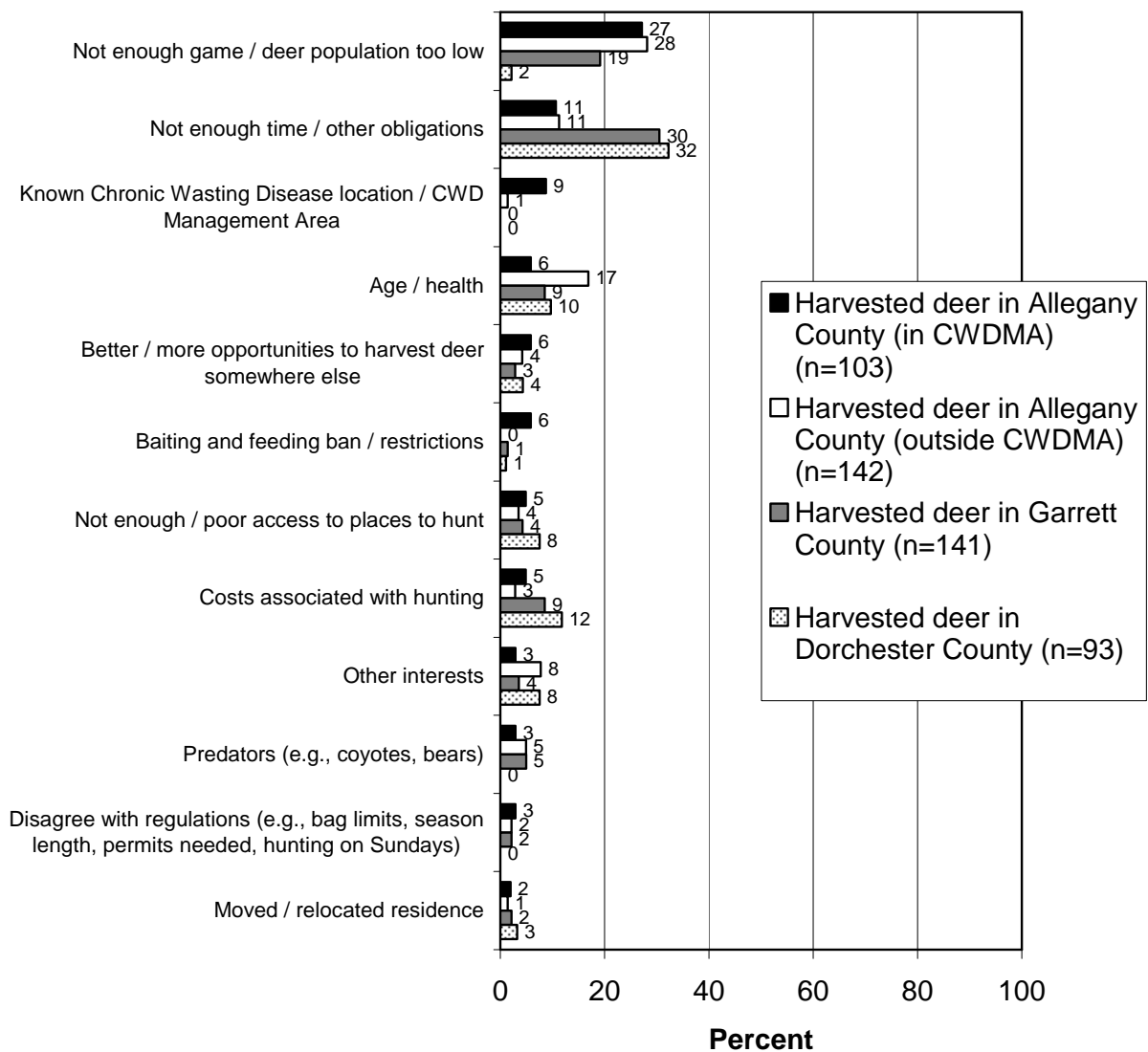
Q48. Would you say your deer hunting participation in [Allegany/Garrett/Dorchester] County has increased, stayed the same, or decreased since 2010? (Asked of those who last hunted deer in [Allegany/Garrett/Dorchester] County in 2011 or 2012.)



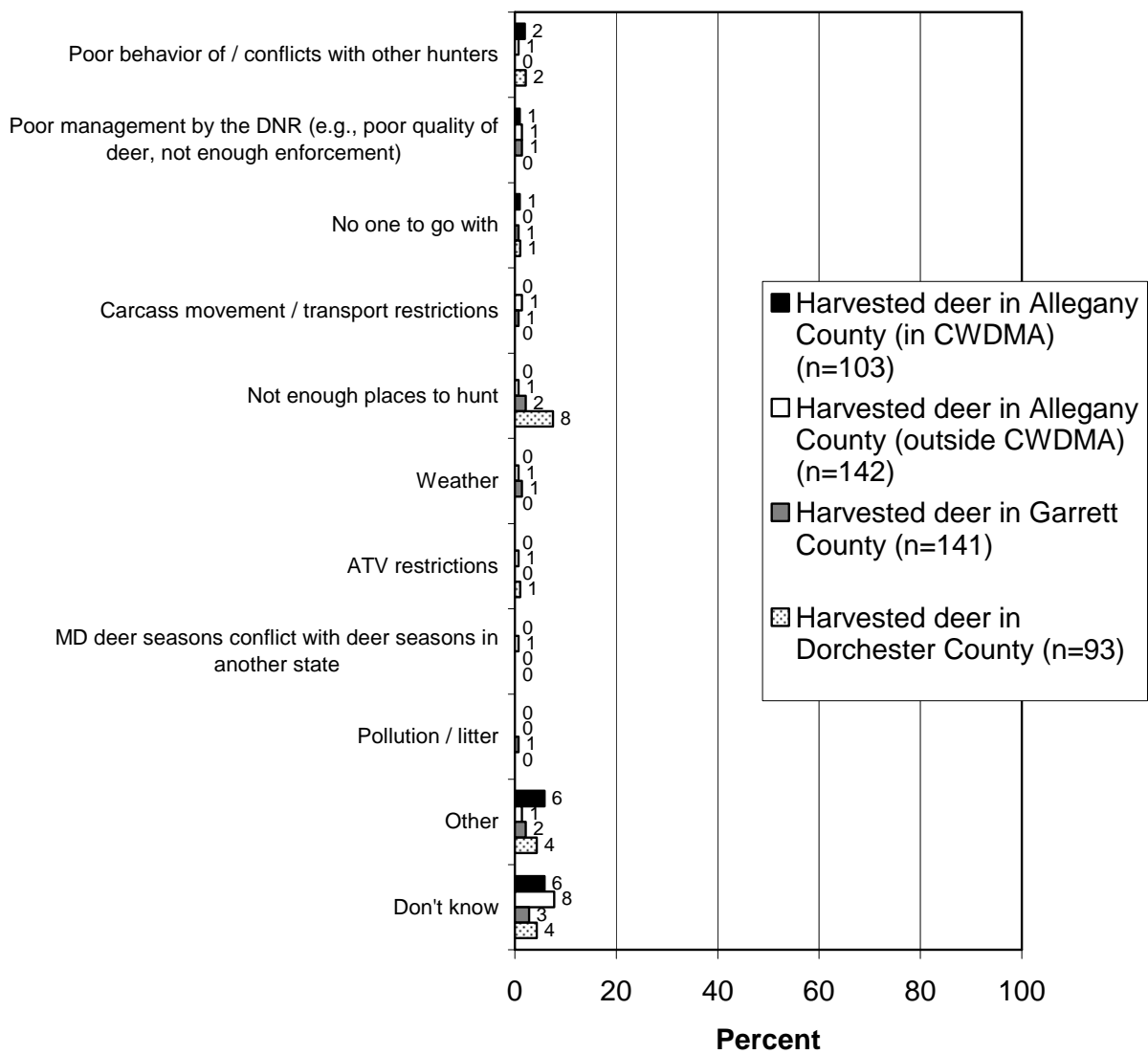
Q49. What is the single most important reason your deer hunting participation in [Allegany/Garrett/Dorchester] County has increased since 2010? (Asked of those whose deer hunting participation in [Allegany/Garrett/Dorchester] County has increased since 2010.)



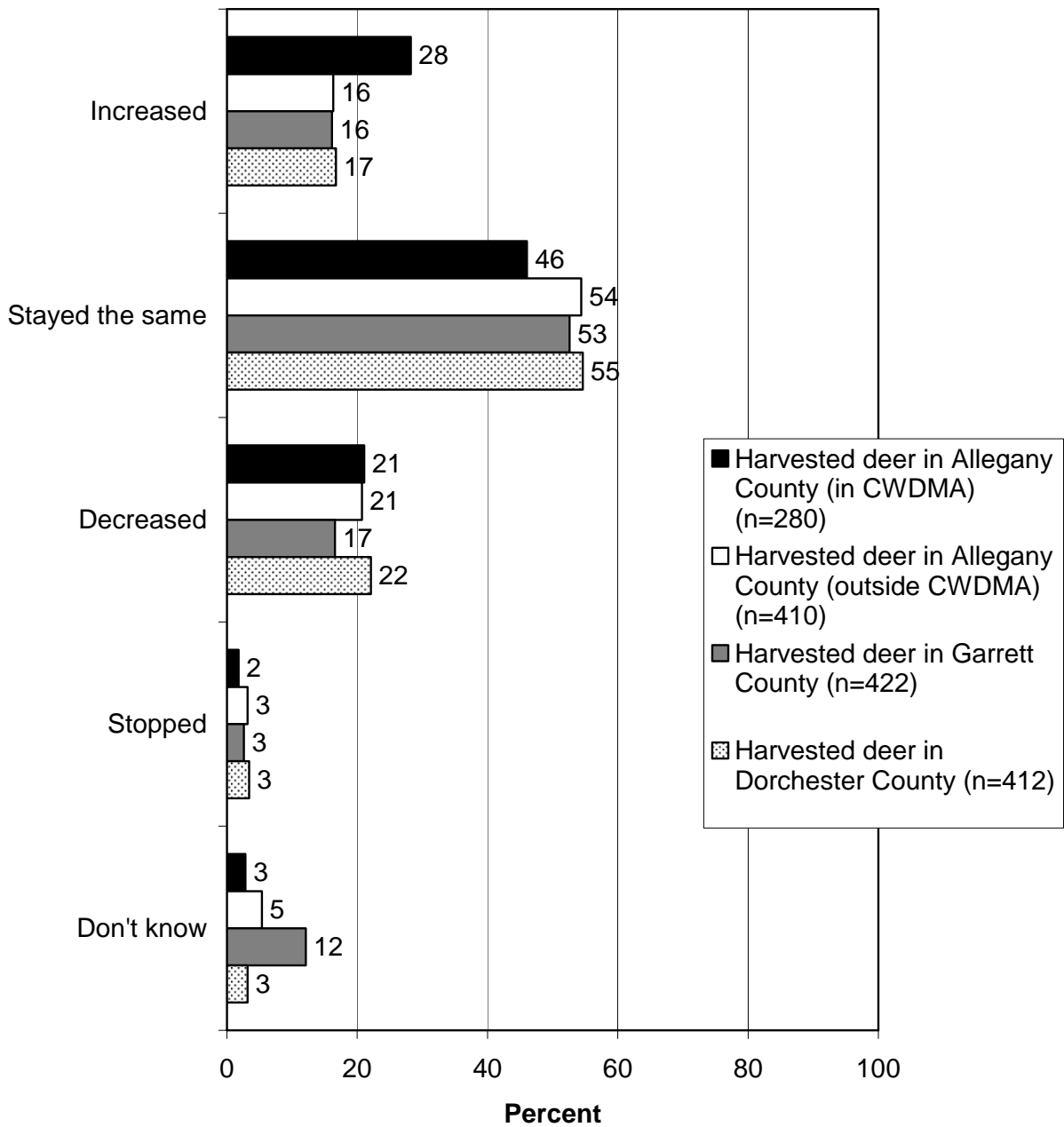
Q53. What is the single most important reason [you have not hunted deer/your deer hunting participation has decreased] in [Allegany/Garrett/Dorchester] County since 2010? (Asked of those whose deer hunting has decreased in [Allegany/Garrett/Dorchester] County since 2010 or who have not hunted in [Allegany/Garrett/Dorchester] County since 2010.)
(Part 1)



Q53. What is the single most important reason [you have not hunted deer/your deer hunting participation has decreased] in [Allegheny/Garrett/Dorchester] County since 2010? (Asked of those whose deer hunting has decreased in [Allegheny/Garrett/Dorchester] County since 2010 or who have not hunted in [Allegheny/Garrett/Dorchester] County since 2010.) (Part 2)



Q56. Would you say your deer hunting participation outside of [Allegany/Garrett/Dorchester] County has increased, stayed the same, or decreased since 2010?



GENERAL KNOWLEDGE OF CHRONIC WASTING DISEASE

- Deer hunters were asked how much they knew about Chronic Wasting Disease, and the results suggest that Allegany County hunters in and outside of the CWDMA, compared to Garrett County and Dorchester County hunters, are more likely to know *a great deal* or *moderate amount* about it ($p \leq 0.001$). By contrast, Garrett and Dorchester County hunters are more likely to know only *a little* or *nothing at all* about the disease ($p \leq 0.001$).
 - Among **Allegany County hunters in the CWDMA**, 63% know a great deal or moderate amount about Chronic Wasting Disease (17% know a great deal), while 37% know a little or nothing (just 4% say they know nothing).
 - Among **Allegany County hunters outside the CWDMA**, 59% know a great deal or moderate amount (including 19% who know a great deal), and 40% know a little or nothing (including 5% who know nothing).
 - Among **Garrett County hunters**, less than half (46%) know a great deal or moderate amount (12% know a great deal), while 54% know a little or nothing (13% say they know nothing).
 - Among **Dorchester County hunters**, 47% know a great deal or moderate amount about the disease (11% know a great deal), and more than half (53%) know a little or nothing (including 12% who know nothing).

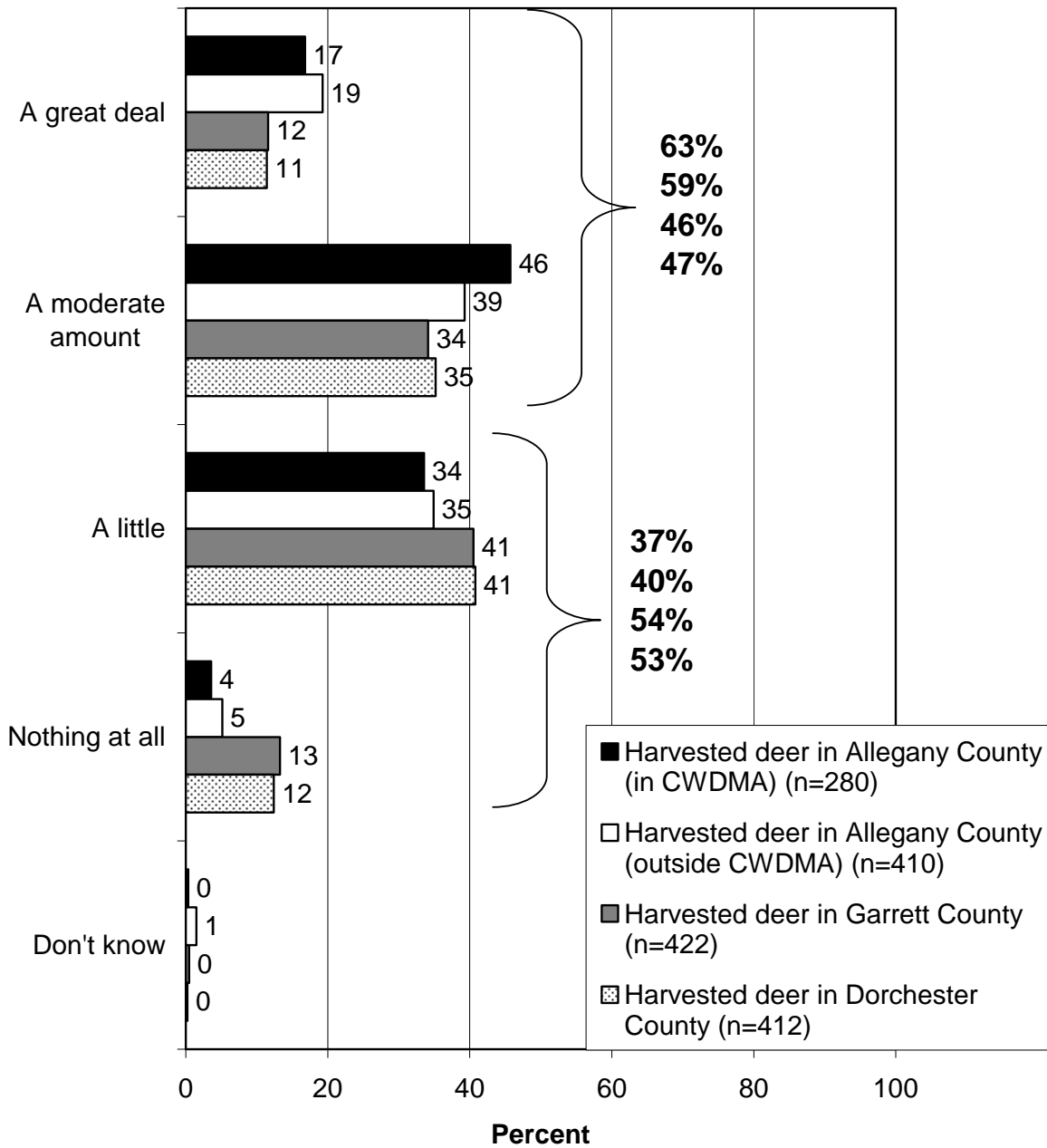
- While large majorities of hunters in all four areas were aware, prior to the survey, that a deer tested positive for Chronic Wasting Disease in Allegany County in 2011, Allegany County hunters in and outside of the CWDMA were more likely to be aware of this than were hunters in Garrett or Dorchester County (from 80% to 83% of Allegany hunters were aware, compared to 63% to 67% of Garrett and Dorchester hunters) ($p \leq 0.001$).

- Around a quarter of hunters from the four areas (ranging from 22% to 26%) *agree* that humans can contract or be infected by Chronic Wasting Disease. Meanwhile, Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, are more likely to *disagree* that humans can contract or be infected by Chronic Wasting Disease: 47% of Allegany hunters in the CWDMA and 50% of Allegany hunters outside of the CWDMA disagree with this, compared to 29% of Garrett and Dorchester

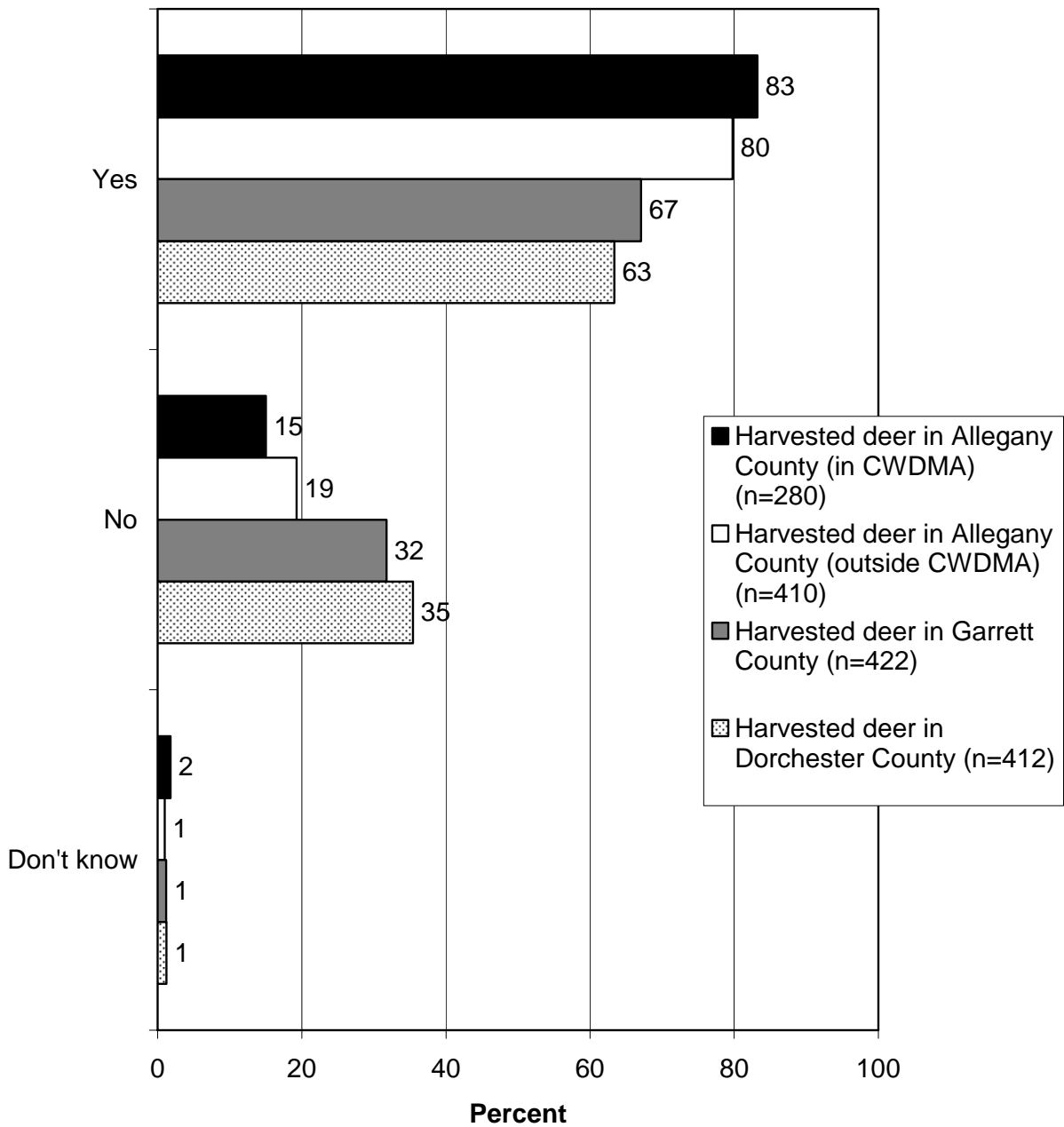
County hunters ($p \leq 0.001$). Note that Garrett and Dorchester County hunters are more likely to be unsure whether humans can contract Chronic Wasting Disease (38% and 42% of them, respectively, gave this response, compared to 24% of Allegany County hunters) ($p \leq 0.001$).

- There is strong overall awareness among deer hunters from the four areas that the DNR tests deer samples each year for Chronic Wasting Disease, although Allegany County hunters in and outside of the CWDMA are again more likely than their counterparts in the other areas to be aware of this: 81% of Allegany County hunters in and outside of the CWDMA indicated being aware of such testing prior to the survey, compared to 72% of Garrett County hunters and 69% of Dorchester County hunters ($p \leq 0.001$).
- Allegany County hunters in the CWDMA, compared to hunters in the other three groups, are the most likely to have read printed or online information about Chronic Wasting Disease from the Maryland DNR: a majority of them (61%) have read printed, online, or both types of information, while around half of Allegany County hunters outside the CWDMA (52%) and Dorchester County hunters (50%) have done so ($p \leq 0.001$). Meanwhile, just 40% of Garrett County hunters have read printed, online, or both types of information.
- Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, are more likely to know that there are specific ways of processing or butchering deer to minimize exposure to Chronic Wasting Disease: about three-quarters of hunters from Allegany County (both in and outside of the CWDMA) are aware of this, compared to 63% of Garrett County hunters and just 51% of Dorchester County hunters ($p \leq 0.001$).

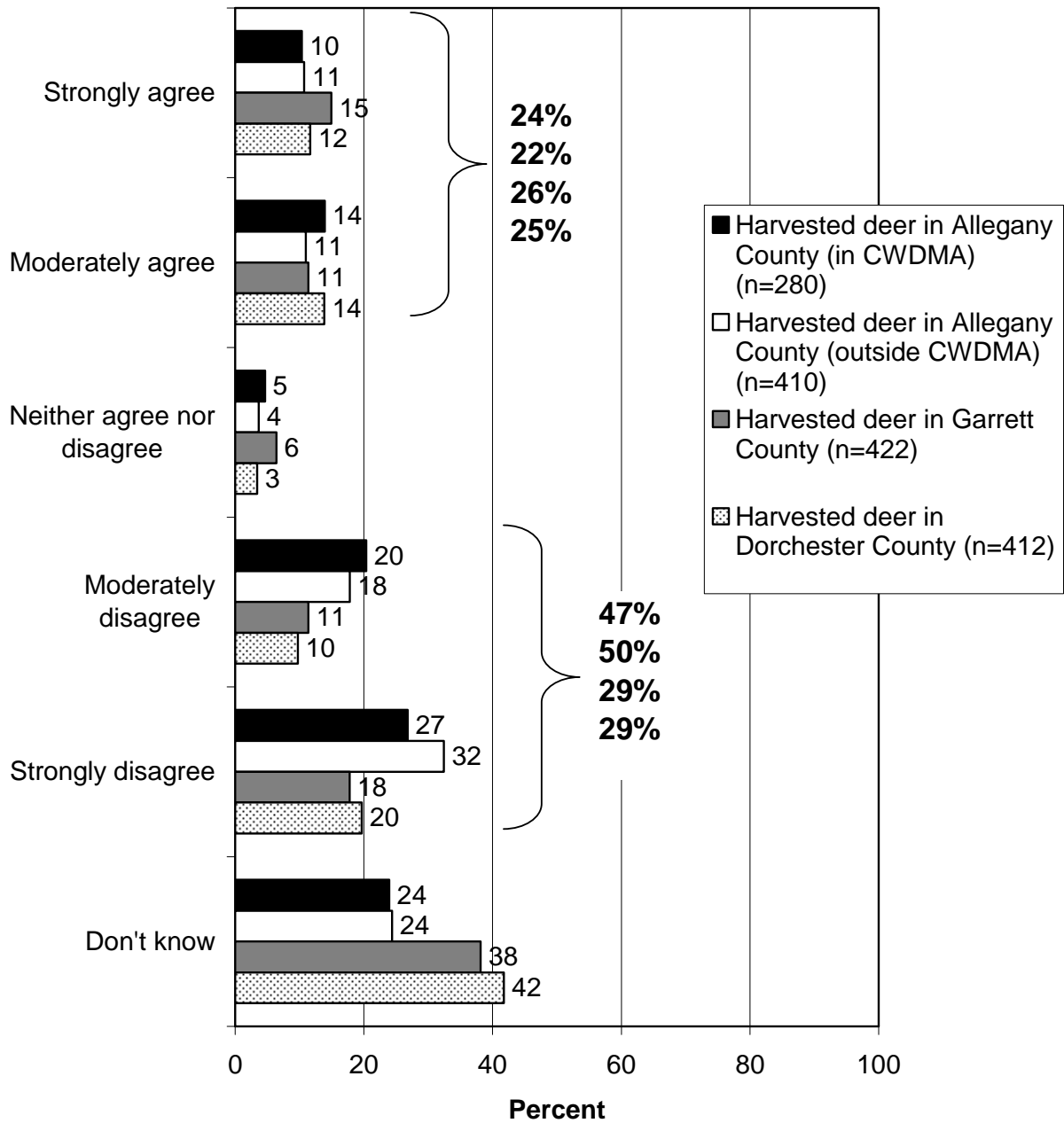
Q59. How much would you say you know about Chronic Wasting Disease, also referred to as CWD? Would you say you know...?



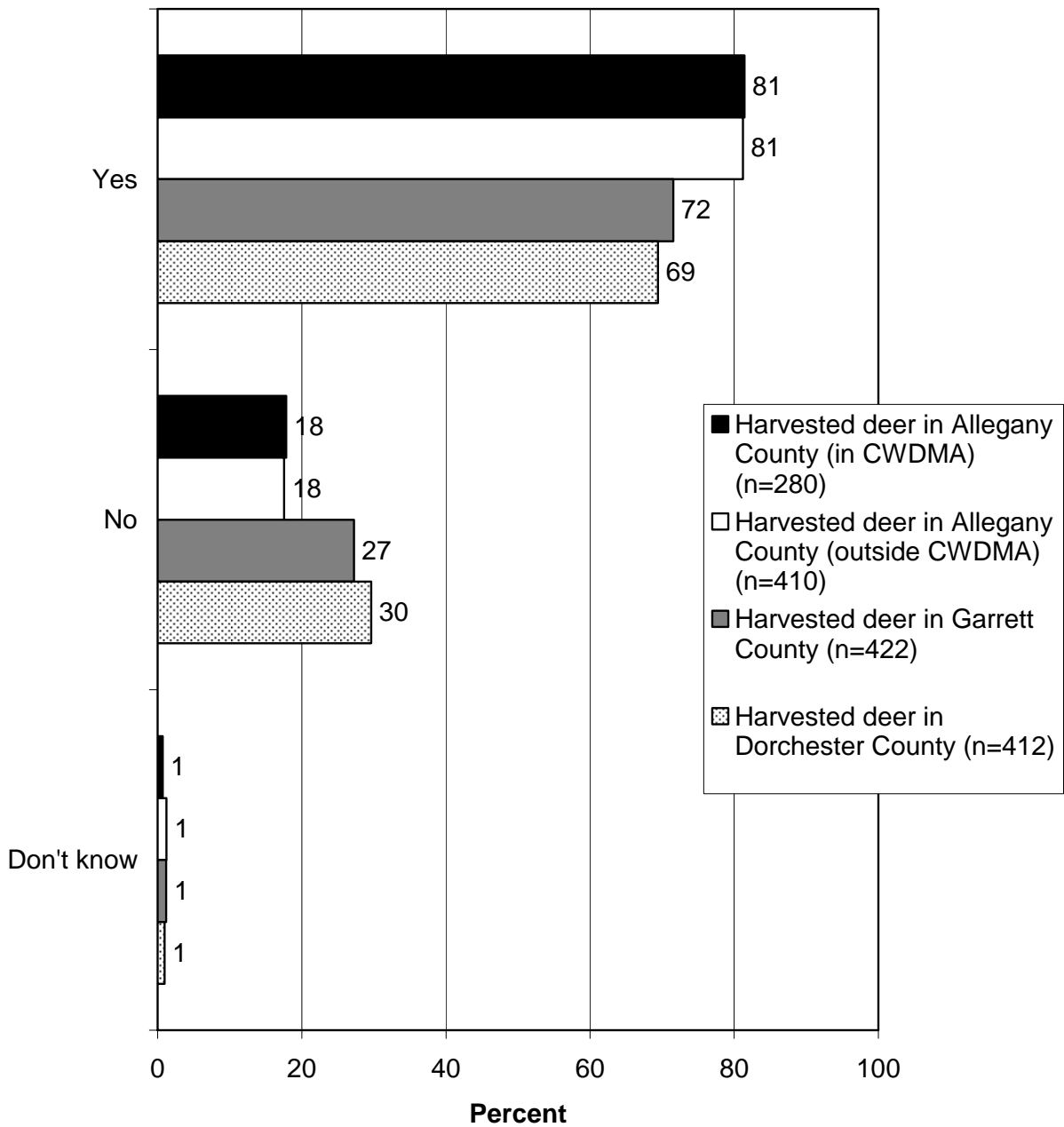
Q60. Prior to this survey, were you aware that a deer tested positive for Chronic Wasting Disease in Allegany County, Maryland, in 2011, prior to the 2011 hunting season?



