

## 1 Supporting Statement

### CONSERVATION EFFECTS ASSESSMENT PROJECT

OMB No. 0535-0245

#### B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1. **Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved during the last collection.**

The target population for the NRI-CEAP cropland assessment is all land in the 48 contiguous States which is classified by the NRI as “cultivated cropland”. During the pilot year of this program the survey will be targeting the Chesapeake Bay watershed. In the following two years the survey will be targeting cultivated cropland in two different watershed areas; these areas have yet to be determined. The sample sites are a sub-sample of the NRI Foundation Sample sites, as described below. The sampling frame can be considered to be all NRI Foundation Sample points classified as cultivated cropland, or more basically, as all non-Federal land in the 48 contiguous States, since the NRI is an area sample.

For more details, see NRCS’s “Statistical Methodology for the NRI-CEAP Cropland Survey”. This work plan covers the scope of the project, survey design, and estimation procedures. The document may be found at: [ftp://ftp-fc.sc.egov.usda.gov/NHQ/nri/ceap/ceap\\_statmethods.pdf](ftp://ftp-fc.sc.egov.usda.gov/NHQ/nri/ceap/ceap_statmethods.pdf).

- (1) NRI Foundation Sample - This sample constitutes a two-stage area sample.
  - a. Stratification was developed county-by-county, utilizing the grid of townships and sections of the Public Land Survey System (PLSS), where possible. A stratum consists of a 2-mile by 6-mile block of 12 sections. Similar strata were constructed for counties not covered by the PLSS. For some counties, these geographic strata were subdivided by factors such as irrigation and ownership patterns.
  - b. Two-stage area samples were selected within each stratum. The 1st-stage sample unit, or primary sampling unit (PSU), is an area/segment of land. Most PSU’s correspond to PLSS quarter-sections and are

nominally half-mile squares; some are as small as half-kilometer squares and others as large as a square mile. The NRI Foundation Sample contains 300,000 of these PSU's (segments).

- c. At the 2nd stage of sampling, one or more sample points were selected within each sample PSU. Three sample points were selected within most PSU's. There are over 800,000 of these sample points in the NRI Foundation Sample. The NRI data base contains site specific information on soils, land cover/use, cropping patterns, and various natural resource issues for each point.

**(2) 2011 NRI CEAP Cropland Assessment.**

NASS will not be using any substitution points for operations that screen out or refuse to participate. NASS will be using a stratified sample that will incorporate a non-response adjustment factor. The study area of interest for the 2011 NRI CEAP cropland assessment is the Chesapeake Bay watershed. The Chesapeake Bay Watershed includes parts of six States: Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia. A total of 1,552 sample locations were selected within the watershed for the NRI CEAP farmer surveys. Sample points will be drawn from the NRCS NRI data base, using a stratified sample with a non-response adjustment. Trained enumerators will collect onsite farm-field level, land management data on all activities conducted in the production of the 2011 crop. This information is unavailable through remote sensing observation. All sample locations are classified as cultivated cropland.

**(3) 2012 and 2013 NRI CEAP Cropland Assessment.**

The 2012 and 2013 cropland assessments will move to other USDA priority watersheds. Two to three different watersheds will be surveyed each year. The sample size for the NRI CEAP farmer surveys will be approximately 2,500 sample points in both 2012 and 2013 (pending approval of funds). The majority of the sample points will be classified as cultivated cropland; however, the 2012 and 2013 samples will also include fields in uncultivated cropland (pasture and hayland).

**(4) Response Rate from Previous NRI CEAP Farmer Surveys.**

The response rate in 2006 (the last year the survey was conducted) was 72.7%. The 2005 response rate was 74.8%. In Supporting Statement Part A, we referenced the target response rate of at least 80%. NASS hopes to increase our response rates by incorporating improved publicity materials in this round of data collection. In addition to the new information brochure given to the respondents, our Field Enumerators will be able to show the

respondents a 2 minute video by Secretary of Agriculture Tom Vilsack, explaining the importance of this survey. On the NASS website we will have a link for the respondents to go and read responses to the most frequently asked questions about this survey. We are also improving our training of Field Enumerators to include more talking points for them to use while they are interviewing the farmers. These talking points will center on why this survey is important to the farmers and their communities.

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

- statistical methodology for stratification and sample selection,
- estimation procedure,
- degree of accuracy needed for the purpose described in the justification,
- unusual problems requiring specialized sampling procedures.

Statistical methodology for stratification and sample selection is described above. Additional information regarding NRI methodology may be found at: <http://www.nrcs.usda.gov/technical/nri/index.html>.

The NRI utilizes points as sampling units for several reasons. Primarily, land use and land unit boundaries change frequently in certain parts of the country and, as mentioned above, certain inherent natural factors such as soil type and erosion factors do not follow human defined boundaries such as state, county, and other land unit boundaries.

