

## **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 Sheep 2011 study is all operations, in 22 States<sup>1</sup>, that are on the NASS list frame with sheep. The preliminary selection of States to be included in the study was done in the spring of 2010. 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 ewes and the number of ewes on those operations, in the 22 States. In addition, descriptive reports will be generated with a methodology section and an appendix showing the reference population of those operations with 1 or more ewes in the 22 States. The previous typical NAHMS study addressing the sheep industry was done in 2001. The 2001 study covered not only the breeding sheep but also the feedlot segment so the reference population was any operation with sheep. Covering both segments in one study is difficult and the needs assessment feedback directed us to look in depth at the breeding sheep segment. The 2007 Census of Agriculture shows 83,134 farms with sheep in the U.S. and 68,222 of those have ewes (82.1 percent of all sheep farms have ewes). Therefore, we chose to focus the inference population to those operations with one or more ewes. For our trends comparison to the previous study done in 2001 we will re-summarize appropriate comparable information just for those operations with one or more ewes.

The initial review of States identified 21 major sheep States with ewes (States with at least two percent of the operations with ewes or 2 percent goat inventory). KY was then added since it was close to the cutoff for percent of farms and we wanted additional Eastern States representation. These 22 States accounted for 85 percent of the ewes (2007 Census and also January 2010 inventory) and 71 percent of the farms (NASS discontinued their publication of State level number of operations, so only the 2007 Census was available). Discussion with NASS sampling branch regarding these States, suggested the elimination of AZ due to sampling frame and response considerations and bringing in NY and KS to meet the 70 percent NAHMS historic representation guidelines for percentage of U.S. inventory and operations. As a result 22 States are recommended for inclusion in the study covering 85 percent of U.S. ewes and 70 percent of U.S. farms with ewes. A memo recommending inclusion of these 22 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: Sheep 2011 State Selection documents in detail this complete selection process.

Examination of the NASS, “*Sheep and Goats, January 2010*” and “*2007 Census of Agriculture*” demonstrates that the selected 22 States account for 70 percent of farms (2007) with ewes and 85 percent of ewes in the United States (January 2010).

---

<sup>1</sup> California, Colorado, Idaho, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Montana, New Mexico, New York, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Virginia, Washington, Wisconsin, and Wyoming. State selection document can be found in Appendix A.

Operations with NASS control inventory of 1 to 19 ewes will be mailed a survey, with a follow-up phone call to non-respondents (CATI component). Operations with control inventory of 20 or more ewes will be visited in person by a NASS enumerator. A similar procedure was successfully used for the NAHMS Goat 2009 study. A 2007 Census of Agriculture special tabulation shows 62% of the operations with ewes have 1-19 ewes but represent only 8 percent of sheep inventory. Including operations with zero ewes on hand, the estimated response rate for the NASS CATI component of the Sheep 2011 study is 75 percent. The 2001 sheep response rate was 73 percent (Appendix B) and the comparable estimated response rate for the on-farm NASS component is 80 percent (response rate calculations appear in Appendix D). Those respondents with 20 or more ewes 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 Sheep 2011 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 ewes and the number of ewes.

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

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

Stratification: A total of 22 States were selected for inclusion in the study based upon each State's contribution to the U.S. total number of ewes and number of operations with ewes as well as geographic representation (Appendix A).

Sampling methodology— Sheep 2011 study: 2,000 operations will be selected with 1 – 19 ewes and 3500 operations with 20 or more ewes (see 'degree of accuracy needed' section for sample size determination) will be selected. Sampling efficiencies will be gained by drawing a sub-sample of respondents to the NASS January 2010 Sheep and Goat survey. This procedure will eliminate a large number of out of business and zero inventory reports. This sampling process was used successfully for the previous sheep study conducted in 2001. The initial NASS sample was selected as a stratified random sample with the strata being both State and operation size. Operation size was based on total ewe inventory. The State-level sample allocation will be based on a weighted proportion of the number of operations in the State and the ewe inventory relative to the 22 State total with smoothing to prevent excessive workload for some States. The percentage of operations with ewes in the State will get a weight of 0.4 and the percentage of ewes will get a weight of 0.6. For example, using the 2007 Census of Agriculture data, Texas has 9.99% of operations and 16.52% of the ewes in the 22 selected States, resulting in a weighted percentage of 13.91% (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 – Final NAHMS Sheep 2011 State Sample Allocation).

For the CATI component of Phase I, operations with 1 – 19 ewes will be mailed a survey (NAHMS-246, General Sheep 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 75% for Phase I CATI (as shown on Appendix D, 20 percent have zero sheep).

For the on-farm component of Phase I, operations with 20 or more ewes will receive a phone call (up to 7 attempts to contact by phone) from a 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 the questionnaire (NAHMS-247, General Sheep Management Report, Enumerator). Upon completion of the interview, if the respondent reported 20 or more ewes as of January 1, 2011, 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 5 or 6 out of 10 eligible producers will consent (estimated at 57% consent rate). NASS will provide the list of producers willing to participate in the second phase of the study (additional questionnaire and biologic sampling) to NAHMS coordinators in each State immediately following Phase I. The estimated overall response rate is 70% for Phase I on-farm (as shown on Appendix D, an additional 10 percent will have zero ewes).

Once all the information on NAHMS-246 and NAHMS-247 has been entered and validated, NASS will send a clean dataset to NAHMS along with completed reports (all NAHMS-247 forms and only the mail NAHMS-246).