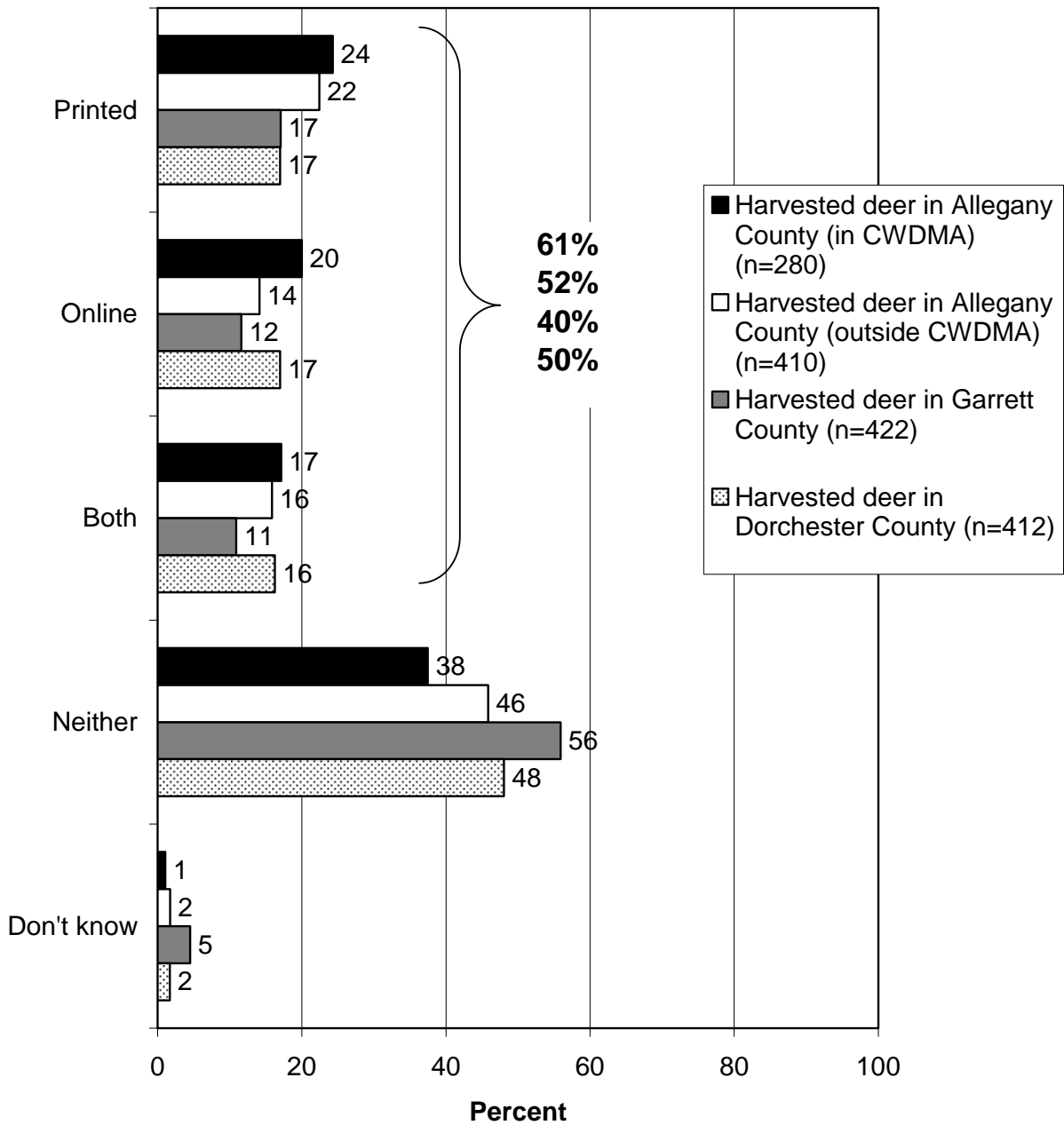
Q97. Do you agree or disagree that humans can contract or be infected by Chronic Wasting Disease?



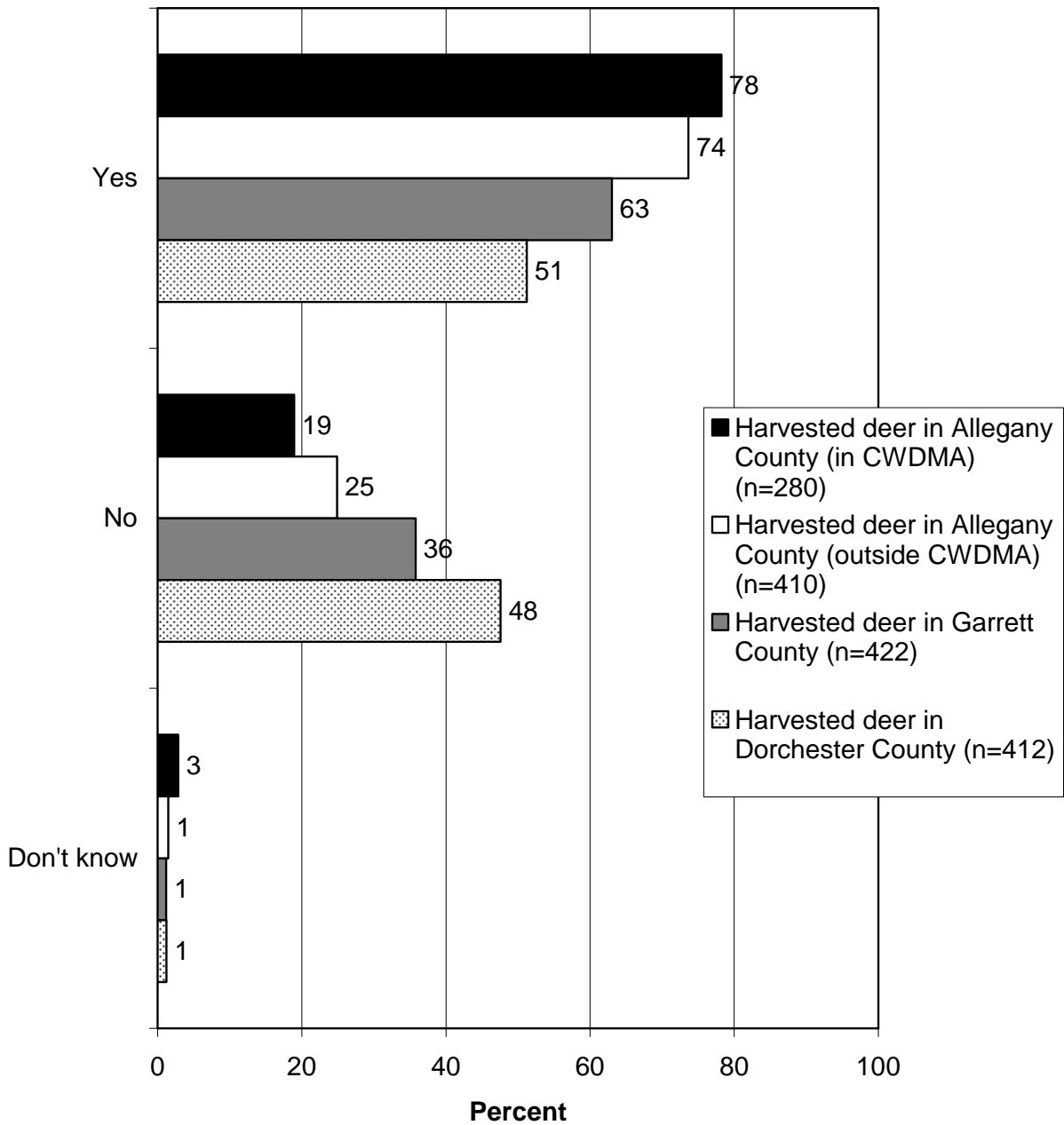
Q98. Prior to this survey, were you aware that the Maryland Department of Natural Resources, or the DNR, tests deer samples each year for Chronic Wasting Disease?



Q99. Have you ever read printed or online information about Chronic Wasting Disease specifically from the Maryland DNR?



Q100. Did you know there are specific ways you can process or butcher deer to minimize exposure to Chronic Wasting Disease?



AWARENESS OF AND PROXIMITY TO THE CHRONIC WASTING DISEASE MANAGEMENT AREA

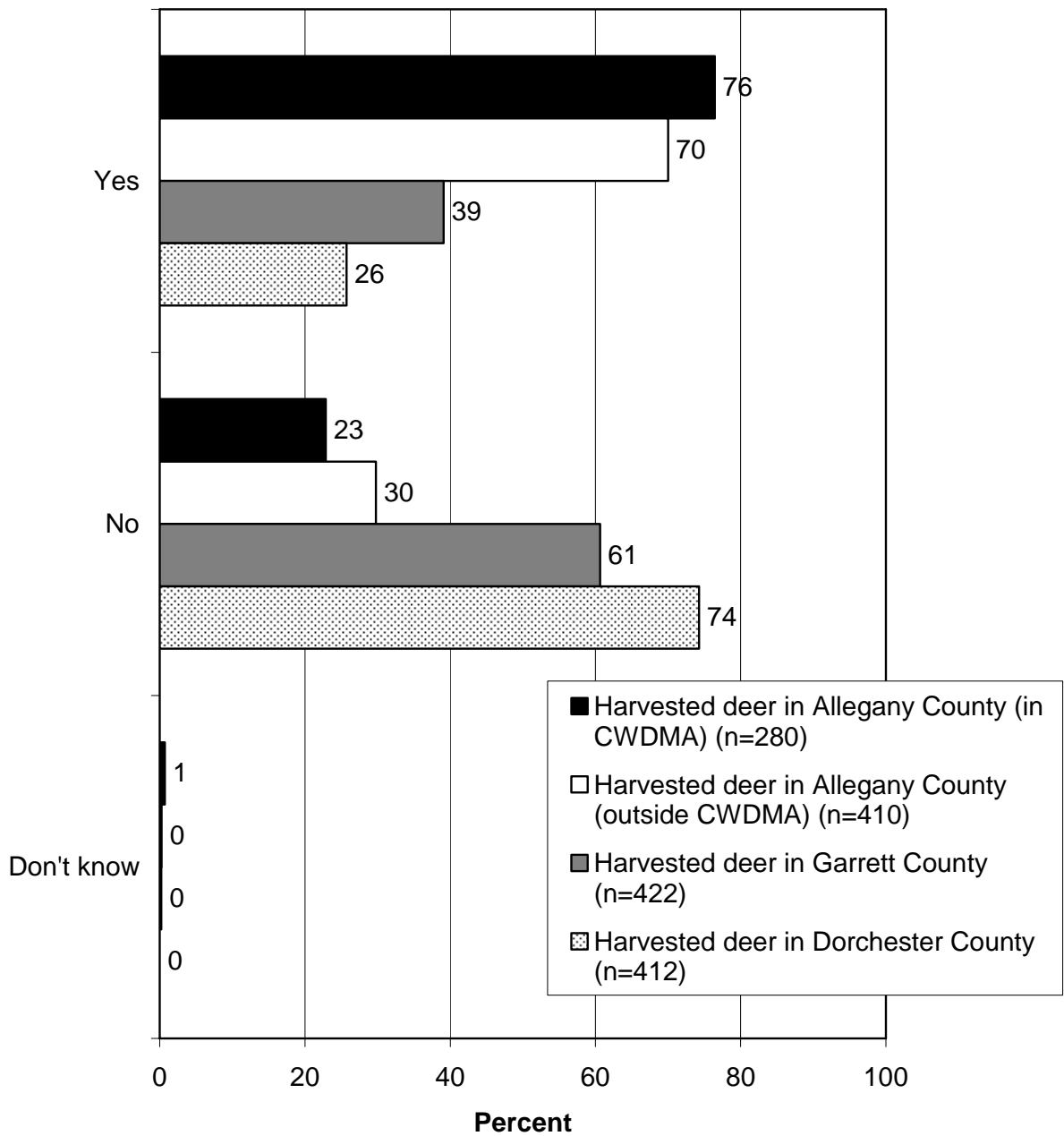
- Deer hunters were read the following description of the CWDMA:

The Maryland Department of Natural Resources, also called the DNR, has established a Chronic Wasting Disease Management Area within Allegany County to help prevent the spread of the disease. Deer hunting is currently allowed in the area. The Disease Management Area is the portion of Allegany County noted as Private Land Code 233 in the annual *Guide to Hunting and Trapping*. The Disease Management Area includes Green Ridge State Forest east of Flintstone and Oldtown.

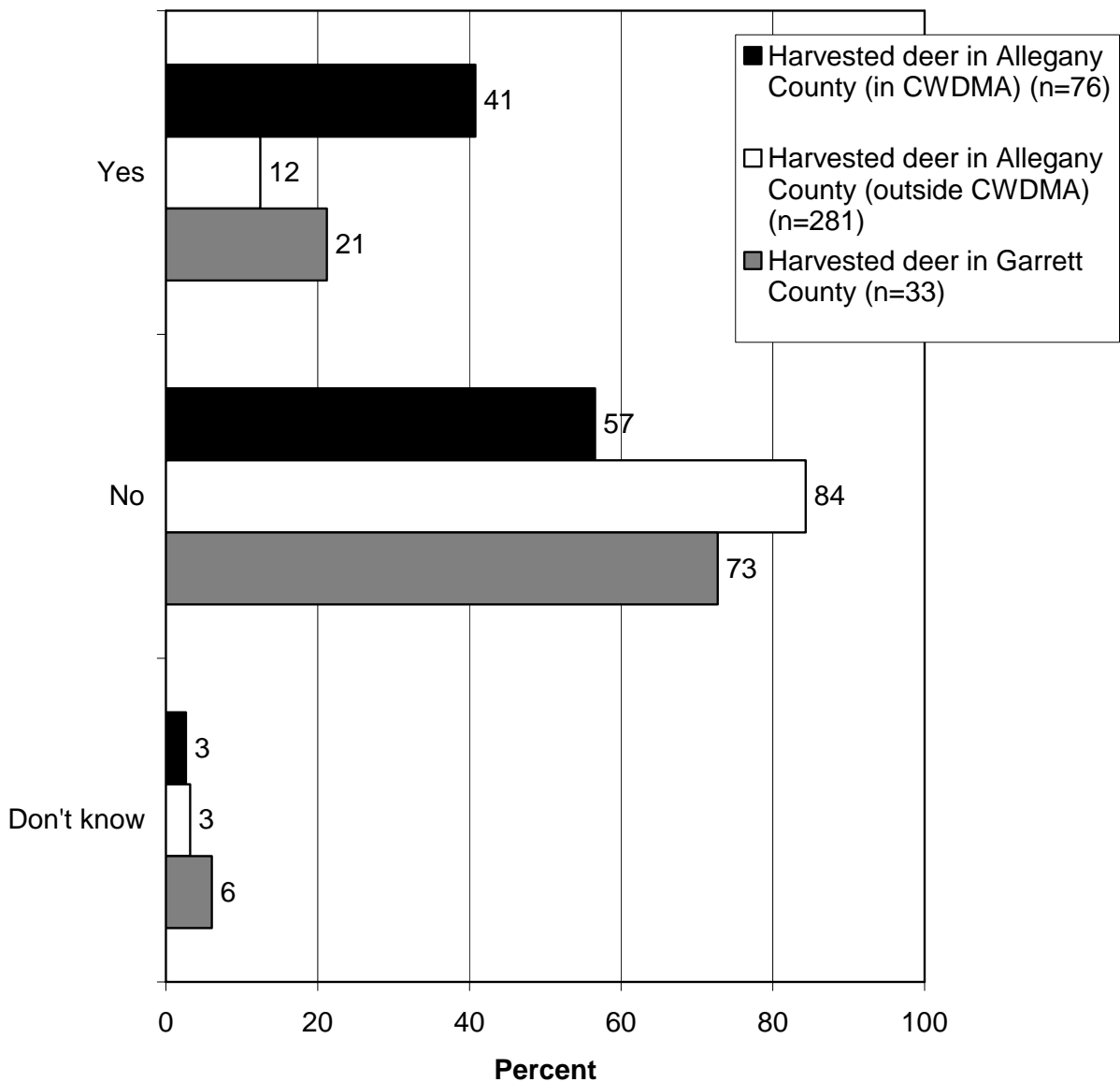
They were then asked whether they had been aware of the CWDMA prior to the survey. The results indicate that Allegany County deer hunters in and outside of the CWDMA, compared to Garrett and Dorchester County deer hunters, were more likely to be aware of the CWDMA prior to the survey: 76% of Allegany County hunters in the CWDMA and 70% of Allegany County hunters outside the CWDMA were aware of this, compared to just 39% of Garrett County hunters and 26% of Dorchester County hunters ($p \leq 0.001$).

- A follow-up question asked Allegany County *residents* in the sample if they lived within the CWDMA (that is, the portion of Allegany County known as Private Land Code 233 in the annual hunting guide): 41% of Allegany County hunters in the CWDMA, 12% of Allegany County hunters outside the CWDMA, and 21% of Garrett County hunters indicated currently living within the CWDMA. (Note that no Dorchester County deer hunters in the sample were Allegany County residents; therefore, no Dorchester County deer hunters received the follow-up questions pertaining to residence within the CWDMA.)
- Another question asked Allegany County residents who did *not* live within the CWDMA how far, in miles, they lived from the area: Allegany hunters in the CWDMA lived a mean distance of 19.43 miles from the area (median of 15 miles); Allegany hunters outside the CWDMA lived a mean distance of 20.90 miles from the area (median of 20 miles); and Garrett hunters (who live in Allegany County but not in the CWDMA) lived a mean distance of 27.54 miles from the area (median of 25 miles).
- Finally, Allegany deer hunters who owned land of 50 acres or more in Allegany County were asked whether any portion of the land was located within the CWDMA: 62% of landowner Allegany hunters in the CWDMA said that at least a portion of their land was located within the CWDMA, compared to just 10% among landowner Allegany hunters outside the CWDMA.

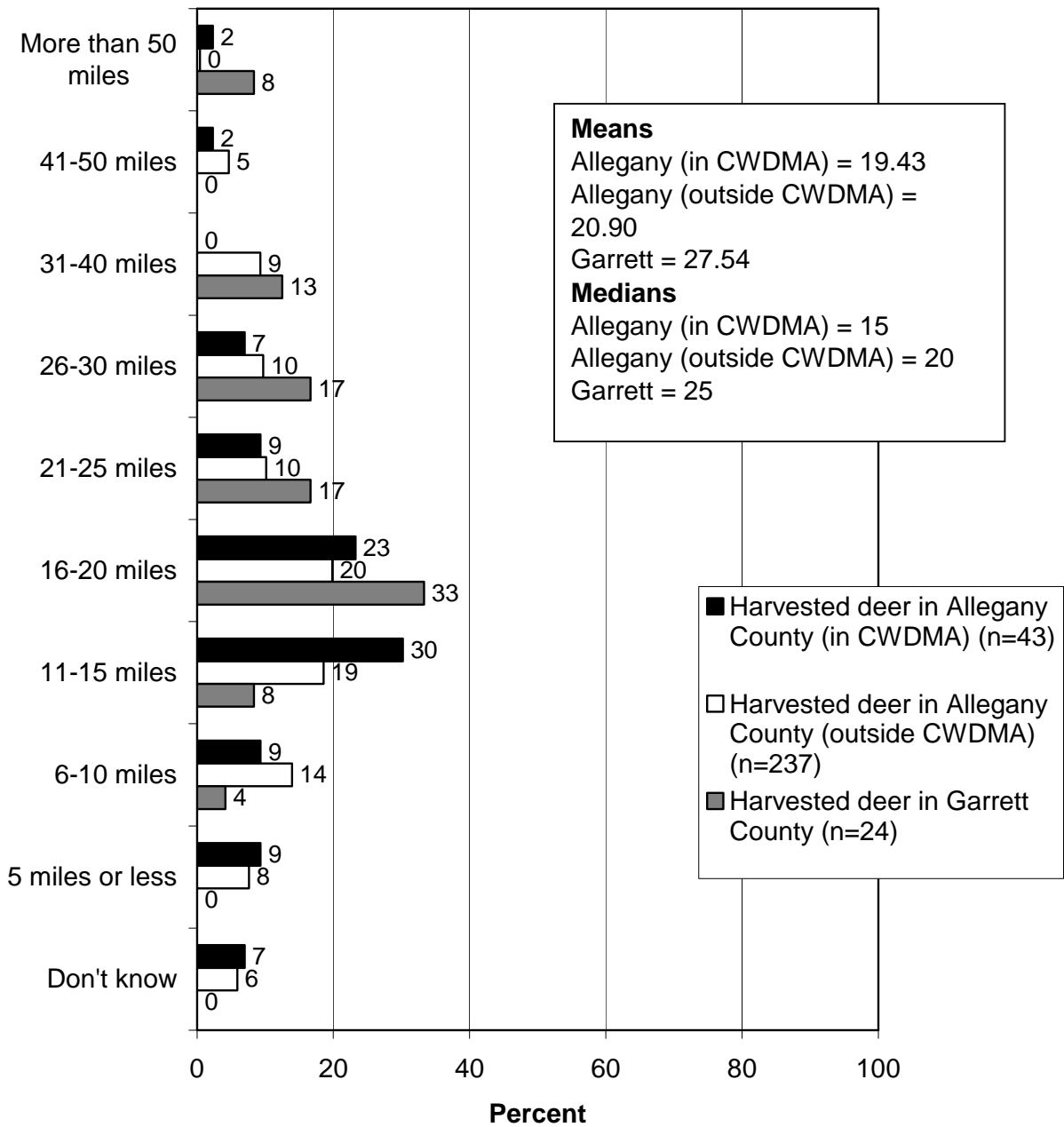
Q62. Prior to this survey, were you aware of the Chronic Wasting Disease Management Area?



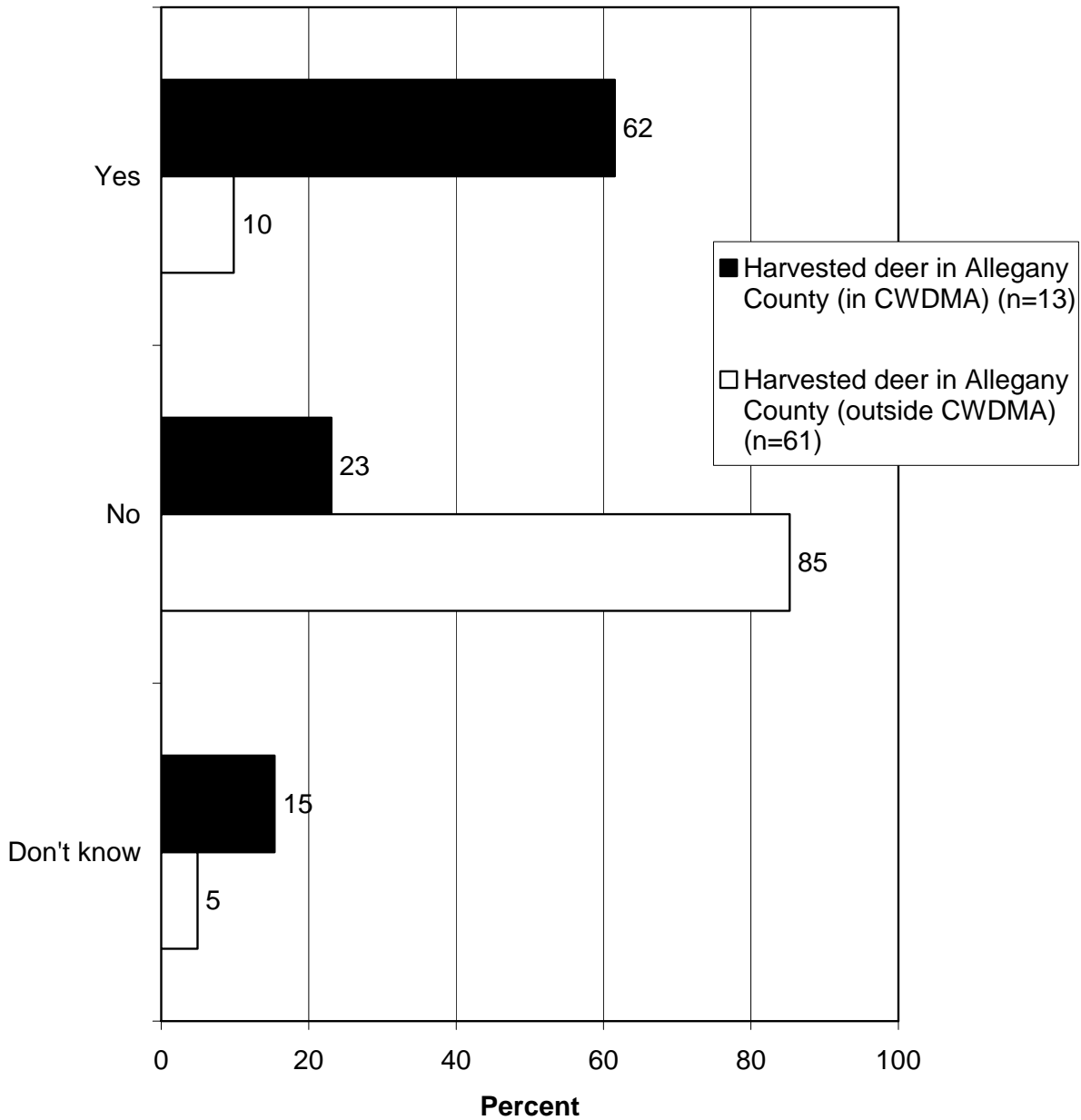
Q63. Based on the description of where the area is located, do you currently live within the Chronic Wasting Disease Management Area, that is, the portion of Allegany County known as Private Land Code 233 in the annual hunting guide? (Asked of those who live in Allegany County.)



Q64. About how far, in miles, do you live from the Disease Management Area? (Asked of those who live in Allegany County but do not live within the Chronic Wasting Disease Management Area.)



**Q66. Earlier you said you own land in Allegany County. Is this land, or any portion of this land, located within the Disease Management Area?
(Asked of Allegany deer hunters who own land of at least 50 acres or more in Allegany County.)**



HUNTING PARTICIPATION IN AND NEAR THE CHRONIC WASTING DISEASE MANAGEMENT AREA

- Deer hunters were asked whether they had hunted deer in the CWDMA *prior to* the discovery of Chronic Wasting Disease in 2011, and Allegany County hunters in the CWDMA were, by far, the group most likely to have done so: roughly three-quarters of them (74%) hunted deer in the area during this time period, compared to a third of Allegany County hunters outside the CWDMA (33%), 7% of Garrett County hunters, and 10% of Dorchester County hunters ($p \leq 0.001$).
 - From 88% to 97% of deer hunters from the four areas who hunted deer in the CWDMA prior to the discovery of CWD hunted bucks, while 58% to 83% hunted does (note that Dorchester County had the lowest percentage of those who hunted does in the area during this time period).

- The survey asked deer hunters whether they had hunted deer in the CWDMA *since* the discovery of Chronic Wasting Disease in 2011 (i.e., during the 2011 or 2012 hunting season), and responses generally showed a notable drop in participation following the discovery of CWD. Allegany County hunters in the CWDMA were again the group most likely to have hunted in the CWDMA, with slightly more than half of them (56%) hunting deer in the CWDMA during the 2011 or 2012 hunting season (recall that 74% had hunted deer in the area *prior to* the discovery of CWD) ($p \leq 0.001$). Meanwhile, 21% of Allegany County hunters outside the CWDMA hunted deer in the CWDMA during the 2011 or 2012 hunting season (33% of them had hunted deer in the area *prior to* the discovery of CWD), 4% of Garrett County hunters (7% hunted deer in the area *prior to* the discovery of CWD), and 3% of Dorchester County hunters (10% hunted deer in the area *prior to* the discovery of CWD). (Note that a total of only 16 Garrett County hunters and 11 Dorchester County hunters hunted deer in the CWDMA after the discovery of CWD in 2011; these numbers should be kept in mind when interpreting the results below.)
 - Regarding the type of land deer hunters hunted on when hunting in the CWDMA after the discovery of CWD in 2011, Allegany County hunters in the CWDMA most often hunted on public land (55%), while 22% hunted mostly on private land and 23% hunted on both types of land about equally. Allegany County hunters outside the CWDMA were

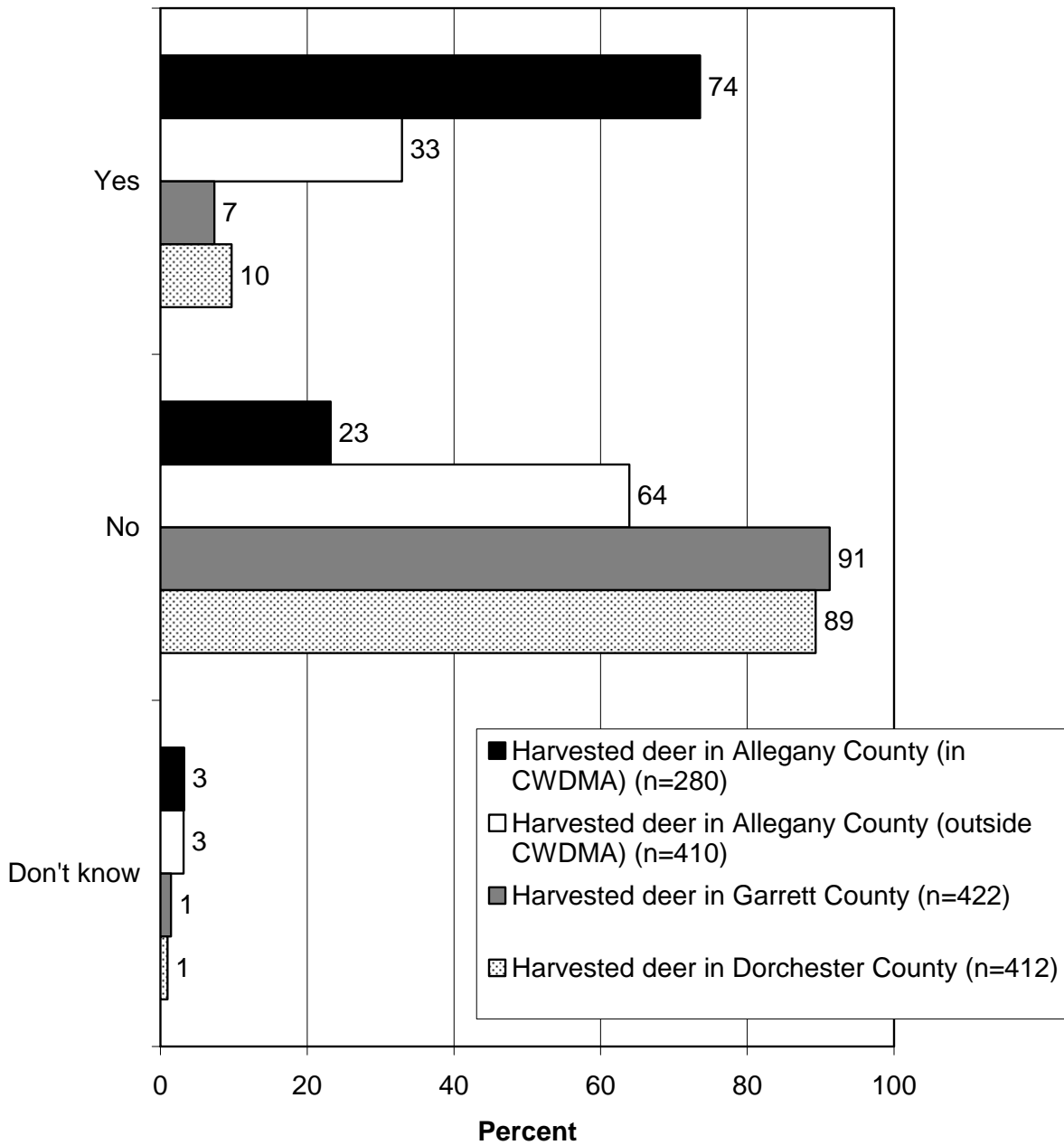
divided rather evenly: 35% hunted mostly on public land, 32% hunted mostly on private land, and 33% hunted on both types about equally. Garrett County hunters most often hunted on private land (56%), while the remaining 44% hunted mostly on public land. Finally, Dorchester County hunters most commonly hunted on public land (36%), followed by 27% who hunted mostly on private land and 27% who hunted on both types about equally.

