



# Sheep and Goats Methodology and Quality Measures

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## Sheep and Goats Survey Methodology

**Scope and Purpose:** The January Sheep and Goats Survey is conducted annually and targets sheep and goat producers in the United States, excluding Alaska. The survey collects data for total sheep and goat inventories and components of that total, including breeding animals, market inventory, market lambs by weight group, goat inventory by type, lamb and kid crops, and wool and mohair production and value. In addition, data are collected for death loss from previous year, on-farm slaughter, and breeding and market animal values. Every five years a Sheep and Lamb Predator and Non-Predator Loss Survey is conducted nationally and incorporated as part of the January Sheep and Goats Survey; in other years, a similar survey is conducted by Colorado (every other year), Idaho, Montana, Utah, and Wyoming. Sheep estimates are published for 32 states and New England and goat estimates are published for 42 states and New England.

**Survey Timeline:** The reference date for the January Sheep and Goats Survey is January 1, with a data collection period of approximately 15 calendar days. Field Offices may begin data collection one day prior to the reference date. Data collection continues until a scheduled ending date and Field Offices have about 4 or 5 business days to complete editing and analysis, execute the summary, and interpret survey results. The Agricultural Statistics Board must perform the national review, reconcile state estimates to the national estimates, and prepare official estimates for release in 5 or 6 business days. The estimates are released to the public on the last Friday in January.

**Sampling:** The target population for the Sheep and Goats Survey is all agricultural establishments with one or more sheep or goats owned by the operation. NASS uses a dual frame approach, consisting of list frame and area frame components, to provide complete coverage of this target population. The Sheep and Goats Survey is conducted in every state except Alaska.

The list frame includes all known agricultural establishments. A profile, known as control data, of each establishment is maintained on the list frame to allow NASS to define list frame sampling populations for specific surveys and to employ efficient sampling designs. Only list frame records with positive sheep or goat control data are included in the list frame population. The list frame sheep and goat population includes approximately 217,800 farms and ranches and covers approximately 87 percent of sheep inventory and 65 percent of goat inventory in the United States.

The area frame contains all land in the state and, as such, is complete. The land is stratified according to intensity of agriculture using satellite imagery. The land in each stratum is divided into segments of roughly one square mile. Segments are optimally allocated and sampled to effectively measure crops and livestock. The sampled segments are fully enumerated in June. All farms and ranches found operating tracts in these segments are checked to see if they are included in the list frame sheep and goat population. The farms and ranches that are not included in the list frame sheep and goat population, called nonoverlap tracts, are sampled for the January Sheep and Goats Survey so that the target population is completely represented. The area frame component of the January Sheep and Goats Survey covers approximately 13 percent of the sheep inventory and 35 percent of the goat inventory in the United States.

The Sheep and Goats Survey list frame sample is selected using a hierarchical stratified sampling design with strata defined by total sheep and goats. The sample is designed to achieve a National standard error of 2 percent of the point estimate for total sheep and 4 percent for total goats and kids. The National list frame sample size for the Sheep and Goats Survey in recent years is approximately 21,000. The Sheep and Goats Survey nonoverlap sample uses a stratified sample design based on data collected in the June Area Frame Survey. The area frame sample size is approximately 1,700. Each list frame and area frame sampling unit is assigned a sampling weight which is used to create the survey estimates.

**Data Collection and Editing:** For consistency across modes, the paper version is considered the master questionnaire and the web and Computer Assisted Telephone Interview (CATI) instruments are built to model the paper instrument. Questionnaire content and format are evaluated annually through a specifications process where requests for changes are evaluated and approved or disapproved. Input may vary from question wording or formatting to a program change involving the deletion or modification of current questions or addition of new ones. If there are significant changes to either the content or format proposed, a NASS survey methodologist will pre-test the changes for usability. Prior to the start of data collection, all modes of instruments are reviewed and web and CATI instruments are thoroughly tested. All federal data collections require approval by the Office of Management and Budget (OMB). NASS must document the public need for the data, show the design applies sound statistical practice, ensure the data do not already exist elsewhere, and that the public is not excessively burdened. The sheep and goats questionnaire must display an active OMB number that gives NASS the authority to conduct the survey, a statement of the purpose of the survey and the use of the data being collected, a response burden statement that gives an estimate of the time required to complete the form, a confidentiality statement that the respondent's information will only be used for statistical purposes in combination with other producers, and a statement saying that response to the survey is voluntary and not required by law.

