

B. Collections of Information Employing Statistical Methods

1. Describe the potential respondent universe and any sampling or other respondent selection methods to be used.

The potential respondent universe of the Goat 2009 study is all operations, in 21 States¹, that are on the NASS list frame with goats. The preliminary selection of States to be included in the study was done in the fall of 2007. The goal of NAHMS national studies is to include States that account for at least 70 percent of the animals and operators/producers in the United States. The reference population for baseline information (subset of overall study questions) is the number of operations with one or more goats and the number of goats on those operations, in the 21 states. In addition, descriptive reports will be generated with a reference population of those operations with 10 or more goats in the 21 States.

The initial review of States identified 20 major goat States (States with at least two percent of the operations with goats or 2 percent goat inventory). One state close to the cutoff was dropped because the Southeast region was well represented and would be overburdened. An additional 2 States having inventory or number of herds close to the 2 percent cutoff were assessed for inclusion in the study based on the State's interest and geographic representation for a total of 21 States. A memo recommending inclusion of the 21 States was provided to the VS Regional Directors. Each Regional Director sought input from their respective States about being included or excluded from the study. Appendix A: Goat 2009 State Selection documents the processes.

Examination of the NASS, "*Sheep and Goats, February 2008*" and "*Farms, Land in Farms, and Livestock Operations 2007 Summary February 2008*" demonstrates that the selected 21 States account for 78.4 percent of goat operations and 85.3 percent of goats in the United States.

Operations with NASS control inventory of 1 to 9 goats will be mailed a survey, with a follow-up phone call to non-respondents (CATI component). Operations with control inventory of 10 or more goats will be visited in person by a NASS enumerator. Including operations with zero goats on hand, the estimated response rate for the NASS CATI component of the Goat 2009 study is 76 percent. The 2001 sheep response rate was 73 percent (Appendix B) and the estimated response rate for the on-farm NASS component is 79 percent (response rate calculations appear in Appendix D). All respondents with one or more goats from the NASS on-farm component (Phase I) will be eligible to participate in the APHIS data collection phase (Phase II) of the study.

The descriptive reports from the Goat 2009 study will include a Methodology Section explaining the study processes – needs assessment, sample selection, data collection and editing, estimation, and response rates. In addition, an appendix in the report will include a table identifying the specific reference population in terms of the number of operations with goats and the number of goats.

¹ Alabama, California, Colorado, Florida, Georgia, Indiana, Iowa, Kentucky, Michigan, Missouri, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, Wisconsin. State selection document can be found in Appendix A.

2. ***Describe the procedures for the collection of information.***

• **Statistical methodology for stratification and sample selection:**

Stratification: A total of 21 States were selected for inclusion in the study based upon each state's contribution to the U.S. total number of goats and number of operations with goats as well as geographic representation (Appendix A).

Sampling methodology— Goat 2009 study: 2,000 operations with 1 – 9 goats and 3500 operations with 10 or more goats (see 'degree of accuracy needed' section for sample size determination) will be selected from NASS' list frame of producers with one or more goats. The sample will be selected as a stratified random sample with the strata being both state and operation size. Operation size is based on total goat inventory. The state-level allocation will be based on a weighted proportion of the number of operations in the state and the goat inventory relative to the 21 State total with smoothing to prevent excessive workload for some States. The percentage of operations with goats in the State will get a weight of 0.4 and the percentage of goats will get a weight of 0.6. For example, using the 2002 Census of Agriculture data, Texas has 24.45% of operations and 54.93% of the goats in the 21 selected States, resulting in a weighted percentage of 42.74% (Appendix A). The allocation will be adjusted to move some of the sample from States with large samples (e.g., Texas) to other States with fewer samples. Within States, the State-level sample will be allocated within size strata. Allocation to size strata will follow the same strategy as the state-level allocation (Appendix C – Preliminary NAHMS Goat 2009 Sample Allocation).

For the CATI component of Phase I, operations with 1 – 9 goats will be mailed a survey (NAHMS-216, General Goat Management Report, CATI), with a re-mailing to non-respondents 2 weeks later. Non-respondents to the second mailing will be contacted via telephone and offered the opportunity to complete the survey by phone. Up to seven telephone calls will be made by NASS in order to contact the producer. If these attempts to reach the producer are unsuccessful the selected unit will be coded as inaccessible. The estimated overall response rate is 76% for Phase I CATI (as shown on Appendix D, 20 percentage points of these have zero goats).