- Among those who hunted deer in the CWDMA after the discovery of CWD in 2011, 97% of Allegany County hunters in the CWDMA and 85% of Allegany County hunters outside the CWDMA said they hunted bucks, while 56% of Garrett County hunters and 73% of Dorchester County hunters indicated the same. Meanwhile, 77% of Allegany County hunters in the CWDMA, 69% of Allegany County hunters outside the CWDMA, 56% of Garrett County hunters, and 64% of Dorchester County hunters hunted does in the CWDMA following the discovery of CWD in 2011.
 - Those who hunted deer in the CWDMA after the discovery of CWD in 2011 were asked whether they had personally harvested any deer in the area: 66% of Allegany County hunters in the CWDMA, 47% of Allegany County hunters outside the CWDMA, 38% of Garrett County hunters, and 9% of Dorchester County hunters indicated that they had done so.
- Deer hunters in the sample who last hunted deer in Allegany, Garrett, or Dorchester County in 2011 or 2012 were asked whether they had personally harvested any deer in the county since the discovery of CWD (Allegany hunters, both in and outside of the CWDMA, were asked whether they had harvested deer in Allegany County *outside* of the CWDMA). While only about a third of Allegany County hunters in the CWDMA (36%) indicated that they had harvested a deer in Allegany County outside of the CWDMA, at least two-thirds of each of the other three groups had done the same in their respective counties, including 66% of Allegany County hunters outside the CWDMA, 77% of Garrett County hunters, and 87% of Dorchester County hunters.

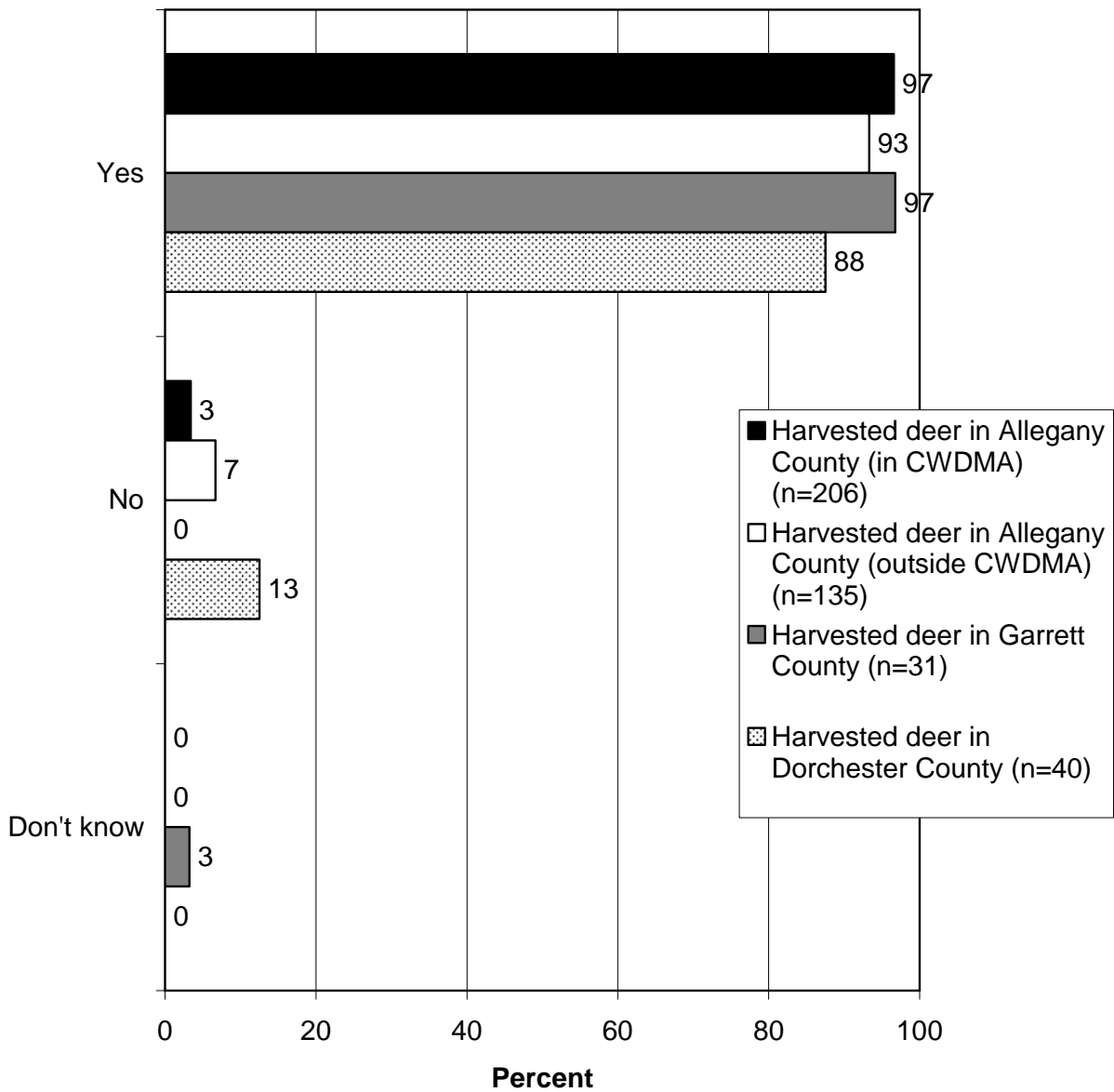
- A question asked deer hunters in the four areas how close, in miles, to the CWDMA they were willing to hunt deer. In general, the results suggest that while Allegany County hunters are willing to hunt deer fairly close to the CWDMA (particularly those from the group that previously harvested a deer within the CWDMA), their Garrett and Dorchester County counterparts prefer to hunt a greater distance from the area. A majority of Allegany County hunters in the CWDMA (63%) indicated being willing to hunt less than a mile from the CWDMA, while 41% of Allegany County hunters outside the CWDMA, 22% of Garrett County hunters, and 31% of Dorchester County hunters gave the same answer. At the same time, 14% of Allegany County hunters in the CWDMA, 22% of Allegany County hunters outside the CWDMA, 36% of Garrett County hunters, and 33% of Dorchester County hunters were unsure how close to the CWDMA they would be willing to hunt deer. The median distance deer hunters in each area would be willing to hunt from the CWDMA illustrates the differences between Allegany County hunters and Garrett and Dorchester County hunters: Allegany County hunters in and outside of the CWDMA had a median distance of 0 miles, compared to a median distance of 5 miles for Garrett County hunters and 4 miles for Dorchester County hunters.
- It was hypothesized that the closer Allegany and Garrett County hunters lived to the CWDMA, the closer these hunters would be willing to hunt deer to the CWDMA. However, when the two data points (i.e., number of miles the respondent's residence was located from the CWDMA and number of miles the respondent was willing to hunt to the CWDMA) were plotted, it was determined that no relationship existed between the two—this held true for both Allegany and Garrett County hunters. (Note that the correlation could not be tested for Dorchester County hunters, as none of these individuals were residents of Allegany County and so did not provide a response for the first data point.)
- Two questions, asked of those who hunted in the CWDMA since the discovery of CWD, measured awareness and use of deer carcass disposal dumpsters located in the area. The results indicate that Allegany County hunters in and outside of the CWDMA, compared to Garrett and Dorchester County hunters, were more likely to be aware of the dumpsters prior to the survey: more than three-quarters of Allegany County hunters in the CWDMA (80%) and two-thirds of Allegany County hunters outside the CWDMA (67%) were aware of the

carcass disposal dumpsters prior to the survey, compared to 50% of Garrett County hunters and 45% of Dorchester County hunters ($p \leq 0.005$). The follow-up question found that about a third of Allegany County hunters in the CWDMA (33%) and Allegany County hunters outside the CWDMA (30%) had used one of the dumpsters before, compared to just 13% of Garrett County hunters. (No Dorchester County hunters had ever used a carcass disposal dumpster.)

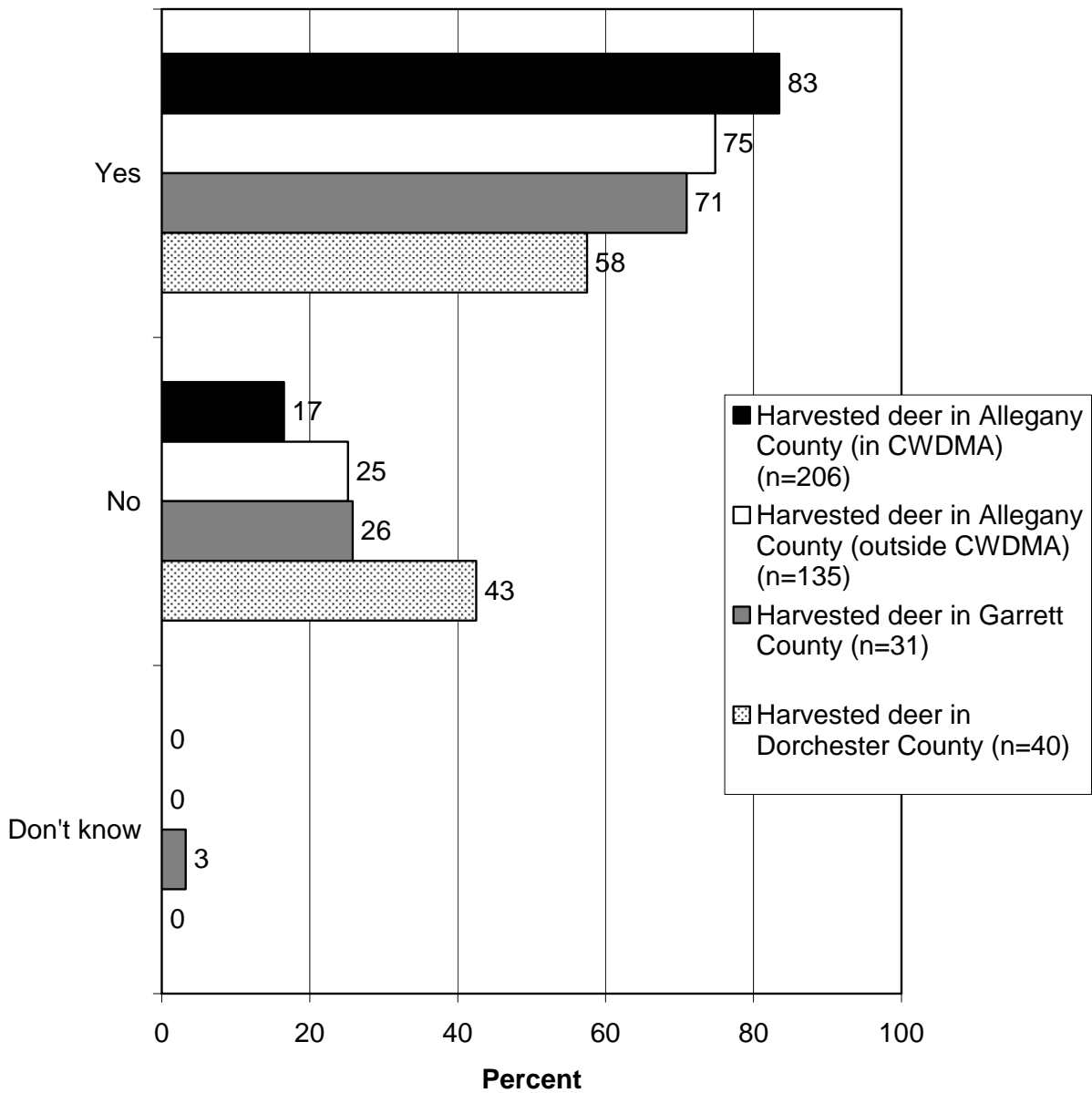
Q67. Did you hunt deer in the Chronic Wasting Disease Management Area prior to the discovery of Chronic Wasting Disease in 2011?



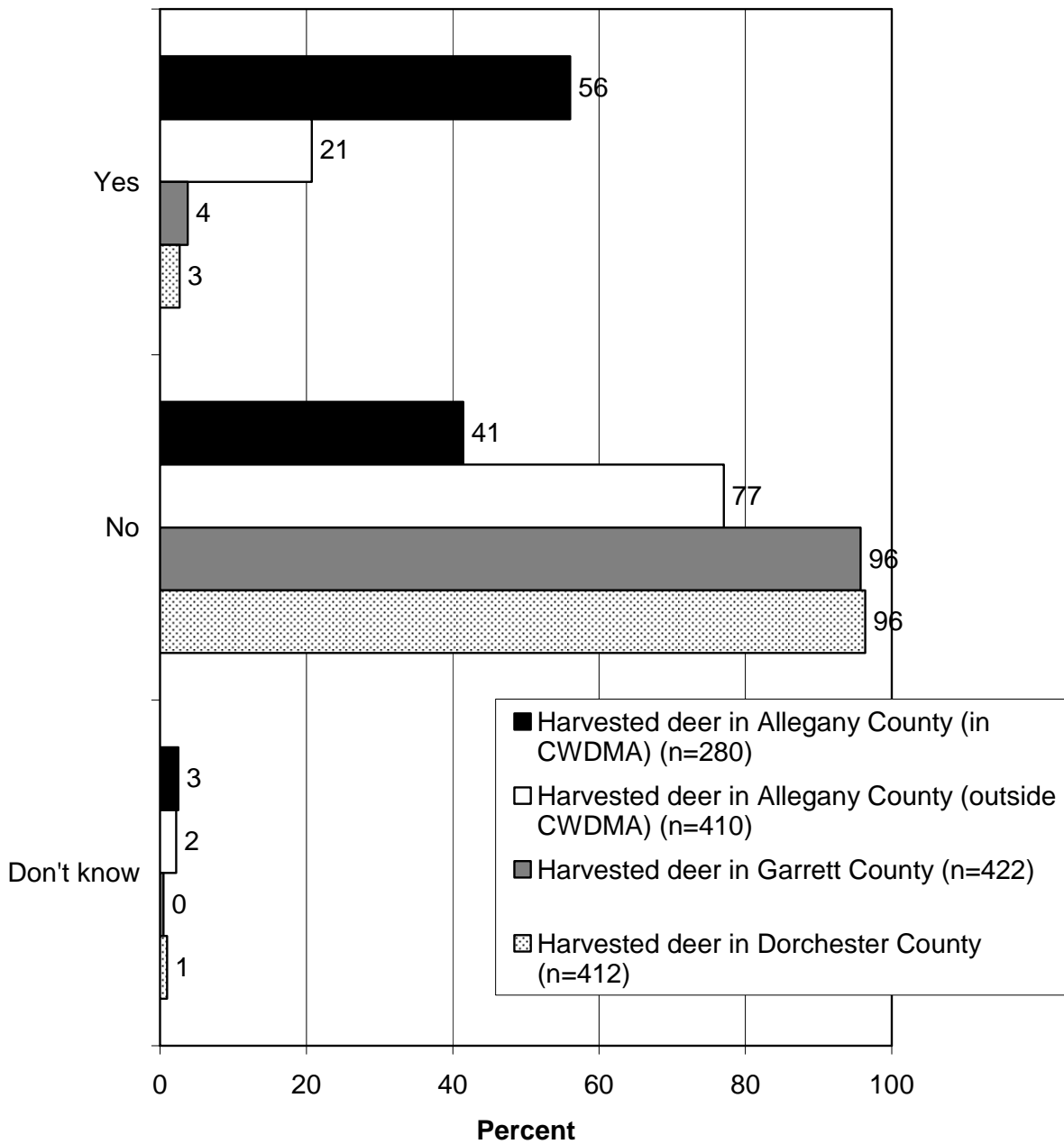
Q68. Did you hunt bucks in the Disease Management Area prior to the discovery of Chronic Wasting Disease? (Asked of those who hunted deer in the Chronic Wasting Disease Management Area prior to the discovery of Chronic Wasting Disease in 2011.)



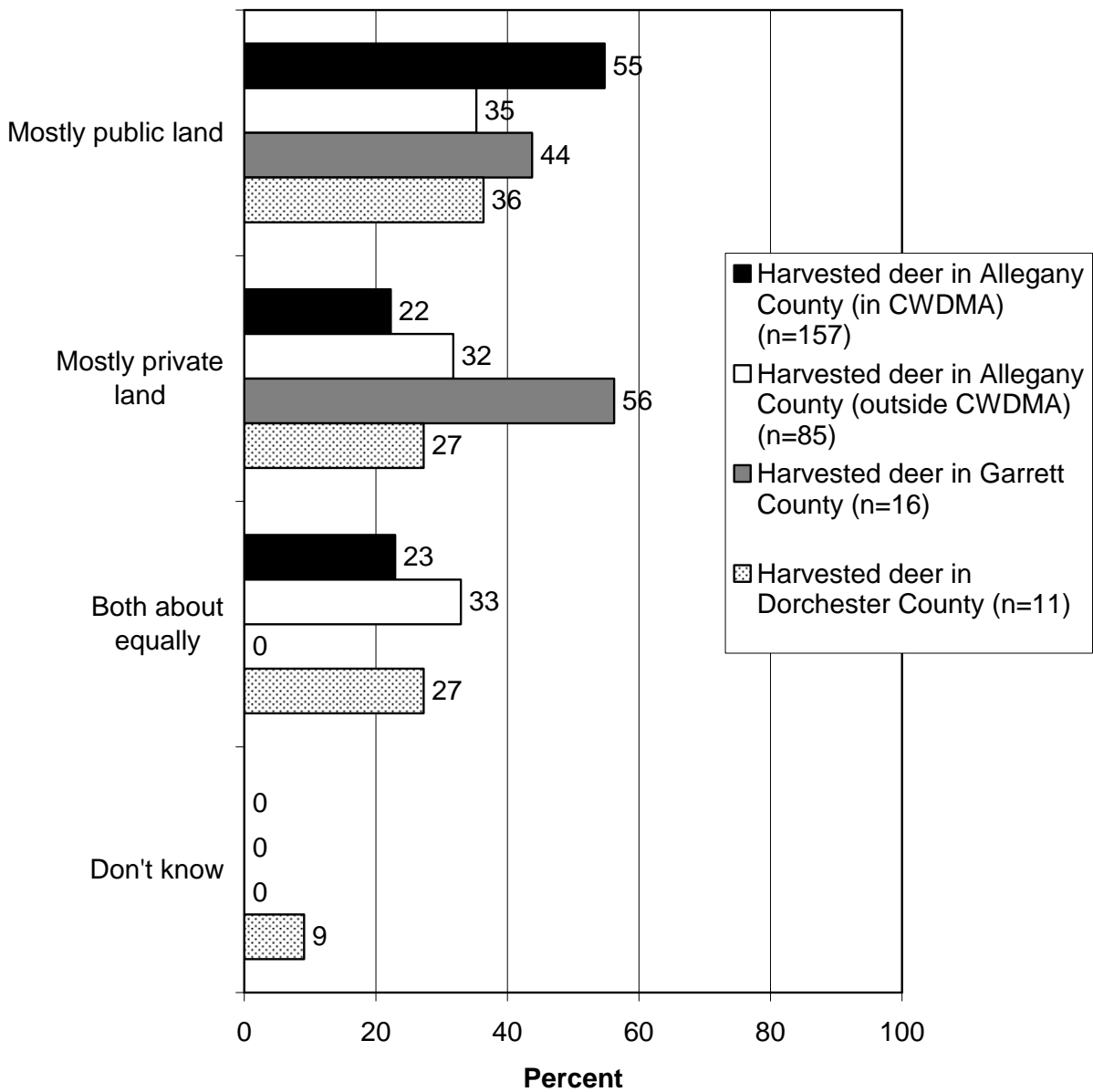
Q69. Did you hunt does in the Disease Management Area prior to the discovery of Chronic Wasting Disease? (Asked of those who hunted deer in the Chronic Wasting Disease Management Area prior to the discovery of Chronic Wasting Disease in 2011.)



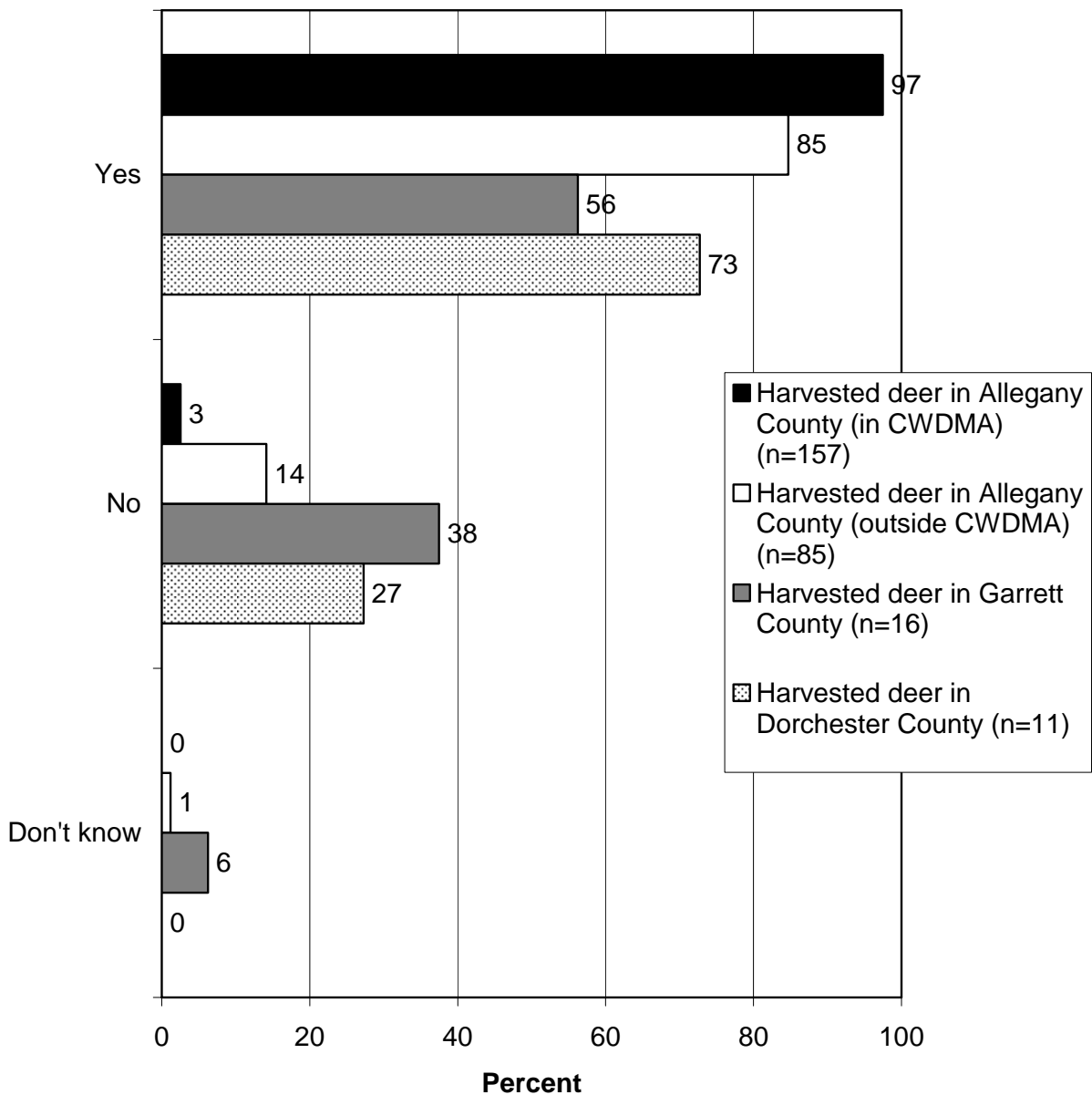
Q70. Have you hunted deer in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011, that is, during the 2011 or 2012 hunting season?



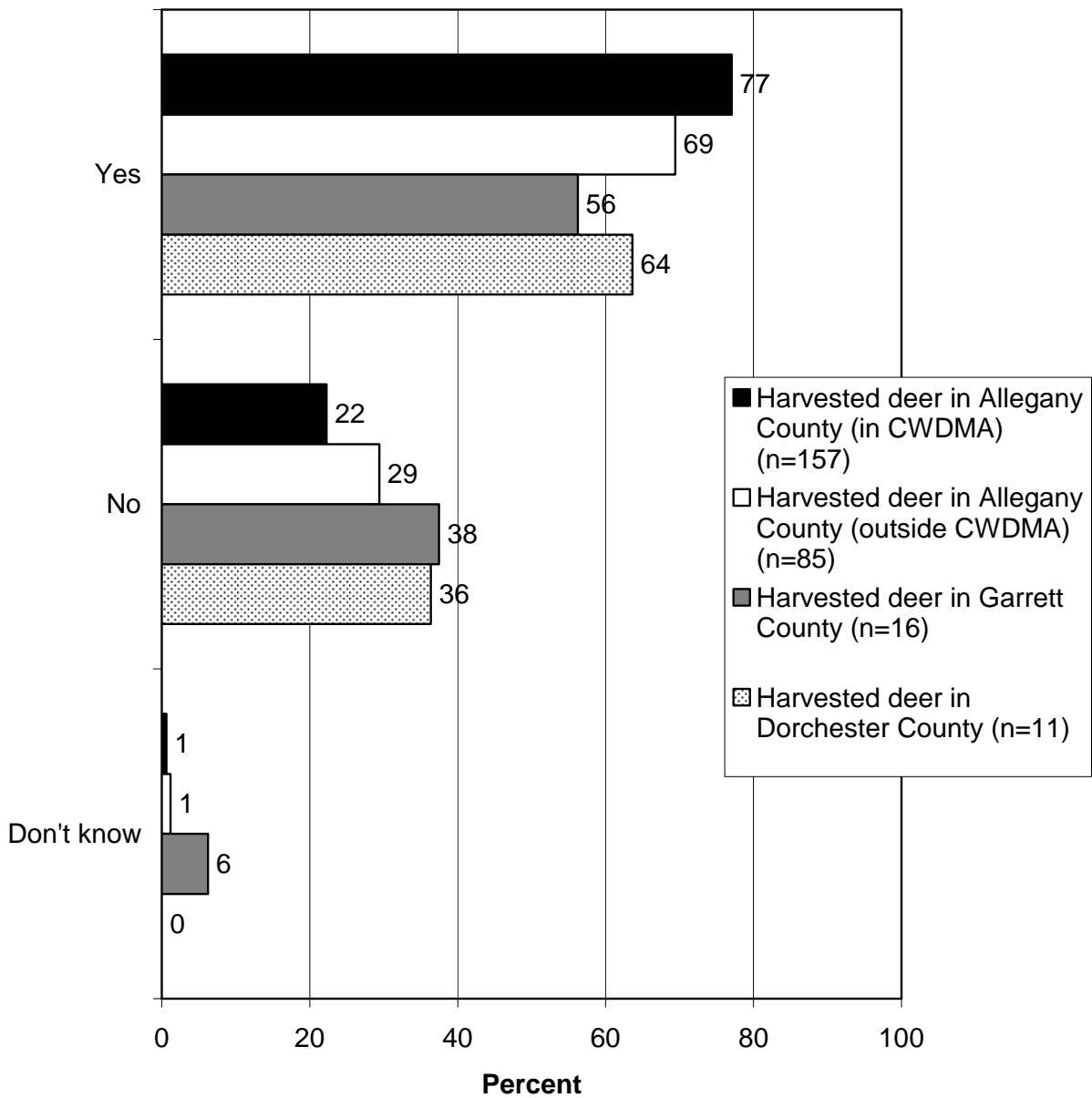
Q71. When hunting in the Disease Management Area since the discovery of Chronic Wasting Disease in 2011, do you hunt deer mostly on public land, mostly on private land, or both about equally? (Asked of those who have hunted deer in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011.)



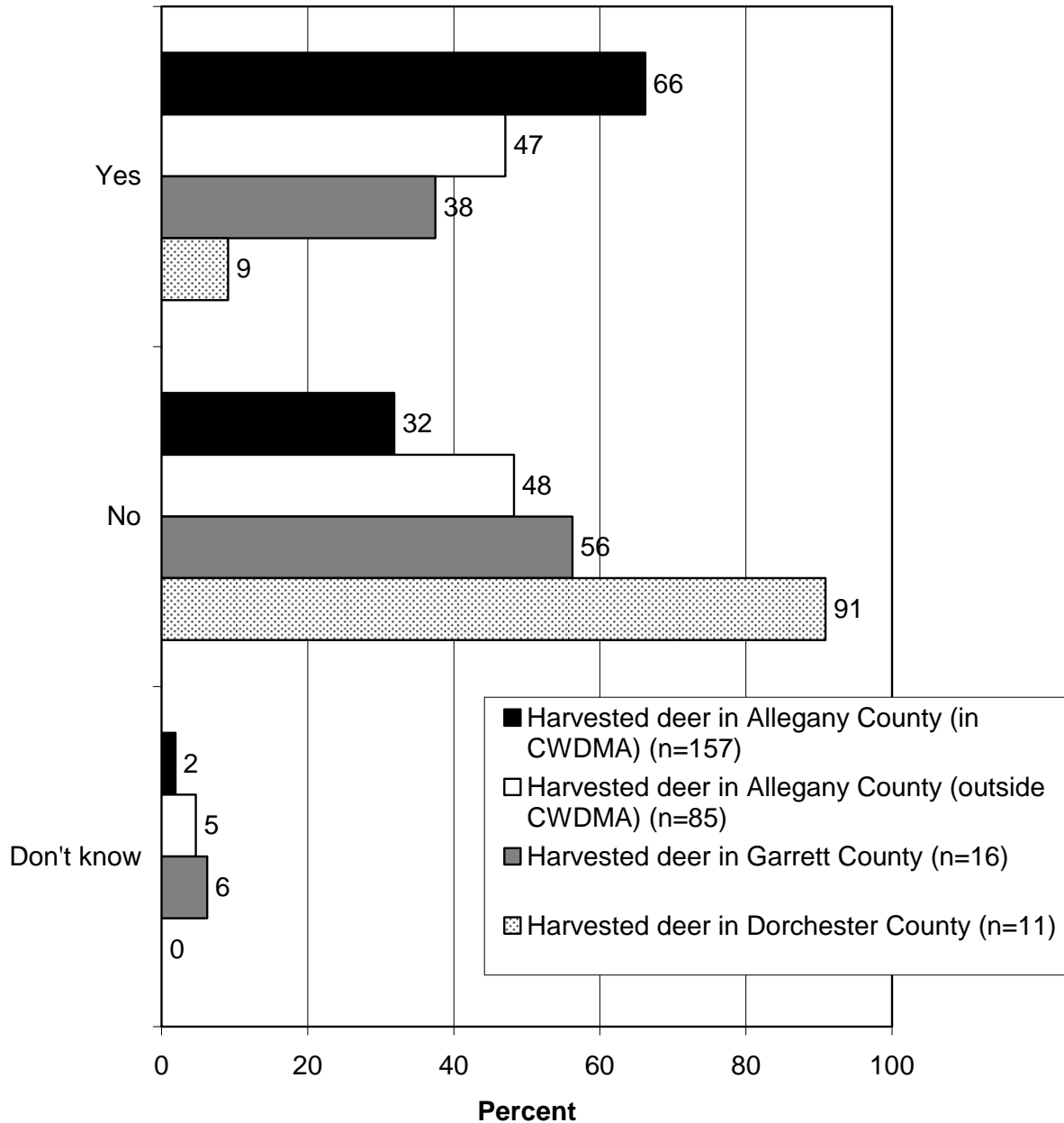
Q72. Have you hunted bucks in the Disease Management Area since the discovery of Chronic Wasting Disease? (Asked of those who have hunted deer in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011.)