In addition to asking the specific sheep and goat items, all instruments collect information to verify the sampled unit, determine any changes in the name or address, identify any partners to detect possible duplication, verify the farm still qualifies for the target population, and identify any additional operations operated by the sampled operator.

Sampled farms and ranches receive a pre-survey letter explaining the survey and that they will be contacted for survey purposes only. The letter provides the questions to be asked to allow respondents to prepare in advance and also provides a pass code they can use to complete the survey on the internet. All modes of data collection are utilized for sheep and goat surveys. Field Offices are given the option of conducting a mail out/mail back phase. While mail is the least costly mode of collection, the short data collection period and the uncertainty of postal delivery times limit its effectiveness. Most of the data are collected by computer-assisted telephone interviews (CATI) by individual Field Offices and Data Collection Centers. Limited personal interviewing is done, generally for large operations or those with special handling arrangements. A program is run to determine if any sampled farms are in multiple on-going surveys, so data collection can be coordinated.

**Survey Edit:** As survey data are collected and captured, they are edited for consistency and reasonableness using automated systems. Reported data are typically first edited as a "batch" of data when first captured. The edit logic ensures the coding of administrative data follows the methodological rules associated with the survey design. Relationships between data items on the current survey are verified and, in certain situations, those items may be compared to data from earlier surveys to ensure relationships are logical. The edit will determine the status of each record to be either "dirty" or "clean." Dirty records must be updated and reedited or certified by an analyst to be clean. If updates are needed, they are reedited interactively. Only clean records are eligible for analysis and summary.

**Analysis Tools:** Edited sheep and goat data are processed through an interactive analysis tool which displays data for all reports by item. The tool provides scatter plots, tables, charts, and special tabulations that allow the analyst to compare an individual record to other similar records within their state. Outliers and unusual data relationships become evident and Field Office staff will review them to determine if they are correct. The tool also allows comparison to a farm's previously reported data to detect large changes in the operation. Suspect data found to be in error are corrected, while data found to be correct are kept.

**Nonsampling Errors:** Nonsampling errors are present in any survey process. These errors include reporting, recording, editing, and imputation errors. Steps are taken to minimize the impact of these errors, such as questionnaire testing, comprehensive interviewer training, validation and verification of processing systems, detailed computer edits, and the analysis tool.

**Estimators:** Each farm and ranch in the sample has an initial sampling weight. This is the inverse of the sampling fraction. For example, if a stratum has 1,000 farms in the population and 200 are sampled for this survey, each sampled farm has a weight of 5. In other words, each sampled farm represents 5 farms. The nonoverlap tracts sampled to measure

the sheep and goats not accounted for by the list have a weight determined by adjusting their original area frame weight by any second stage sampling weight.

Response to the January Sheep and Goats Survey is voluntary. Some producers refuse to participate in the survey. Others cannot be located during the data collection period and some submit incomplete reports. These nonrespondents must be accounted for if accurate estimates of sheep and goats are to be made. For the Sheep and Goats Survey, nonrespondents are accounted for by adjusting the weights of the respondents. The adjustment occurs by stratum as the bounded strata represent homogeneous groupings of similar sized farms. The largest stratum is unbounded and consists of large and, often unique, farms. Nonrespondents in this stratum and the nonoverlap tracts must be manually imputed by Field Office statisticians and their weights are not adjusted. The adjustment is performed by individual item on the questionnaire (total sheep, total goats, sheep death loss) so adjustments for item nonresponse (partial reports) and unit nonresponse (refusals and inaccessible) are done in a single calculation. Using the previous example, if 180 of the original 200 respond, the weights of the 180 will be adjusted to 1,000 divided by 180, or 5.56.

Two estimators are used to compute direct measures of the sheep and goat items. The “reweighted” estimator and the “adjusted” estimator are computationally identical except in how the nonresponse adjustments are made. The reweighted estimator uses a global weight adjustment across all usable reports. The nonresponse weight adjustment for the adjusted estimator uses an additional piece of information. When a sampled farm refuses to cooperate, interviewers will probe to determine the presence of sheep and/or goats even though the number is not known. This presence/absence indicator is used in the weight adjustment.

Point estimates, called direct expansions, for both estimators are calculated by multiplying the reported value by the nonresponse adjusted weight and summing to a stratum total. A variance estimate is also computed at the stratum level. The nonoverlap tracts are treated as an additional stratum. Totals and variances are additive across strata to form a state estimate and states are additive to a national estimate.