For the on-farm component of Phase I, up to seven telephone calls will be made by the NASS enumerator to set up a convenient time to introduce the study. If the enumerator cannot contact the producer via phone, the enumerator will drive to the farm to initiate contact and will either complete the interview at that time or establish another time for the interview. If the farm location cannot be established, the selected unit will be coded as inaccessible. Once contact is made, the NASS enumerator will administer NAHMS-217 (General Goat Management Report - Enumerator). Upon completion of the interview, the respondent will be asked to sign a consent form allowing NASS to turn their name over to APHIS for further consideration in the study; this will complete Phase I of the study. Approximately 6 out of 10 producers will consent. NASS will provide the list of producers willing to participate in the second phase of the study (additional questionnaires and biologic sampling) to NAHMS coordinators in each state immediately following Phase I. The estimated overall response rate is 79% for Phase I on-farm (as shown on Appendix D, 9 percentage points of these have zero goats).

Once all the information on NAHMS-216 and NAHMS-217 has been entered and validated, NASS will send a clean dataset to NAHMS along with completed reports (all NAHMS-217 forms and only the mail NAHMS-216).

Phase II of the study consists of an on farm interview administered by an APHIS-designated data collector, typically a veterinary medical officer (VMO). The data collector will contact the producer to set up a time to administer the study questionnaire and collect biological samples. Upon arrival on the premises, the data collector will present NAHMS-218 (Producer Agreement) to the producer which allows the producer to indicate what portion(s) of the Goat 2009 study they agree to participate in. Once NAHMS-218 is completed and signed, the data collector will administer NAHMS-219 (VS Initial Visit Questionnaire) to the producer. Once NAHMS-219 has been completed, biologic samples may be collected, or a separate time may be set up for the data collector to come back and take biologic samples [NAHMS-221 (Fecal Parasite Sample Collection Record), NAHMS-222 (Johnes Environment Sample Collection Record), NAHMS-223 (Blood Sample Collection Record), NAHMS-224 (Milk Sample Collection Record), NAHMS-226 (Scab Sample Collection Record)] depending on what the producer indicates on NAHMS-218. Additionally, follow-up testing will be offered to operations with negative environmental Johnes test and positive blood results [NAHMS-225 (Johnes Followup Record)]. Once NAHMS-219 has been completed, and all of the samples indicated on NAHMS-218 have been taken, Phase II of the study will be completed. The completed questionnaires will be returned to NAHMS via U.S. Mail. The estimated response rate is 70% for the Phase II questionnaires. Approximately 75% of operations that complete the Phase II questionnaire will participate in collection of biological samples.

- **Estimation procedure:**

The sampling design is a stratified random sample with unequal probabilities of selection. The statistical estimation will be undertaken using either SAS survey procedures or SUDAAN. Both software packages use a Taylor series expansion to estimate appropriate variances for the stratified, weighted data.

- **Degree of accuracy needed:**

In order to obtain an estimate of 10% +/- 2.0% a sample size of 851 operations with 1 – 9 goats (CATI) and a sample size of 844 operations with 10 or more goats (enumerator) is needed when a simple random sample is taken. Similarly, to obtain a prevalence/proportion estimate of 10% +/- 3.0% would require a simple random sample of only 381 for the CATI and 380 for the enumerator component.

However, the complex survey design typically will result in variances that are inflated. Design effects for previous NAHMS studies typically ranged from less than one, up to three. Assuming a typical design effect of 2.0 and a CATI “completed” survey rate of 56% (Appendix D), a sample size of 3039 $[(851*2.0)/0.56]$ or 1361 $[(381*2.0)/0.56]$ would be needed to obtain the desired precision nationally when the estimate is 10% +/- 2% or 3% respectively.

If NASS selects a sample of 2000 goat operations with 1-9 goats (CATI) we can expect approximately 1120 good NASS responses (Appendix D). Assuming a design effect = 2, this will allow national estimates of approximately 50% +/- 4%, 20% +/- 3%, 10% +/- 2.5%.

If NASS selects a sample 3500 goat operations with 10+ goats (enumerator component), we can expect approximately 1019 good responses at the VMO phase (Phase II) (Appendix D). This will allow national estimates of approximately 50% +/- 4%, 20% +/- 3.5%, 10% +/- 2.5%.

- **Unusual problems requiring specialized sampling procedures:**

There are no unusual problems requiring specialized sampling procedures and data collection cycles.

3. *Describe methods to maximize response rates and to deal with issues of non-response.*

Study Design:

- The CATI short questionnaire for small goat producers should minimize non-response in this group of producers.
- The study minimizes collection of data to that which is absolutely necessary to meet the stated objectives.
- NAHMS staff will develop training materials for NASS enumerators that explain the purpose of the study and addresses anticipated difficulties with questions.
- After participating in a telephone conference call training session with NAHMS staff, each State's NAHMS coordinator (VMO) will help train NASS enumerators in their respective State.
- The NAHMS coordinator conducting training will acquaint the NASS enumerators with NAHMS, their role in the information collection, and the type of information to be reported resulting from the data collected.
- Similarly, for the APHIS phase, each State's NAHMS coordinator will receive three days of specialized training via NAHMS staff and in return train the APHIS-designated data collectors in their State.
- The goat specialist for NAHMS has made numerous contacts and collaborative efforts to identify the information needs of the industry and the best way to ask for that information via questionnaire.

