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 Beef 2007-08 study is all operations, in 24 States[1], that are on the NASS list frame with beef cows. The preliminary selection of States to be included in the study was done in October 2006. 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 the study is the number of operations with beef cows and the number of beef cows on those operations, in the 24 states.

The initial review of States identified 22 major beef States (States with at least two percent of the operations with beef cows or 2 percent beef cow inventory). An additional 9 States were assessed for inclusion in the study based on previous study participation or having inventory or number of herds close to the 2 percent cutoff. Of the 31 States initially identified, a memo recommending inclusion of 23 States was provided in November 2006 to the VS Regional Directors. Each Regional Director sought input from their respective States about being included or excluded from the study. Louisiana was included, based on the State's interest for a total of 24 States.

Examination of the NASS, "*Cattle, January 2006"* and "*Farms, Land in Farms and Livestock Operations, 2005 Summary"*, demonstrates that the selected 24 States account for 84.2 percent of beef operations and 88.3 percent of beef cows in the United States (Appendix A – Total U.S. Beef Operations and Beef Cow Inventory, 2005-2006.)

Based on data from previous NAHMS beef surveys (Appendix B – NAHMS Beef '97 and CHAPA Review of Response Rates), the estimated response rate for the NASS on farm component of the Beef 2007-08 study is 75 percent (response rate calculations appear in Appendix E). All respondents with beef cows, from the NASS component will be eligible to participate in the APHIS data collection phase (Phase II) of the study. Criterion for eligibility is one or more beef cows as reported on the General Beef Management Report.

The descriptive reports from the Beef 2007-08 study will include a Methodology Section explaining the study processes – needs assessment, sample selection, data collection and editing, estimation, and response rates. In addition the appendix will include a table identifying the specific reference population in terms of the number of operations with beef cows and the number of beef cows.

[1] Alabama, Arkansas, California, Colorado, Florida, Georgia, Idaho, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Virginia, Wyoming. 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 24 States were selected for inclusion in the study based upon each state's contribution to the U.S. total number of beef cows and number of operations with beef cows as well as geographic representation (Appendix A).

Sampling methodology— Beef 2007-08 study: 4,000 beef operations (see 'degree of accuracy needed' section for sample size determination) will be selected from NASS' list frame of producers with one or more beef cows. The sample will be selected as a stratified random sample with the strata being both state and operation size. Operation size is based on beef cow inventory. The state-level allocation will be based on a weighted proportion of the number of operations in the state and the cow inventory relative to the U.S. levels with smoothing to prevent excessive workload for some States (Appendix A). The percentage of U.S. operations with beef cows in the State will get a weight of 0.6 and the percentage of beef cows will get a weight of 0.4. For example, Texas has 17.01% of operations and 16.46% of the beef cows in the 24 selected States. The allocation will be adjusted to move some of the sample from States with large samples (Texas, Missouri and Oklahoma) to other States with fewer samples. Within States, the State-level sample will be allocated within size strata. Allocation will follow the same strategy as the state-level allocation since proportions of operations and proportions (ratios) of beef cows will be estimated using the data obtained from this study (Appendix C – Preliminary NAHMS Beef 2007-08 Sample Allocation).

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-201 (General Beef Management Report). 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 2 out of 3 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. Once all the information on NAHMS-201 has been entered and validated, NASS will send a clean dataset to NAHMS along with completed reports via mail. The estimated overall response rate based on previous NAHMS beef studies is 75% for Phase I (as shown on APHIS-71, 10% of these are either out of business or have zero beef cows).