Ratio estimates are also computed for many items. For example, market lambs can be estimated as a percent of total market sheep and lamb inventory. Ratio estimates use the reweighted estimator described above for the numerator and denominator. Both the numerator and denominator must be reported in order for that record to be used in the ratio estimator.

**Estimation:** When all samples are accounted for, all responses fully edited, and the analysis material is reviewed, each Field Office executes the summary for their state. When all Field Offices have run summaries, Headquarters executes the national summary. Since all states conduct identical surveys, the samples can be pooled and national survey results computed. The summary results provide multiple point estimates and their standard errors for each data series being estimated. It also provides information used to assess the performance of the current survey and evaluate the quality of the survey estimates, such as strata level expansions, response rates, and percent of the expansion from usable reports.

Field Offices are responsible for performing a detailed review of their survey results. Any irregularities revealed by the summary must be investigated and, if necessary, resolved. Using the historical relationship of the survey estimates to the official estimate, Field Offices must interpret the survey results and submit a recommended estimate to Headquarters. The data are viewed in tabular and graphical form and a consensus estimate is established. Field Offices see their survey results only and do not have access to other states’ results. For some data series, information from other sources is also utilized in the process of establishing estimates.

For the national estimates, NASS assembles a panel of statisticians to serve as the Agricultural Statistics Board which reviews the national results and establishes the national estimates. Since larger sample sizes yield more precise results, NASS employs the “top-down” approach by determining the national estimates first and reconciling the state estimates to the national number for sheep and goat inventories, lamb and kid crops, and wool and mohair production. The “Board” also enjoys an advantage in being able to examine results across states, compare the state recommendations, and utilize administrative data available only at the national level. The same estimators used in the state summaries are produced by the national summary. The Board follows the same approach the states do in determining the national estimate. The historical relationship of the survey estimates to the official estimate is evaluated over time to determine accuracy and bias using tables and graphs. Every 5 years NASS conducts the Census of Agriculture, which is an exhaustive data collection

effort for all known farm operations across the United States. The information gathered from the Census of Agriculture is used to establish “bench mark” levels by which the survey estimators can be compared and bias determined. Survey based estimators can also be impacted by “outliers” – individual reports that have “excessive influence” on the results due to either improper classification or extremely unusual data for a given operation (i.e. operation is not representative of other operations). NASS thoroughly reviews the survey data to identify these situations and consider their impact on the survey results when establishing the official estimates.

External information (administrative data) is also utilized in the process of setting estimates. In order to be considered, these data must be deemed to be reliable and come from unbiased sources. The most common administrative data is commercial slaughter. NASS employs a balance sheet approach whenever possible to ensure that estimates are as accurate as possible. This approach typically is limited to National-level estimates. A balance sheet and its components are reviewed when the inventory numbers are established. Commercial slaughter is an important element of the balance sheet at the national level since its high degree of reliability is based on a near-actual count of animals slaughtered. National-level live animal imports from other countries and exports to other countries are also considered.

Subtracting the disposition components of the balance sheet from supply components should, theoretically, give the current inventory. However, each component of the balance sheet has varying degrees of possible estimation error. To be most useful as an indication of inventory, therefore, each component should be estimated on the basis of all available information. The supply components of the National balance sheet are the beginning inventory, births, and imports (inshipments for State balance sheets). From this supply, the disposition components – commercial slaughter (marketings at State level), farm slaughter, deaths, and exports – are subtracted. The result is the indicated number on hand at the end of the period or year.

## Quality Metrics for Sheep and Goats

**Purpose and Definitions:** Under the guidance of the Statistical Policy Office of the Office of Management and Budget, the United States Department of Agriculture’s National Agricultural Statistics Service provides data users with quality metrics for its published data series. The metrics tables below describe the performance data for all surveys contributing to the publication. The accuracy of data products may be evaluated through sampling and non-sampling error. The measurement of error due to sampling in the current period is evaluated by the coefficient of variation for each estimated item. Nonsampling error is evaluated by response rates and the percent of the estimate from reported data.

**Sample size** is the number of observations selected from the population to represent a characteristic of the population.

**Response rate** is the proportion of the sample that responded to the survey.

**Percent of estimate from reported data** is the percent of the estimate represented by the actual survey respondents.

**Coefficient of variation** provides a measure of the size for the standard error relative to the point estimate and is used to measure the precision of the results of a survey estimator.

**Sheep and Goats Survey Sample Size and Response Rates:** To assist in evaluating the performance of the estimates in the sheep and goats report, the sample size and response rates are displayed. The slight decrease in sample size for sheep and goat operations in 2012 from 2011 can be attributed to regular fluctuations in sample sizes from year-to-year. Response rates overall for 2011 and 2012 are displayed.