- A pre-survey letter² will be sent along with the brochure³. Once personal contact is made by the enumerator the brochure will again be presented.

Contacting Respondents:

- The study has been announced and is supported by the American Meat Goat Association (AMGA), American Dairy Goat Association (ADGA), and American Boer Goat Association (ABGA).
- Producers will be called by the NASS enumerator up to seven times followed by an on farm visit before they are listed as a refused or inaccessible operation. NASS enumerators have gone through specific training to help them answer questions of reluctant producers so as to maximize response rates.
- The APHIS-designated data collector will contact farms that have consented to continue in the study and set up a convenient time for the producer to complete the questionnaire and conduct biological sampling. Training for the APHIS-designated data collector will include specific suggestions from the NASS trainers based upon their experience in avoiding refusals.

Data Collection Steps:

- The NASS telephone interviewer, via CATI, will complete NAHMS-216 for the small goat sample.
- The NASS enumerators will complete NAHMS-217, and ask eligible producers to sign the consent form for producers selected with 10 or more goats.
- Data collectors will arrive at the premises at the agreed upon time.
- The APHIS-designated data collectors will administer NAHMS-218, 219, 221-226 to the consenting producers.

Data Analysis Steps:

If the respondents differ substantially from the nonrespondents there will be the potential for bias. There are two approaches that we will use to examine for potential bias. First, NASS's control data on their list frame will be available for both respondents and non-respondents to allow for examination of potential differences in the types of responding and non-responding producers. The information will include number of goats for each selected unit. For the APHIS phase (Phase II) we will have the data from the completed initial survey available for comparing respondents versus nonrespondents as well as the control data from the NASS list frame. Secondly, we can compare estimates from the study with available indicators from other sources. For example, although we do not publish estimates of goats, the survey results will allow us to make estimates that we can use to compare against NASS' inventory estimates.

² Sample of pre-survey letter is attached.

³ Brochure is attached.

The complex sampling design necessitates the use of weights which reflect the initial sample selection probabilities (the inverse of the selection interval). Weights of nonrespondents will be transferred to responding operations that are most similar based on available data. These data will be available from the NASS list frame for the NASS phase of the study. The APHIS phase weight adjustments will be based on data available from both the NASS list frame and the NASS component results. Within categories, the sum of weights of the nonrespondents and respondents will be divided by the sum of the weights of the respondents only. This factor will be used to adjust the weights of the respondents within the category. All weights for nonrespondents will be set to zero. In addition, a goat inventory weight adjustment will be made using NASS published estimates.

4. Describe any test procedures or methods to be undertaken.

The proposed questionnaires will be tested during the pretest involving less than 10 respondents. Results of these pretests will be utilized to refine the questionnaires in order to reduce respondent burden and improve the usefulness of the information.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and /or analyze the information for the agency.

The statistical aspects of the design were coordinated by Mr. George Hill, Mathematical Statistician, USDA APHIS, Veterinary Services, CEAH, Fort Collins, CO, (970) 494-7250. The actual data collection will be conducted by APHIS-designated data collectors. Contact persons for data collection are:

- Dr. John Clifford, Deputy Administrator, USDA APHIS, Veterinary Services, Washington, DC (202) 447-6835.

Analysis of the data will be accomplished by NAHMS veterinarians, epidemiologists, and statisticians under the direction of:

- Mr. George Hill, Acting Center Director, National Animal Health Monitoring System, USDA APHIS, VS, CEAH, 2150 Centre Avenue, Building B MS2E7, Fort Collins, CO 80526-8117 (970) 494-7250.

Consultants used for the Goat 2009 study are:

- Mr. Ray Bowman, Kentucky Goat Producers Association, 7325 Flat Creek Pike, Frankfort, KY 40601 (502) 227-9709 jrfarms@ccol.net

- Mr. Tom Boyer, TVB Management Co., Professional Management, Consulting and Appraisal Services, 2200 Shalk Creek, Coalville, UT 84017 (435) 336-7000 ewenique@allwest.net

- Ms. Linda Campbell, Former President American Dairy Goat Association, Khimaira, 2974 Stonyman Road, Luray VA 22835 (540) 743-4628 Linda@Khimaira.com

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Appendix A: Goat 2009 State Selection (3/2008)

Purpose of document:

To arrive at a general agreement on States to be included in the NAHMS Goat 2009 study and to document the selection process, based upon 2002 Census of Agriculture.