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 questionnaires and collect biological samples. Upon arrival on the premises, the data collector will present NAHMS-202 (Producer Agreement) to the producer which allows the producer to indicate what

portion(s) of the Beef 2007-08 study they agree to participate in. Once NAHMS-202 is completed and signed, the data collector will administer NAHMS-203 (VS Initial Visit Questionnaire) to the producer. Once NAHMS-203 has been completed, a separate time will be set up for the data collector to come back and administer NAHMS-204 (VS Second Visit Questionnaire) and take biologic samples [NAHMS-205 (Ear Notch Sample Collection Record), NAHMS-206 (Fecal Sample Collection Record), and NAHMS-207 (Parasite Sample Collection Record)] depending on what the producer indicates on NAHMS-202. The data collector may set up to four separate times to come back to the farm (once per sample) to complete the biological sampling. Once NAHMS-204 has been completed, and all of the samples indicated on NAHMS-202 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 based on previous NAHMS beef cow-calf studies 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% (cv=10.0%) a sample size of 864 is needed when a simple random sample is taken. Similarly, to obtain a prevalence/proportion estimate of 50%+/-10% (cv=10%) would require a simple random sample of only 96. However, the complex survey design typically will result in variances that are inflated. The design effect from the Beef 1997 study indicates the magnitude of the variance inflation that can be expected (Appendix D). Design effects ranged from less than one, up to three for the selected variables from the initial NASS survey that were evaluated. Assuming a typical design effect of 2.0 and a "completed" survey rate of 65% (Appendix E), a sample size of 2658 [(864*2.0)/0.65] would be needed to obtain the desired precision nationally when the estimate is 10%. Assuming a typical design effect of 3.0 and a "completed" survey rate of 65%, a sample size of 3987 [(864*3.0)/0.65] would be needed to obtain the desired precision nationally when the estimate is 10%. In the second phase of collection, the design effects tended to be higher than the first phase of collection (2.6-4.1 based on evaluated estimates). The second phase response rate of 70% and the increased design effect would indicate that the initial sample size would not be adequate to meet the desired precision when the estimate is 10%. However, empirically, the coefficient of variation was approximately 10% when the point estimate was 16% in the 1997 study (initial sample size of 4,092). Thus, assuming a similar response pattern that was observed in 1997 would give us the ability to attain the desired precision at the national level if the estimate is about 15%.

The design of the Beef 1997 study was very similar to the proposed design for the Beef 2007-08 study. The initial sample size for the NASS phase was similar (n=4,092 in 1997). Estimates, standard errors and coefficients of variation (based on 2,713 completed questionnaires) presented in Appendix D indicate that the minimum degree of precision that was desired was attained and, in all cases, exceeded for the NASS component. Similarly, the estimates, standard errors, and coefficients of variation for the APHIS phase (based on 1,190 completed questionnaires) met the desired accuracy goals (Appendix D).

- **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:

- Many questions have been repeated from previous NAHMS beef cow-calf studies conducted in 1992-93 and 1997.

- The study minimizes collection of data to that which is absolutely necessary to meet the stated objectives.

- NAHMS staff will develop a training CD for NASS enumerators that explains the purpose of the study and addresses anticipated difficulties with questions, including proper pronunciation of diseases. Each enumerator will receive a CD.

- 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 beef 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 sample of 4,000 producers with beef cows will be drawn from NASS' producer list.

- A pre-survey letter[2] will be sent along with the brochure[3]. 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 National Cattlemen's Beef Association (NCBA) and American Association of Bovine Practitioners (AABP).

- 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 enumerators will complete NAHMS-201, and ask eligible producers to sign the consent form.

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

- The APHIS-designated data collectors will administer NAHMS-202-207 to the consenting producers.

Data Analysis Steps:

Response rates, given the methods described above, are expected to be approximately 65% (completed) and 70% respectively for the two phases of data collection, (10% will respond with zero beef cows). 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 beef cows for each selected unit on a specific date. 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 beef cows, 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 beef cow 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. Nora Wineland, Leader, National Animal Health Monitoring System, USDA APHIS, VS, CEAH, 2150 Centre Avenue, Building B MS2E7, Fort Collins, CO 80526-8117 (970) 494-7230.