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-248 (Producer Agreement) to the producer which allows the producer to indicate what portion(s) of the Sheep 2011 study they agree to participate in. Once NAHMS-248 is completed and signed, the data collector will administer NAHMS-249 (VS Initial Visit Questionnaire) to the producer. Once NAHMS-249 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-250 (Fecal Parasite Sample Collection Record), NAHMS-251 (Nasal Swab and Blood Sample Collection Record), NAHMS-252 (Scab Sample Collection Record)] depending on what the producer indicates on NAHMS-248. Once NAHMS-249 has been completed, and all of the samples indicated on NAHMS-248 have been taken, Phase II of the study will be complete. The completed questionnaires will be returned to NAHMS via U.S. Mail. The estimated response rate is 70% for the Phase II

questionnaires. Approximately 50% 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 – 19 ewes (CATI) and a sample size of 844 operations with 20 or more ewes (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 55% (Appendix D), a sample size of 3095  $[(851*2.0)/0.55]$  or 1385  $[(381*2.0)/0.55]$  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 operations with 1-19 ewes (CATI) we can expect approximately 1100 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 operations with 20+ ewes (enumerator component), we can expect approximately 980 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 (less than 20 ewes) operations should minimize non-response in this group of producers.

The study minimizes collection of data to that which is absolutely necessary to meet 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 sheep 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 letter<sup>2</sup> will be sent along with the brochure<sup>3</sup>. 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 Sheep Industry Association (ASI), and the USAHA Sheep and Goat Committee.

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-246 for the small (less than 20 ewes) operations sample.

---

<sup>2</sup> The pre-survey letters are attached in Appendix E and F.

<sup>3</sup> Brochure is attached.

The NASS enumerators will complete NAHMS-247, and ask eligible producers to sign the consent form for producers selected with 20 or more ewes.

Data collectors will arrive at the premises at the agreed upon time.

The APHIS-designated data collectors will administer NAHMS-248-253 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 ewes 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 the number of ewes, the survey results will allow us to make estimates that we can use to compare against NASS' inventory estimates.

The complex sampling design necessitates the use of weights which reflect the initial sample selection probabilities (the inverse of the selection interval) and sub-sampling probabilities (the inverse of the sub-sampling 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 ewe 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:

- Dr. Bruce Wagner, Center Director, National Animal Health Monitoring System, USDA APHIS, VS, CEAH, 2150 Centre Avenue, Building B MS2E7, Fort Collins, CO 80526-8117 (970) 494-7256.

Consultants used for the Sheep 2011 study are:

- Dr. Alicia Anderson, Epi Team/Rickettsial Zoonoses Branch, Division of Viral and Rickettsial Diseases, National Center for Zoonotic and Veterinary Emerging Diseases, Centers for Disease Control and Prevention, 1600 Clifton Dr, Atlanta, GA [aha5@cdc.gov](mailto:aha5@cdc.gov)

Dr. Tom Besser, Washington State University, Department of Veterinary Microbiology and Pathology. P.O. Box 647040, Pullman, WA 99164-7040 (509) 335-6075 [tbesser@vetmed.wsu.edu](mailto:tbesser@vetmed.wsu.edu)

- Mr. Ray Bowman, Kentucky Goat Producers Association, 7325 Flat Creek Pike, Frankfort, KY 40601 (502) 227-9709 [ray@kysheepandgoat.org](mailto:ray@kysheepandgoat.org)

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

- Dr. William Edmiston, Texas Animal Health Commission, P.O. Box 519 El Dorado, TX 76936 (325) 853-2572, [goatdock@yahoo.com](mailto:goatdock@yahoo.com)

- Dr. Brian Faris, Sheep and Meat Goat Specialist, Assistant Professor, Kansas State University, Weber 228, Manhattan, KS 66506 (785) 532-1255, [brfaris@ksu.edu](mailto:brfaris@ksu.edu)

- Dr. Will Getz, Professor/Extension Specialist, Fort Valley State University, P.O. Box 4061, 231 Pettigrew Center, Fort Valley, GA 31030-4313 (478) 825-6955, [getzw@fvsu.edu](mailto:getzw@fvsu.edu)

- Dr. Ray Kaplan, Associate Professor, Department of Infectious Diseases, College of Veterinary Medicine, University of Georgia, Athens, Georgia, 30602 (706) 542-5670. [rkaplan@uga.edu](mailto:rkaplan@uga.edu)

Dr. James Logan, Wyoming State Veterinarian, 1934 Wyott Drive, Cheyenne, WY 82002 (307) 857-4140 [jlogan@State.wy.us](mailto:jlogan@State.wy.us)

- Dr. Chris Lupton, Professor, Animal Nutrition, Sheep & Goats, Texas A and M, College of Life Sciences, 7887 US Hwy 87 North, San Angelo, TX 76901 (325) 653-4576 [c-lupton@tamu.edu](mailto:c-lupton@tamu.edu)

- Dr. Catherine O'Rourke, Agricultural Research Service, Animal Diseases Research Unit, 337 Bustad, Washington State U, Pullman, WA 99164-7030 (509) 335-6020

[korourke@vetmed.wsu.edu](mailto:korourke@vetmed.wsu.edu)

- Dr. Paul Plummer, Clinician Ruminant Internal Medicine, Iowa State University School of Veterinary Medicine, 1710 Veterinary Medicine, Ames, Iowa 50011-8522 (515) 294-8522

[pplummer@iaState.edu](mailto:pplummer@iaState.edu)