Materials to review:

1. Attached spreadsheets on number of all goats and farms by State:
 - a. Table 1a—All goats and farms, by State FIPS code
 - b. Table 1b—Number of all goats—descending order
 - c. Table 1c—Number of farms—descending order
 - d. Table 1d—Weighted percent of the U.S. total—descending order

2. Attached spreadsheets on number of milk goats and farms by State:
 - a. Table 1a—Milk goats and farms, by State FIPS code
 - b. Table 1b—Number of milk goats—descending order
 - c. Table 1c—Number of farms—descending order
 - d. Table 1d—Weighted percent of the U.S. total—descending order

3. Attached spreadsheets on number of angora goats and farms by State:
 - a. Table 1a—Angora goats and farms, by State FIPS code
 - b. Table 1b—Number of angora goats—descending order
 - c. Table 1c—Number of farms—descending order
 - d. Table 1d—Weighted percent of the U.S. total—descending order

4. Attached spreadsheets on number of meat goats and farms by State:
 - a. Table 1a—Meat goats and farms, by State FIPS code
 - b. Table 1b—Number of meat goats—descending order
 - c. Table 1c—Number of farms—descending order
 - d. Table 1d—Weighted percent of the U.S. total—descending order

I. Process for 1+ all goats—individual State contribution:

1. Identify States with 2% or more of the U.S. total for both number of all goats and number of herds/farms.

<u>State</u>	<u>All Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AL	50,574	2.00	2,259	2.47	2.19
CA	103,122	4.08	3,542	3.87	3.99
GA	69,498	2.75	2,975	3.25	2.95
KY	68,412	2.70	3,471	3.80	3.14
NC	67,276	2.66	3,546	3.88	3.15
OK	82,792	3.27	3,560	3.89	3.52
TN	114,664	4.53	5,268	5.76	5.02
TX	1,194,289	47.20	17,411	19.04	35.93
8-State total	1,750,627	69.19	42,032	45.96	59.89

2. Identify remaining States with 2% or more of either number of all goats or number of farms.

<u>State</u>	<u>All Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
FL	39,964	1.58	1,992	2.18	1.82
IN	27,801	1.10	2,190	2.39	1.62
MI	21,094	0.83	2,163	2.36	1.45
MO	48,654	1.92	2,411	2.64	2.21
NY	33,130	1.31	2,473	2.70	1.87
OH	45,061	1.78	4,014	4.39	2.82
OR	30,628	1.21	2,344	2.56	1.75
PA	39,932	1.58	3,213	3.51	2.35
SC	41,192	1.63	2,143	2.34	1.91
VA	41,275	1.63	2,376	2.60	2.02
WI	35,179	1.39	1,899	2.08	1.66
11-State total	403,910	15.96	27,218	29.75	21.48
19-State total	2,154,537	85.15	69,250	75.71	81.37

3. Identify remaining States roughly close to the 2% cutoff level.

<u>State</u>	<u>All Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AZ	35,374	1.40	499	0.55	1.06
AR	32,580	1.29	1,388	1.52	1.38
CO	18,561	0.73	1,388	1.52	1.05
IL	17,192	0.68	1,344	1.47	1.00
MN	19,768	0.78	1,413	1.54	1.09
MS	26,738	1.06	1,366	1.49	1.23
WA	23,217	0.92	1,552	1.70	1.23
WV	17,484	0.69	1,428	1.56	1.04
7-State total	190,914	7.55	10,378	11.35	9.08
26-State total	2,345,451	92.70	79,628	87.06	90.45

4. Discussion of State selection based upon all-goat data presented in above tables 1-3.
- TX has nearly half the goats in the U.S., followed by TN with 4.53 percent and CA with 4.08 percent.
 - Including the 19 States with 2 percent of either all goats or farms is reasonable and generates sample coverage of 85.15 percent for goats and 75.71 percent for farms, thus meeting the NAHMS goal of at least 70 percent of animals and farms.
 - Of the seven next largest States (those close to the 2-percent cutoff) no individual State warrants inclusion based on size.
 - Conclusion—Based upon the all-goat parameters, the identified 19 States are suggested for inclusion in the study.

5. Recommended all-goat study States.

<u>State</u>	<u>All Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AL	50,574	2.00	2,259	2.47	2.19
CA	103,122	4.08	3,542	3.87	3.99
FL	39,964	1.58	1,992	2.18	1.82
GA	69,498	2.75	2,975	3.25	2.95
IN	27,801	1.10	2,190	2.39	1.62
KY	68,412	2.70	3,471	3.80	3.14
MI	21,094	0.83	2,163	2.36	1.45
MO	48,654	1.92	2,411	2.64	2.21
NY	33,130	1.31	2,473	2.70	1.87
NC	67,276	2.66	3,546	3.88	3.15
OH	45,061	1.78	4,014	4.39	2.82
OK	82,792	3.27	3,560	3.89	3.52
OR	30,628	1.21	2,344	2.56	1.75
PA	39,932	1.58	3,213	3.51	2.35
SC	41,192	1.63	2,143	2.34	1.91
TN	114,664	4.53	5,268	5.76	5.02
TX	1,194,289	47.20	17,411	19.04	35.93
VA	41,275	1.63	2,376	2.60	2.02
WI	35,179	1.39	1,899	2.08	1.66
19-State total	2,154,537	85.15	69,250	75.71	81.37