Consultants used for the Beef 2007-08 study are:

- Mr. Jason Ahola, Beef Extension Specialist, Animal and Veterinary Science, Agricultural Sciences Bldg., University of Idaho, Moscow, ID 83844-2330 (208) 459-6365 jahola@uidaho.edu

- Dr. Bruce Broderson, Nebraska Veterinary Diagnostic Laboratory, Veterinary Diagnostic Center University of Nebraska-Lincoln, Lincoln, NE 68583, (402) 472-1434

- Mr. Darrh Bullock, Extension Faculty, Animal and Food Science, 804 W P Garrigus Bldg. 0215 Lexington, KY 40506, (859) 257-7514 dbullock@email.uky.edu

- Dr. Barry Dunn, Room 124, Kleberg Agriculture Bldg., College of Agricultural and Human Sciences, 700 University Blvd. MSC, Texas A&M University-Kingsville, Kingsville, TX 78363 (361) 593-3712, barry.dunn@tamuk.edu

- Dr. Tom Field, Department of Animal Sciences, Colorado State University, Ft. Collins, CO 80523-1171, (970) 491-6642, Tom.Field@colostate.edu

- Dr. Robert Fulton, Professor, Dept. of Pathobiology, Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK 74078, (405) 744-8170, robert.fulton@okstate.edu

- Dr. Louis C. Gasbarre, Research Leader, Bovine Functional Genomics, Rm. 6, Bldg. 200 BARC-East, 10300 Baltimore Ave., Beltsville, MD 20705-0000, (301) 504-8509, lgasbarr@anri.barc.usda.gov

- Dr. Will Hueston, Professor, Veterinary Population Medicine, College of Veterinary Medicine University of Minnesota, 1365 Gortner Ave., St. Paul, MN 55108, (612) 625-8709, hueston001@umn.edu

- Dr. Jim Kennedy, Lab Director, Colorado State University Diagnostic Laboratory, 27847 Road 21, Rocky Ford, CO 81067, (719) 254-6382

- Dr. Diane L. Kitchen, Veterinarian Manager, Bovine Programs, Division of Animal Industry Florida Dept. of Agriculture and Consumer Services, The Capitol, Tallahassee, FL 32399-0800 (850) 410-0940, kitched@doacs.state.fl.us

- Dr. Dan Kniffen, Assistant Professor, Dept. of Agricultural Sciences, 0320 Ag Sci & Ind Bldg. Pennsylvania State University, University Park, PA 16802, (814) 865-7809, dmk28@psu.edu

- Dr. John Mass, Extension Veterinarian, School of Veterinary Medicine, University of California-Davis, Davis, CA 95616, (530) 752-3990, jmaas@ucdavis.edu

- Dr. John Pollak, B-47 Morrison Hall, Animal Sciences, Cornell University, Ithaca, NY 14853 (607) 255-2846, epj6@cornell.edu

- Mr. Ryan Ruppert, National Cattlemen's Beef Association, 9110 E. Nichols Ave. #300, Centennial, CO 80112, (303) 694-0305

- Dr. Mike Sanderson, Associate Professor, Clinical Sciences, Q216 Mosier Hall, Kansas State University, Manhattan, KS 66506, (785) 532-4264, sanderson@ksu.edu

- Dr. David Sjeklocha, Haskell County Animal Hospital, POB 876, Sublette, KS 67877 (620) 675-8180, drdave@wbsnet.org

- Dr. Bob Smith, Veterinary Clinical Services, 205 McElroy Hall, Oklahoma State University Stillwater, OK 74078, (405) 744-6651, smith@okstate.edu

- Dr. Daryl Strohbehn, Professor, Animal Science, Iowa State University, 337 Kildee Hall Ames, IA 50011-3150, (515) 294-3020, stroh@iastate.edu

- Dr. Robert Weaber, Assistant Professor, Extension, 5134A Animal Science Research Center Division of Animal Sciences, University of Missouri, Columbia, MO 65211, (573) 882-5479, weaberr@missouri.edu

- Dr. Brad White, Assistant Professor, Clinical Sciences, Q211 Mosier Hall, Kansas State University, Manhattan, KS 66506, (785) 532-4243, whiteb@ksu.edu