### Sheep and Goats Survey Sample Size and Response Rate – United States: 2011 and 2012

	Sample size		Response rate	
	2011	2012	2011	2012
	(number)	(number)	(percent)	(percent)
United States .....	23,155	23,031	78.7	77.2

### Sheep and Goats Survey Quality Metrics – United States: 2011 and 2012

	Percent of estimate from reported data		Coefficient of variation	
	2011	2012	2011	2012
	(percent)	(percent)	(percent)	(percent)
All sheep and lambs .....	80.9	84.9	2.02	2.13
Breeding sheep and lambs .....	79.5	83.8	1.95	2.58
Market sheep and lambs .....	85.0	88.1	4.46	2.43
Lamb crop .....	80.1	83.3	1.64	2.32
Wool production .....	79.6	84.0	2.63	2.79
All goats and kids .....	83.7	85.6	3.59	2.95
Angora goats and kids .....	72.4	80.2	10.13	10.19
Meat and other goats and kids .....	83.8	85.7	3.86	3.08
Milk goats and kids .....	87.3	86.3	11.66	8.92
Kid crop .....	82.6	84.2	5.15	3.31
Mohair Production .....	70.6	79.9	10.75	15.31

## Sheep and Goats Survey Sample Size and Response Rates – States and United States: 2011 and 2012

	Sample size		Response rate	
	2011 (number)	2012 (number)	2011 (percent)	2012 (percent)
Alabama .....	391	385	79.5	71.7
Arizona .....	208	199	73.6	70.9
Arkansas .....	323	330	80.2	72.4
California .....	959	982	71.2	70.4
Colorado .....	664	876	66.0	68.7
Delaware .....	53	48	83.0	83.3
Florida .....	347	334	86.5	80.8
Georgia .....	430	427	73.5	74.2
Hawaii .....	129	136	86.0	82.4
Idaho .....	412	394	77.4	72.8
Illinois .....	472	455	80.5	79.6
Indiana .....	463	446	92.7	85.4
Iowa .....	914	906	79.5	72.4
Kansas .....	499	468	80.4	69.2
Kentucky .....	507	498	83.0	74.1
Louisiana .....	260	262	86.2	81.3
Maryland .....	270	256	64.8	65.2
Michigan .....	484	498	81.8	75.1
Minnesota .....	671	661	81.4	74.7
Mississippi .....	292	296	77.1	80.4
Missouri .....	571	559	73.4	75.1
Montana .....	684	675	78.5	77.9
Nebraska .....	423	423	84.9	87.0
Nevada .....	120	121	80.0	74.4
New England <sup>1</sup> .....	521	555	80.2	79.8
New Jersey .....	181	183	84.0	84.2
New Mexico .....	355	372	68.5	76.9
New York .....	437	418	78.0	77.8
North Carolina .....	539	512	89.4	88.7
North Dakota .....	297	277	84.2	78.7
Ohio .....	772	781	77.3	74.3
Oklahoma .....	620	630	74.0	66.8
Oregon .....	710	701	83.5	86.7
Pennsylvania .....	611	607	82.2	75.6
South Carolina .....	319	327	79.0	82.0
South Dakota .....	841	826	85.0	84.7
Tennessee .....	637	609	79.1	77.3
Texas .....	2,260	2,171	72.9	80.6
Utah .....	675	651	68.0	77.7
Virginia .....	579	560	77.7	80.9
Washington .....	392	342	83.7	75.1
West Virginia .....	352	383	92.0	80.7
Wisconsin .....	600	587	85.7	85.0
Wyoming .....	911	904	80.2	72.6
United States .....	23,155	23,031	78.7	77.2

<sup>1</sup> New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

<sup>2</sup> Individual state estimates not available for states not shown, but are included in Other States.