II. Process for 1+ milk goats—individual State contribution:

1. Identify States with 2% or more of the U.S. total for both number of milk goats and number of herds/farms.

<u>State</u>	<u>Milk Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
CA	37,343	12.84	1,301	5.81	10.03
IN	7,558	2.60	790	3.53	2.97
IA	8,524	2.93	447	2.00	2.56
KY	5,977	2.06	670	2.99	2.43
MI	8,935	3.07	843	3.77	3.35
MN	7,703	2.65	532	2.38	2.54
MO	8,656	2.98	749	3.35	3.12
NY	12,822	4.41	1,146	5.12	4.69
NC	6,712	2.31	572	2.55	2.41
OH	14,420	4.96	1,358	6.07	5.40
OK	8,389	2.88	865	3.86	3.28
OR	9,250	3.18	816	3.64	3.37
PA	12,652	4.35	1,082	4.83	4.54
TN	6,971	2.40	753	3.36	2.78
TX	22,569	7.76	1,703	7.61	7.70
WA	8,106	2.79	607	2.71	2.76

WI	25,900	8.91	668	2.98	6.54
17-State total	212,487	73.08	14,902	66.56	70.47

2. Identify remaining States with 2% or more of either number of milk goats or number of farms.

<u>State</u>	<u>Milk Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
CO	5,581	1.92	563	2.51	2.16
18-State total	218,068	75.00	15,465	69.07	72.63

3. Identify remaining States roughly close to the 2% cutoff level.

<u>State</u>	<u>Milk Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AR	5,772	1.98	353	1.58	1.82
FL	3,686	1.27	364	1.63	1.41
ID	4,434	1.52	396	1.77	1.62
IL	4,685	1.61	425	1.90	1.73
KS	4,341	1.49	417	1.49	1.64
VA	4,401	1.51	421	1.88	1.66
6-State total	27,319	9.38	2,376	10.25	9.88
24-State total	245,387	84.38	17,841	79.32	82.51

4. Discussion of State selection based upon milk goat data presented in tables 1-3.
- CA is the largest State with nearly 13 percent of the milk goats, followed by WI at 9 percent and TX with 8 percent.
 - The 18 States nearly meet the 70-percent cutoff criteria. Beyond these States, 6 States are all roughly about the same size and could be included in the study based upon interest, for a total of 24 States with 84.4 percent of the milk goats and 79.3 percent of farms with milk goats.
 - Suggest 24 milk goats States be included.

5. Recommended milk goat States.

<u>State</u>	<u>Milk Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AR	5,772	1.98	353	1.58	1.82
CA	37,343	12.84	1,301	5.81	10.03
CO	5,581	1.92	563	2.51	2.16
FL	3,686	1.27	364	1.63	1.41
ID	4,434	1.52	396	1.77	1.62
IL	4,685	1.61	425	1.90	1.73
IN	7,558	2.60	790	3.53	2.97
IA	8,524	2.93	447	2.00	2.56
KS	4,341	1.49	417	1.49	1.64
KY	5,977	2.06	670	2.99	2.43
MI	8,935	3.07	843	3.77	3.35
MN	7,703	2.65	532	2.38	2.54
MO	8,656	2.98	749	3.35	3.12
NY	12,822	4.41	1,146	5.12	4.69
NC	6,712	2.31	572	2.55	2.41
OH	14,420	4.96	1,358	6.07	5.40
OK	8,389	2.88	865	3.86	3.28
OR	9,250	3.18	816	3.64	3.37
PA	12,652	4.35	1,082	4.83	4.54
TN	6,971	2.40	753	3.36	2.78
TX	22,569	7.76	1,703	7.61	7.70
VA	4,401	1.51	421	1.88	1.66
WA	8,106	2.79	607	2.71	2.76
WI	25,900	8.91	668	2.98	6.54
24-State total	245,387	84.38	17,841	79.32	82.51

III. Process for 1+ angora goats—individual State contribution:

1. Identify States with 2% or more of the U.S. total for both number of angora goats and number of herds/farms.

<u>State</u>	<u>Angora Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
TX	229,937	76.45	908	17.89	53.03