Appendix A: Total U.S. Beef Operations and Beef Cow Inventory, 2005-2006

FIPS Code	State	Beef Cow Inventory (x 1,000)	Percent of US Total Inventory	Percent of 24 States Inventory	2005 Operations	Percent of US Total Operations	Percent of 24 States Operations
1	*AL	696	2.09	2.37	23,000	2.99	3.55
2	AK	6.1	0.02		90	0.01	
4	AZ	190	0.57		1,900	0.25	
5	*AR	919	2.76	3.13	27,000	3.51	4.16
6	*CA	700	2.11	2.38	11,500	1.49	1.77
8	*CO	685	2.06	2.33	9,700	1.26	1.50
9	CT	5	0.02		770	0.10	
10	DE	4	0.01		230	0.03	
12	*FL	926	2.78	3.15	15,400	2.00	2.38
13	*GA	592	1.78	2.02	19,000	2.47	2.93
15	HI	87.4	0.26		650	0.08	
16	ID	472	1.42		7,200	0.93	
17	*IL	446	1.34	1.52	14,800	1.92	2.28
18	IN	222	0.67		12,000	1.56	
19	*IA	1,053	3.17	3.58	25,000	3.25	3.86
20	*KS	1,560	4.69	5.31	27,000	3.51	4.16
21	*KY	1,128	3.39	3.84	38,000	4.93	5.86
22	LA	468	1.41		12,400	1.61	
23	ME	12	0.04		1,000	0.13	
24	MD	49	0.15		2,500	0.32	
25	MA	8	0.02		750	0.10	
26	MI	108	0.32		7,200	0.93	
27	*MN	390	1.17	1.33	15,000	1.95	2.31
28	*MS	536	1.61	1.82	18,800	2.44	2.90
29	*MO	2,236	6.72	7.61	54,000	7.01	8.33
30	*MT	1,451	4.36	4.94	11,400	1.48	1.76
31	*NE	1,930	5.80	6.57	20,000	2.60	3.08
32	NV	238	0.72		1,300	0.17	
33	NH	4	0.01		530	0.07	
34	NJ	9	0.03		700	0.09	
35	NM	460	1.38		6,200	0.81	
36	NY	78	0.23		6,200	0.81	
37	*NC	384	1.15	1.31	18,000	2.34	2.78
38	*ND	937	2.82	3.19	10,600	1.38	1.63
39	*OH	297	0.89	1.01	15,600	2.03	2.41
40	*OK	2,075	6.24	7.06	48,000	6.23	7.40
41	*OR	619	1.86	2.11	11,800	1.53	1.82
42	PA	152	0.46		12,000	1.56	
44	RI	1.5	0.00		150	0.02	
45	SC	213	0.64		9,000	1.17	
46	*SD	1,719	5.17	5.85	15,000	1.95	2.31
47	*TN	1,110	3.34	3.78	42,000	5.45	6.48
48	*TX	5,475	16.46	18.64	131,000	17.01	20.20
49	UT	335	1.01		5,200	0.68	
50	VT	10	0.03		1,000	0.13	
51	*VA	747	2.25	2.54	22,000	2.86	3.39
53	WA	293	0.88		9,200	1.19	
54	WV	204	0.61		10,900	1.42	
55	WI	250	0.75		12,700	1.65	

56	*WY	763	2.29	2.60	4,800	0.62	0.74
US total		33,253.0	100.00		770,170	100.00	100.00
24-State total		29,374	88.30	100.00	648,400	84.21	

Purpose of document:
To arrive at a general agreement on States to be included in the NAHMS Beef 2007-08 study and to document the selection process.

Materials to review:

1. Attached spreadsheets on number of beef cows and operations by State:
    a. Table 1—All beef cows and operations, by State FIPS code
    b. Table 2—Number of beef cows—descending order
    c. Table 3—Number of operations—descending order
    d. Table 4—Weighted percent of the U.S. total—descending order

2. Attached spreadsheet for number of cows and operations by State indicating percent change since 1993 and 1997, compared to 2006:
    a. Table 5—Inventory and operation comparisons—FIPS code order
    b. Table 6—Inventory and operation comparisons—inventory descending order
    c. Table 7—Inventory and operation comparisons—operations descending order
    d. Table 8—Cows and operations—preliminary study States, FIPS code