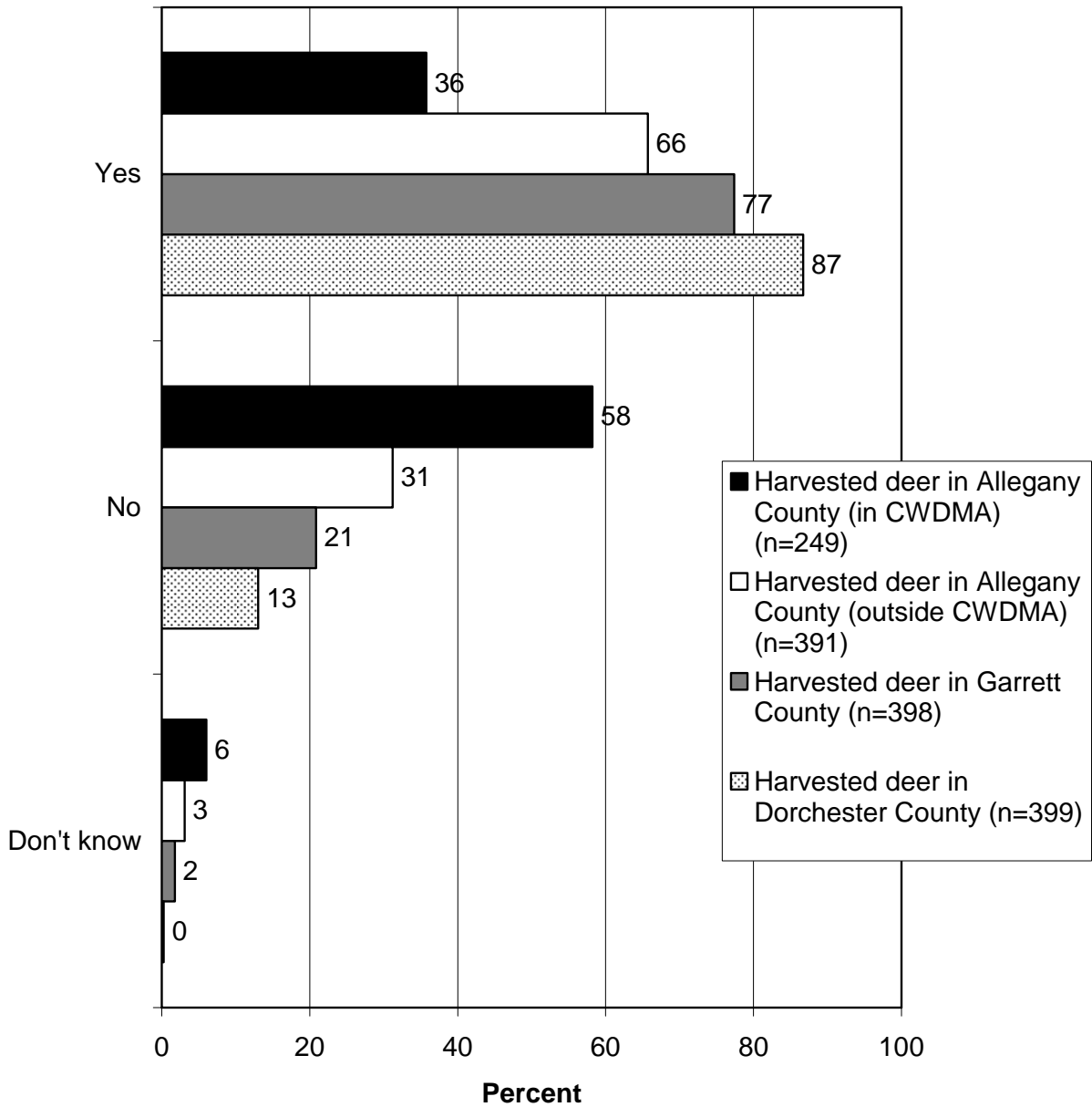
Q73. Have you hunted does in the Disease Management Area since the discovery of Chronic Wasting Disease? (Asked of those who have hunted deer in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011.)



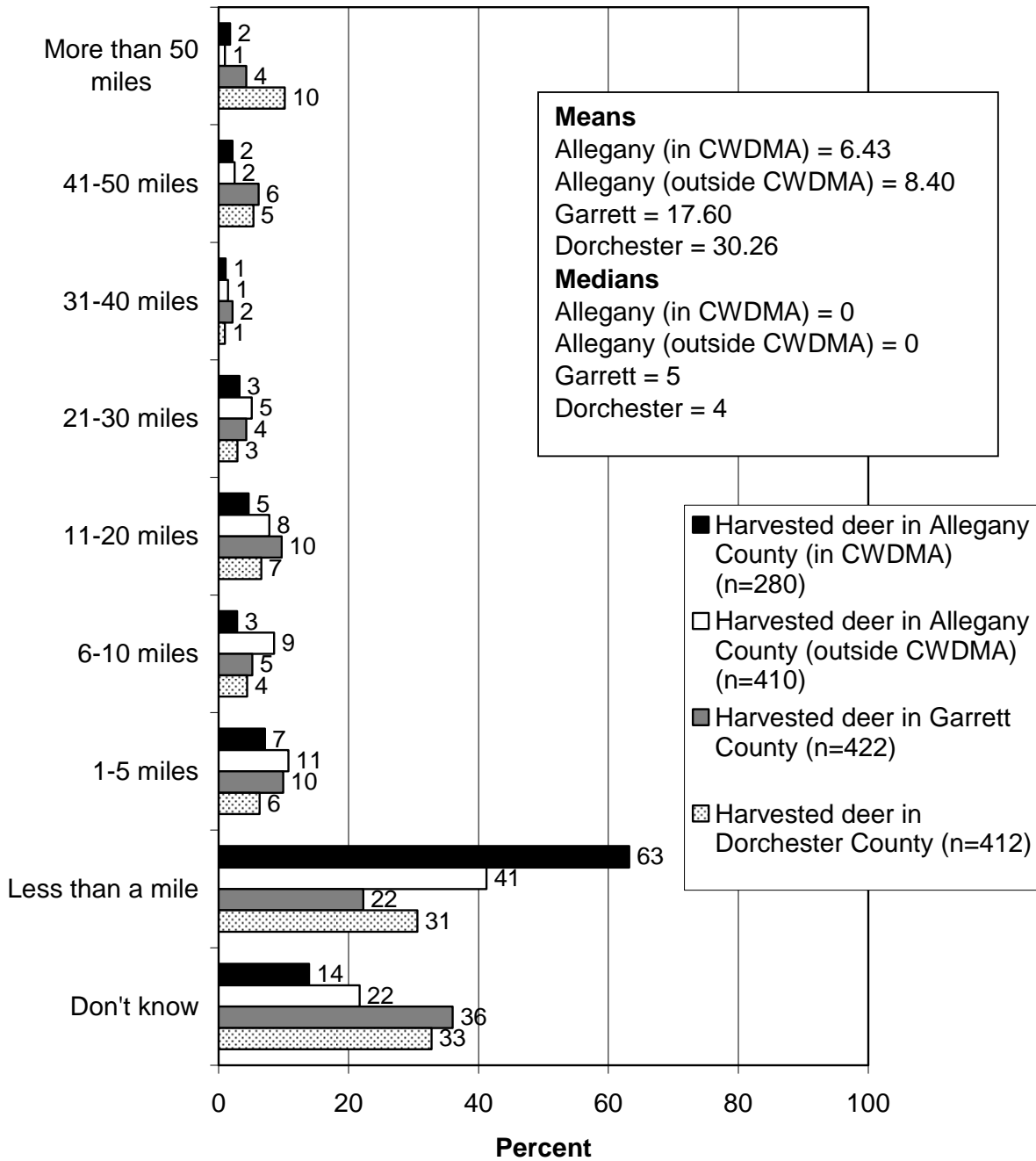
Q74. Have you personally harvested any deer in the Disease Management Area since the discovery of Chronic Wasting Disease? (Asked of those who have hunted deer in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011.)



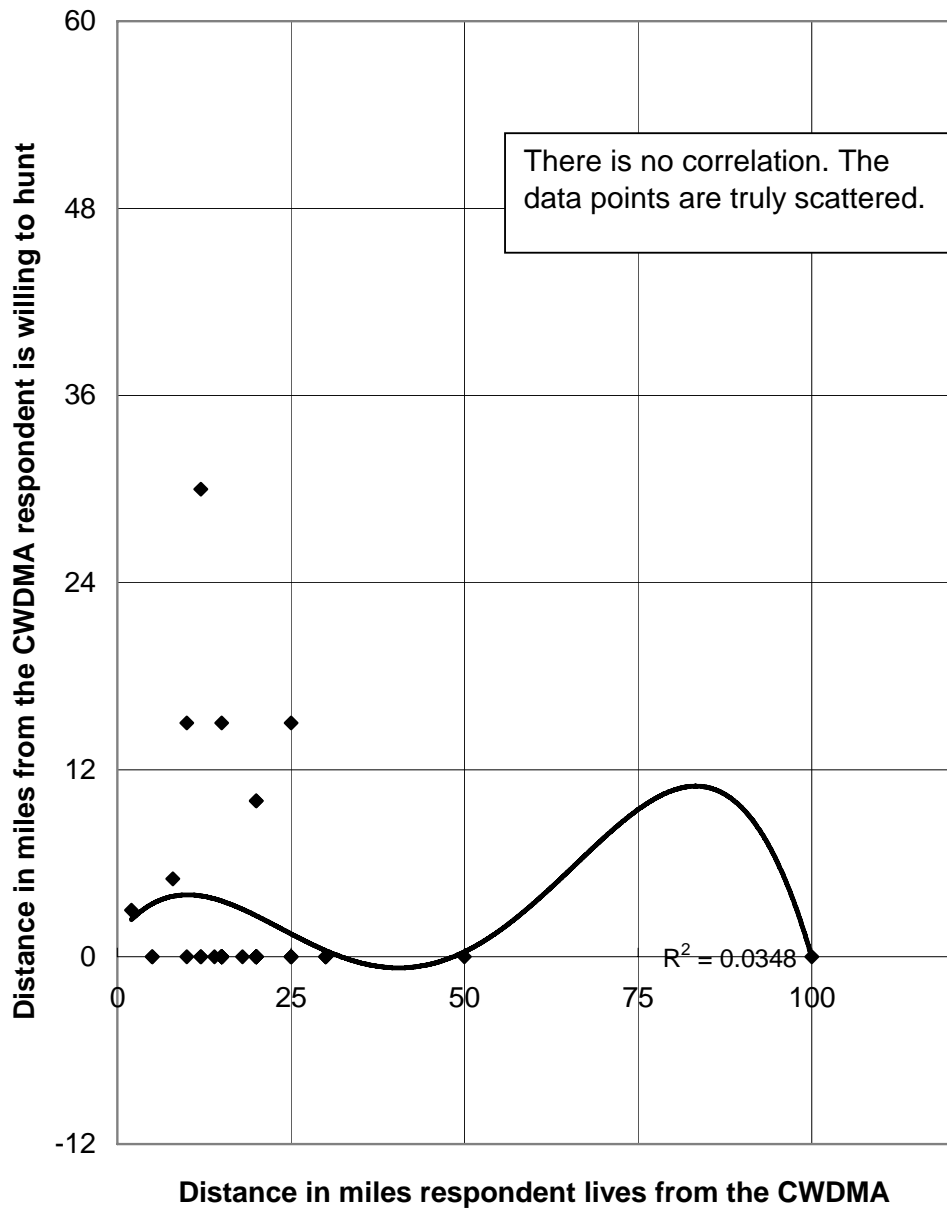
Q77. Have you personally harvested any deer in [Allegheny County outside of the Disease Management Area/Garrett County/Dorchester County] since the discovery of Chronic Wasting Disease? (Asked of those whose last time hunting deer in [Allegheny/Garrett/Dorchester] County was 2011 or 2012.)



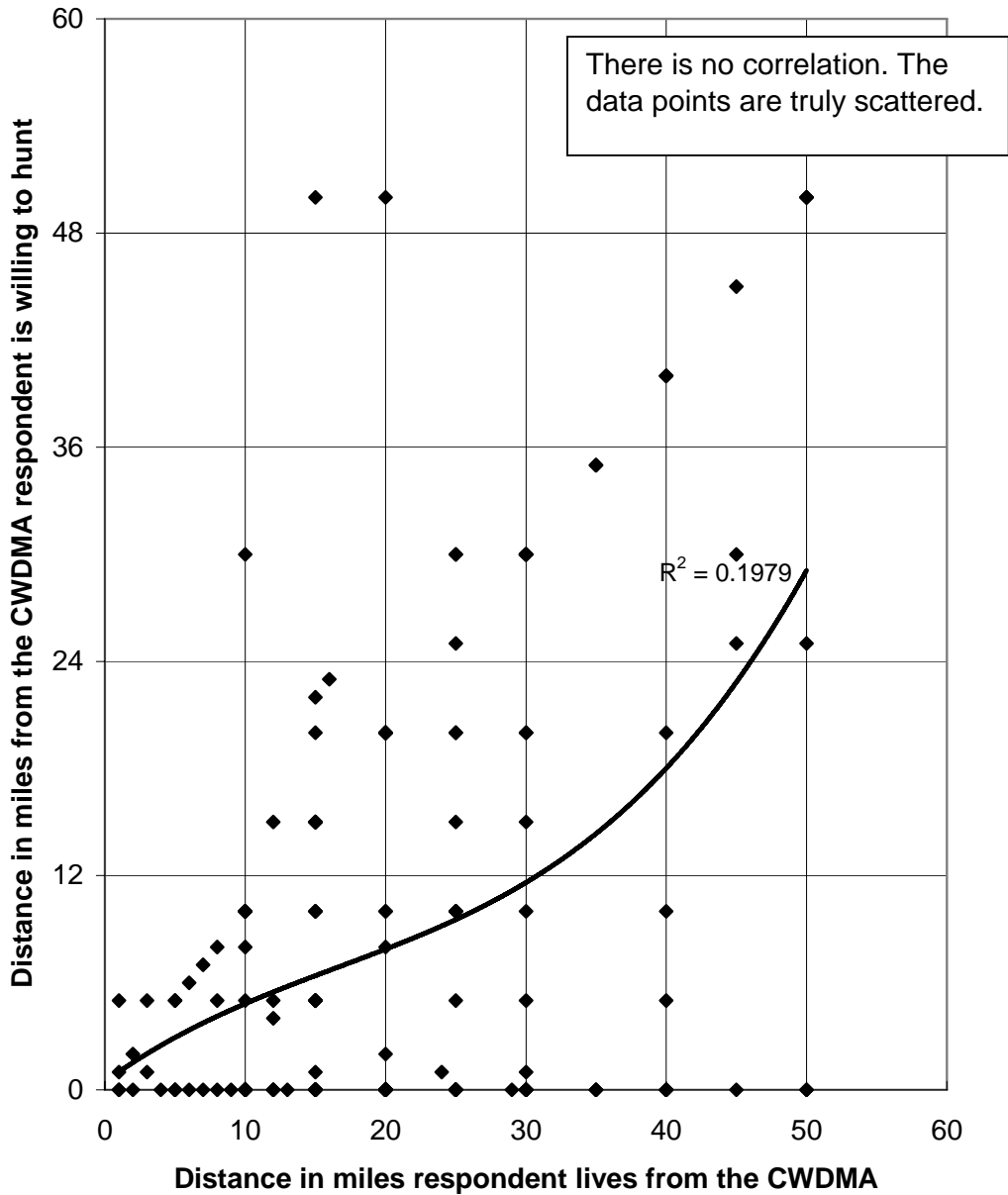
Q78. How close, in miles, to the Disease Management Area are you willing to hunt deer?



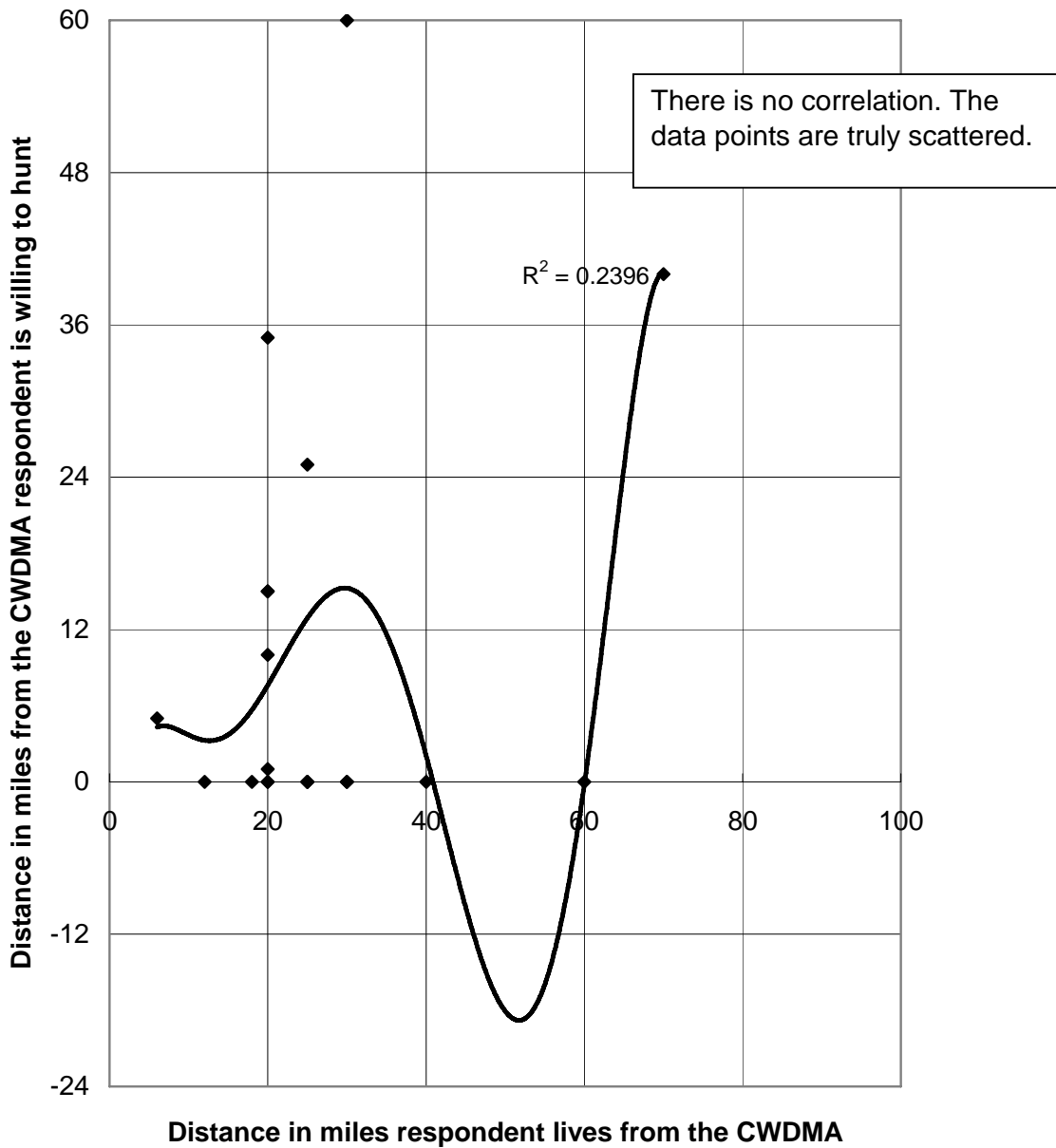
**Distance respondent lives from CWDMA vs.
Distance from CWDMA respondent is willing to
hunt deer. (Among Allegany County hunters in the
CWDMA.)**



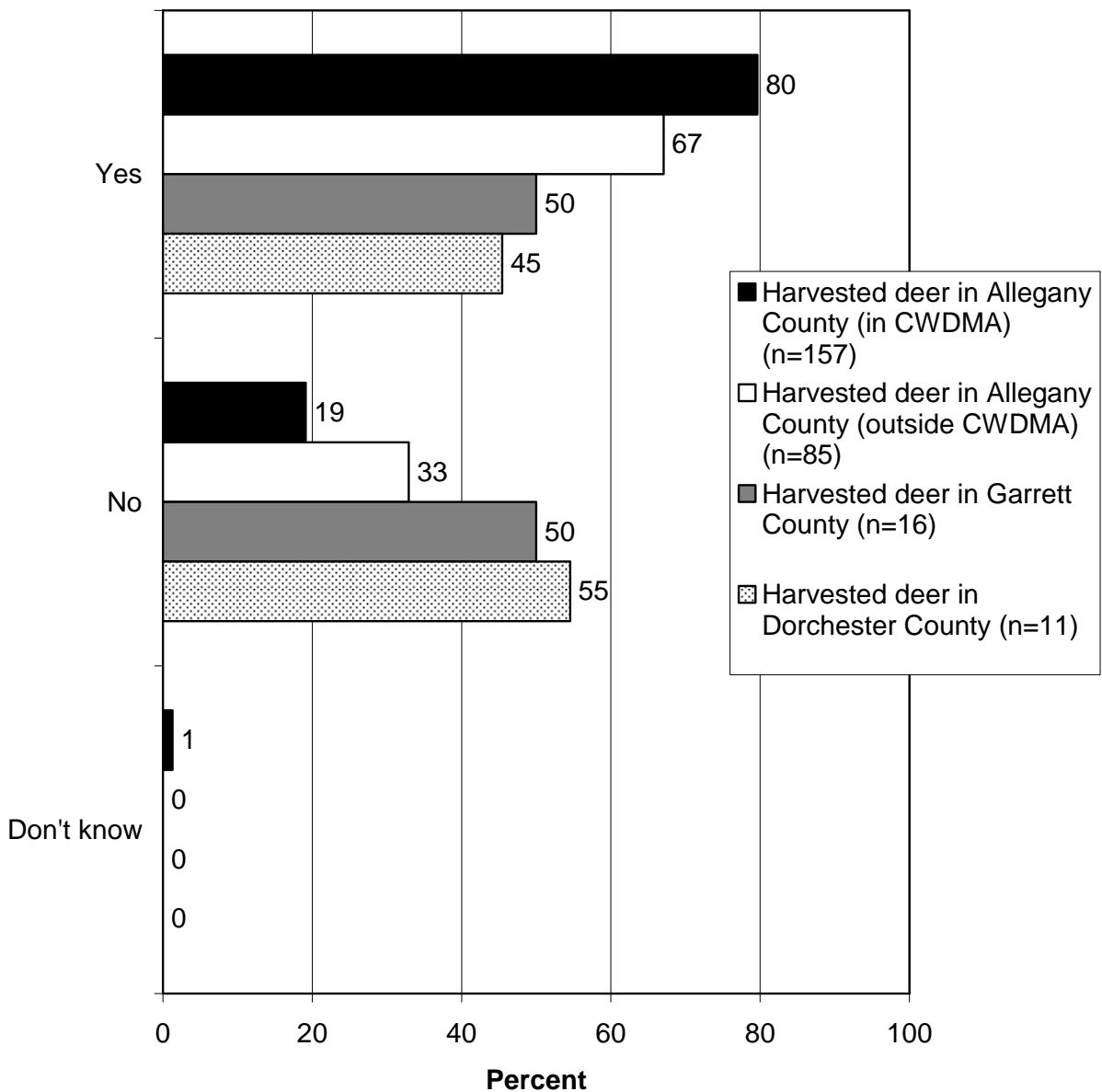
**Distance respondent lives from CWDMA vs.
Distance from CWDMA respondent is willing to
hunt deer. (Among Allegany County hunters
outside the CWDMA.)**



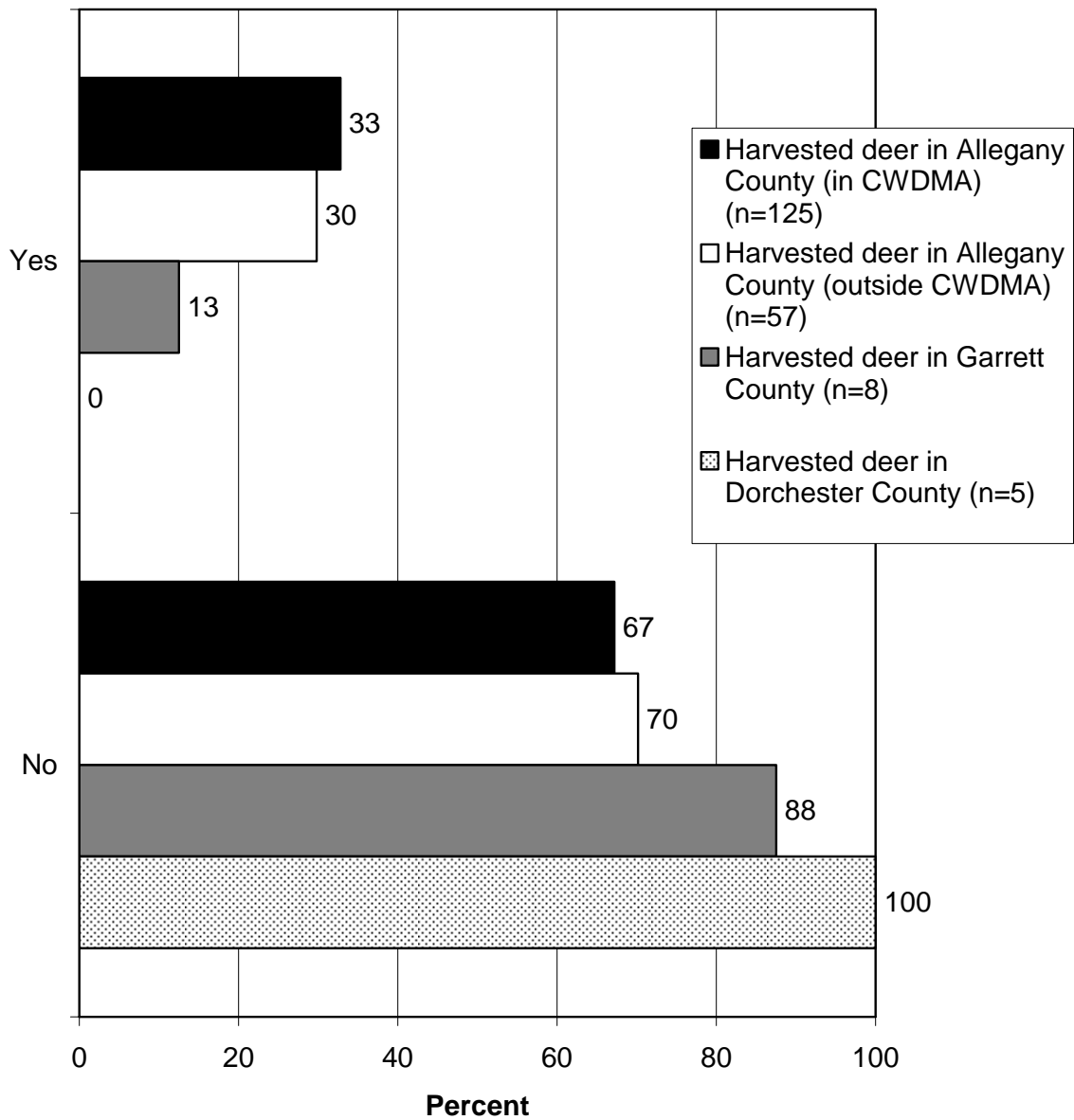
Distance respondent lives from CWDMA vs. Distance from CWDMA respondent is willing to hunt deer. (Among Garrett County hunters.)



Q95. Prior to this survey, were you aware of dumpsters specifically for the purpose of deer carcass disposal in the Disease Management Area? (Asked of those who have hunted in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011.)



Q96. Have you ever used a carcass disposal dumpster in the Disease Management Area? (Asked of those who have hunted in the Chronic Wasting Disease Management Area since the discovery of Chronic Wasting Disease in 2011 and are aware of deer carcass disposal dumpsters in the Disease Management Area.)