2. Identify remaining States with 2% or more of either number of angora goats or number of farms.

<u>State</u>	<u>Angora Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AZ	27,905	9.28	53	1.04	5.98
CA	4,538	1.51	246	4.85	2.84
CO	1,004	0.33	150	2.96	1.38
KY	817	0.27	127	2.50	1.16
MI	1,374	0.46	145	2.86	1.42
MN	981	0.33	152	3.00	1.39
MO	2,483	0.83	154	3.03	1.71
NM	7,059	2.35	98	1.93	2.18
NY	769	0.26	140	2.76	1.26
NC	1,571	0.52	161	3.17	1.58
OH	2,202	0.73	253	4.99	2.43
OK	1,101	0.37	132	2.60	1.26
OR	2,156	0.72	257	5.06	2.46
PA	1,023	0.34	161	3.17	1.47
TN	482	0.16	143	2.82	1.22
VA	1,164	0.39	124	2.44	1.21
WA	846	0.28	178	3.51	1.57
WI	645	0.21	138	2.72	1.22
18-State total	58,120	19.34	2,812	55.41	33.74
19-State total	288,057	95.79	3,720	73.30	86.77

3. Identify remaining States roughly close to the 2% cutoff level.

<u>State</u>	<u>Angora Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
GA	318	0.11	75	1.48	0.65
ID	403	0.13	75	1.48	0.67
MT	944	0.31	89	1.75	0.89
WV	822	0.27	84	1.66	0.83
4-State total	2,487	0.82	323	6.37	3.04
23-State total	290,544	96.61	4,043	79.67	89.81

4. Discussion of State selection based upon Angora goat data presented in tables 1-3.
 - a. TX has over three-fourths of the angora goats, but only 18 percent of the farms, which implies these are rather large producers.
 - b. AZ is the next largest State with 9.3 percent of the angora goats, followed by other southwest States such as NM (2.4 percent) and CA (1.5 percent).
 - c. These four States account for 89.6 percent of the angora goats, but only 25.7 percent of farms with angora goats. There are additional States with over 2 percent of farms, but these States do not contribute much to the number of head (each with a large number of small producers).
 - d. Suggest including just these four States for angora information collection: AZ, CA, NM, and TX.

5. Recommended angora goat States.

<u>State</u>	<u>Angora Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AZ	27,905	9.28	53	1.04	5.98
CA	4,538	1.51	246	4.85	2.84
NM	7,059	2.35	98	1.93	2.18
TX	229,937	76.45	908	17.89	53.03
4-State total	269,439	89.59	1305	25.71	64.03

IV. Process for 1+ meat goats—individual State contribution:

1. Identify States with 2% or more of the U.S. total for both number of meat goats and number of herds/farms.
- 2.

<u>State</u>	<u>Meat Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AL	47,270	2.44	2,042	2.72	2.55
CA	61,241	3.16	2,613	3.48	3.29
GA	66,018	3.40	2,786	3.72	3.53
KY	61,618	3.18	2,979	3.97	3.50
NC	58,993	3.04	3,111	4.15	3.49
OK	78,302	3.78	3,006	4.01	3.87
TN	107,211	5.53	4,758	6.35	5.86
TX	941,783	48.57	16,145	21.53	37.76
8-State total	1,422,436	73.10	37,440	49.93	63.85

3. Identify remaining States with 2% or more of either number of meat goats or number of farms.

<u>State</u>	<u>Meat Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
FL	36,020	1.86	1,764	2.35	2.06
IN	20,045	1.03	1,665	2.22	1.51
MI	10,785	0.56	1,601	2.14	1.19
MO	37,515	1.93	1,852	2.47	2.15
NY	19,539	1.01	1,644	2.19	1.48
OH	28,439	1.47	3,039	4.05	2.50
OR	19,222	0.99	1,704	2.27	1.50
PA	26,257	1.35	2,426	3.24	2.11
SC	37,985	1.96	1,943	2.59	2.21
VA	35,710	1.84	2,035	2.71	2.19

10-State total	271,517	14.00	19,673	26.23	18.90
18-State total	1,693,953	87.10	57,113	76.16	82.75

4. Identify remaining States roughly close to the 2% cutoff level.

<u>State</u>	<u>Meat Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AR	26,578	1.37	1,173	1.56	1.45
MS	24,788	1.28	1,222	1.63	1.42
WA	14,265	0.74	1,129	1.51	1.04
WI	8,634	0.45	1,360	1.81	0.99
WV	14,326	0.74	1,166	1.56	1.07
5-State total	88,591	4.58	6,050	8.07	5.97
23-State total	1,782,544	91.68	63,163	84.23	88.72

5. Discussion of State selection based upon meat goat data presented in tables 1-3.
- TX accounts for about half the meat goats in the U.S. Next is TN with 5.5 percent, while the next six largest States are all about the same size.
 - The top eight States account for 73 percent of meat goats but only 50 percent of farms, so additional States are needed.
 - The addition of 10 States meets our 70-percent coverage criteria; however it must be noted that AR and MS have a weighted percent greater than one State in the 2-percent cutoff criteria and nearly comparable to higher levels of two States. Therefore it is suggested, based upon meat goats, that 20 States be included in the study—the 18 States plus AR and MS.
6. Recommended meat goat States.