3. Attached spreadsheet identifying preliminary study States

I. Process for 1+ beef cows—individual State contribution:

1. Identify States with 2% or more of the U.S. total for both number of beef cows and number of herds/operations.

	Beef Cows		Herds/Operations		
State	**Number (000)**	**Percent**	**Number**	**Percent**	**Wtd. %**
AL	696	2.09	23,000	2.99	2.45
AR	919	2.76	27,000	3.51	3.06
FL	926	2.78	15,400	2.00	2.47
IA	1,053	3.17	25,000	3.25	3.20
KS	1,560	4.69	27,000	3.51	4.22
KY	1,128	3.39	38,000	4.93	4.01
MO	2,236	6.72	54,000	7.01	6.84
NE	1,930	5.80	20,000	2.60	4.52
OK	2,075	6.24	48,000	6.23	6.24
TN	1,110	3.34	42,000	5.45	4.18
TX	5,475	16.46	131,000	17.01	16.68
VA	747	2.25	22,000	2.86	2.49
12-State total	19,855	59.69	472,400	61.35	60.36

2. Identify remaining States with 2% or more of either number of beef cows or operations.

	Beef Cows		Herds/Operations		
State	**Number (000)**	**Percent**	**Number**	**Percent**	**Wtd. %**
CA	700	2.11	11,500	1.49	1.86
CO	685	2.06	9,700	1.26	1.74
GA	592	1.78	19,000	2.47	2.05
MS	536	1.61	18,800	2.44	1.94
MT	1,451	4.36	11,400	1.48	3.21
NC	384	1.15	18,000	2.34	1.63
ND	937	2.82	10,600	1.38	2.24
OH	297	0.89	15,600	2.03	1.35
SD	1,719	5.17	15,000	1.95	3.88
WY	763	2.29	4,800	0.62	1.63
10-State total	8,064	24.24	134,400	17.46	21.53
22-State total	27,919	83.93	606,800	78.81	81.89

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

	Beef Cows		Herds/Operations		
State	**Number (000)**	**Percent**	**Number**	**Percent**	**Wtd. %**
IL	446	1.34	14,800	1.92	1.57
MN	390	1.17	15,000	1.95	1.48
OR	619	1.86	11,800	1.53	1.73
25-State total	29,374	88.30	648,400	84.21	86.67

4. Identify remaining States that could receive consideration. States in parentheses were in the Beef ‘97 study.

	Beef Cows		Herds/Operations		
State	**Number (000)**	**Percent**	**Number**	**Percent**	**Wtd. %**
ID	472	1.42	7,200	0.93	1.23
IN	222	0.67	12,000	1.56	1.02
LA	468	1.41	12,400	1.61	1.49
(NM)	460	1.38	6,200	0.81	1.15
WA	293	0.88	9,200	1.19	1.01
WI	250	0.75	12,700	1.65	1.11
6-State total	2,165	6.51	59,700	7.75	7.01
31-State total	31,539	94.81	708,100	91.96	93.68

II. Process of 1+ beef cows—regional considerations:

Identify States by region for reporting of results with consideration to regions used in the previous study.

		Cows %	Ops %	Wtd %
1997 (23 States):				
West	CA, CO, MT, NM, OR, WY	15.53	7.29	12.23
North Central	KS, NE, ND, SD	17.56	9.42	14.30
South Central	OK, TX	21.52	21.11	21.36
Central	AR, IL, IA, MO	13.31	15.21	14.07
Southeast	AL, FL, GA, KY, MS, TN, VA	17.95	24.61	20.61
23-State % total cows in Jan. 1, 1997, and 1996 ops:		85.87	77.64	82.58
2007-08 (total 25 States):				
West	CA, CO, MT, OR, WY	12.68	6.38	10.17
North Central	KS, NE, MN, ND, OH, SD	20.54	13.42	17.69
South Central	OK, TX	22.70	23.24	22.92
Central	AR, IL, IA, MO	13.99	15.69	14.67
Southeast	AL, FL, GA, KY, MS, NC, TN, VA	18.39	25.48	21.22
25-State % total cows based on 1/2006:		88.30	84.21	86.67

III. Process for 1+ beef cows—comments, include addressing States for special consideration:

1. For each State identified that could receive consideration for being in the study, the following pros and cons are provided:

   OR has more cows than either IL or MN (in category of close to 2% cutoff) and requested inclusion for the ’97 study. The West region has the lowest representation of all regions. Therefore OR should be included.