## Quality Metrics for All Sheep and Lambs – United States: 2011 and 2012

	Percent of estimate from reported data		Coefficient of variation	
	2011	2012	2011	2012
	(percent)	(percent)	(percent)	(percent)
Arizona .....	82.9	82.7	20.46	18.19
California .....	70.9	75.8	7.64	6.60
Colorado .....	79.3	88.0	3.82	1.37
Idaho .....	90.4	86.6	4.63	21.52
Illinois .....	83.6	82.8	12.75	11.86
Indiana .....	90.5	89.9	15.01	21.18
Iowa .....	82.7	79.5	19.74	8.03
Kansas .....	80.2	79.9	6.53	16.99
Kentucky .....	87.3	88.3	29.06	44.65
Michigan .....	89.2	84.5	8.31	13.86
Minnesota .....	86.3	83.0	6.33	14.19
Missouri .....	79.2	85.3	14.54	29.07
Montana .....	81.0	79.4	6.04	6.65
Nebraska .....	93.3	91.5	35.09	18.04
Nevada .....	99.3	98.1	0.76	1.14
New England <sup>1</sup> .....	87.7	83.3	15.97	12.25
New Mexico .....	77.8	80.7	17.56	15.03
New York .....	82.5	91.0	9.28	7.90
North Carolina .....	95.2	92.8	12.44	14.87
North Dakota .....	88.0	82.0	4.28	13.61
Ohio .....	80.4	81.0	10.12	9.07
Oklahoma .....	77.4	77.5	13.79	12.30
Oregon .....	93.0	93.6	4.28	2.82
Pennsylvania .....	86.5	80.0	13.25	7.81
South Dakota .....	85.9	87.1	3.35	8.57
Tennessee .....	78.7	83.7	14.27	19.32
Texas .....	72.2	84.6	5.79	6.85
Utah .....	70.8	95.1	3.71	4.01
Virginia .....	89.8	87.7	23.41	19.55
Washington .....	93.9	89.8	19.01	22.82
West Virginia .....	95.9	90.0	9.68	20.52
Wisconsin .....	90.7	88.1	12.01	15.82
Wyoming .....	83.6	82.3	2.77	2.51
Other States <sup>2</sup> .....	89.1	87.0	7.89	8.17
United States .....	80.9	84.9	2.00	2.10

<sup>1</sup> New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

<sup>2</sup> Individual state estimates not available for states not shown, but are included in Other States.

**Quality Metrics for Angora Goats – States and United States: 2011 and 2012**

	Percent of estimate from reported data		Coefficient of variation	
	2011 (percent)	2012 (percent)	2011 (percent)	2012 (percent)
Arizona .....	77.0	68.2	32.26	39.19
California .....	71.5	84.3	39.86	25.67
Colorado .....	77.5	77.9	45.46	59.35
Minnesota .....	77.0	86.9	45.74	61.66
Missouri .....	(X)	75.1	(X)	50.44
New England <sup>1</sup> .....	77.5	88.8	22.25	45.57
New Mexico .....	72.7	86.3	26.93	41.20
Ohio .....	80.4	82.4	33.22	42.46
Oregon .....	79.0	91.5	26.72	34.45
Texas .....	70.0	81.9	12.40	12.78
Wisconsin .....	87.2	88.2	42.34	56.27
Other States <sup>2</sup> .....	81.3	79.8	14.85	18.43
United States .....	72.4	80.2	10.13	10.19

(X) Not applicable.

<sup>1</sup> New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

<sup>2</sup> Individual state estimates not available for states not shown, but are included in Other States.



## Quality Metrics for Milk Goats – States and United States: 2011 and 2012

	Percent of estimate from reported data		Coefficient of variation	
	2011	2012	2011	2012
	(percent)	(percent)	(percent)	(percent)
Alabama .....	85.0	71.5	39.87	43.16
Arizona .....	85.4	69.9	49.96	60.38
Arkansas .....	74.0	66.7	48.86	46.05
California .....	78.6	87.6	8.72	20.78
Colorado .....	82.0	83.4	16.08	30.04
Florida .....	87.4	80.1	32.15	27.83
Georgia .....	73.8	74.4	34.48	29.04
Idaho .....	90.5	95.0	62.14	70.39
Illinois .....	81.4	76.2	19.64	35.64
Indiana .....	91.2	83.9	31.32	24.88
Iowa .....	89.3	86.7	59.64	40.62
Kansas .....	93.4	83.6	56.96	38.30
Kentucky .....	82.7	80.5	33.76	33.51
Louisiana .....	99.3	89.8	85.40	58.88
Maryland .....	79.7	90.6	20.30	62.62
Michigan .....	88.2	86.4	27.34	51.35
Minnesota .....	87.2	85.3	25.15	28.29
Mississippi .....	74.0	89.0	70.04	47.42
Missouri .....	88.4	91.0	36.56	42.31
Montana .....	79.2	81.7	20.12	23.64
Nebraska .....	87.8	88.2	22.55	33.75
New England <sup>1</sup> .....	84.2	89.2	8.15	9.17
New Jersey .....	97.4	99.4	64.96	77.43
New Mexico .....	74.6	78.1	51.44	39.12
New York .....	93.6	89.0	37.10	22.09
North Carolina .....	90.1	93.1	13.97	26.56
Ohio .....	77.8	79.0	21.91	28.33
Oklahoma .....	76.5	80.7	26.06	34.52
Oregon .....	80.1	90.3	25.99	19.95
Pennsylvania .....	87.3	81.5	17.49	18.44
South Carolina .....	93.4	79.1	46.15	29.46
South Dakota .....	93.5	88.3	47.21	12.86
Tennessee .....	83.1	81.4	25.02	31.77
Texas .....	78.1	79.1	23.53	30.26
Utah .....	69.7	72.3	43.43	24.96
Virginia .....	87.3	91.9	50.80	53.96
Washington .....	89.0	79.1	23.60	15.17
West Virginia .....	94.9	86.1	38.04	37.17
Wisconsin .....	88.3	88.1	16.52	9.14
Wyoming .....	84.0	93.3	11.13	12.20
Other States <sup>2</sup> .....	96.5	94.0	5.79	5.75
United States .....	87.3	86.3	11.66	8.92