<u>State</u>	<u>Meat Goats</u>		<u>Herds/Farms</u>		<u>Wtd. %</u>
	<u>Number (000)</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
AL	47,270	2.44	2,042	2.72	2.55
AR	26,578	1.37	1,173	1.56	1.45
CA	61,241	3.16	2,613	3.48	3.29
FL	36,020	1.86	1,764	2.35	2.06
GA	66,018	3.40	2,786	3.72	3.53
IN	20,045	1.03	1,665	2.22	1.51
KY	61,618	3.18	2,979	3.97	3.50
MI	10,785	0.56	1,601	2.14	1.19
MS	24,788	1.28	1,222	1.63	1.42
MO	37,515	1.93	1,852	2.47	2.15
NY	19,539	1.01	1,644	2.19	1.48
NC	58,993	3.04	3,111	4.15	3.49
OH	28,439	1.47	3,039	4.05	2.50
OK	78,302	3.78	3,006	4.01	3.87
OR	19,222	0.99	1,704	2.27	1.50
PA	26,257	1.35	2,426	3.24	2.11
SC	37,985	1.96	1,943	2.59	2.21
TN	107,211	5.53	4,758	6.35	5.86
TX	941,783	48.57	16,145	21.53	37.76

VA	35,710	1.84	2,035	2.71	2.19
20-State total	1,745,319	89.75	59,508	79.35	85.62

V. Summary

1. Summary of recommended States based upon individual commodity analysis
- 2.

State	Wtd. Percentages for Recommended States				Final/ Comment
	All Goats	Milk Goats	Angora Goats	Meat Goats	
AL	2.19			2.55	X
AK					
AZ*			5.98		
AR		1.82		1.45	
CA*	3.99	10.03	2.84	3.29	X
CO*		2.16			X
CT					
DE					
FL	1.82	1.41		2.06	X
GA	2.95			3.53	X
HI					
ID*		1.62			
IL*		1.73			
IN*	1.62	2.97		1.51	X
IA*		2.56			X
KS*		1.64			
KY*	3.14	2.43		3.50	X
LA					
ME					
MD*					
MA					
MI*	1.45	3.35		1.19	X
MN*		2.54			
MS				1.42	
MO*	2.21	3.12		2.15	X
MT*					
NE*					
NV*					
NH					
NJ					
NM*			2.18		
NY*	1.87	4.69		1.48	X
NC*	3.15	2.41		3.49	X
ND*					
OH*	2.82	5.40		2.50	X
OK*	3.52	3.28		3.87	X
OR*	1.75	3.37		1.50	X
PA*	2.35	4.54		2.11	X
RI					
SC	1.91			2.21	
SD*					

TN*	5.02	2.78		5.86	X
TX*	35.93	7.70	53.03	37.76	X
UT*					
VT					
VA*	2.02	1.66		2.19	X
WA*		2.76			X
WV*					
WI*	1.66	6.54			X
WY*					
Study	81.37	82.51	64.03	85.62	
17 initial States	77.64	66.49	75.97	79.47	

*NASS goat State-level estimates published. Also New England published separately.

Identifying the above 17 States is the first step at looking at States to be included in the study. The next step would be to look at geographical coverage provided by the 17 and see if additional States are necessary for certain regions of the country. In addition, the overall goal would be to provide good coverage for baseline estimation for all goats as well as adequate coverage for the sub-commodity category that might be selected for in-depth VMO collection/study.

The regional evaluation suggested that inclusion of four States—CO, FL, IA, and WA—primarily to increase dairy goat coverage. IA was included due to their State interesting being in the program.

- There were 21 States finally included for the study.

State	Wtd. Percentages for Final States			
	All Goats	Milk Goats	Angora Goats	Meat Goats
AL	2.19	1.08	0.67	2.55
CA*	3.99	10.03	2.84	3.29
CO*	1.05	2.16	1.38	0.88
FL	1.82	1.41	0.48	2.06
GA	2.95	1.14	0.65	3.53
IN*	1.62	2.97	0.38	1.51
IA*	0.96	2.56	0.69	0.73
KY*	3.14	2.43	1.16	3.50
MI*	1.45	3.35	1.42	1.19
MO*	2.21	3.12	1.71	2.15
NY*	1.87	4.69	1.26	1.48
NC*	3.15	2.41	1.58	3.49
OH*	2.82	5.40	2.43	2.50
OK*	3.52	3.28	1.26	3.87
OR*	1.75	3.37	2.46	1.50
PA*	2.35	4.54	1.47	2.11
TN*	5.02	2.78	1.22	5.86
TX*	35.93	7.70	53.03	37.76
VA*	2.02	1.66	1.21	2.19
WA*	1.23	2.76	1.57	1.04
WI*	1.66	6.54	1.22	0.99
21 States	82.70	75.38	80.09	84.18

*NASS goat State-level estimates published. Also New England published separately.