- Dr. Mary Reynolds, Poxvirus Branch, Division of Viral and Rickettsial Diseases, National Center for Zoonotic and Veterinary Emerging Diseases, Centers for Disease Control and Prevention, 1600 Clifton Dr, Atlanta, GA nzt6@cdc.gov

- Dr. Suelee Robbe, Researcher, National Veterinary Services Laboratory, Ames, Iowa,

(515) 663-7837, [suelee.robbe-austerman@aphis.usda.gov](mailto:suelee.robbe-austerman@aphis.usda.gov)

Paul Rodgers, Deputy Director of Policy, American Sheep Industry Association, Littleton, Colorado (303) 647-9981 [prodgers2@earthlink.net](mailto:prodgers2@earthlink.net)

- Dr. Joe David Ross, Retired Veterinarian, Sonora, TX,

Dr. Bill Shulaw, Department of Veterinary Preventive Medicine, Ohio State University, A100K Sisson Hall, 1920 Coffey Rd, Columbus, OH 43210 (614) 292-7570

- Dr. Sandra Solaiman, Assoc. Professor, Animal and Poultry Sciences, Tuskegee University, Tuskegee, AL 36088 (334) 727-8401 [ssolaim@tuskegee.edu](mailto:ssolaim@tuskegee.edu)

Dr. Diane Sutton, Senior Staff Veterinarian, Veterinary Services, APHIS, USDA, 4700 River Rd, Unit 43, Riverdale, MD 20737-1232 (301) 734-4913, [Diane.L.Sutton@aphis.usda.gov](mailto:Diane.L.Sutton@aphis.usda.gov)



## Appendix A: Sheep 2011 State Selection (6/17/10)

### Purpose of document:

To arrive at a general agreement on States to be included in the NAHMS Sheep 2011 study and to document the selection process.

### I. Process for 1+ all sheep and lambs—individual State contribution (2007 Census of Agriculture):

1. Identify States with 2 percent or more of the U.S. total for both number of all sheep and number of farms for either 2007 or January 1, 2010, inventory.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>					
	<u>All Sheep &amp; Lambs</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>All Sheep (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		
U.S.	5,819,162	100.00	83,134	100.00		5,630,000	100.00			100.00	
AZ	153,829	2.64	4,978	5.99	3.98	160,000	2.84			4.10	
CA*	596,163	10.24	4,063	4.89	8.10	610,000	10.83			8.46	
IA*	209,285	3.60	3,522	4.24	3.85	210,000	3.73			3.93	
MN*	144,557	2.48	2,522	3.03	2.70	130,000	2.31	Used farm numbers from 2007 Census of Agriculture (at left)		2.60	
NM*	126,928	2.18	2,896	3.48	2.70	120,000	2.13			2.67	
OH*	123,161	2.12	3,409	4.10	2.91	128,000	2.27			3.00	
OR*	217,401	3.74	3,209	3.86	3.79	225,000	4.00			3.94	
SD*	335,897	5.77	1,669	2.01	4.27	320,000	5.68			4.21	
TX*	945,164	16.24	8,750	10.53	13.96	830,000	14.74			13.06	
9-State total	0	0	35,018	0	0	0	48.53				45.97

2. Identify remaining States with 2 percent or more of either number of all sheep or number of farms for either 2007 or January 1, 2010, inventory.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>All Sheep</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>All Sheep (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
CO*	413,450	7.10	1,600	1.92	5.03	375,000	6.66			4.77
ID*	229,022	3.94	1,210	1.46	2.94	220,000	3.91			2.93
IL*	52,360	0.90	1,886	2.27	1.45	64,000	1.14			1.59
IN*	49,021	0.84	1,968	2.37	1.45	52,000	0.92			1.50
MI	81,728	1.40	2,409	2.90	2.00	80,000	1.42	Used farm numbers from 2007 Census of Agriculture (at left)		2.01
MO	77,082	1.32	2,247	2.70	1.88	79,000	1.40			1.92
MT*	272,012	4.67	1,493	1.80	3.52	255,000	4.53			3.44
NY	63,182	1.09	1,799	2.16	1.52	66,000	1.17			1.57
OK	76,243	1.31	1,939	2.33	1.72	75,000	1.33			1.73
PA*	96,883	1.66	3,672	4.42	2.77	94,000	1.67			2.77
UT*	277,635	4.77	1,615	1.94	3.64	290,000	5.15			3.87
VA*	77,648	1.33	2,132	2.56	1.83	89,000	1.58			1.97

WA*	53,220	0.91	2,366	2.85	1.69	60,000	1.07	1.78
WI*	89,575	1.54	2,816	3.39	2.28	90,000	1.60	2.31
WY*	412,804	7.09	902	1.08	4.69	375,000	6.66	4.43
15-State total	0	0	30,054	0	0	0	40.21	0
24-State total	5,174,250	88.88	65,072	78.28	84.67	4,997,000	88.74	84.56

3. Identify remaining States roughly close to the 2-percent cutoff level either period.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>All Sheep</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>All Sheep (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
KS*	84,194	1.45	1,166	1.40	1.43	80,000	1.42			1.41
KY	36,996	0.64	1,436	1.73	1.07	37,000	0.66			1.09
NC	27,714	0.48	1,275	1.53	0.90	25,000	0.44			0.88
ND	88,686	1.52	678	0.82	1.24	88,000	1.56			1.26
NE	76,397	1.31	1,287	1.55	1.41	74,000	1.31			1.41
TN	29,751	0.51	1,261	1.52	0.91	31,500	0.56	Used farm numbers from 2007 Census of Agriculture (at left)		0.94
WV	38,338	0.66	1,259	1.51	1.00	30,000	0.53			0.93
7-State total	0	0	0	0	0	365,500	6.48			0
31-State total	5,556,326	95.45	73,434	88.34	92.63	5,362,500	95.22			92.48

\*State also participated in the Sheep 2001 study.