The temporal nature of survey input data will be handled in several ways: (1) use of historical NRI data which is available for all sample points; (2) conservation practices, agricultural management systems, and acts of nature have lasting impacts on the environment, which will be modeled to produce results year by year; and (3) the Annual NRI utilizes a supplemented panel design, wherein each year's sample includes both a Core Panel (that is observed each year) and a supplemental (or rotating) panel.

NASS Field Office staff will receive training from experts at NRCS and the NASS Headquarters NRI CEAP Survey Administration Team. A survey administration manual will be provided to them detailing all aspects of the survey, especially the data collection and editing process. Field enumerators will be given in-depth training and will be provided with an interviewer's manual.

An advance letter and brochure will be sent to the operator of the field associated with the NRI CEAP sample site. NASS field enumerators will have both aerial photographs and county maps with the location of the sample site delineated and a questionnaire with the operator identified. The questionnaire will collect field-level information on chemical, fertilizer, and manure applications, production practices, integrated pest management data; and questions regarding

conservation practices. If the operator of the selected field has developed a farm plan with NRCS, additional information will be collected from county NRCS offices regarding conservation plans and production practices.

Specifications for data collection procedures are provided in further detail in NRCS's "Statistical Methodology for the NRI-CEAP Cropland Survey", at: [ftp://ftp-fc.sc.egov.usda.gov/NHQ/nri/ceap/ceap\\_statmethods.pdf](ftp://ftp-fc.sc.egov.usda.gov/NHQ/nri/ceap/ceap_statmethods.pdf).

Data collected during the farmer interviews will provide input to physical process models associated with the NRI sampling frame. Statistical, geospatial, and process modeling will be used to calibrate data between the smaller sample of field (where very specific information is obtained) and the larger NRI sampling network (where more generalized factors are obtained). This will provide the capability to provide state-level conservation tillage estimates and model-based assessments of impacts of conservation practices on the larger environment of the watershed.

- 3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.**

NASS plans to send a letter and brochure to respondents prior to data collection to inform them of survey selection and to outline the benefits of the survey results. In addition, the brochures will be available at USDA county offices and at agricultural fairs and seminars. Drop-in ads will be provided to the media and NASS Field Offices.

Training in refusal conversion will be given to enumerators; at the NRI CEAP training workshops, sessions are devoted to role playing for refusal conversion. Enumerators will be provided information about the value and use of the data being requested. NRCS personnel will be attending enumerator workshops to provide specific background and uses of the data and to address enumerator concerns.

- 4. Describe any tests of procedures or methods to be undertaken.**

Review of the questionnaire used in the 2006 NRI CEAP farmer survey was conducted during the spring of 2011. Updates were made based on analysis of data from the previous NRI CEAP farmer surveys.

Electronic data collection will be used to help identify the operator of the selected farm fields in which the NRI points lie. NRI sample points will be matched with the USDA Farm Service Agency (FSA) Common Land Use (CLU) geospatial database to determine the name of the farm operator. If the farm field has been registered

with FSA, the name of the current operator will be available. This will reduce the amount of time spent in gathering operator information by field enumerators and will reduce respondent burden.

An iPad application has been developed to determine if the selected point is in scope and to record the boundaries of the field containing the NRI point. The iPad application includes an aerial image of the field containing the NRI sample point and a series of screening questions. Once the enumerator has determined that the correct farm operator has been identified for the point and the field is in the land use of interest, the farm operator will draw off the borders of the selected field on the iPad aerial image. The enumerator will get a message to either "Proceed with interview" or "Do not proceed with interview", based on the screening information. The iPad is also being used in the Pilot survey in 2012 to test the connectivity of the devices in the different regions of the Chesapeake Bay watershed. This information will be used to determine the feasibility of conducting more of the survey using these devices in subsequent years.

In 2011 NASS conducted cognitive interviews of 7 farm operators in the Chesapeake watershed to see what changes could be made to the questionnaire to make it easier for the respondents to understand and complete. Several changes were made to the order of the questions and the inclusion of any screening questions.

The Pilot survey will be conducted in 2012 as the first year of the program. Results of this survey will be used to improve the questionnaire in the second and third year of this approval, if warranted.

**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), or other person(s) who will actually collect and/or analyze the information for the agency.**

Specifications, sample design, and survey design were developed by Jeff Goebel, NRCS (301) 504-2341.

Data collection is carried out by NASS Field Offices; Director of Eastern Field Operations is Norman Bennett (202) 720-3638; Director of Western Field Operations is Janice Goodwin (202) 720-8220.

The NASS survey statistician contact is Julia Klapproth, (202)720-6469 in the Environmental and Economic Surveys Section of the Program Administration Branch, Census and Survey Division. She is responsible for coordination of sampling, questionnaires, data collection, data processing, and Field Office support.

The NASS commodity statistician contact is Liana Cuffman, (202)690-0392 in the Environmental and Demographics Section of the Environmental, Economics, and Demographics Branch, Statistics Division. She is responsible for the analysis and delivery of the final edited data file to NRCS.

July, 2011