   NM and/or ID could contribute to the representation in the West region (10.17 wtd. %, which is the lowest of the five regions). Table 6 shows that inventories and operations in both States have been decreasing, more so in NM than in ID for number of head. Since the regional representation is really low, we recommend including both States in the study. This would bring the regional representation wtd. % up to 12.55% (10.17 + 1.23 + 1.15).

2. For each of the previous study States, excluding those discussed in the previous item, identify any States that could/should be dropped.

   Both NC and OH were identified in the Group II study States as having 2% or more of either cows or operations. Each of these States is characterized by a large number of operations with beef cows (2.34% and 2.03%, respectively), but relatively few beef cows (1.15% and 0.89%, respectively). Neither State was in the ’93 and ’97 studies. Geographically NC is not needed for Southeast representation and OH really does not fit with other States in the Central region. Therefore these two States will not be included.

3. 2007-08 recommended States (total 24 States) for seeking input from the field:

		Cows %	Ops %	Wtd %
2007-08 (total 24 States):				
West	CA, CO, ID, MT, NM, OR, WY	15.48	8.12	12.55
North Central	KS, NE, ND, SD	18.48	9.44	14.86
South Central	OK, TX	22.70	23.24	22.92
Central	AR, IA, MO	12.65	13.77	13.10
Southeast	AL, FL, GA, KY, MS, TN, VA	17.24	23.14	19.59
24-State % total cows based on 1/2006:		86.55	77.71	83.02

4. Field input received based upon the 23 recommended States and projected workload in the field memo.

   The 23-State feedback suggests they were ok with getting the work done. However, a request for inclusion was received from the LA AVIC. The following discussion pertains to the consideration of making LA the 24th state for the study.

   LA was identified above in this document (section I-4 table with discussion in III-1) as one of six States that could receive consideration. Of those six States we included ID and NM for further representation in the West region. Of the six States, LA comes very close to having the most cows and operations and does have the highest weighted percent. LA ranks 23 for number of beef cows, 21 for number of beef cow operations and 24 for the weighted percent. LA is not needed for additional representation in the Southeast region. Recent work on the value of production data by State suggests that broilers account for 60% of the total followed by beef cow/calf at about 24% for LA. LA has only been included in one previous study which required field personnel - the NAHMS Equine '98 study.

   The initial allocation of the 4,000 samples to the 23 States shows the smallest group each receiving 100 operations with a predicted turnover of 41 for VS follow up. Therefore if LA were to be included the 100 would come from the other State allocations such that they would have smaller sample sizes. The main cost of including them would be the cost of administration in another State – training, distribution of materials, etc. Historically, NAHMS has gone so far as to "charge" for State inclusion to cover the added costs and therefore end up with a committed field force to in fact get the work accomplished. In conclusion, it is acceptable to include LA as they were identified as a marginal State from the beginning for inclusion. However, it is highly recommended that LA only be included if a firm commitment can be made by the AVIC and regional director to get the work accomplished.

5. 2007-08 final States (total 24 States) for seeking input from the field:

		Cows %	Ops %	Wtd %
2007-08 (total 24 States):				
West	CA, CO, ID, MT, NM, OR, WY	15.48	8.12	12.55
North Central	KS, NE, ND, SD	18.48	9.44	14.86
South Central	OK, TX	22.70	23.24	22.92
Central	AR, IA, MO	12.65	13.77	13.10

Southeast	AL, FL, GA, KY, LA, MS, TN, VA	18.65	24.75	21.08
24-State % total cows based on 1/2006:		87.96	79.32	84.51

Appendix B: NAHMS Beef '97 and CHAPA Review of Response Rates

1. Beef 1997 and CHAPA sample review

a. General Beef Management Report (NASS) response rates:

