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 2014 NRI CEAP cropland assessment is all land in the St. Francis River Basin (Arkansas, Missouri and Mississippi) which is classified by the NRI as "cultivated and non-cultivated cropland". NASS will only be surveying points in the St. Francis River watershed in Arkansas and Missouri. The target population for the 2015 and 2016 NRI CEAP cropland assessment is all land in the 48 contiguous States which is classified by the NRI as "cultivated and non-cultivated cropland". 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 and non-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.

(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 sage 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) 2014 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 2014 NRI CEAP cropland assessment is the St. Francis River watershed. The St. Francis River Watershed will include parts of two States: Arkansas and Missouri. A total of 1,700 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 2014 crop. This information is unavailable through remote sensing observation. All sample locations are classified as cultivated cropland.

(3) 2015 and 2016 NRI CEAP Cropland Assessment.

The 2015 and 2016 cropland assessments will move to other USDA priority watersheds spread across the US. Multiple watersheds will be surveyed each year. The sample size for the NRI CEAP farmer surveys will be approximately 22,000 sample points in both 2015 and 2016 (pending approval of funds). The majority of the sample points will be classified as cultivated and non-cultivated cropland.

(4) Response Rate from Previous NRI CEAP Farm Operator Surveys.

The response rate in 2013 (Sacramento River, San Joaquin and Tulare Lake Basin watersheds) was 64.0%. The response rate in 2012 (Western Lake Erie Basin and the Des Moines River watersheds) was 72.2%. 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. 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.

NASS used the OMB approved methodology for calculating the response rates for 2012 and 2013.

The decrease in response rate for 2013 survey (Sacramento River, San Joaquin and Tulare Lake Basin watersheds) can be explained with the following background information.

With the CEAP survey NASS collects data for the National Resources Inventory (NRI) locations. These locations or points on a map are matched against the Farm Service Agency's (FSA) database to determine who is operating that land. NASS then looks through all the farm names and looks for duplications; in order to minimize the number of contacts we make on any individual farmer. When NASS attempted to match the NRI points against the FSA data base we had a lot of points that did not have names and addresses associated with them. Therefore when we went out to conduct the Identification Phase of the survey we discovered that some of the large fruit and vegetable farmers in California had land that was associated with numerous NRI points. A few operators had as many as 10 points in their operations. These operators were willing to provide us with data for a couple of their fields, but they did not want to complete 10 separate questionnaires, resulting in a higher than normal refusal rate.

Farm operators voluntarily register their program crop acres with FSA, and since crops such as fruits, nuts and vegetables are generally not included in the FSA programs, there is little incentive for these farmers to participate in the voluntary sign up program with FSA.

With the rotation of target areas NASS expects to return to a response rate in the low to mid 70% range and with improved publicity materials we hope to move closer to the 80% completion rate.

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/Internet/FSE_DOCUMENTS/stelprdb1167354.pdf

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.

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.

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.

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 was used in the 2011 Pilot survey (data collected in2012) to test the connectivity of the devices in the different regions of the Chesapeake Bay watershed. This information was used to determine the feasibility of conducting more of the survey using these devices in subsequent years.

In 2013 NASS conducted cognitive interviews of 7 farm operators in the Sacramento River watershed to see what changes could be made to the questionnaire to make it easier for the respondents to understand and complete. The interviews verified that the layout of the Fertilizer, Manure, and Pesticide application tables should extend to trees and vines (i.e., “non-cultivated” cropland). Additionally, we verified that the mandatory Pesticide Use Reports that farmers filed with the California State EPA directly translate to the current items in the Pest Control applications table, allowing for the direct transfer of data from these California Pesticide Use Reports. Newly-added questions in the irrigation

section held up very well during testing with very few issues and minimal misunderstanding. Grammatical and minor formatting changes were made to improve the look and flow of the questionnaire. Enhancements were added to the questionnaire and enumerator documents to aid in clarification of questions and or terminology during data collection. There were no substantial issues with the current layout or content of the questionnaire.

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 Patrick Flanagan, NRCS (301) 504-2222.

Data collection is carried out by NASS State and Regional Field Offices; Director of Field Operations is Kevin Barnes (202) 720-8220.

The NASS survey statistician contact is Torey Lawrence, (202)720-6469 in the Environmental and Economic Surveys Section of the Survey Administration Branch, Census and Survey Division. He 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.

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