Note: AR and NV were included in the 22 States for 2001 study but did not meet the criteria in the above tables 1-3.

4. Identify those States with +/- 20 percent or more change from 2002 to 2007 Census for all sheep and with +/- 25 percent or more change for farms.

State	<u>All Sheep</u>			State	<u>Farms</u>		
	<u>2002</u>	<u>2007</u>	<u>% Change 2007/2002</u>		<u>2002</u>	<u>2007</u>	<u>% Change 2007/2002</u>
AL	11,374	16,926	148.81	AK	36	49	136.11
AK	530	951	179.43	AZ	411	4,978	1,211.19
AZ	114,888	153,829	133.89	AR	556	728	130.94
FL	10,794	13,030	120.72	FL	617	875	141.82
IL	66,078	52,360	79.24	GA	529	664	125.52
IN	61,620	49,021	79.55	HI	103	394	382.52
KY	27,443	36,996	134.81	LA	420	549	130.71
LA	6,704	8,723	130.12	MA	514	734	142.80
MA	9,592	11,787	122.88	NH	395	531	134.43
MS	6,990	8,414	120.37	NM	993	2,896	291.64
NE	97,373	76,397	78.46	NC	1,010	1,275	126.24
NY	83,630	63,182	75.55	RI	77	107	138.96

NC	22,863	27,714	121.22	SC	267	367	137.45
ND	114,002	88,686	77.79	VA	1,697	2,132	125.63
SC	3,339	7,852	235.16	WA	1,709	2,366	138.44
TN	23,295	29,751	127.71				

5. Discussion of State selection based upon all-sheep data presented in above tables 1-4.
  - a. With declines in inventory for IL and IN we probably do not need either State in the study, although we may want to keep IN, similar to the Goat 2009 study.
  - b. Delete most States with a wtd. % of less than 2 percent—IL, IN, MO, NY, OK, and not sure about VA and WA. Note: approaching below 70 percent number of farms.
  
6. Discussion of State selection relevant to regional representation.
  - a. Previous study in 2001 used four regions. Suggest three be used for 2011.

## II. Process for ewes 1 yr old and older—individual State contribution (2007 Census of Agriculture):

1. Identify States with 2 percent or more of the U.S. total for both number of ewes 1+ and number of farms for either 2007 or January 1, 2010, inventory.

State	2007 Census of Agriculture					NASS Sheep and Goats, Jan. 2010					
	Ewes 1+		Farms		Wtd. %	Ewes 1+ (1/1/10)		Farms		Wtd. %	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent		
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00	
AZ	75,285	2.14	2,843	4.17	2.95	75,000	2.25			3.01	
CA*	286,544	8.15	3,413	5.00	6.89	263,000	7.87			6.73	
IA*	128,518	3.65	3,168	4.64	4.05	116,000	3.47			3.94	
MN*	85,049	2.42	2,225	3.26	2.76	76,000	2.28			2.67	
MT*	184,087	5.24	1,375	2.02	3.95	188,000	5.63	Used farm numbers from 2007 Census of Agriculture (at left)		4.18	
NM*	87,131	2.48	2,152	3.15	2.75	84,000	2.51			2.77	
OH*	74,331	2.11	2,929	4.29	2.99	81,000	2.43			3.17	
OR*	119,356	3.39	2,802	4.11	3.68	121,000	3.62			3.82	
SD*	210,005	5.97	1,580	2.32	4.51	205,000	6.14			4.61	
TX*	580,861	16.52	6,814	9.99	13.91	510,000	15.27			13.16	
UT*	210,388	5.98	1,430	2.10	4.43	215,000	6.44			4.70	
11-State total	0	0	0	0	0	1,934,000	0				0

2. Identify remaining States with 2 percent or more of either number of ewes 1+ or number of farms for either 2007 or January 1, 2010, inventory.

State	2007 Census of Agriculture					NASS Sheep and Goats, Jan. 2010				
	Ewes 1+		Farms		Wtd. %	Ewes 1+ (1/1/10)		Farms		Wtd. %
	Number	Percent	Number	Percent		Number	Percent	Number	Percent	

CO*	200,269	5.70	1,265	1.85	4.16	155,000	4.64	3.53
ID*	161,935	4.61	1,047	1.53	3.38	150,000	4.49	3.31
IL*	34,832	0.99	1,663	2.44	1.57	41,000	1.23	1.71
IN*	32,656	0.93	1,678	2.46	1.54	36,000	1.08	1.63
MI	48,398	1.38	1,969	2.89	1.98	46,000	1.38	1.98
MO	51,328	1.46	1,911	2.80	2.00	55,000	1.65	2.11
NY	42,321	1.20	1,523	2.23	1.62	42,000	1.26	1.65
OK	46,739	1.33	1,470	2.15	1.66	43,000	1.29	1.63
PA*	62,828	1.79	3,067	4.50	2.87	63,000	1.89	2.93
VA*	48,219	1.37	1,796	2.63	1.88	55,000	1.65	2.04
WA*	35,138	1.00	1,977	2.90	1.76	38,000	1.14	1.84
WI*	56,172	1.60	2,413	3.54	2.37	57,000	1.71	2.44
WY*	258,096	7.34	817	1.20	4.88	240,000	7.19	4.79
13-State total	0	00	0	0	0	1,021,000	30.60	0
24-State total	3,120,486	88.75	53,327	78.17	84.54	2,955,000	88.51	84.35