OPINIONS ON THE IMPACT OF CHRONIC WASTING DISEASE ON DEER HUNTING PARTICIPATION

The survey included seven questions measuring the extent to which CWD had impacted deer hunters' hunting participation in Maryland as a whole, as well as in Allegany, Garrett, or Dorchester County (note that, as in previous questions, the survey inserted the specific county name into each question depending on the respondent's deer harvest area). Respondents were asked whether they agreed or disagreed with the following statements:

- Chronic Wasting Disease has caused you to change where you hunt deer in Maryland.
 - Chronic Wasting Disease has caused you to deer hunt less in Maryland in general.
 - Chronic Wasting Disease has caused you to stop deer hunting completely in Maryland.
 - Chronic Wasting Disease has caused you to deer hunt less in [county name] County.
 - Chronic Wasting Disease has caused you to stop deer hunting completely in [county name] County.
 - Chronic Wasting Disease has caused you to stop hunting bucks in [county name] County.
 - Chronic Wasting Disease has caused you to stop hunting does in [county name] County.
- Overall, the results suggest that CWD has had little impact on deer hunters' overall participation, as overwhelming majorities of deer hunters in the four areas strongly or moderately disagreed with each of the seven statements (also recall that large majorities of hunters in each of the four areas indicated in an earlier question having hunted deer all five of the previous five years). Indeed, the results indicate that the greatest impact CWD has had on deer hunters is in causing some of them to change where they hunt deer in Maryland:
- In looking at the results by the percentage of each deer hunter group in *strong* or *moderate* agreement with each statement, the statement with the most overall agreement is that CWD has caused hunters to change where they hunt deer in Maryland: 19% of Allegany County hunters in the CWDMA, 14% of Allegany County hunters outside the CWDMA, and 10% of Garrett and Dorchester County hunters agree with this.
 - Additionally, 12% of Allegany County hunters in the CWDMA *strongly* or *moderately* agree that CWD has caused them to hunt deer less in Allegany County.
 - No other statement in the series had more than 9% of hunters from any area in agreement. Also note that for each statement, the most agreement (though generally slight) came from Allegany County hunters in the CWDMA.
- Those who hunted in the CWDMA prior to or since the discovery of CWD were asked two questions measuring the effect of management regulations within the CWDMA on their deer

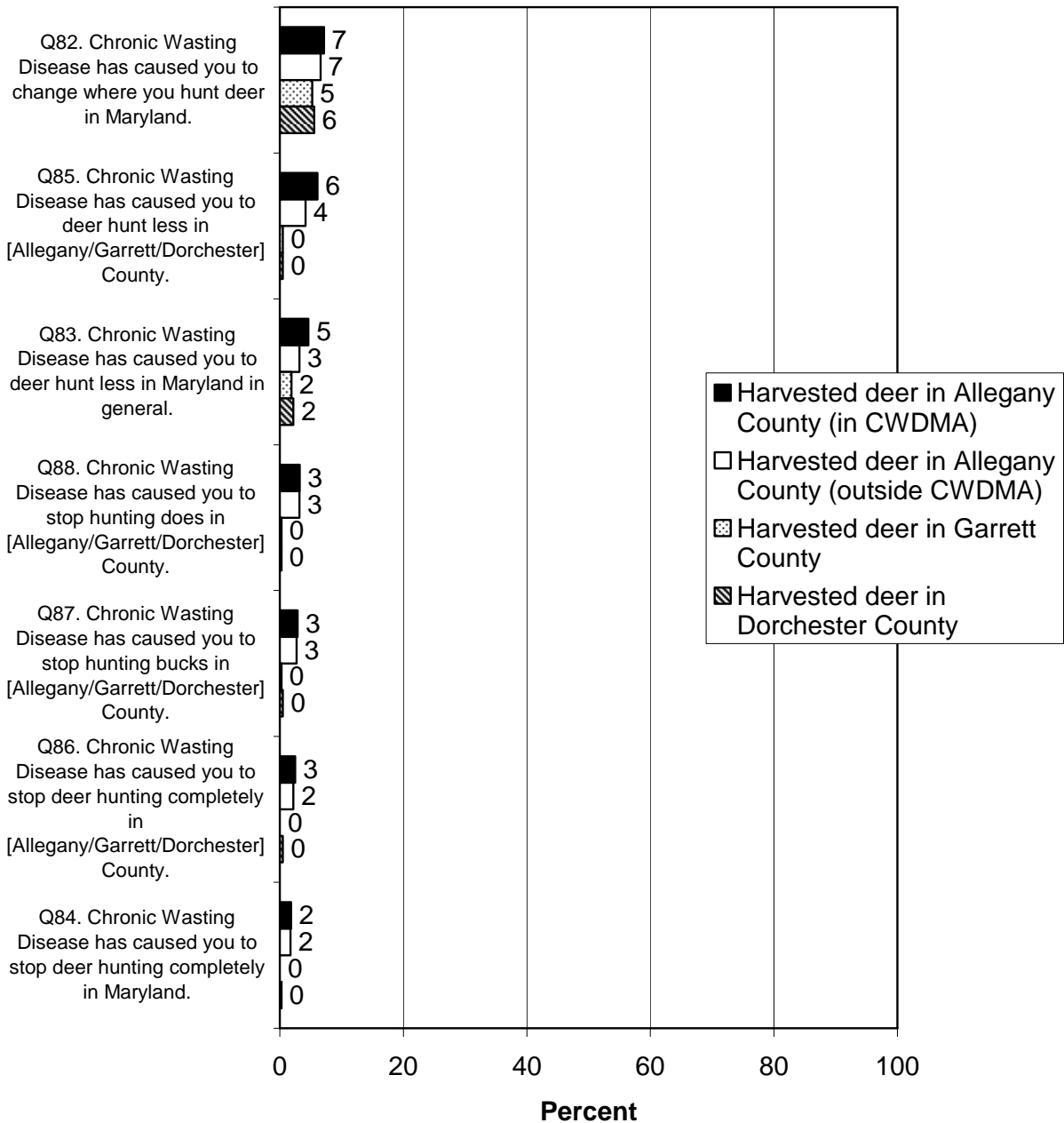
hunting participation in the area. The results suggest that these deer hunters do not view the regulations as having caused them to stop hunting deer within the CWDMA.

- The first question asked these deer hunters whether they agreed or disagreed that the *carcass movement restriction* within the CWDMA has caused them to stop deer hunting in the area: overwhelming majorities of deer hunters from each of the four areas (between 80% and 86%) disagree with this, with most disagreement being *strong*; meanwhile, between 5% and 19% of deer hunters from each area were in agreement (the most agreement was from Allegany County hunters outside the CWDMA).
 - The second question asked deer hunters who had hunted in the CWDMA prior to or since the discovery of CWD whether they agreed or disagreed that *the prohibition of baiting deer* within the CWDMA had caused them to stop deer hunting in the area: as before, overwhelming majorities of hunters from each area (from 84% to 92%) were in disagreement, with most *strongly* disagreeing; at the other end of the spectrum, only between 3% and 9% of respondents from each area agree that the regulation caused them to stop hunting deer in the CWDMA (the most agreement was from Allegany County hunters in the CWDMA).
- The survey included three questions exploring hypothetical reactions from deer hunters to the discovery of CWD in an area where they hunt deer (i.e., any hypothetical area, not limited to the CWDMA in Allegany County). These questions found that while the discovery of CWD itself would cause less than a third of respondents from each area to stop hunting deer in the area, greater percentages of hunters would stop hunting in the area given the prohibition of deer baiting and whole deer carcass removal. In general, the results indicate that Allegany County hunters in the CWDMA are the least likely of the four groups to agree that they would stop deer hunting in an area upon the discovery of CWD ($p \leq 0.005$) and the introduction of related regulations ($p \leq 0.001$).

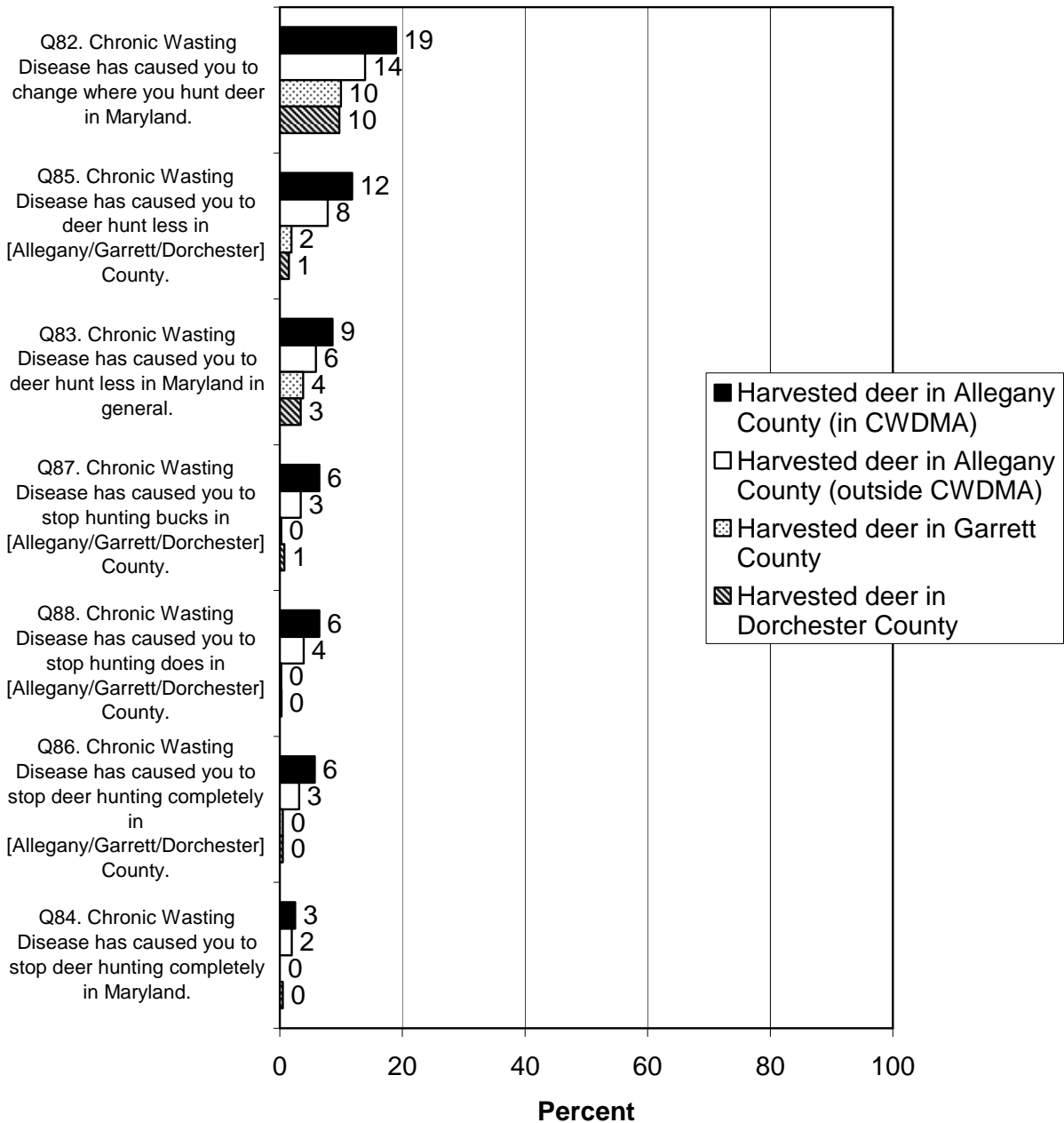
The results below consider the percentage of hunters in each area who *strongly* or *moderately* agree that they would stop hunting deer in the area given each scenario:

- Among **Allegany County hunters in the CWDMA**, 16% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 18% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 30% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Allegany County hunters outside the CWDMA**, 22% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 28% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 39% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Garrett County hunters**, 27% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 37% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 49% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.
- Among **Dorchester County hunters**, 27% *strongly* or *moderately* agree that they would stop hunting deer in an area where CWD was found; 33% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit deer baiting in the area; and 44% agree that they would stop hunting deer in an area where CWD was found and regulations were implemented to prohibit the removal of whole deer carcasses from the area.

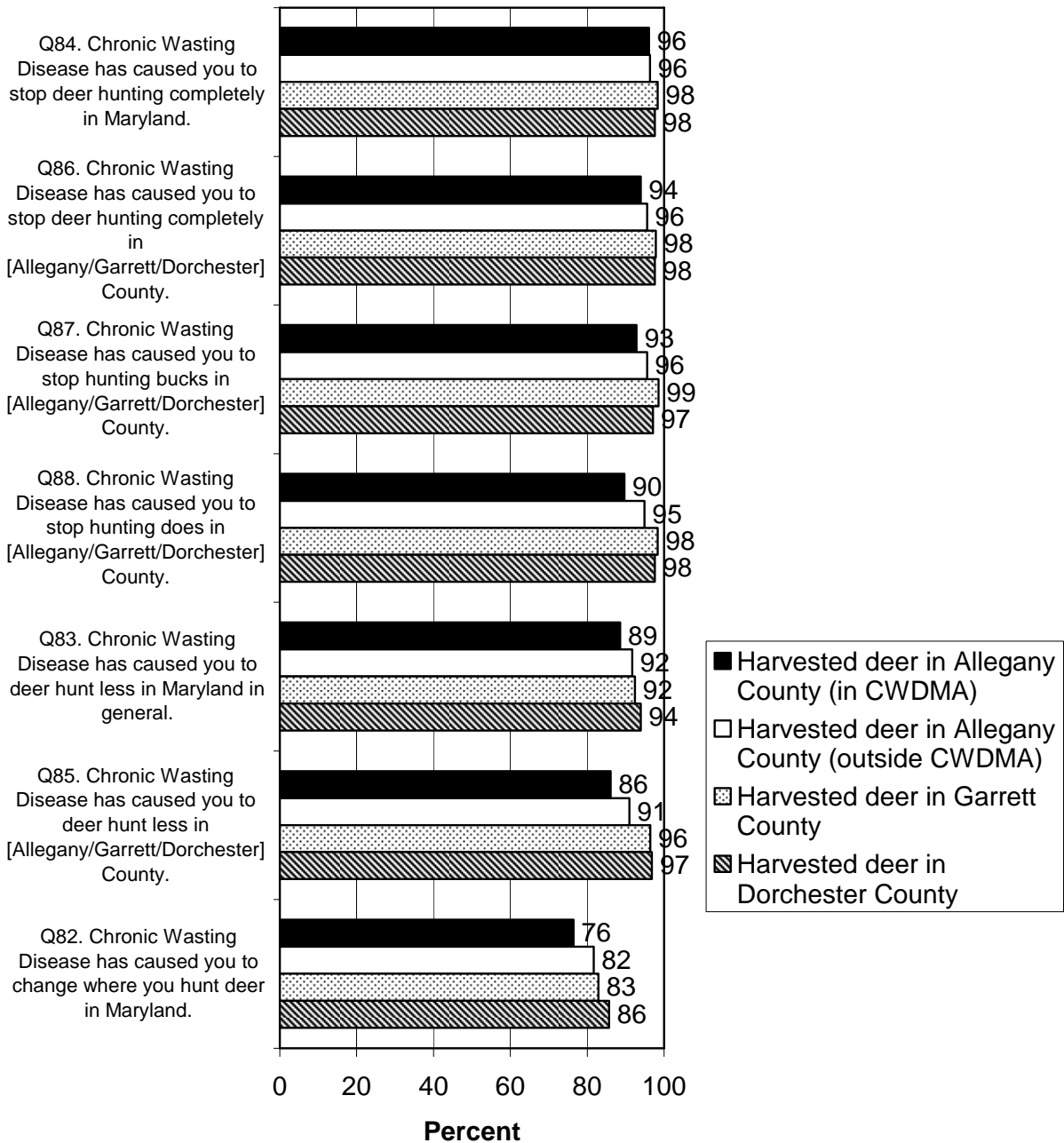
Percent who strongly agree with the following statements.



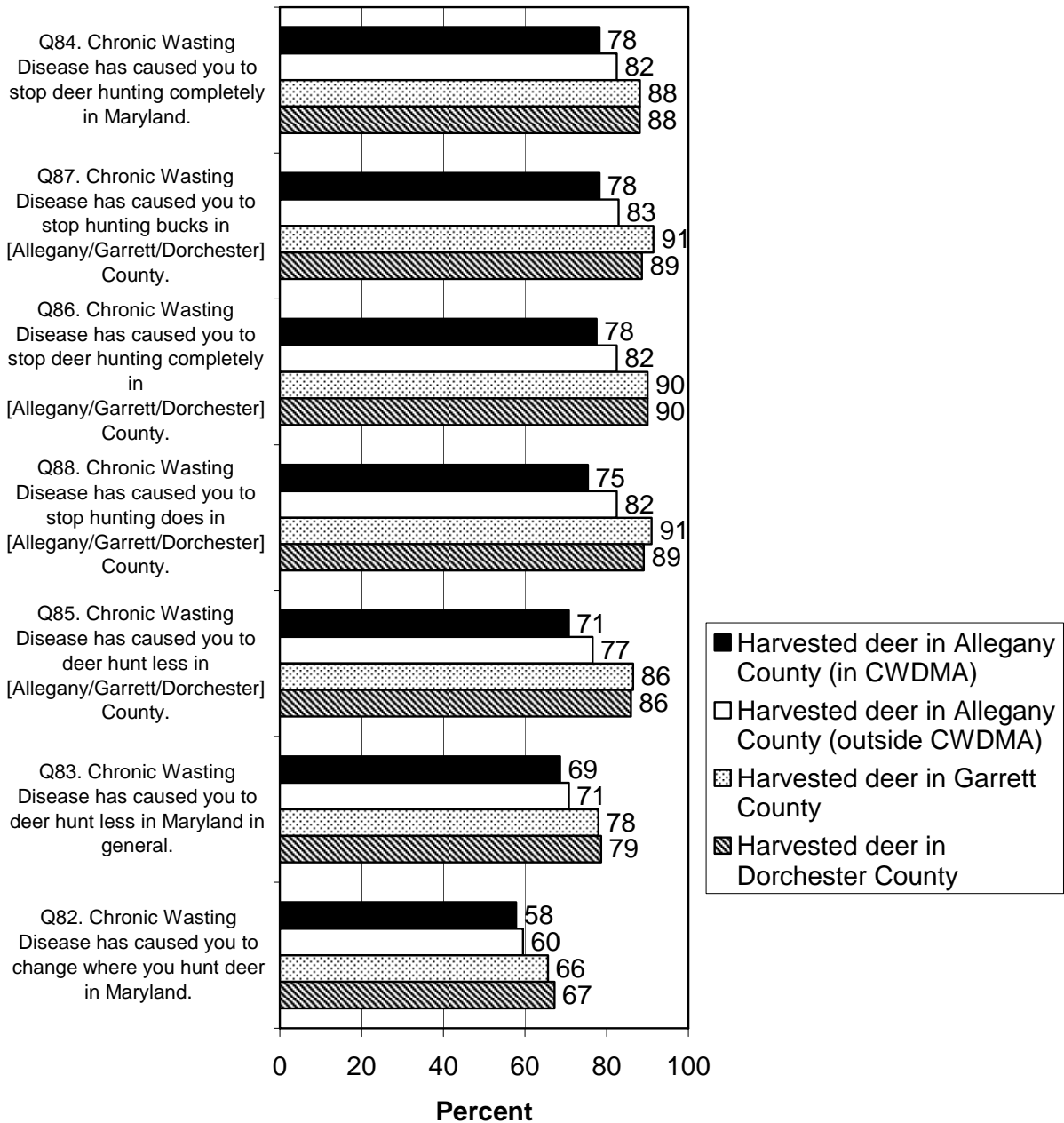
Percent who strongly or moderately agree with the following statements.



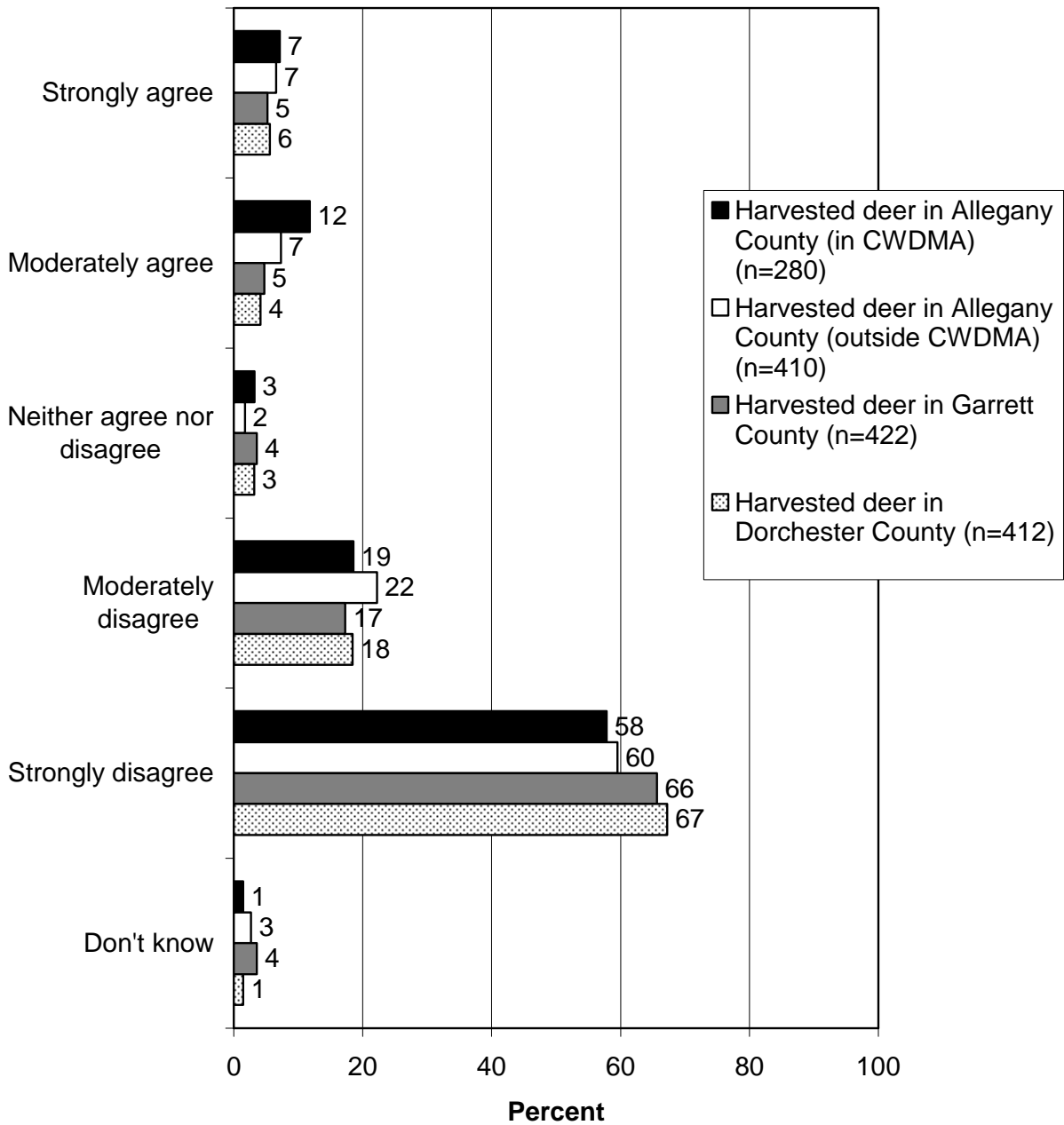
Percent who moderately or strongly disagree with the following statements.



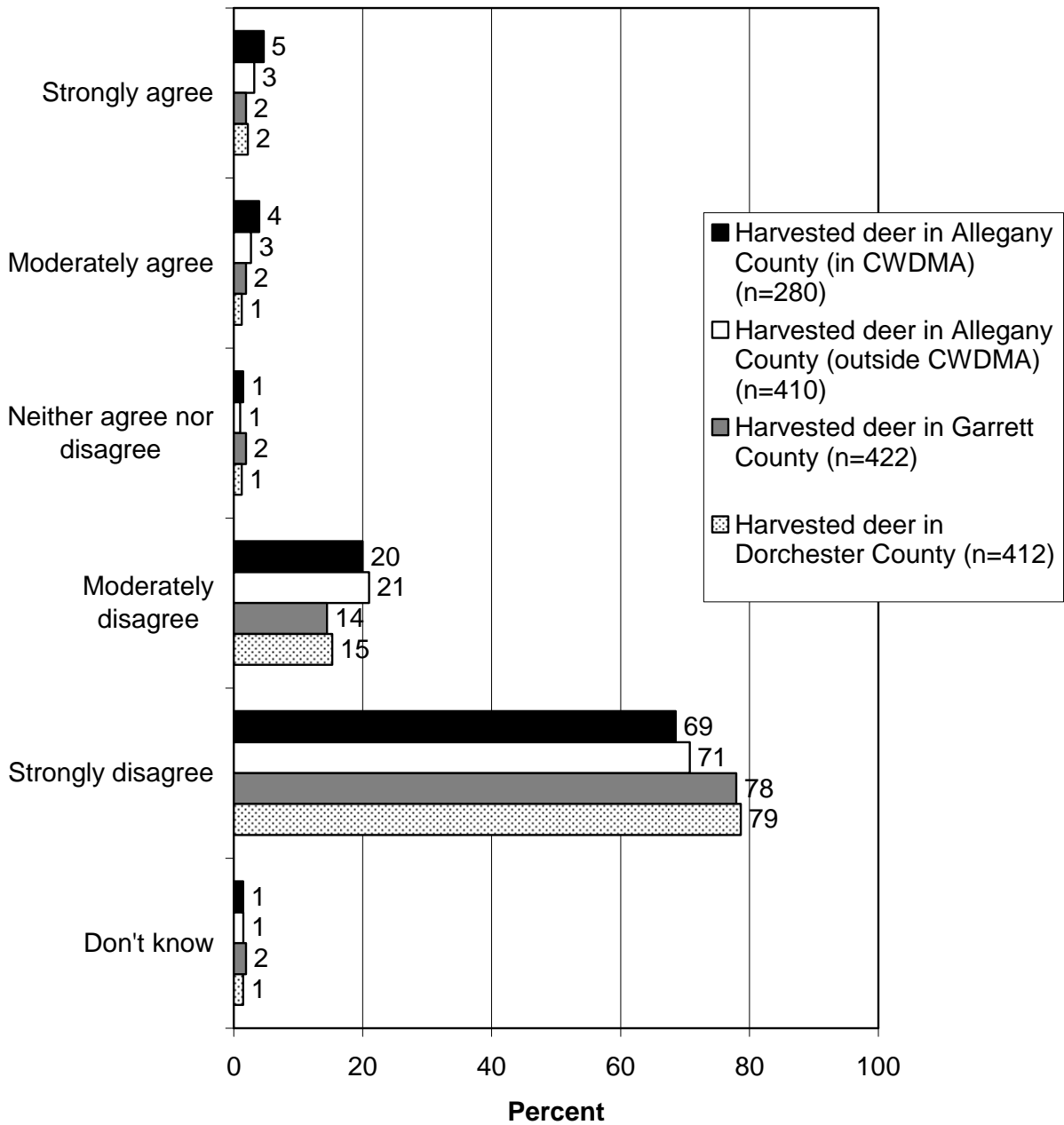
Percent who strongly disagree with the following statements.



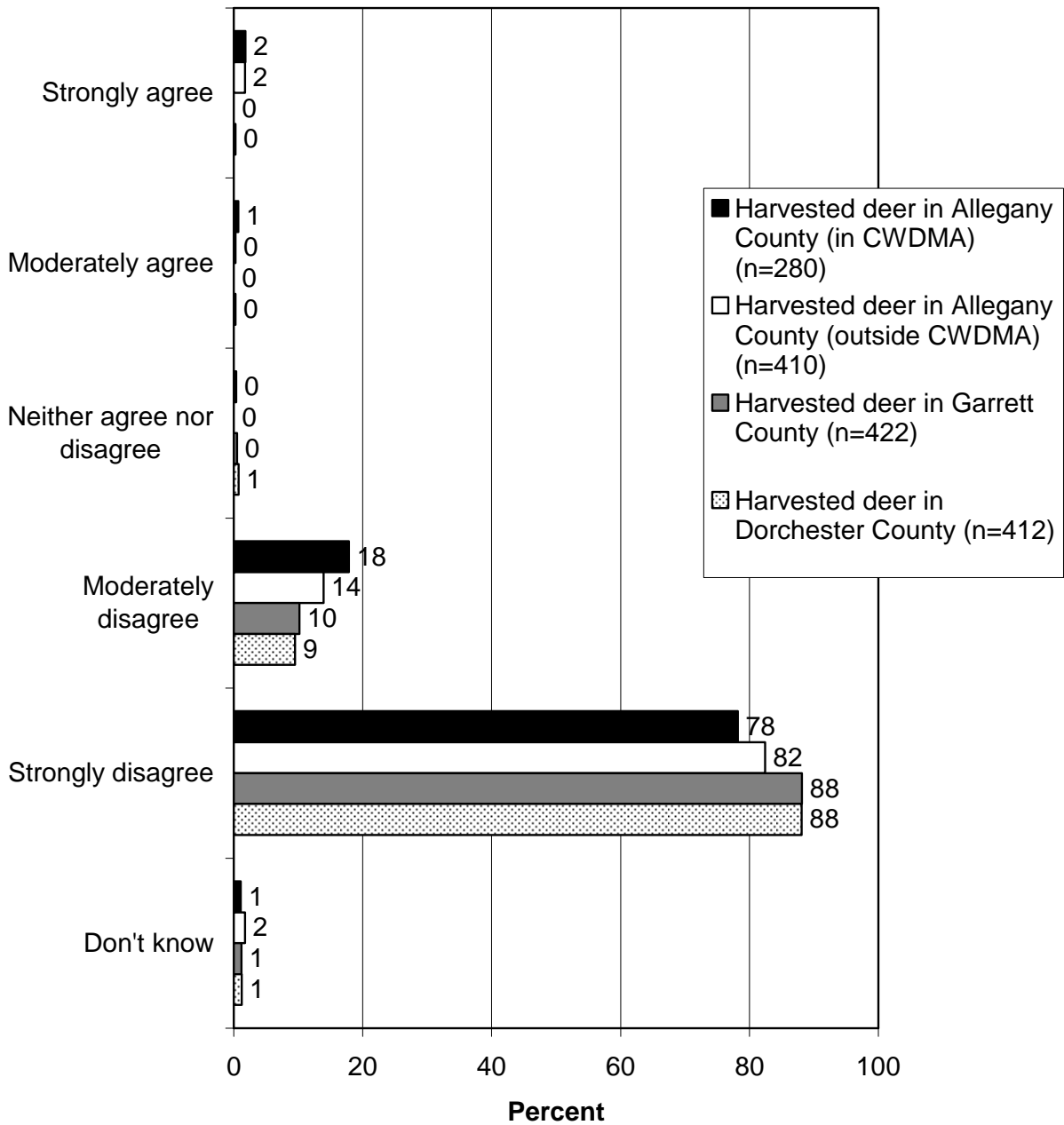
Q82. Chronic Wasting Disease has caused you to change where you hunt deer in Maryland. (Do you agree or disagree with this statement?)



