# The USDA/NASS Cropland Data Layer

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**Biographical Sketch of Authors**

Rick Mueller is a Remote Sensing Analyst with the Spatial Analysis Research Section. He is involved in systems integration, training, and project support for the Cropland Data Layer Program. Rick's interests include: enhancing software functionality, improving remote sensing acreage estimation techniques, maintaining software documentation, and training NASS Remote Sensing Analysts. Rick is also responsible for researching applications using the AVHRR sensor for crop condition assessment. Larry W. Beard is currently Head of the Economics Section, and has served in a broad capacity with NASS throughout his 26 year career. As State Director of the North Dakota Agricultural Statistics Service, from 1994-2001, Larry positioned the office to lead in the development of the statewide Cropland Data Layer. Prior to that, Larry was the Executive Assistant to the Administrator from 1990 - 1994, in Washington, D.C., and had tours in the Indiana, Idaho, and North Dakota State Statistical Offices. He is a native Texan, graduate of Texas Tech University, and proudly served his country in the U.S. Marine Corps during the Vietnam era. Dath Mita is a GIS/Remote Sensing Specialist with North Dakota State University (NDSU) Extension Service and North Dakota Agricultural Statistics Service (NDASS). He is involved in the production of remotely sensed cropland data for the state of North Dakota as part of the in-state agreement between NDASS and NDSU. Dath Mita is a project leader for Satellite Imagery Applications to Water Quality Project in North Dakota.

**Abstract**

The USDA National Agricultural Statistics Service (NASS) is currently producing an annual ortho-rectified Cropland Data Layer (CDL) product in six agriculturally intensive States, and working on pilot projects in three other States. The states in production include; Arkansas, Illinois, Indiana, Iowa, Mississippi, and North Dakota, and pilot states of Missouri, Nebraska, and New Mexico. The CDL program provides a detailed categorized census of planted acreage for participating states. The CDL is available by state and includes the latest two years worth of categorized data in commercial vendor format, when available. The CDL is published in the public domain and released on CD-ROM.

The CDL uses raw imagery collected from the Landsat 5 TM and 7 ETM+ sensors during the growing season, and ground data collected during NASS's June Agricultural Survey to train the classifier. Each raw scene is co-registered to an ortho-rectified base image provided by EarthSat Inc, and the correlation coefficients from the base co-registration are applied to the categorized scenes. The categorized images are stitched together based on scene priority. The strengths of the CDL program are the positional accuracy of the imagery, and the detailed mapping of the major commodities that are grown in a given state.

The CDL program represents a unique cooperative venture between three USDA Agencies (the Spatial Analysis Research unit of NASS, the Foreign Agriculture Service, and the Farm Service Agency) plus in-state agreements between the NASS State Statistical Field Offices and their respective state government and/or university partners. Customer uses of the CDL include; Federal, State, and County Governments, universities; global change, soils, and water quality assessment, farm organizations, seed, fertilizer and pesticide companies, farm equipment dealers, farm real estate, agribusinesses, and grain transit companies to name a few.