<sup>1</sup> New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

<sup>2</sup> Individual state estimates not available for states not shown, but are included in Other States.

## Quality Metrics for Meat and Other Goats – States and United States: 2011 and 2012

	Percent of estimate from reported data		Coefficient of variation	
	2011 (percent)	2012 (percent)	2011 (percent)	2012 (percent)
Alabama .....	86.0	79.2	14.37	14.59
Arizona .....	62.2	87.4	65.86	36.80
Arkansas .....	84.1	87.4	19.31	25.95
California .....	88.7	86.1	17.38	10.75
Colorado .....	84.6	74.9	17.83	20.60
Florida .....	92.8	86.7	15.04	12.93
Georgia .....	76.2	76.1	12.15	11.52
Hawaii .....	93.9	93.1	6.95	11.49
Idaho .....	94.4	91.5	26.05	26.23
Illinois .....	87.1	86.0	15.62	20.52
Indiana .....	87.9	90.2	15.95	19.76
Iowa .....	85.2	82.7	13.33	12.90
Kansas .....	88.7	82.8	12.75	20.01
Kentucky .....	90.1	78.5	26.13	15.00
Louisiana .....	90.2	87.5	18.63	26.13
Maryland .....	78.1	75.7	18.62	21.98
Michigan .....	92.2	88.8	28.70	28.64
Minnesota .....	88.5	88.3	24.66	29.50
Mississippi .....	91.0	88.4	29.94	20.30
Missouri .....	80.7	89.1	17.41	18.55
Montana .....	92.5	94.3	27.53	31.06
Nebraska .....	90.4	95.2	17.62	20.19
Nevada .....	83.4	77.4	11.74	14.66
New England <sup>1</sup> .....	85.8	93.2	19.15	20.37
New Jersey .....	92.3	84.8	33.07	17.89
New Mexico .....	79.3	78.4	31.69	16.60
New York .....	92.5	90.2	42.93	26.03
North Carolina .....	91.7	94.1	11.22	15.17
North Dakota .....	89.6	85.0	16.16	24.76
Ohio .....	89.3	87.4	23.28	26.85
Oklahoma .....	79.9	77.0	12.90	13.61
Oregon .....	87.1	91.6	15.01	12.32
Pennsylvania .....	91.2	88.1	13.96	15.72
South Carolina .....	89.9	92.8	21.34	19.52
South Dakota .....	94.7	88.9	45.01	18.95
Tennessee .....	87.8	86.0	12.55	14.01
Texas .....	78.1	83.6	7.19	5.92
Utah .....	86.8	83.2	16.53	12.27
Virginia .....	89.6	91.2	18.47	17.14
Washington .....	92.8	90.4	21.55	26.03
West Virginia .....	94.5	87.5	31.67	26.88
Wisconsin .....	92.6	94.3	18.81	18.88
Wyoming .....	89.8	96.0	7.55	6.37
Other States <sup>2</sup> .....	72.1	89.5	58.12	40.95
United States .....	83.8	85.7	3.86	3.08

<sup>1</sup> New England includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

<sup>2</sup> Individual state estimates not available for states not shown, but are included in Other States.

## Information Contacts

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Questionnaires and Editing .....	Editing and Questionnaire Branch .....	(202) 720-6201	HQ_CSD_DCB@nass.usda.gov
Sampling .....	Survey Sampling Branch .....	(202) 720-3895	HQ_CSD_SB@nass.usda.gov
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