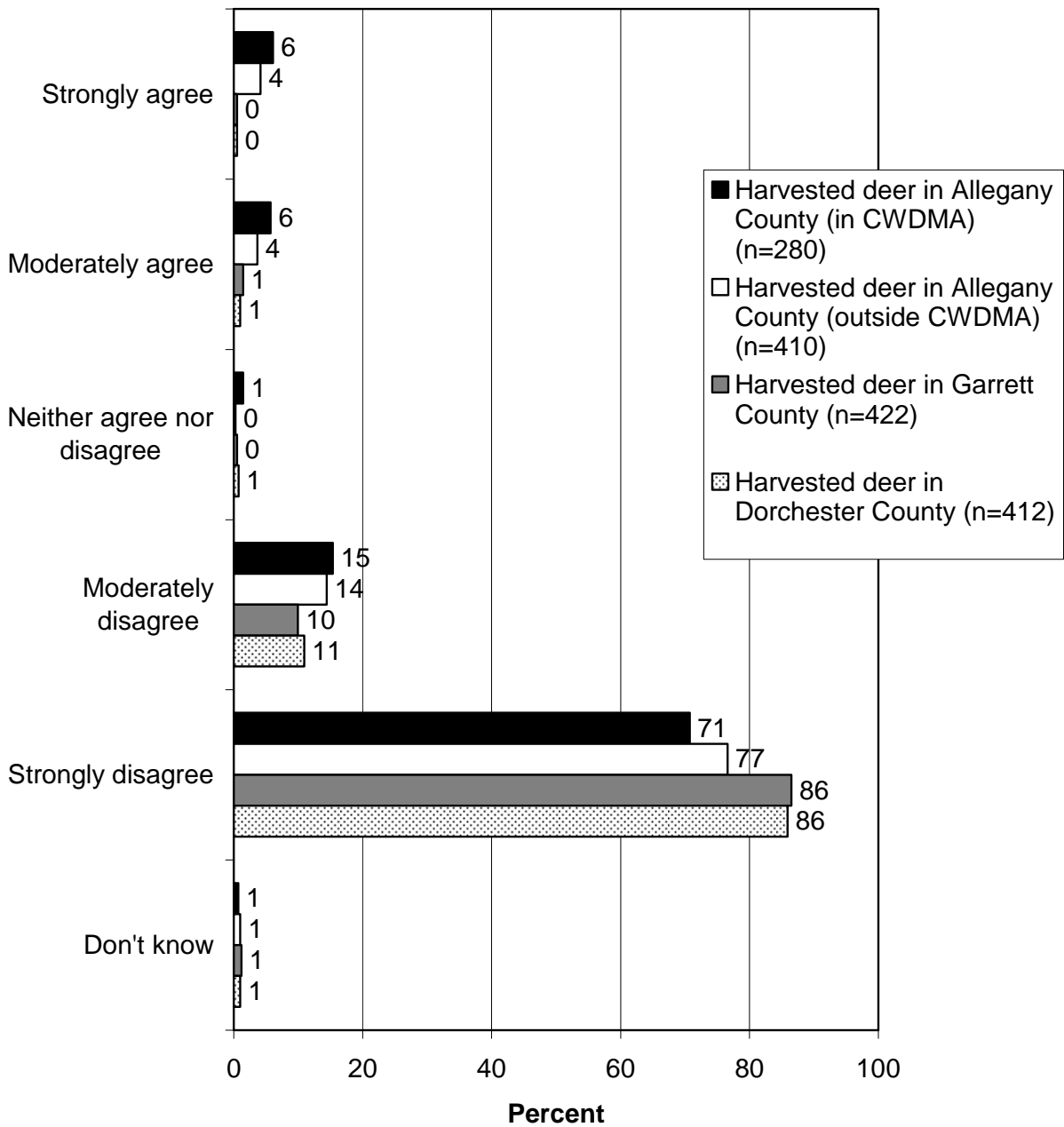
Q83. Chronic Wasting Disease has caused you to deer hunt less in Maryland in general. (Do you agree or disagree with this statement?)



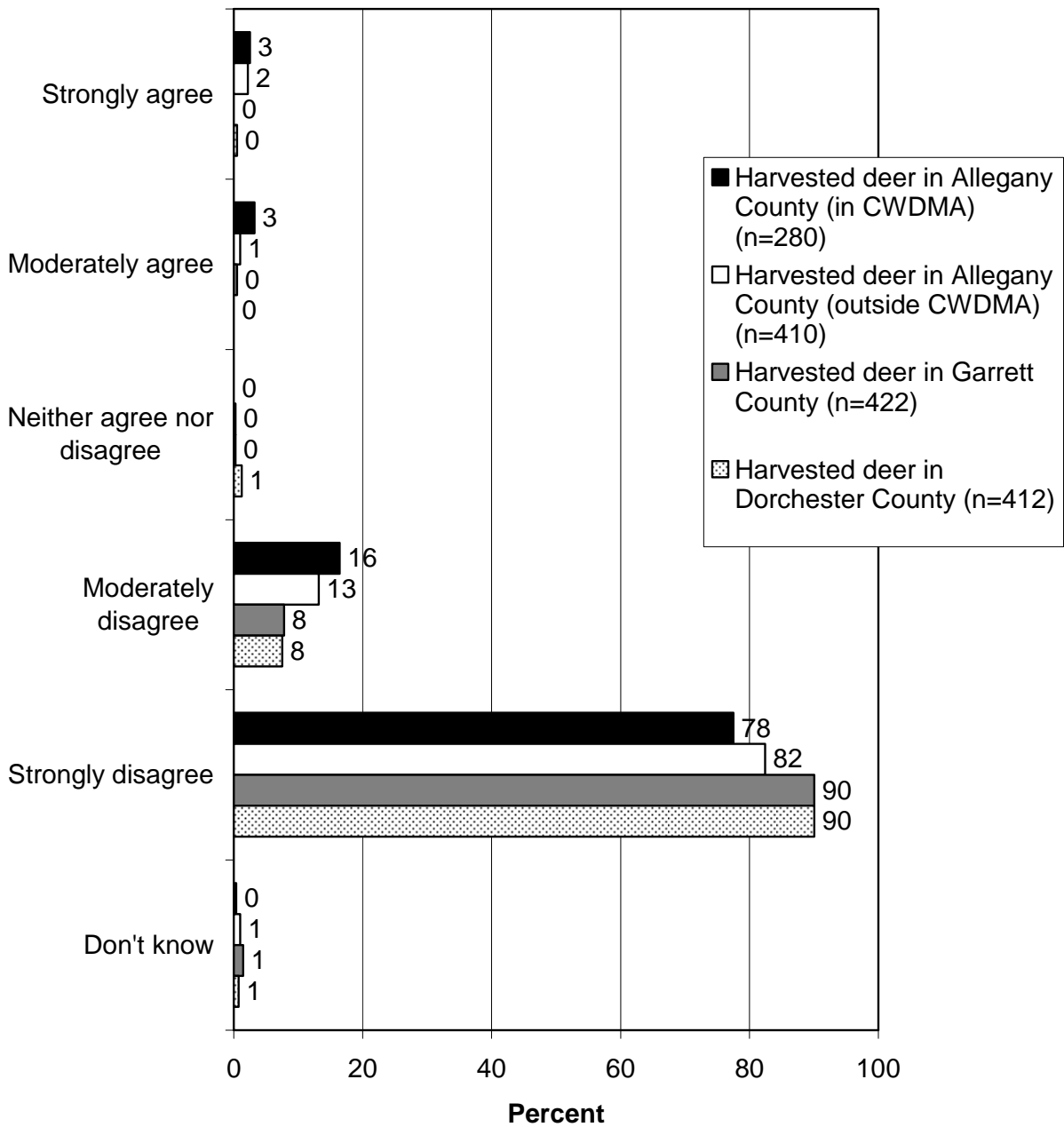
Q84. Chronic Wasting Disease has caused you to stop deer hunting completely in Maryland. (Do you agree or disagree with this statement?)



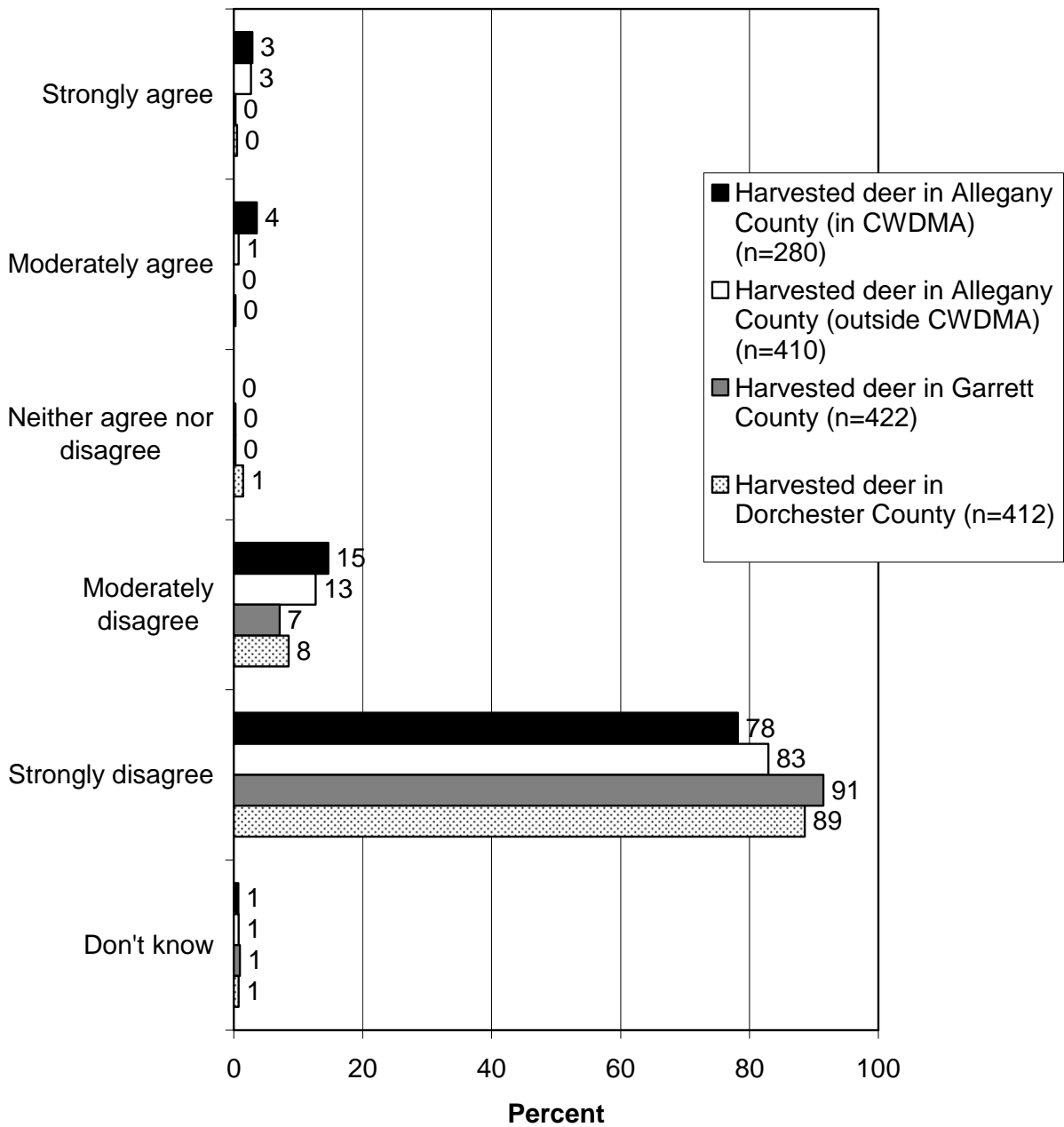
Q85. Chronic Wasting Disease has caused you to deer hunt less in [Allegany/Garrett/Dorchester] County. (Do you agree or disagree with this statement?)



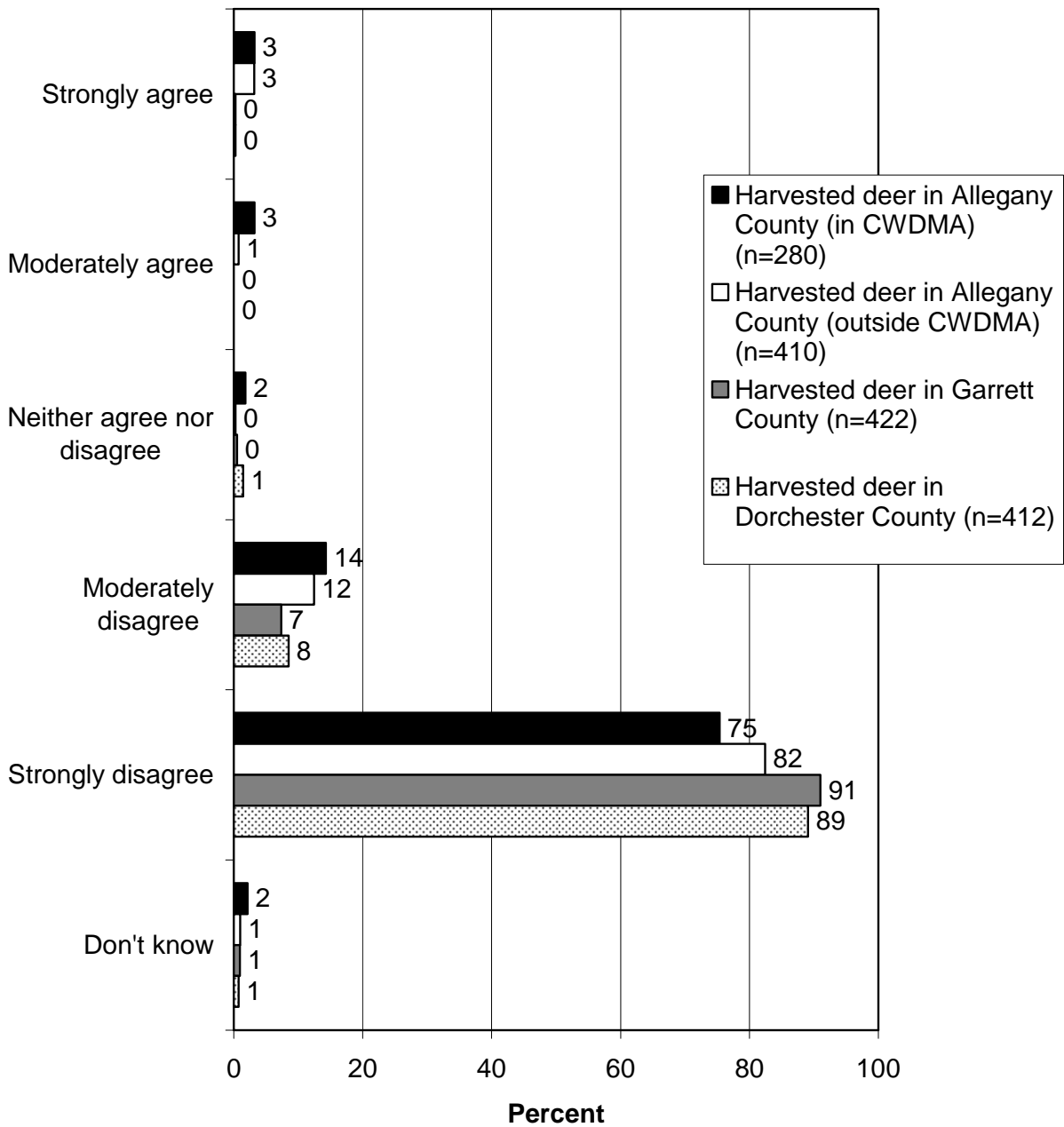
Q86. Chronic Wasting Disease has caused you to stop deer hunting completely in [Allegany/Garrett/Dorchester] County. (Do you agree or disagree with this statement?)



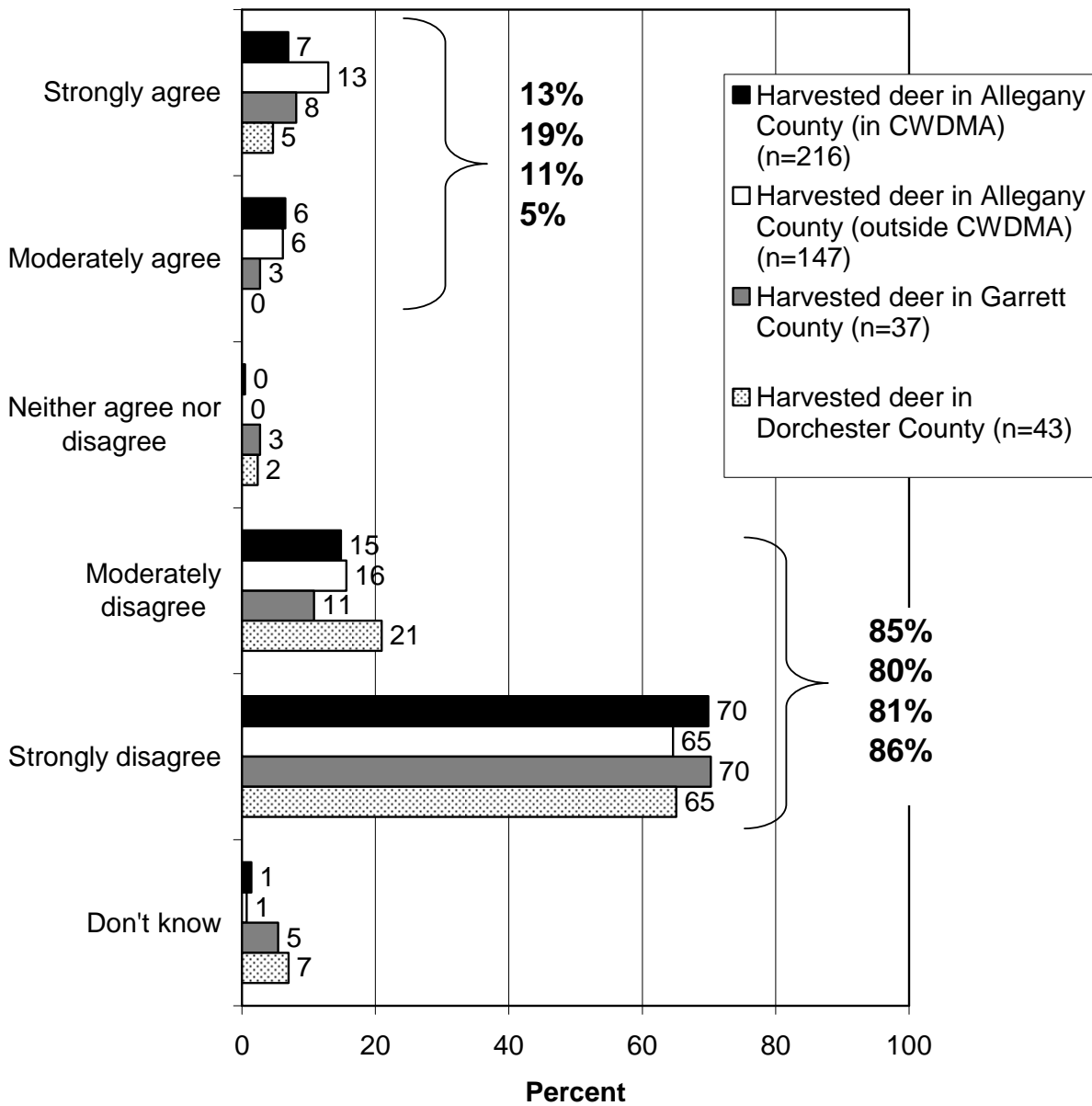
Q87. Chronic Wasting Disease has caused you to stop hunting bucks in [Allegany/Garrett/Dorchester] County. (Do you agree or disagree with this statement?)



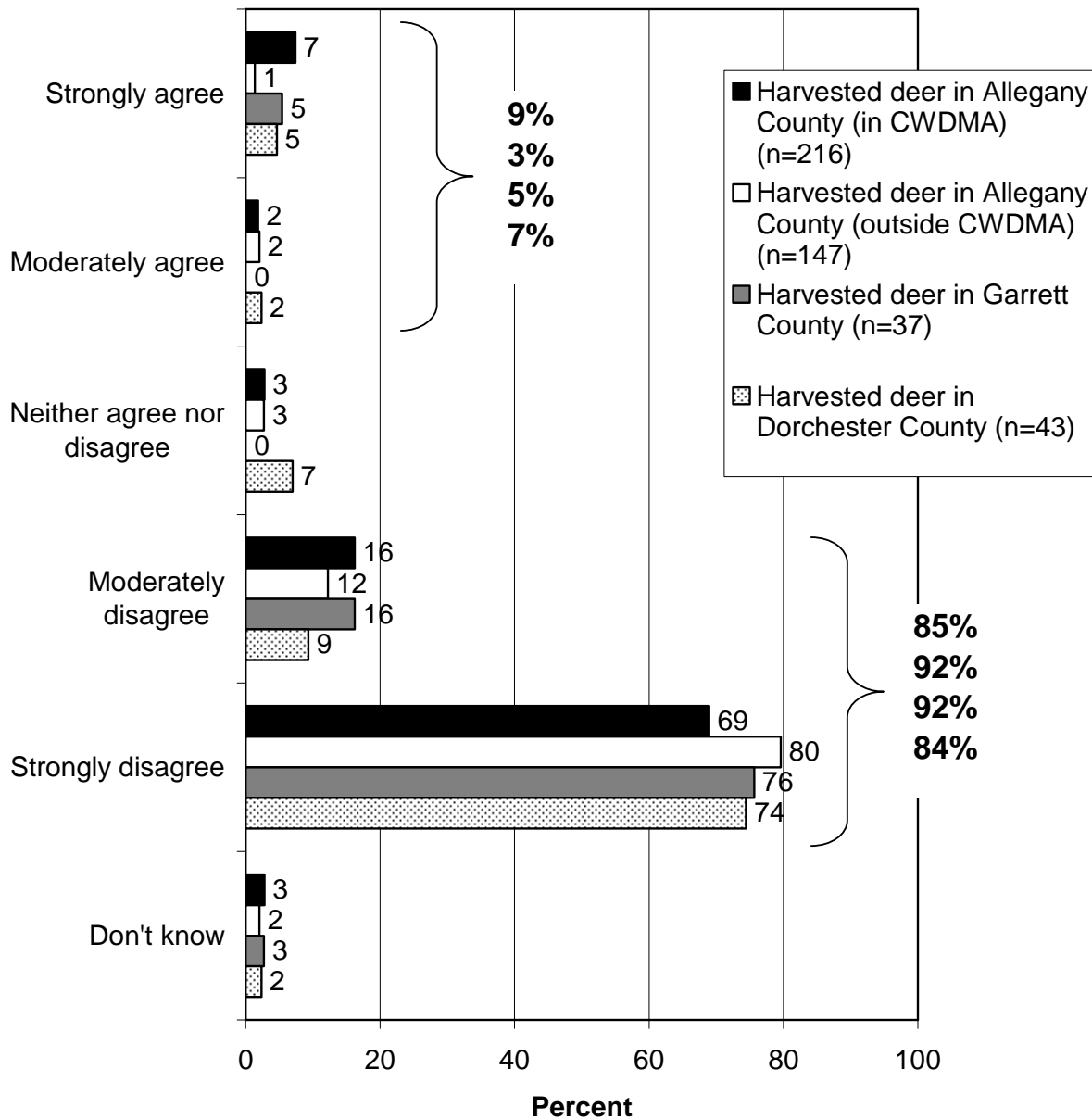
Q88. Chronic Wasting Disease has caused you to stop hunting does in [Allegany/Garrett/Dorchester] County. (Do you agree or disagree with this statement?)



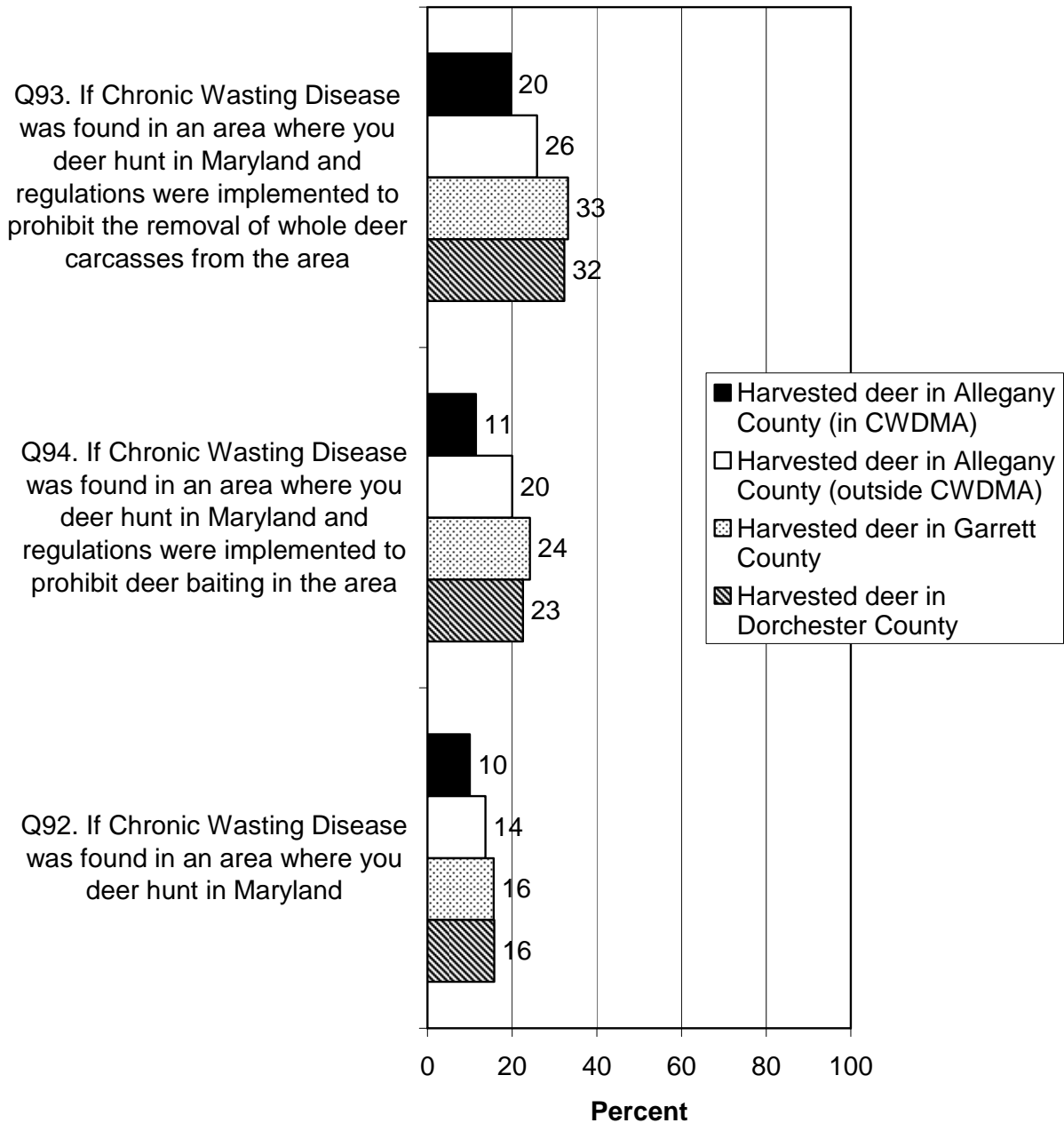
**Q90. Do you agree or disagree that the carcass movement restriction within the Chronic Wasting Disease Management Area has caused you to stop deer hunting in the area?
(Asked of those who hunted in the Chronic Wasting Disease Management Area prior to or since the discovery of Chronic Wasting Disease in 2011.)**



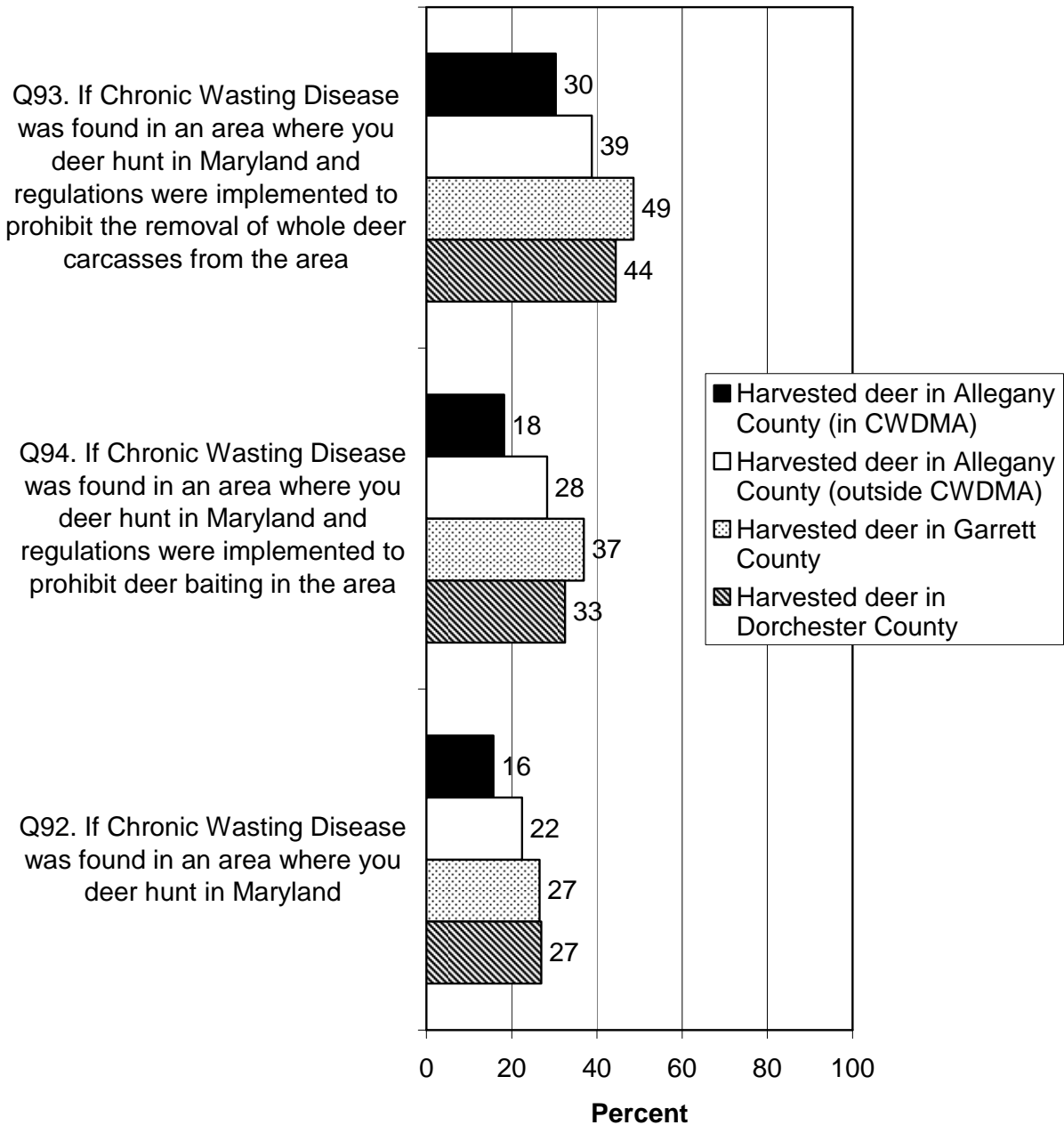
Q91. Do you agree or disagree that the prohibition of baiting deer within the Chronic Wasting Disease Management Area has caused you to stop deer hunting in the area? (Asked of those who hunted in the Chronic Wasting Disease Management Area prior to or since the discovery of Chronic Wasting Disease in 2011.)