Used farm numbers  
from 2007 Census  
of Agriculture  
(at left)

3. Identify remaining States roughly close to the 2-percent cutoff level either period.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
KS*	52,614	1.50	1,011	1.48	1.49	41,000	1.23			1.33
KY	22,225	0.63	1,171	1.72	1.07	23,000	0.69			1.10
NC	16,419	0.47	1,071	1.57	0.91	15,000	0.45			0.90
ND	60,676	1.73	626	0.92	1.40	59,000	1.77			1.43
NE	47,965	1.36	1,133	1.66	1.48	47,000	1.41			1.51
TN	17,671	0.50	988	1.45	0.88	19,000	0.57			0.92
WV	23,523	0.67	1,082	1.59	1.04	20,000	0.60			0.99
7-State total	0	0	0	0	0	224,000	6.72			0
31-State total	3,361,579	95.61	60,409	88.56	92.81	3,179,000	95.23			92.53

Used farm numbers  
from 2007 Census  
of Agriculture  
(at left)

\*State also participated in the Sheep 2001 study.

Note: AR and NV were included in the 22 States for 2001 study but did not meet the criteria in the above tables 1-3.

4. Identify those States with +/- 20 percent or more change from 2002 to 2007 Census for ewes 1+ and with +/- 25 percent or more change for farms.

<u>State</u>	<u>Ewes 1+</u>			<u>State</u>	<u>Farms</u>		
	<u>2002</u>	<u>2007</u>	<u>% Change 2007/2002</u>		<u>2002</u>	<u>2007</u>	<u>% Change 2007/2002</u>
AL	6,733	10,060	149.41	AZ	370	2,843	768.38
AK	257	486	189.11	FL	489	631	129.04
AZ	59,228	75,285	127.11	HI	91	300	329.67
CO	155,038	200,269	129.17	MA	458	615	134.28
FL	5,612	7,354	131.04	MT	1,843	1,375	74.61
HI	6,800	8,841	130.01	NH	354	454	128.25
KY	16,808	22,225	132.23	NM	829	2,152	259.59
LA	4,064	4,956	121.95	NY	2,055	1,523	74.11
MA	6,267	7,537	120.26	RI	66	89	134.85
MS	3,643	5,194	142.57	WA	1,564	1,977	126.41
NV	57,455	42,822	74.53				
NY	54,256	42,321	78.00				
SC	1,787	3,944	220.71				
TN	13,444	17,671	131.44				

5. Discussion of State selection based on ewe 1+ data presented in above tables 1-4.
- Suggest dropping States with less than 2 percent wtd. contribution (using Jan. 2010 inventory estimates), including IL, IN, probably not MI, NY, OK, and probably not WA to help represent the West coast).
  - This would give a total of 20 States, although total percentage of farms would be under 70 percent, but close, at 68.89 percent and inventory at 83.65 thus giving a wtd. percent of 77.73.
6. Discussion of State selection relevant to regional representation.
- Suggest using three regions.
7. Recommended ewe 1+ study States for further discussion.

<u>State</u>	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
AZ	75,285	2.14	2,843	4.17	2.95	75,000	2.25			3.01
CA*	286,544	8.15	3,413	5.00	6.89	263,000	7.87	Used farm numbers from 2007 Census of Agriculture (at left)		6.73
CO*	200,269	5.70	1,265	1.85	4.16	155,000	4.64		3.53	
IA*	128,518	3.65	3,168	4.64	4.05	116,000	3.47		3.94	
ID*	161,935	4.61	1,047	1.53	3.38	150,000	4.49		3.31	
MI	48,398	1.38	1,969	2.89	1.98	46,000	1.38		1.98	
MN*	85,049	2.42	2,225	3.26	2.76	76,000	2.28		2.67	

MO	51,328	1.46	1,911	2.80	2.00	55,000	1.65	2.11
MT*	184,087	5.24	1,375	2.02	3.95	188,000	5.63	4.18
NM*	87,131	2.48	2,152	3.15	2.75	84,000	2.51	2.77
OH*	74,331	2.11	2,929	4.29	2.99	81,000	2.43	3.17
OR*	119,356	3.39	2,802	4.11	3.68	121,000	3.62	3.82
PA*	62,828	1.79	3,067	4.50	2.87	63,000	1.89	2.93
SD*	210,005	5.97	1,580	2.32	4.51	205,000	6.14	4.61
TX*	580,861	16.52	6,814	9.99	13.91	510,000	15.27	13.16
UT*	210,388	5.98	1,430	2.10	4.43	215,000	6.44	4.70
VA*	48,219	1.37	1,796	2.63	1.88	55,000	1.65	2.04
WA*	35,138	1.00	1,977	2.90	1.76	38,000	1.14	1.84
WI*	56,172	1.60	2,413	3.54	2.37	57,000	1.71	2.44
WY*	258,096	7.34	817	1.20	4.88	240,000	7.19	4.79
20 – State total	0	0	0	0	0	0	0	0