The 21-State coverage based upon the NASS January 1, 2008, and 2007 operations showed weighted percentages for Angora at 75.58; meat at 84.02, milk at 75.99, and all goats at 82.52 percent, respectively.

4. State contribution of 21-State total.

State	All Goats				
	Farms	Percent	Inventory	Percent	Wtd. %
AL	2,259	3.17	50,574	2.33	2.66
CA*	3,542	4.97	103,122	4.74	4.84
CO*	1,388	1.95	18,561	0.85	1.29
FL	1,992	2.80	39,964	1.84	2.22
GA	2,975	4.18	69,498	3.20	3.59
IN*	2,190	3.08	27,801	1.28	2.00
IA*	1,167	1.64	18,898	0.87	1.18
KY*	3,471	4.87	68,412	3.15	3.84
MI*	2,163	3.04	21,094	0.97	1.80
MO*	2,411	3.39	48,654	2.24	2.70
NY*	2,473	3.47	33,130	1.52	2.30
NC*	3,546	4.98	67,276	3.09	3.85
OH*	4,014	5.64	45,061	2.07	3.50
OK*	3,560	5.00	82,792	3.81	4.28
OR*	2,344	3.29	30,628	1.41	2.16
PA*	3,213	4.51	39,932	1.84	2.91
TN*	5,268	7.40	114,664	5.27	6.12
TX*	17,411	24.45	1,194,289	54.93	42.74
VA*	2,376	3.34	41,275	1.90	2.47
WA*	1,552	2.18	23,217	1.07	1.51
WI*	1,899	2.67	35,179	1.62	2.04
21 States	71,214	100.00	2,174,021	100.00	100.00

*NASS goat State-level estimates published. Also New England published separately.

Appendix B: NAHMS Sheep 2001 Review of Response Rates

1. Sheep 2001 sample review

a. Response rates:

Questionnaire	Collection dates	Sample	Compl.	Compl. %	Good*	% good
Gen Sheep Mgmt Rept (NASS)	12/29/00-1/26/01	5,080	3,729	73.4	3,210	63.2
Ref of Sheep Health in the U.S.	2/5/01-4/27/01	1,775	1,101	62.0	1,101	62.0
Lambing Prac	6/4/01-6/29/01	1,101	870	79.0	870	79.0
Feedlot	9/4/01-11/16/01	45	32	71.1	32	71.1

*Complete data and were in scope.

Appendix C: Preliminary NAHMS Goat 2009 State Sample Allocations								
	Herd Size							
State	1-9¹	10-19	20-49	50-99	100+	500+	10+ Total²	Total
Alabama	71	38	52	32	23	0	145	216
California	105	42	55	31	66	0	194	299
Colorado	69	21	24	13	16	0	74	143
Florida	71	35	43	24	23	0	125	196
Georgia	81	43	63	36	33	0	175	256
Indiana	89	30	33	17	16	0	96	185
Iowa	52	22	25	15	19	0	81	133
Kentucky	100	47	55	38	32	0	172	272
Michigan	93	26	26	12	13	0	77	170
Missouri	86	35	41	25	33	0	134	220
New York	95	33	34	19	21	0	107	202
North Carolina	99	49	61	38	25	0	173	272
Ohio	126	43	43	25	18	0	129	255
Oklahoma	104	46	56	35	47	0	184	288
Oregon	94	32	34	17	19	0	102	196
Pennsylvania	110	36	40	23	21	0	120	230
Tennessee	121	59	85	51	41	0	236	357
Texas	199	113	177	137	217	223	867	1,066
Virginia	82	34	44	27	22	0	127	209
Washington	71	23	29	18	15	0	85	156
Wisconsin	82	24	20	17	36	0	97	179
Total	2,000	831	1,040	650	756	223	3,500	5,500

¹General Goat Management Report (CATI).

²General Goat Management Report (Enumerator).

Appendix D: Estimated Response Rates for Goats 2009 study

Phase	Response category	Percentage in phase	Expected counts
CATI			
	Zero on hand	20.0	400
	Complete	56.0	1120
	Refusal	24.0	480
	Total	100.0	2000
Phase I Enumerator			
	Zero on hand	9.0	315
	Complete and agree to continue	41.6	1455
	Complete and do not agree to continue	28.4	995
	Complete Phase I	70.0	2450
	Out of scope	1.0	35
	Refusal	20.0	700
	Total	100.0	3500
Phase II VMO			
	Complete	29.1	1019
	Refusal	12.5	436
	Subtotal	41.6	1455
	Ineligible from first phase	10.0	(315 + 35) 350
	Refusal from first phase	48.4	(995 + 700) 1695
	Total	100.0	3500