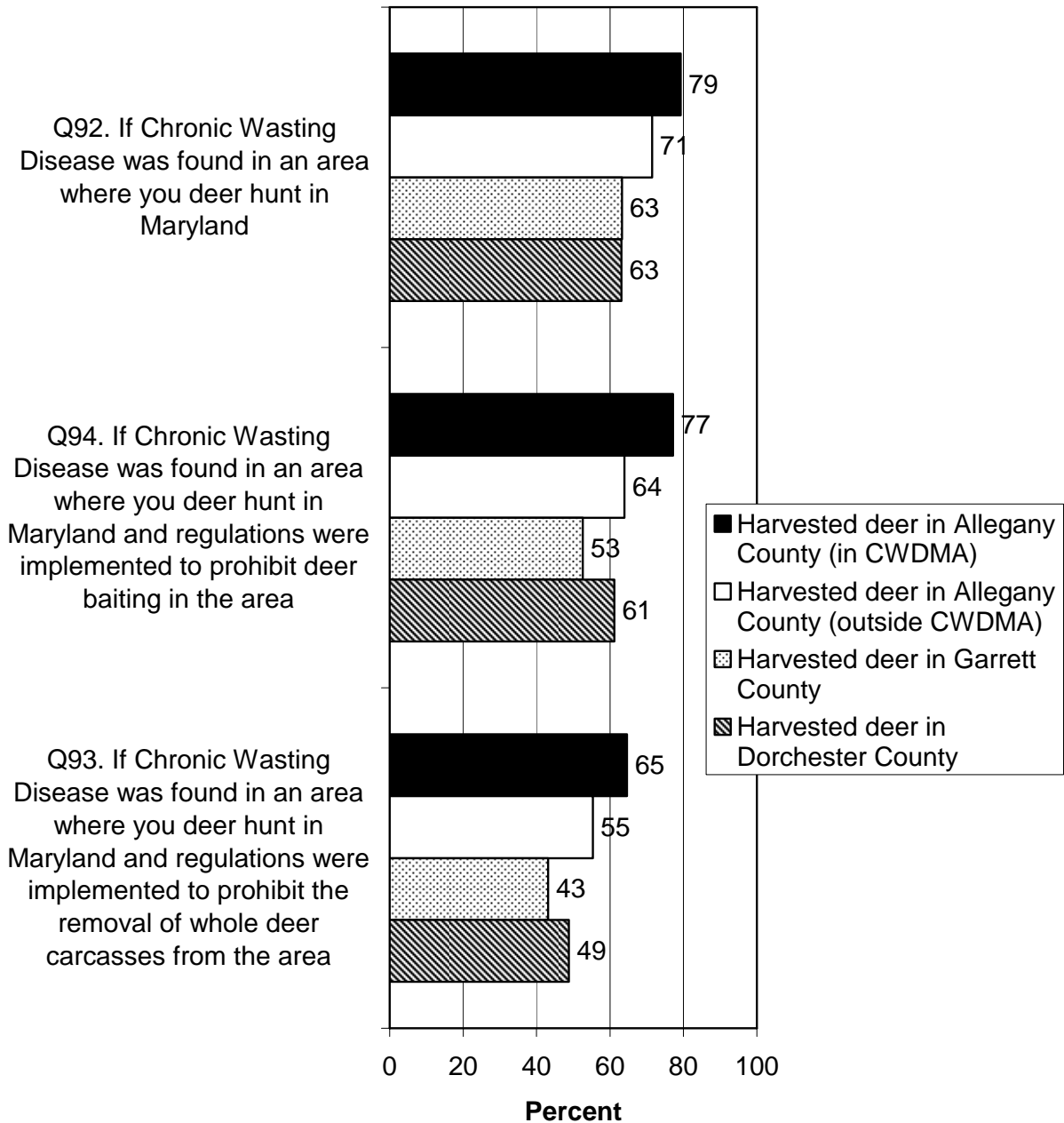
Percent who strongly agree they would stop deer hunting given the following conditions.



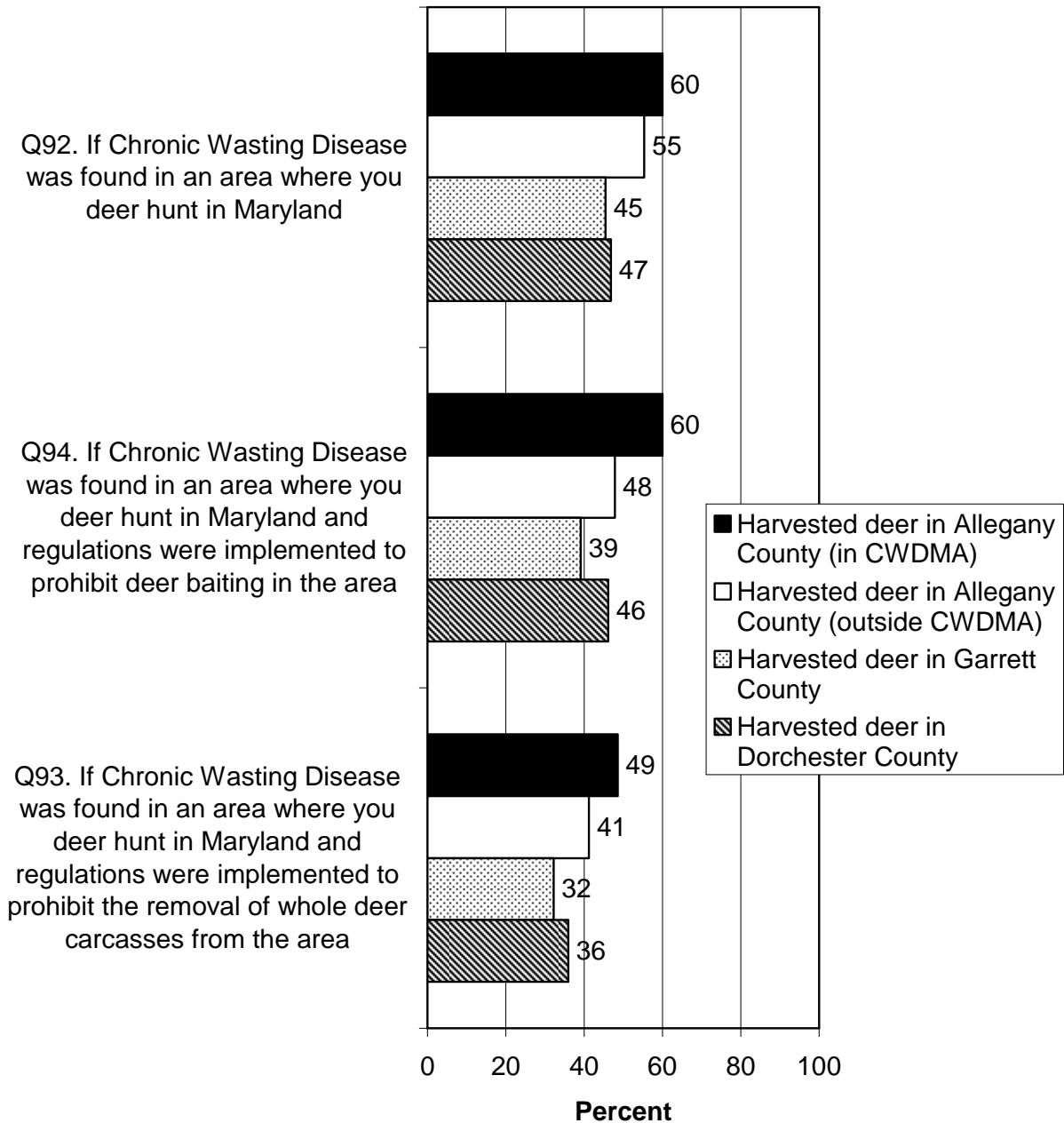
Percent who strongly or moderately agree they would stop deer hunting given the following conditions.



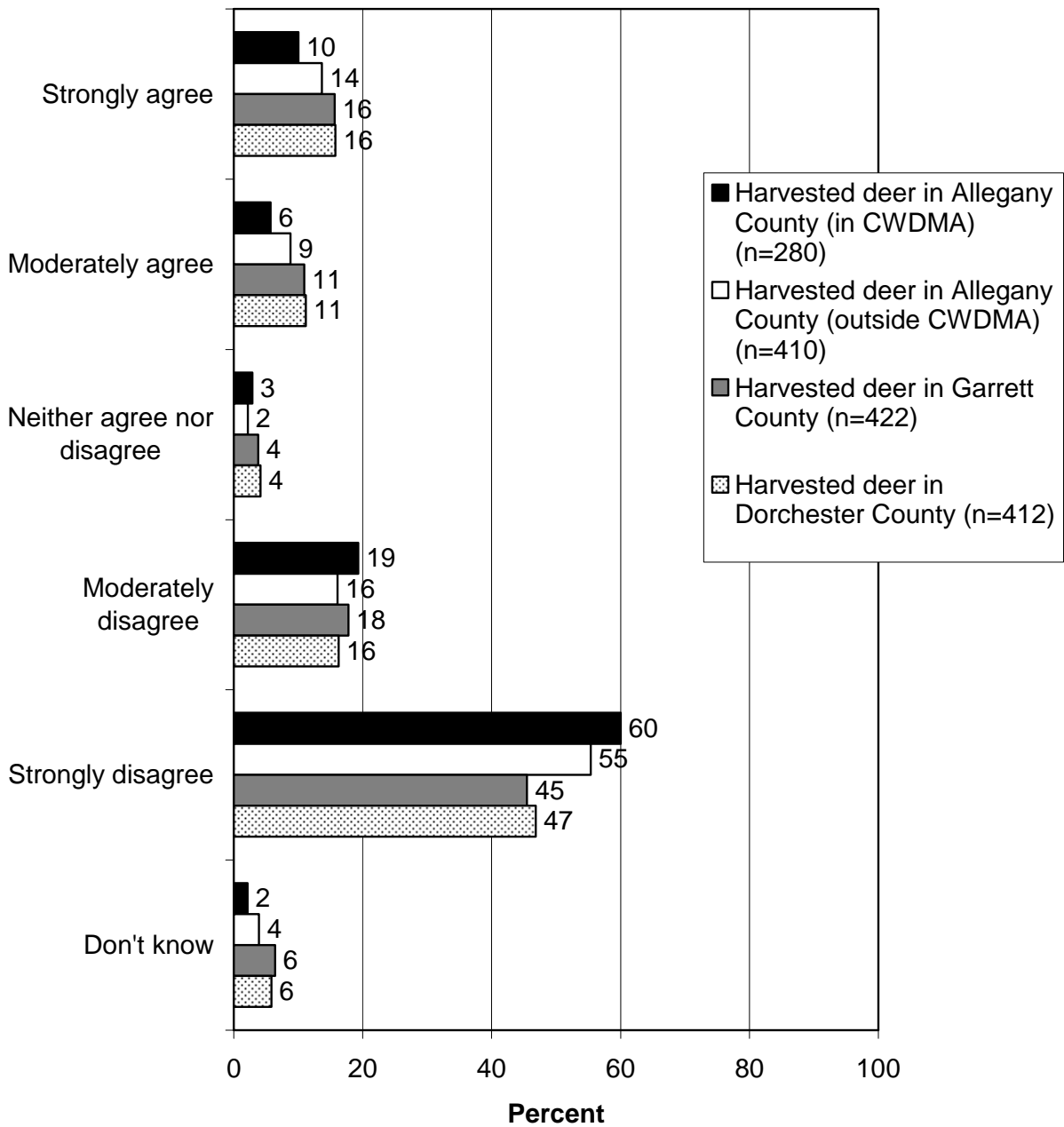
Percent who moderately or strongly disagree they would stop deer hunting given the following conditions.



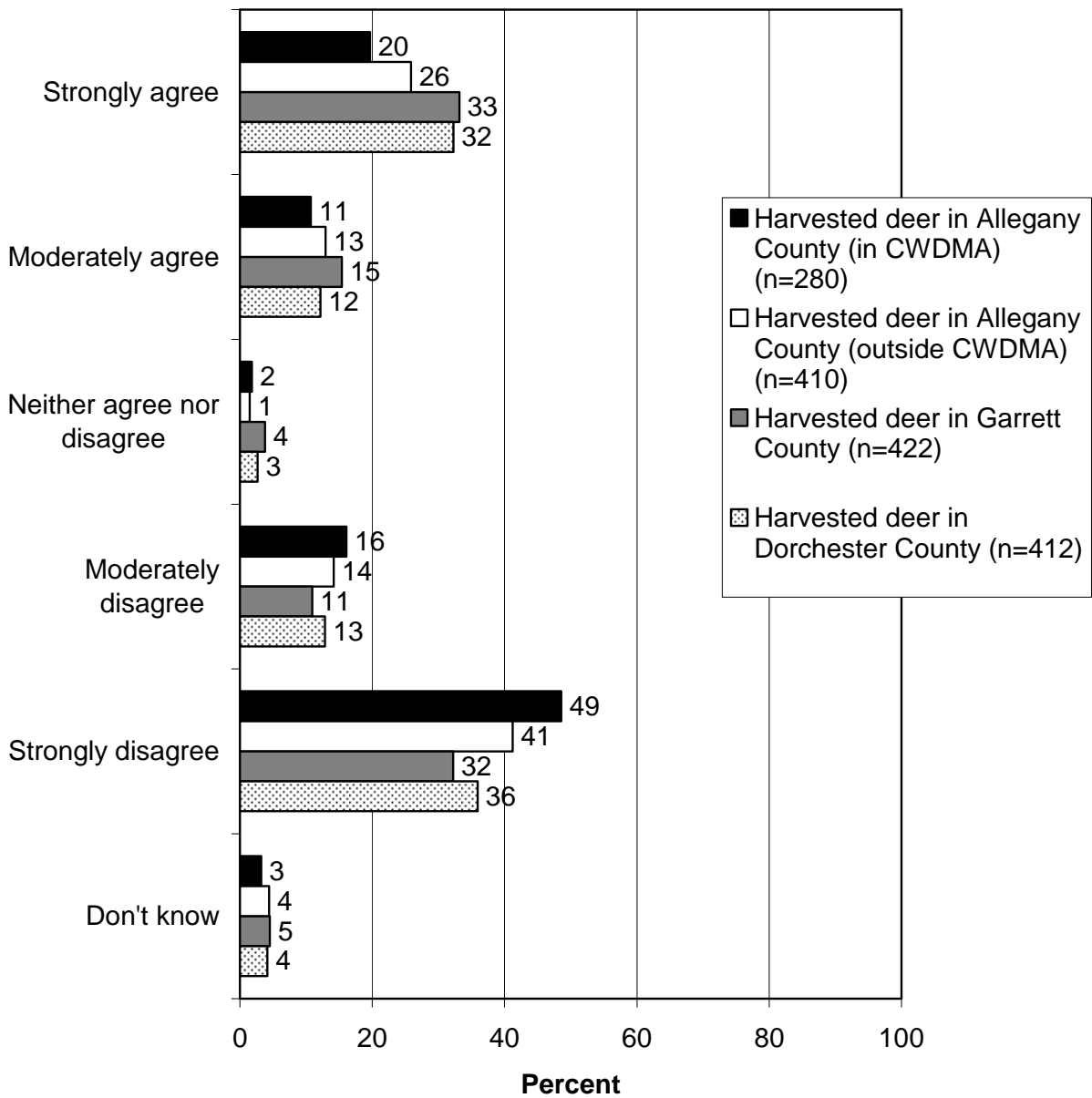
Percent who strongly disagree they would stop deer hunting given the following conditions.



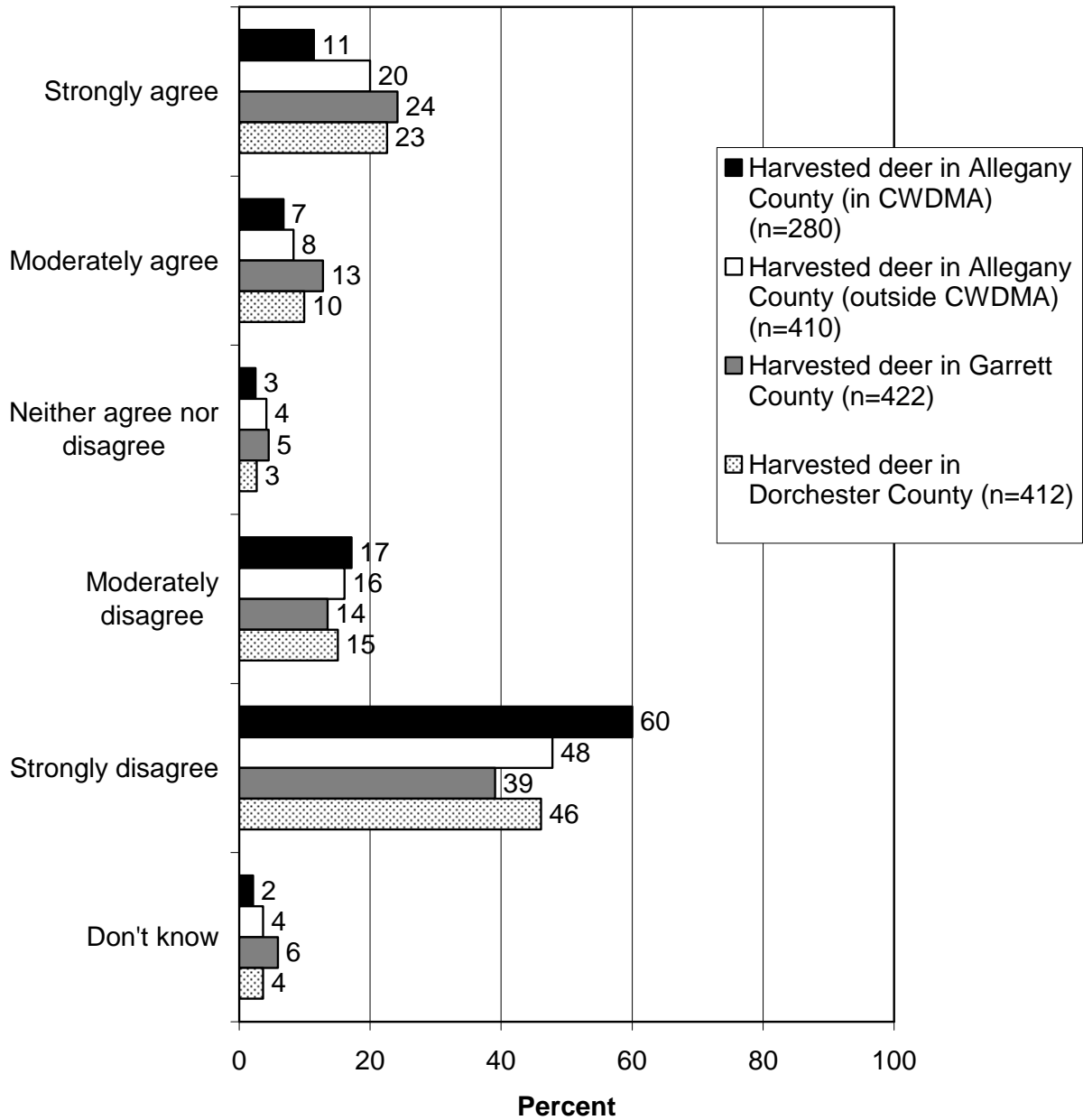
Q92. If Chronic Wasting Disease was found in an area where you deer hunt in Maryland, do you agree or disagree that you would stop deer hunting in that area?



Q93. If Chronic Wasting Disease was found in an area where you deer hunt in Maryland and regulations were implemented to prohibit the removal of whole deer carcasses from the area, do you agree or disagree that you would stop deer hunting in that area?



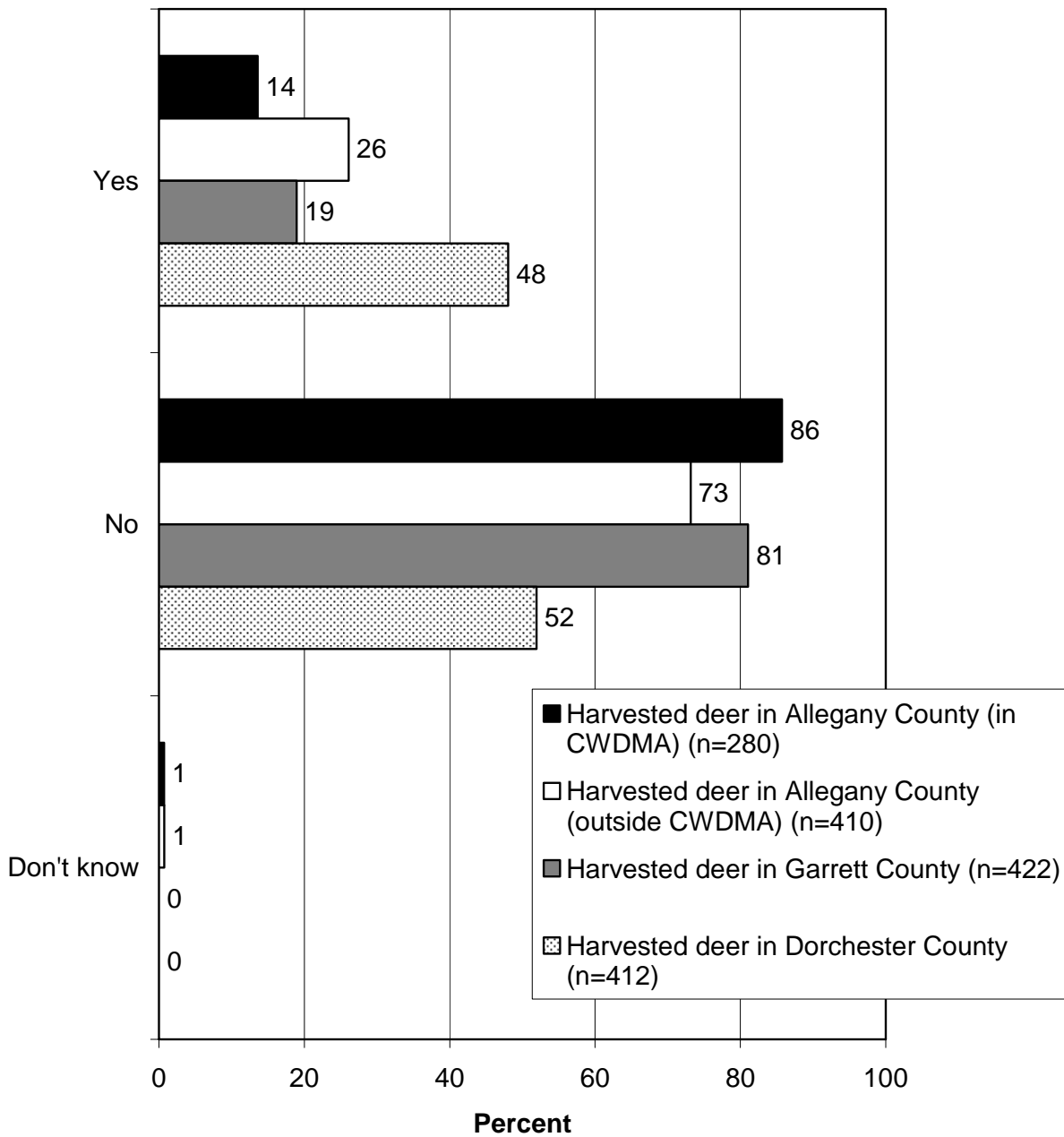
Q94. If Chronic Wasting Disease was found in an area where you deer hunt in Maryland and regulations were implemented to prohibit deer baiting in the area, do you agree or disagree that you would stop deer hunting in that area?



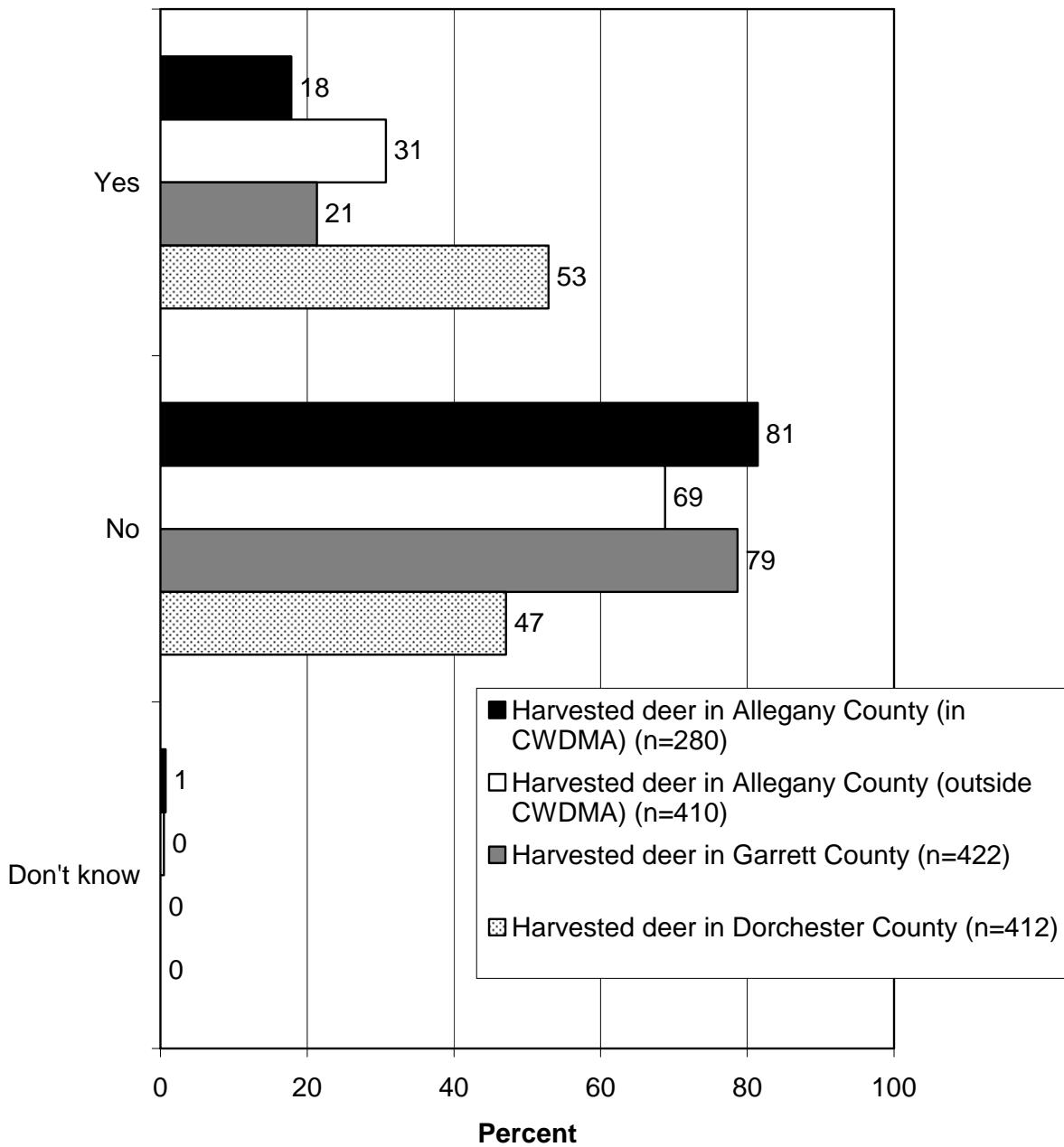
MEMBERSHIP IN HUNTING CLUBS AND LAND LEASES

- The survey explored membership in deer hunting clubs and land leases for the purpose of hunting deer in Allegany, Garrett, or Dorchester County.
- Dorchester County hunters, compared to hunters in the other three areas, were the most likely to have belonged to a deer hunting club or land lease for the purpose of hunting deer in the county *in the past 2 years*: 48% of Dorchester County hunters belonged to such a club or lease, compared to 14% of Allegany County hunters in the CWDMA, 26% of Allegany County hunters outside the CWDMA, and 19% of Garrett County hunters ($p \leq 0.001$).
 - Results followed the same pattern regarding membership in deer hunting clubs or land lease for the purpose of hunting deer in the county *prior to 2011*, with Dorchester County hunters being the most likely of the four groups to belong to such clubs and land leases: 53% of Dorchester County hunters belonged to such a club or lease prior to 2011, compared to 18% of Allegany County hunters in the CWDMA, 31% of Allegany County hunters outside the CWDMA, and 21% of Garrett County hunters ($p \leq 0.001$).
 - Deer hunters who said they had been members of such clubs or land leases were asked whether they had been members of clubs or land leases for the purpose of hunting deer in the CWDMA *in the past 2 years*, as well as *prior to the discovery of CWD in 2011*.
 - Regarding the time period in the past 2 years: 50% of Allegany County hunters in the CWDMA, 22% of Allegany County hunters outside the CWDMA, and 9% of Garrett County hunters who had been members of deer hunting clubs or land leases said they belonged to such clubs/leases for the purpose of hunting deer in the CWDMA.
 - Regarding the time period prior to the discovery of CWD in 2011: 46% of Allegany County hunters in the CWDMA, 25% of Allegany County hunters outside the CWDMA, 36% of Garrett County hunters, and 22% of Dorchester County hunters who had been members of deer hunting clubs or land leases said they belonged to such clubs/leases for the purpose of hunting deer in the CWDMA.

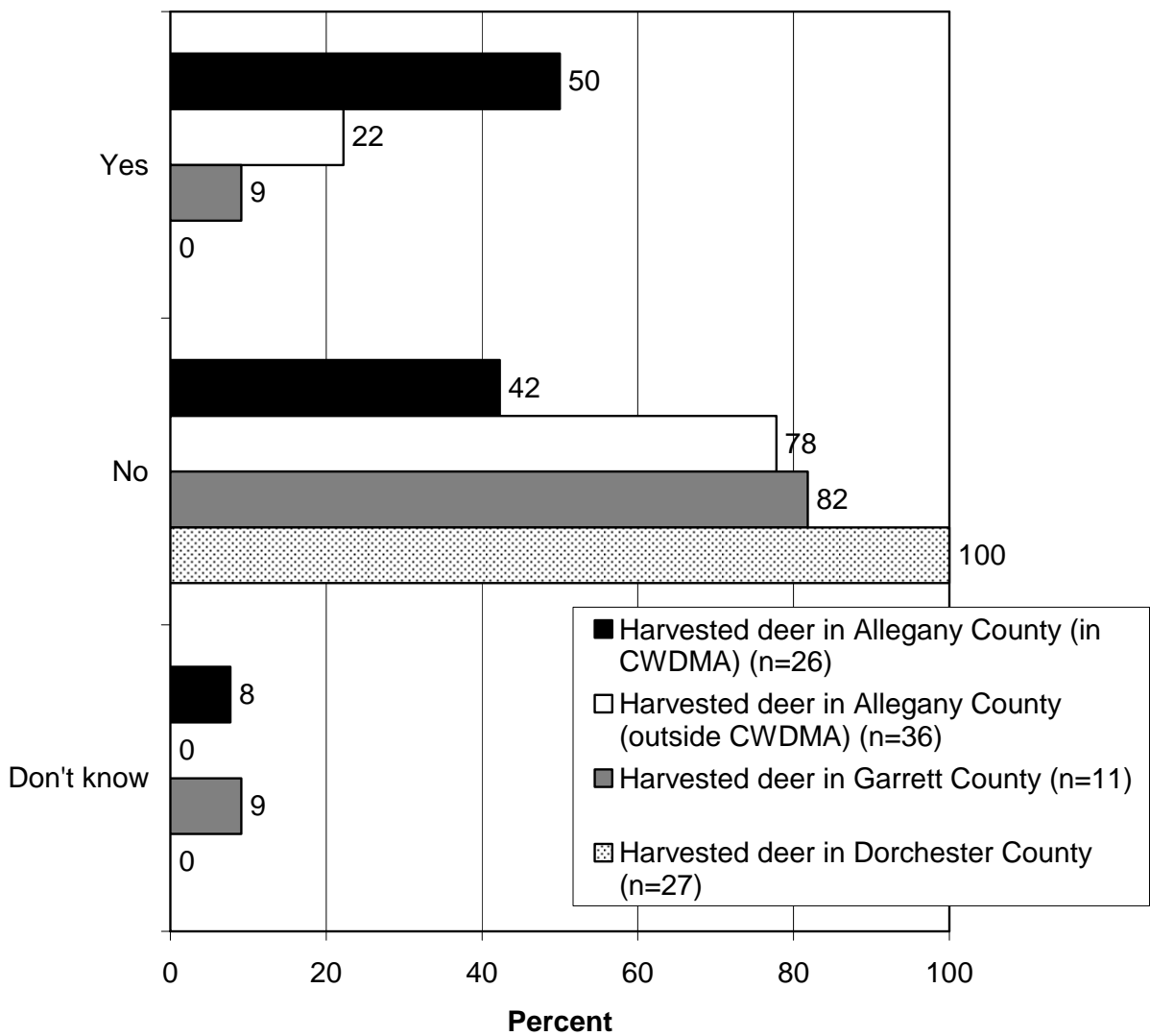
Q102. In the past 2 years, have you been a member of any deer hunting clubs or land leases for the purpose of hunting deer in [Allegany/Garrett/Dorchester] County?