8. State selection based upon additional discussion with NAHMS staff.

a. The 20 States were deemed important however KY was added to provide more eastern representation and the final States are shown below.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>		<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
AZ	75,285	2.14	2,843	4.17	2.95	75,000	2.25			3.01
CA*	286,544	8.15	3,413	5.00	6.89	263,000	7.87			6.73
CO*	200,269	5.70	1,265	1.85	4.16	155,000	4.64			3.53
IA*	128,518	3.65	3,168	4.64	4.05	116,000	3.47			3.94
ID*	161,935	4.61	1,047	1.53	3.38	150,000	4.49			3.31
KY	22,225	0.63	1,171	1.72	1.07	23,000	0.69			1.10
MI	48,398	1.38	1,969	2.89	1.98	46,000	1.38	Used farm numbers from 2007 Census of Agriculture (at left)		1.98
MN*	85,049	2.42	2,225	3.26	2.76	76,000	2.28			2.67
MO	51,328	1.46	1,911	2.80	2.00	55,000	1.65			2.11
MT*	184,087	5.24	1,375	2.02	3.95	188,000	5.63			4.18
NM*	87,131	2.48	2,152	3.15	2.75	84,000	2.51			2.77
OH*	74,331	2.11	2,929	4.29	2.99	81,000	2.43			3.17
OR*	119,356	3.39	2,802	4.11	3.68	121,000	3.62			3.82
PA*	62,828	1.79	3,067	4.50	2.87	63,000	1.89			2.93
SD*	210,005	5.97	1,580	2.32	4.51	205,000	6.14			4.61
TX*	580,861	16.52	6,814	9.99	13.91	510,000	15.27			13.16
UT*	210,388	5.98	1,430	2.10	4.43	215,000	6.44			4.70
VA*	48,219	1.37	1,796	2.63	1.88	55,000	1.65			2.04
WA*	35,138	1.00	1,977	2.90	1.76	38,000	1.14			1.84

WI*	56,172	1.60	2,413	3.54	2.37	57,000	1.71	2.44
WY*	258,096	7.34	817	1.20	4.88	240,000	7.19	4.79
21-State total	2,986,163	0	0	0	0	0	0	0

9. Final State selection based upon feedback from NASS regarding sampling considerations.

a. The individual operation sampling will be based upon a sub-sample of those operations reporting one or more ewes on the NASS Jan. 1, 2020 Sheep and Goat Report. Analysis of this data set shows for AZ there are only 11 available in the 1-19 group and 19 in the 20+ ewes group. Therefore, not enough considering response rates, consent and also VMO response rates. It was recommended we drop AZ and discussion was held to include KS and NY to meet our criteria of both 70% for producers and inventory. Therefore 22 States are recommended for the study.

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
CA*	286,544	8.15	3,413	5.00	6.89	263,000	7.87			6.73
CO*	200,269	5.70	1,265	1.85	4.16	155,000	4.64			3.53
IA*	128,518	3.65	3,168	4.64	4.05	116,000	3.47			3.94
ID*	161,935	4.61	1,047	1.53	3.38	150,000	4.49			3.31
KY	22,225	0.63	1,171	1.72	1.07	23,000	0.69			1.10
KS*	52,614	1.50	1,011	1.48	1.49	41,000	1.23			1.33
MI	48,398	1.38	1,969	2.89	1.98	46,000	1.38			1.98
MN*	85,049	2.42	2,225	3.26	2.76	76,000	2.28	Used farm numbers from 2007 Census of Agriculture (at left)		2.67
MO	51,328	1.46	1,911	2.80	2.00	55,000	1.65			2.11
MT*	184,087	5.24	1,375	2.02	3.95	188,000	5.63			4.18
NM*	87,131	2.48	2,152	3.15	2.75	84,000	2.51			2.77
NY	42,321	1.20	1,523	2.23	1.62	42,000	1.26			1.65
OH*	74,331	2.11	2,929	4.29	2.99	81,000	2.43			3.17
OR*	119,356	3.39	2,802	4.11	3.68	121,000	3.62			3.82
PA*	62,828	1.79	3,067	4.50	2.87	63,000	1.89			2.93
SD*	210,005	5.97	1,580	2.32	4.51	205,000	6.14			4.61
TX*	580,861	16.52	6,814	9.99	13.91	510,000	15.27			13.16
UT*	210,388	5.98	1,430	2.10	4.43	215,000	6.44		4.70	
VA*	48,219	1.37	1,796	2.63	1.88	55,000	1.65		2.04	
WA*	35,138	1.00	1,977	2.90	1.76	38,000	1.14		1.84	
WI*	56,172	1.60	2,413	3.54	2.37	57,000	1.71		2.44	
WY*	258,096	7.34	817	1.20	4.88	240,000	7.19		4.79	
22-State total	3,005,813	0	0	0	0	0	0			0

## West region

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
CA*	286,544	8.15	3,413	5.00	6.89	263,000	7.87	Used farm numbers from 2007 Census of Agriculture (at left)		6.73
OR*	119,356	3.39	2,802	4.11	3.68	121,000	3.62			3.82
WA*	35,138	1.00	1,977	2.90	1.76	38,000	1.14			1.84
3-State total	0	0	0	12.01	0	0	0			0