Study name	Questionnaire	Collection dates	Sample	Compl *	Compl %	Good **	% good
Beef '97	Gen Beef Mgmt Rept (NASS)	12/31/96-2/3/97	4,092	3,101	75.8	2,713	66.3
	Beef Health Report (VMO)	3/3/97-4/30/97	1,756	1,756	67.8	1,190	67.8
	Beef Feed Management Report (VMO)	8/1/97-12/17/97	1,190	952	80.0	952	80.0
CHAPA	Gen Beef Rept (NASS-tele)	9/29/92-10/9/92	5,003	3,397	67.9	2,539	50.7
	Beef Mgmt Rept (NASS)	11/9/92-12/4/92	1,189	799		799	67.2
	Beef Health Report (VMO)	1/2/93-2/28/93	799	540		540	67.6
	Beef Breeding Management Report (VMO)	7/1/93-7/30/93	799	523		523	65.5
	Close Out Production Report	1/2/94-1/31/94	799	495		495	62.0

* Includes questionnaires with inventory data, including zero inventory.

** Includes questionnaires with complete data and in-scope records, but excludes zero inventory and out of business records.

Appendix C: Preliminary NAHMS Beef 2007-08 Sample Allocation

	Cow Inventory Strata					
State	**1-49**	**50-99**	**100-199**	**200-499**	**500+**	**Total n**
AL	72	27	18	14	6	137
AR	72	33	24	18	11	158
CA	34	14	16	24	30	118
CO	34	19	23	28	21	125
FL	48	15	14	19	37	133
GA	50	19	15	11	5	100
IA	66	39	29	17	6	157
ID	23	11	13	18	18	83
KS	68	44	41	35	19	207
KY	106	41	27	17	7	198
LA	37	14	10	10	6	77
MO	123	60	43	30	13	269
MS	53	21	14	10	6	104
MT	29	21	31	52	43	176
ND	25	27	35	32	9	128
NE	49	37	44	53	46	229
NM	20	10	11	15	20	76
OK	107	52	43	38	25	265
OR	37	11	13	18	32	111
SD	31	31	45	56	32	195
TN	105	31	19	10	3	168
TX	235	91	79	78	70	553
VA	74	26	18	13	6	137
WY	13	10	16	28	29	96
All	**1511**	**704**	**641**	**644**	**500**	**4000**

Appendix D: Selected estimates from Beef 1997 with associated standard errors, coefficients of variation, and design effects

Phase I: NASS enumerator portion				
Variable	Point estimate	Standard Error	Coefficient of variation	Design effect
Percent of operations that marketed calves born in 1996 using forward pricing	1.5	0.2	13.3	0.8
Percent of operations that had only one defined breeding season	36.6	1.7	4.6	3.2
Percent of unweaned calves that died or were lost	3.4	0.11	3.2	1.6
Phase II: Veterinary medical officer visit				
Percent of operations that bred both registered and commercial cattle	21.4	2.3	10.7	3.8
Percent of operations that used estrus synchronization	11.9	1.9	16.0	4.1
Before bringing cattle onto the operation in the last 3 years, percent of operations that normally require vaccination of cattle for Brucellosis.	16.2	1.7	10.5	2.6

Appendix E: Estimated Response Rates for the Beef 2007-08 study

Estimated response percentages and counts for the Beef survey for the three study phases.

Phase	Response category	Percentage in Phase	Expected counts
Phase I			
	Zero on hand or out of business	10.0	400
	Complete and agree to continue	41.4	1,656
	Complete and do not agree to continue	23.6	944
	Response to Phase I	75.0	3,000
	Refusal	24.0	960
	Out of scope (ineligible for phase I)	1.0	40
	Total	100.0	4,000
Phase II			
	Complete	41.4*70.0=29.0	1,159
	Refusal	41.4*30.0=12.4	497
	Subtotal	41.4	1,656
	Ineligble from first phase	11.0	440
	Refusal from first phase	47.6	1,904
	Total	100.0	4,000
Phase III			
	Complete	41.4*70.0*90.0=26.1	1,043
	Refusal	41.4*70.0*10.0=2.9	116
	Subtotal	29.0	1,159
	Ineligible from first phase	11.0	440
	Refusal from first two phases	60.0	2,401
	Total	100.0	4,000