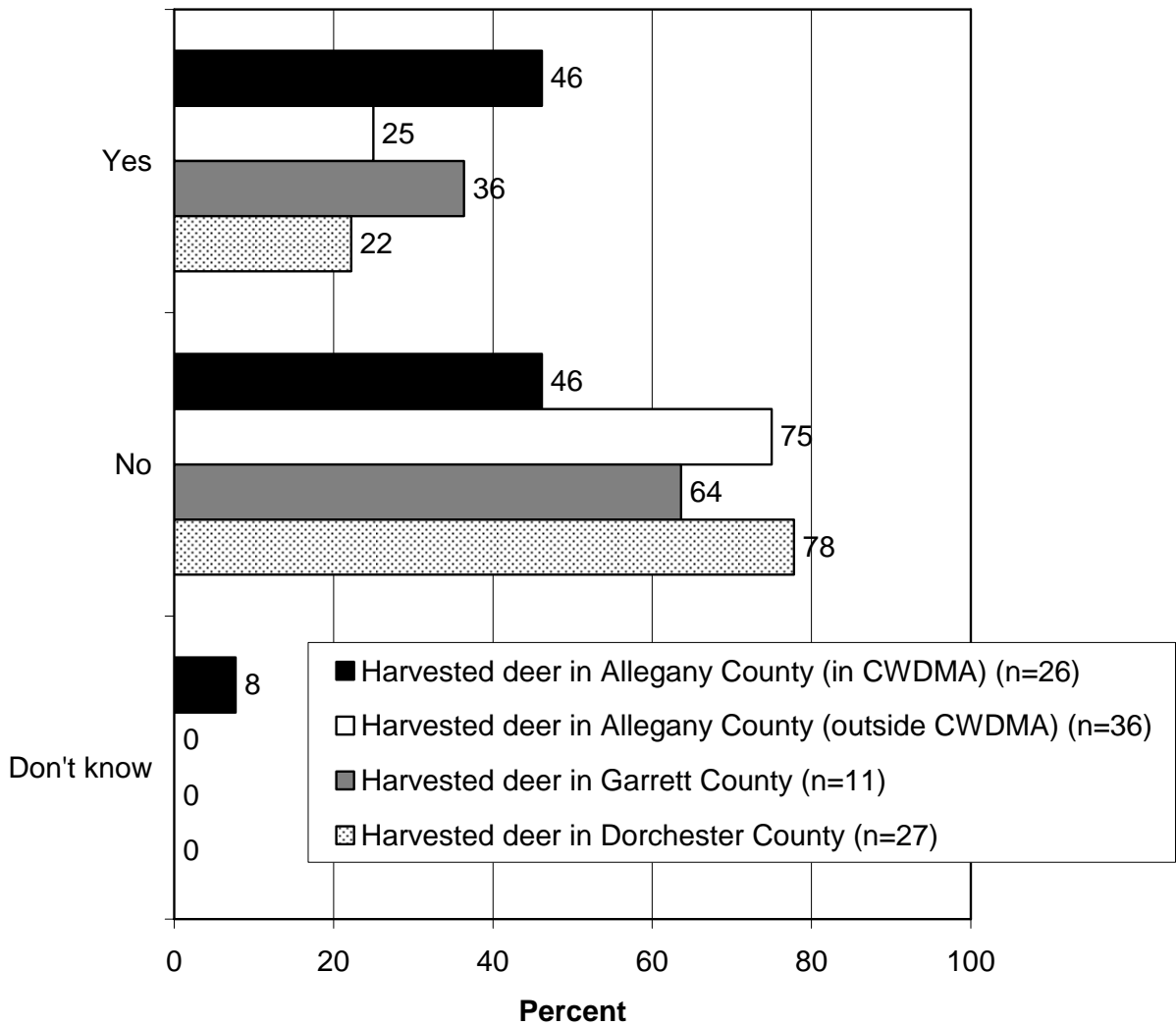
Q103. Were you a member of any deer hunting clubs or land leases for the purpose of hunting deer in [Allegany/Garrett/Dorchester] County prior to 2011?



Q104. Have you been a member of any deer hunting clubs or land leases for the purpose of hunting deer in the Chronic Wasting Disease Management Area in the past 2 years? (Asked of those who have been a member of a deer hunting club or land lease for the purpose of hunting deer in [Allegany/Garrett/Dorchester] County in the past 2 years and who have hunted in the Chronic Wasting Disease Management Area prior to or since the discovery of Chronic Wasting Disease in 2011.)



Q105. Were you a member of any deer hunting clubs or land leases for the purpose of hunting deer in the Chronic Wasting Disease Management Area prior to the discovery of Chronic Wasting Disease in 2011? (Asked of those who have been a member of a deer hunting club or land lease for the purpose of hunting deer in [Allegany/Garrett/Dorchester] County prior to 2011 and who have hunted in the Chronic Wasting Disease Management Area prior to or since the discovery of Chronic Wasting Disease in 2011.)

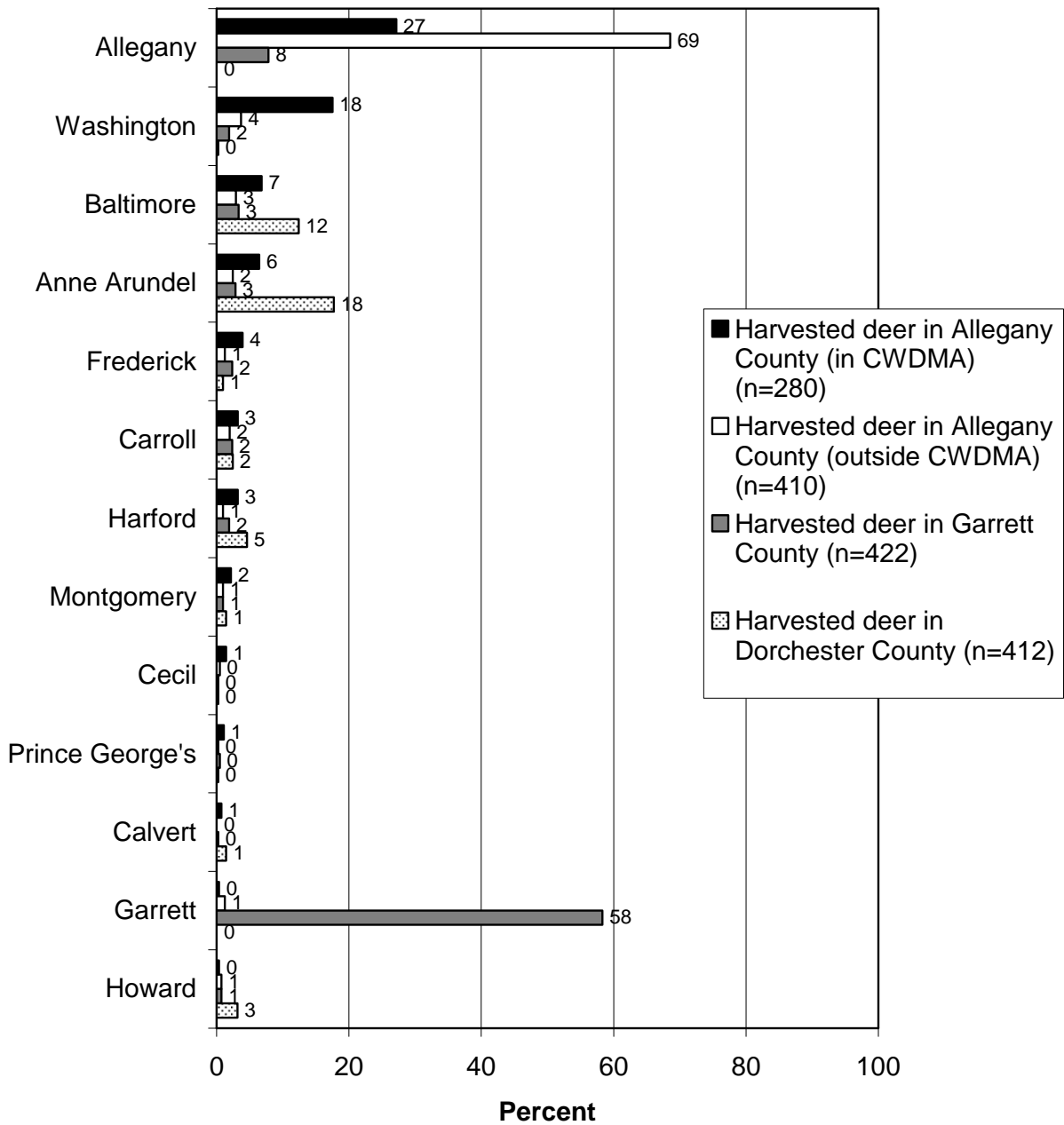


DEMOGRAPHIC DATA

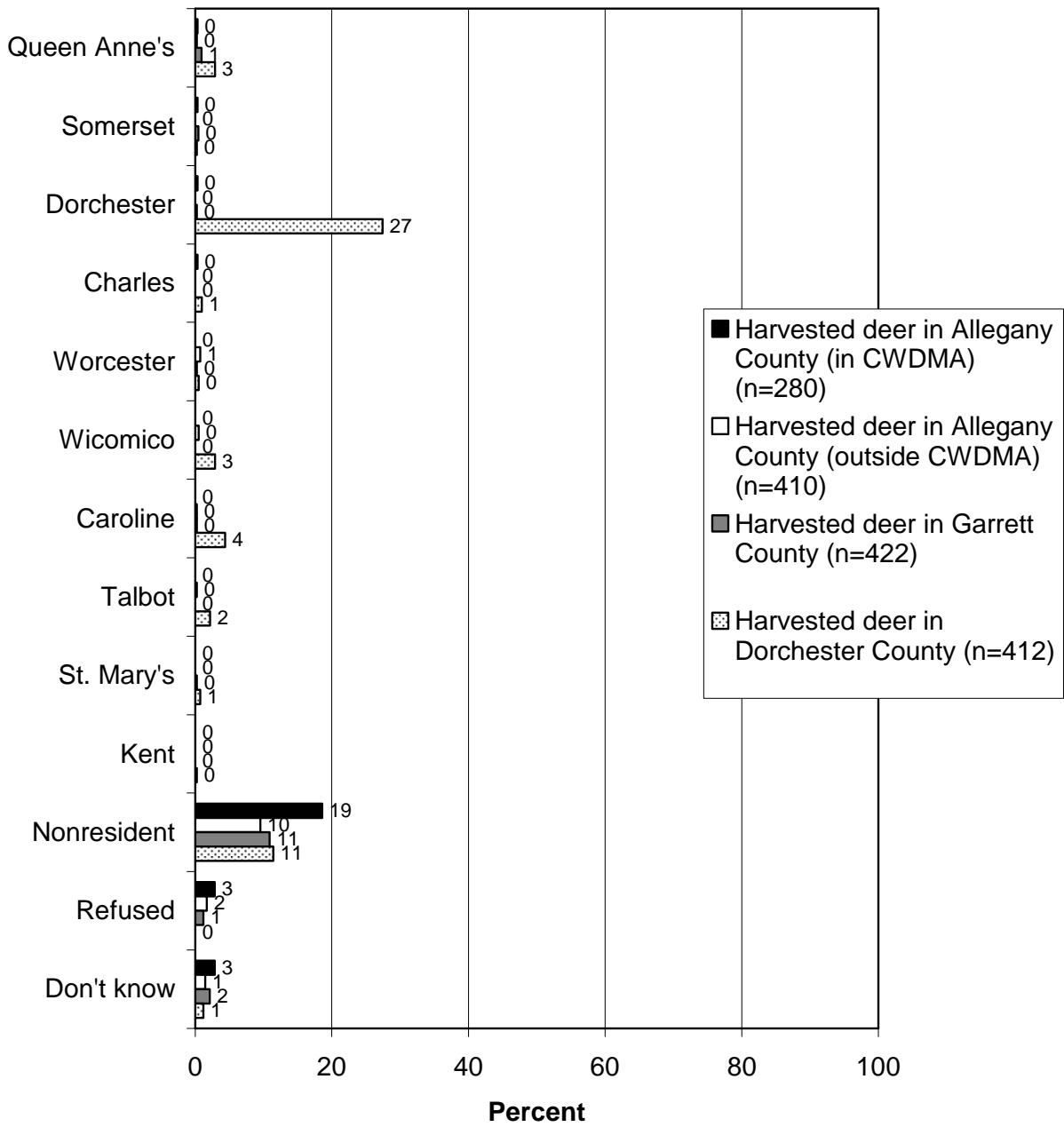
- Respondents' counties and states of residence are shown, generally corresponding to the deer harvest area criteria used to apportion the samples; note that 19% of Allegany County hunters in the CWDMA, 10% of Allegany County hunters outside the CWDMA, and 11% of Garrett and Dorchester County hunters were nonresidents of Maryland.

- Other demographic data include the age and gender of respondents.

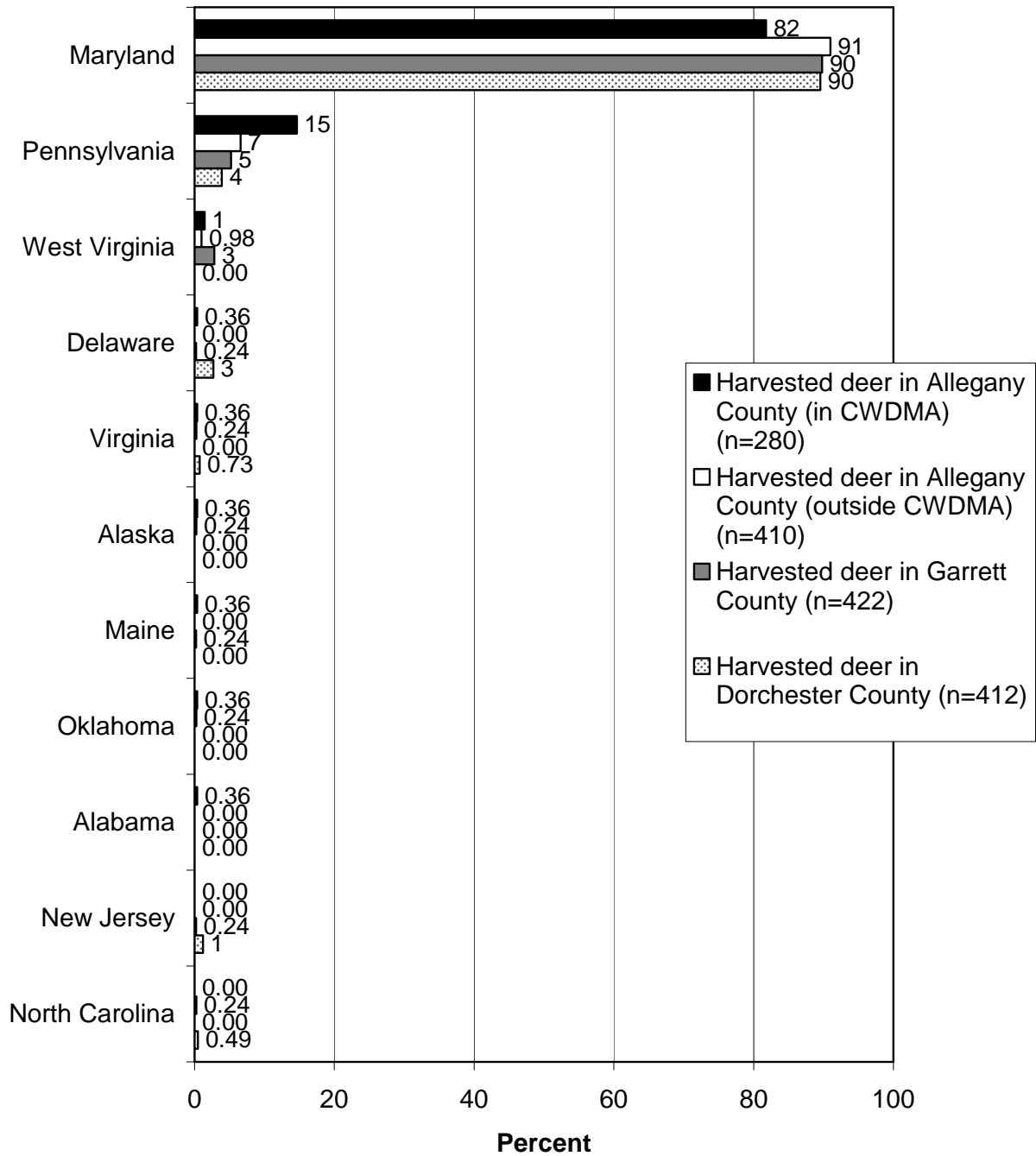
Q27. What county do you live in? (Part 1)



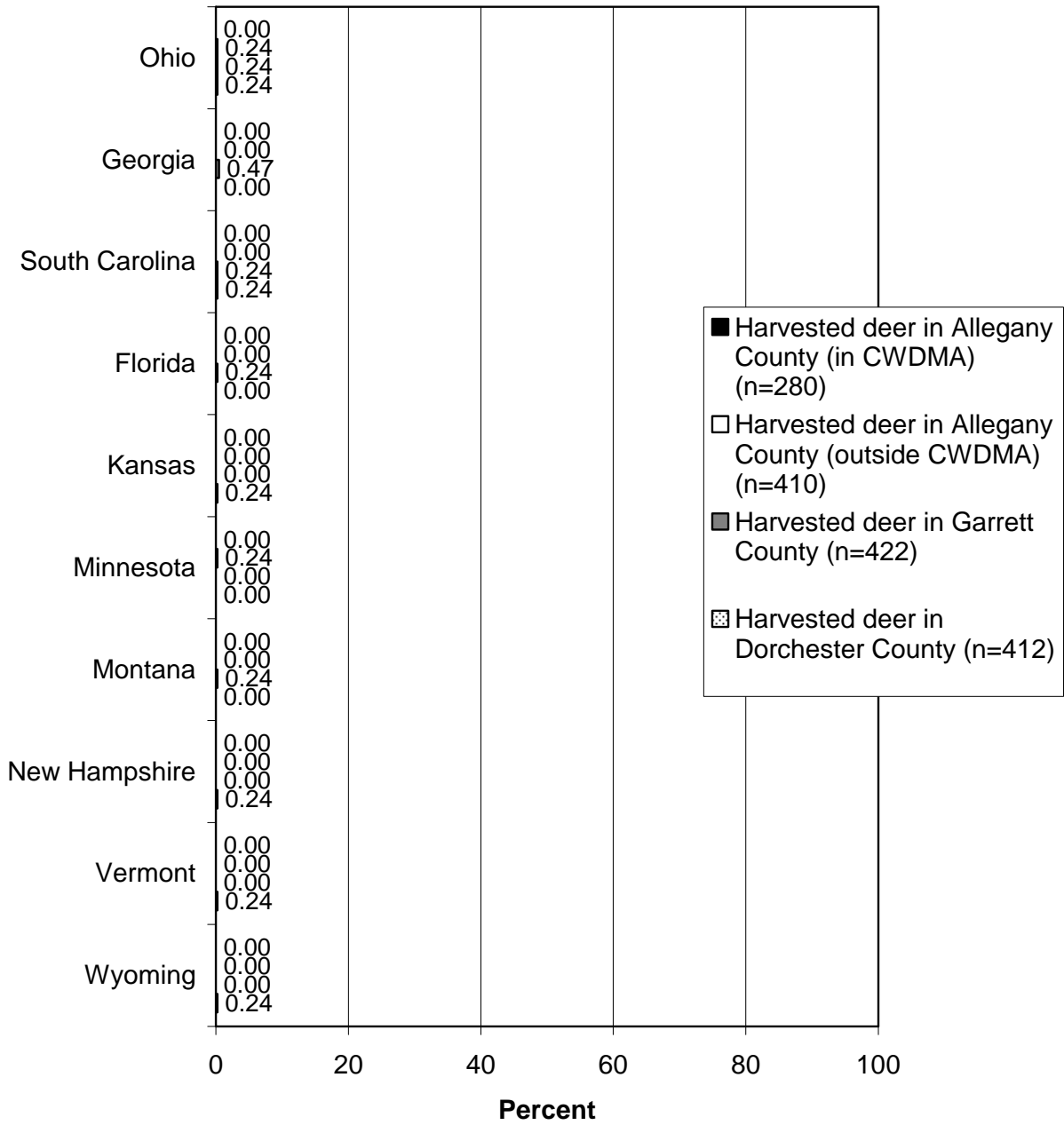
Q27. What county do you live in? (Part 2)



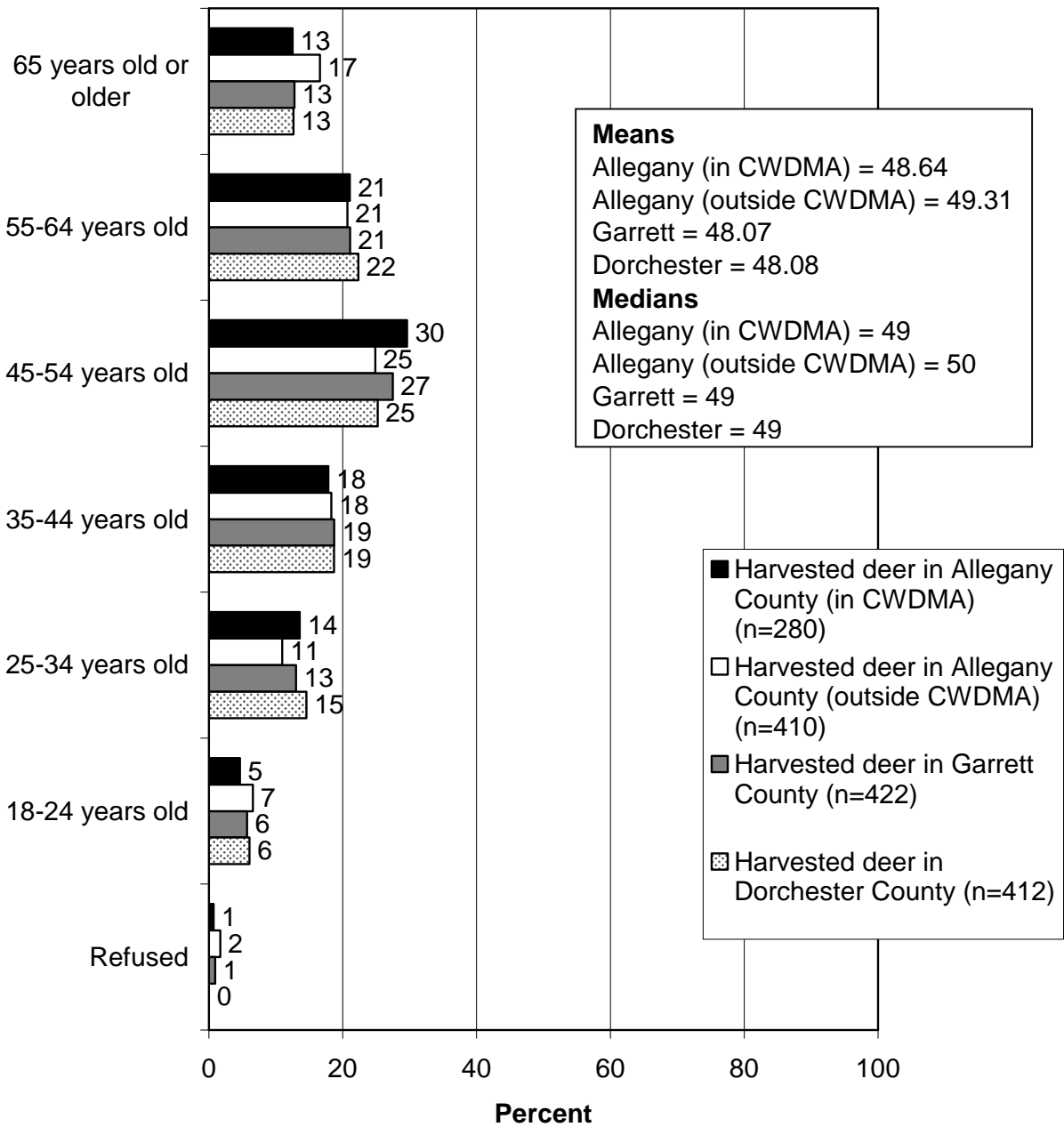
Q28. What state do you live in? (Part 1)



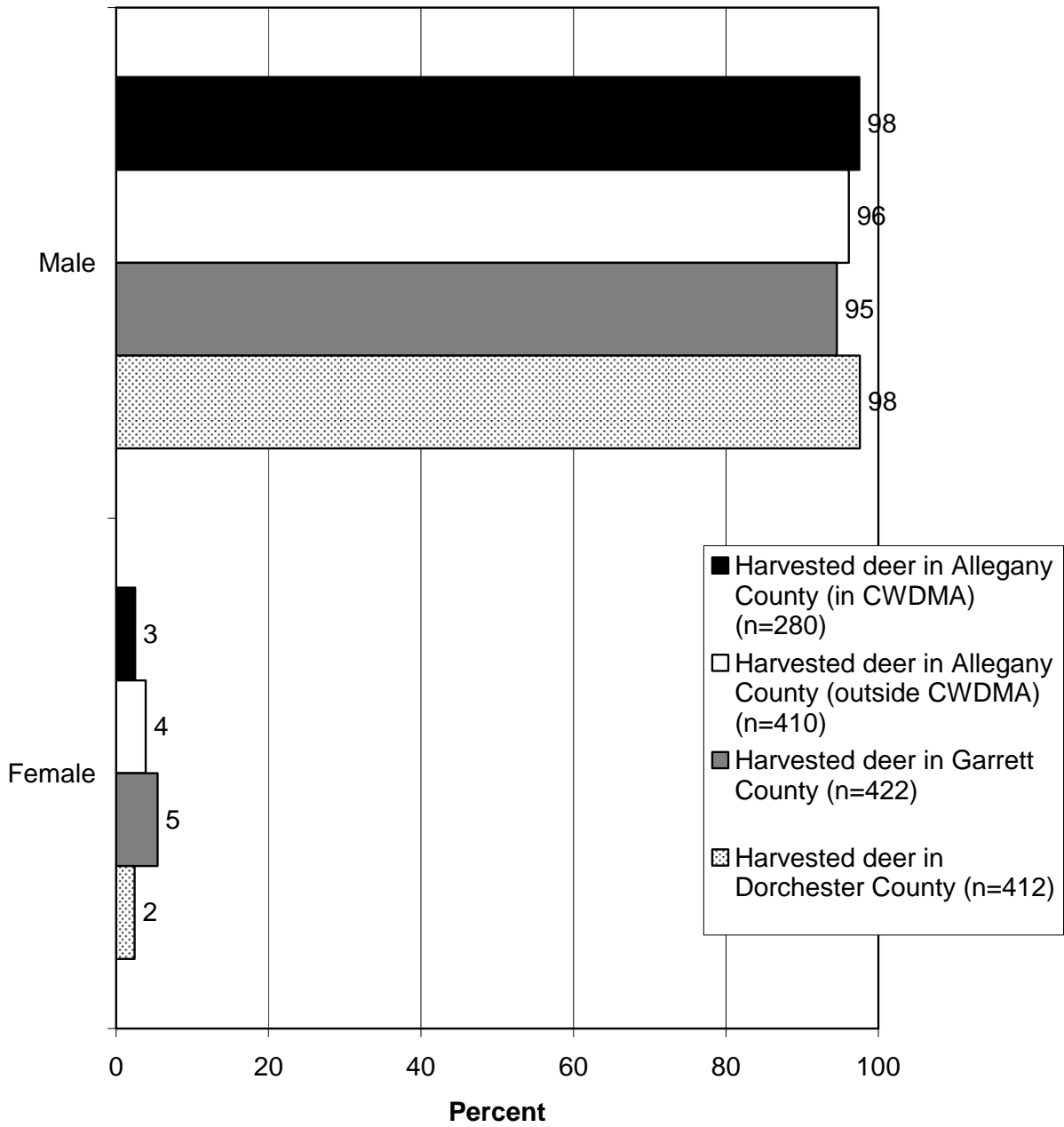
Q28. What state do you live in? (Part 2)



Q107. Respondent's age.



Q114. Respondent's gender (observed, not asked, by interviewer).



ABOUT RESPONSIVE MANAGEMENT

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

Utilizing our in-house, full-service telephone, mail, and web-based survey center with 50 professional interviewers, we have conducted more than 1,000 telephone surveys, mail surveys, personal interviews, and focus groups, as well as numerous marketing and communication plans, needs assessments, and program evaluations.

Clients include the federal natural resource and land management agencies, most state fish and wildlife agencies, state departments of natural resources, environmental protection agencies, state park agencies, tourism boards, most of the major conservation and sportsmen's organizations, and numerous private businesses. Responsive Management also collects attitude and opinion data for many of the nation's top universities.

Specializing in research on public attitudes toward natural resource and outdoor recreation issues, Responsive Management has completed a wide range of projects during the past 22 years, including dozens of studies of hunters, anglers, wildlife viewers, boaters, park visitors, historic site visitors, hikers, birdwatchers, campers, and rock climbers. Responsive Management has conducted studies on endangered species; waterfowl and wetlands; and the reintroduction of large predators such as wolves, grizzly bears, and the Florida panther.

Responsive Management has assisted with research on numerous natural resource ballot initiatives and referenda and has helped agencies and organizations find alternative funding and increase their membership and donations. Additionally, Responsive Management has conducted major organizational and programmatic needs assessments to assist natural resource agencies and organizations in developing more effective programs based on a solid foundation of fact.

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 has also conducted focus groups and personal interviews with residents of the African countries of Algeria, Cameroon, Mauritius, Namibia, South Africa, Tanzania, Zambia, and Zimbabwe.

Responsive Management routinely conducts surveys in Spanish and has conducted surveys in Chinese, Korean, Japanese and Vietnamese and has completed numerous studies with specific target audiences, including Hispanics; African-Americans; Asians; women; children; senior citizens; urban, suburban, and rural residents; large landowners; and farmers.

Responsive Management's research has been upheld in U.S. District Courts; used in peer-reviewed journals; and presented at major natural resource, fish and wildlife, and outdoor recreation conferences across the world. Company research has been featured in most of the nation's major media, including CNN, *The New York Times*, *The Wall Street Journal*, and on the front pages of *USA Today* and *The Washington Post*. Responsive Management's research has also been highlighted in *Newsweek* magazine.

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