## Central region

State	<u>2007 Census of Agriculture</u>					<u>NASS Sheep and Goats, Jan. 2010</u>				
	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
CO*	200,269	5.70	1,265	1.85	4.16	155,000	4.64	Used farm numbers from 2007 Census of Agriculture (at left)		3.53
ID*	161,935	4.61	1,047	1.53	3.38	150,000	4.49			3.31
KS*	52,614	1.50	1,011	1.48	1.49	41,000	1.23			1.33
MT*	184,087	5.24	1,375	2.02	3.95	188,000	5.63			4.18
NM*	87,131	2.48	2,152	3.15	2.75	84,000	2.51			2.77
SD*	210,005	5.97	1,580	2.32	4.51	205,000	6.14			4.61
TX*	580,861	16.52	6,814	9.99	13.91	510,000	15.27			13.16
UT*	210,388	5.98	1,430	2.10	4.43	215,000	6.44			4.70
WY*	258,096	7.34	817	1.20	4.88	240,000	7.19			4.79
9-State total	1,945,386	0	17,491	0	0	0	0			0



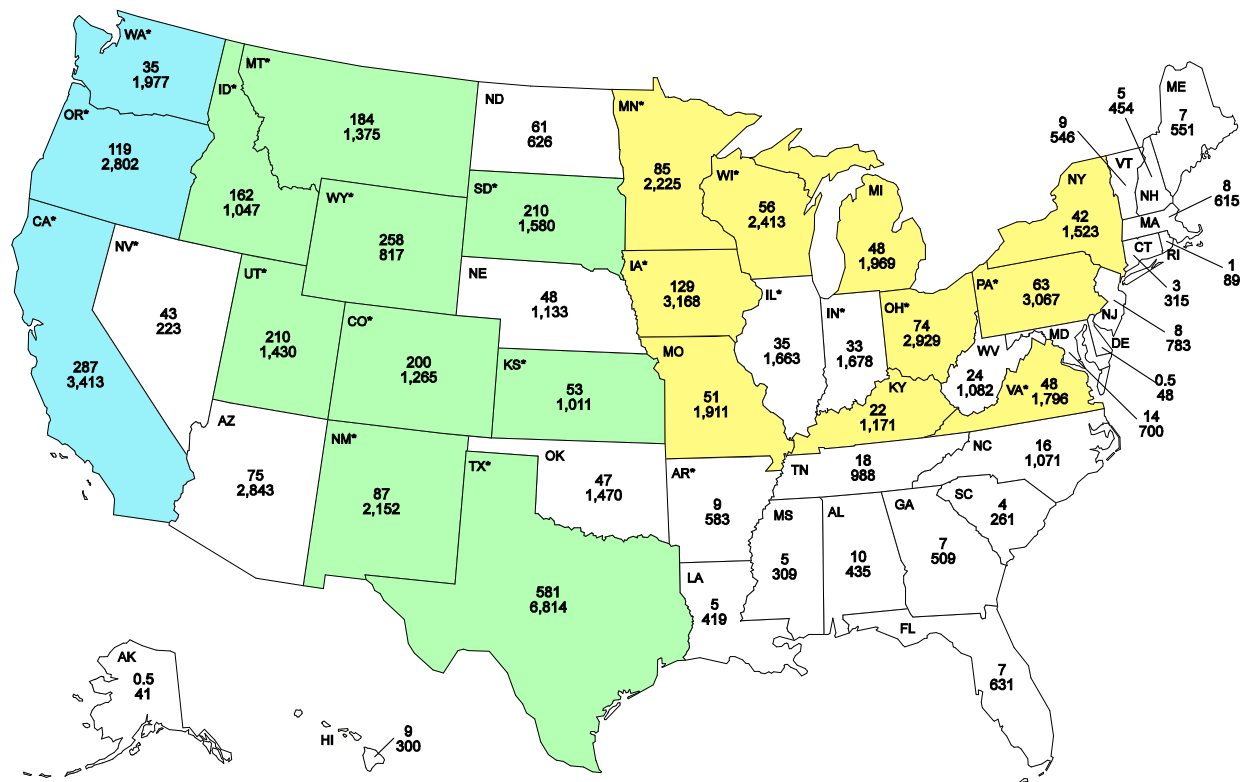
## East region

### 2007 Census of Agriculture

### NASS Sheep and Goats, Jan. 2010

State	<u>Ewes 1+</u>		<u>Farms</u>		<u>Wtd. %</u>	<u>Ewes 1+ (1/1/10)</u>		<u>Farms</u>		<u>Wtd. %</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>		<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
U.S.	3,516,409	100.00	68,222	100.00		3,340,000	100.00			100.00
IA*	128,518	3.65	3,168	4.64	4.05	116,000	3.47			3.94
KY	22,225	0.63	1,171	1.72	1.07	23,000	0.69			1.10
MI	48,398	1.38	1,969	2.89	1.98	46,000	1.38			1.98
MN*	85,049	2.42	2,225	3.26	2.76	76,000	2.28			2.67
MO	51,328	1.46	1,911	2.80	2.00	55,000	1.65			2.11
NY	42,321	1.20	1,523	2.23	1.62	42,000	1.26	Used farm numbers from 2007 Census of Agriculture (at left)		1.65
OH*	74,331	2.11	2,929	4.29	2.99	81,000	2.43			3.17
PA*	62,828	1.79	3,067	4.50	2.87	63,000	1.89			2.93
VA*	48,219	1.37	1,796	2.63	1.88	55,000	1.65			2.04
WI*	56,172	1.60	2,413	3.54	2.37	57,000	1.71			2.44
10-State total	619,389	0	0	0	0	614,000	0			

**Sheep 2011 State Selection—Ewes 1+ (2007 Census of Agriculture) by Region**



Head (x1,000)  
Farms

\*States included in Sheep 2001 study

**Appendix B: Review of Previous Response Rates**

1. Sheep 2001 sample performance

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.

<b>Appendix C: Final NAHMS Sheep 2011 State Sample Allocations</b>								
		<b>Herd Size</b>						
<b>State</b>	<b>FIPS Code</b>	<b>1-19<sup>1</sup></b>	<b>20-99</b>	<b>100-199</b>	<b>200-499</b>	<b>500+</b>	<b>20+ Total<sup>2</sup></b>	<b>Total</b>
California	6	125	72	24	20	116	232	357
Colorado	8	78	46	26	17	97	186	264
Idaho	16	29	40	8	15	87	150	179
Iowa	19	89	106	40	33	14	193	282
Kansas	20	43	52	16	19	29	116	159
Kentucky	21	47	30	12	7	2	51	98
Michigan	26	42	71	20	14	5	110	152
Minnesota	27	83	79	34	29	10	152	235
Missouri	29	35	66	28	17	10	121	156
Montana	30	50	58	39	47	71	215	265
New Mexico	35	28	41	7	16	40	104	132
New York	36	40	49	19	17	13	98	138
Ohio	39	71	87	28	15	2	132	203
Oregon	41	87	66	20	40	51	177	264
Pennsylvania	42	75	78	12	14	12	116	191
South Dakota	46	26	74	50	56	66	246	272
Texas	48	91	121	78	88	155	442	533
Utah	49	67	46	27	24	102	199	266
Virginia	51	52	64	12	14	1	91	143
Washington	53	47	51	7	7	10	75	122
Wisconsin	55	65	69	35	20	1	125	190
Wyoming	56	131	43	20	30	118	211	342
<b>Total</b>		<b>1,401</b>	<b>0</b>	<b>562</b>	<b>559</b>	<b>1,012</b>	<b>3,542</b>	<b>4,943</b>

<sup>1</sup>General Sheep Management Report (CATI).

<sup>2</sup>General Sheep Management Report (Enumerator).

#### Appendix D: NAHMS Sheep 2011 Estimated Response Rates

Phase	Response category	Percentage in phase	Expected counts
CATI			
	Zero on hand	20.0	400
	Complete	55.0	1100
	Refusal	25.0	500
	Total	100.0	2000
Phase I Enumerator			
	Zero on hand	10.0	350
	Complete and agree to continue	40.0	1400
	Complete and do not agree to continue	30.0	1050
	Complete Phase I	70.0	2450
	Out of scope	1.0	35
	Refusal	19.0	665
	Total	100.0	3500
Phase II VMO			
	Complete	28.0	980
	Refusal	12.0	420
	Subtotal	40.0	1400
	Ineligible from first phase	11.0	(350 + 35) 385
	Refusal from first phase	49.0	(1050 + 665) 1715
	Total	100.0	3500

## Appendix E: NAHMS Sheep 2011 Large Operation Pre-Survey Letter

xxxx 1, 2010

Dear Sheep Producer,

The U.S. Department of Agriculture (USDA) will soon conduct an in-depth study of U.S. sheep operations, focusing on such important topics as herd management, productivity, and health issues. The Sheep 2011 Study will yield critical data that will benefit the entire sheep industry. Therefore, I am hoping that we can count on your participation.

The Sheep 2011 Study, which is part of the National Animal Health Monitoring System (NAHMS), will benefit you and your fellow sheep producers by

- providing baseline information on animal health, nutrition, and management practices;
- evaluating ways to help treat, reduce, and control disease in the flock; and
- helping to guide future research and education efforts.

USDA's Animal and Plant Health Inspection Service and National Agricultural Statistics Service (NASS) will conduct the survey in 22 major sheep-producing States. A NASS representative will visit you in January 2011 to complete the questionnaire.

Please be assured that the survey responses will be kept strictly confidential and used only in combination with other responses to report regional and U.S. estimates.

The enclosed brochure describes this study in more detail.

We value your input and look forward to your cooperation in making the Sheep 2011 Study a success for the entire U.S. sheep industry.

Sincerely,

Carol House  
Deputy Administrator for Programs and products

Enclosure (1)

## Appendix F: NAHMS Sheep 2011 Small Operation Pre-Survey Letter

xxxx 1, 2010

Dear Sheep Producer,

The U.S. Department of Agriculture (USDA) will soon conduct an in-depth study of U.S. sheep operations, focusing on such important topics as herd management, productivity, and health issues. The Sheep 2011 Study will yield critical data that will benefit the entire sheep industry. Therefore, I am hoping that we can count on your participation.

The Sheep 2011 Study, which is part of the National Animal Health Monitoring System (NAHMS), will benefit you and your fellow sheep producers by

- providing baseline information on animal health, nutrition, and management practices;
- evaluating ways to help treat, reduce, and control disease in the flock; and
- helping to guide future research and education efforts.

USDA's Animal and Plant Health Inspection Service and National Agricultural Statistics Service (NASS) will conduct the survey in 22 major sheep-producing States. You can complete your survey and return it in the self-addressed envelope or one of our telephone enumerators will be contacting you between January 1 and January 31, 2011, for a telephone interview.

Please be assured that the survey responses will be kept strictly confidential and used only in combination with other responses to report regional and U.S. estimates.

The enclosed brochure describes this study in more detail.

We value your input and look forward to your cooperation in making the Sheep 2011 Study a success for the entire U.S. sheep industry.

Sincerely,

Carol House  
Deputy Administrator for Programs and products

Enclosure (1)