

**USDA Service Center Agencies
Geospatial Data Management Team
Data Management Plan For**

Major Land Resource Area Data v4.2

January 2008

I. Purpose and Scope (business case)

A. Purpose

Major land resource areas (MLRAs) are geographically associated Land Resource Units (LRUs). Identification of these large areas is important in statewide agricultural planning and has value in interstate, regional, and national planning.

Land resource categories historically used at state and national levels are land resource units, land resource areas, and land resource regions. LRUs are the basic units from which MLRAs are determined. They are also the basic units for state land resource maps. LRUs are typically coextensive with state general soil map units, but some general soil map units are subdivided into LRUs because of significant geographic differences in soils, climate, water resources, or land use. LRUs generally are several thousand acres in size. A unit can be one continuous area or several separate areas that are near each other. In 2005, these areas were designated as common resource areas (CRAs) within the Natural Resources Conservation Service (NRCS).

CRAs are created by subdividing MLRAs by topography, other landscape features, hydrologic units, resource concerns, resource uses, and human considerations affecting use and soil and water conservation treatment needs.

The MLRA Geographic Database was prepared for Agricultural Handbook 296 re-publication and is used to support decisions about regional and national agricultural issues. MLRAs Geographic Database and Agriculture Handbook 296 helped to identify the need for research and resource inventories, and it became the vehicle for extrapolating the results of research across political boundaries. It also became the basis for organizing and operating natural resource conservation programs. Today, USDA soil survey offices are organized to serve groups of the major land resource areas defined in this handbook. The handbook was updated in 1978, and the second edition was printed in 1981. This 2006 version of the handbook is the third edition.

B. Scope

The scope is the United States (all 50 states), the Pacific Basin and Caribbean.

II. Acquisition

A. Data Source

1. Producer Information
 - a. Name

USDA / National Soil Survey Center

b. Location of Headquarters

100 Centennial Mall North, Room 152
Lincoln, NE 68508-3866

Internet Address

<http://soils.usda.gov/>

2. Publisher Information

a. Name

USDA / National Soil Survey Center

b. Location of Headquarters

100 Centennial Mall North, Room 152
Lincoln, NE 68508-3866

c. Internet Address

<http://soils.usda.gov/>

3. Acquisition Information

a. Delivery Media

ftp download

b. Download URL

<ftp://ftp-fc.sc.egov.usda.gov/NSSC/MLRA/>

c. Projected Data Availability Schedule

Currently available

B. Standards Information

1. Geospatial Data Standard

a. Standard Name and Steward Information

United States Department of Agriculture (USDA) Service Center Agencies (SCA)
Standard For Geospatial Data

b. Standard Version

SCI Std 003-02
October 15, 2003

c. Standard URL

<http://www.itc.nrcs.usda.gov/scdm/docs/SPG-GeospatialDataStandard.pdf>

2. Metadata Standard

a. Standard Name and Steward Information

Metadata are compliant with:
Federal Geographic Data Committee (FGDC)
Content Standard for Digital Geographic Metadata FGDC
STD-001-1998 Version 2 revised June 1998

And:
United States Department of Agriculture (USDA) Service Center Agencies (SCA)
Standard For Geospatial Dataset Metadata
SCI Std 003-02 October 15, 2003

<http://www.itc.nrcs.usda.gov/scdm/docs/SPG-GeospatialDatasetFileMetadata.pdf>

b. Description of Metadata Captured

The Federal Geographic Data Committee's content standard for digital geospatial metadata (<http://www.fgdc.gov/metadata>) is used to document MLRA data.

c. Metadata Accuracy and Completeness Assessment

The metadata is accurate and minimally complete.

C. Acquired Data Structure

1. Geospatial Data Format

a. Format (raster, vector, etc.)

Vector

b. Format Name

ESRI shapefile

c. Data Extent

United States (all 50 states), the Pacific Basin and Caribbean.

d. Horizontal and Vertical Resolution

Horizontal resolution is the same as 1:250,000 USGS base maps for the conterminous United States and 1:1,000,000 USGS base maps for Alaska.

Vertical resolution is not measured.

e. Absolute Horizontal and Vertical Accuracy

These data have a scale dependency use constraint and should not be applied at map scales generally larger than 3,500,000. Original compilation scales included 1:250,000 USGS base maps for the conterminous United States and 1:1,000,000 USGS base maps for Alaska.

f. Nominal Scale

1:250,000 for the conterminous United States and 1:1,000,000 for Alaska.

g. Horizontal and Vertical Datum

The horizontal datum is North American Datum 1983.
The vertical datum is N/A.

- h. Projection
 - Geographic
- i. Coordinate Units
 - Decimal Degrees
- j. Average Data Set Size
 - About 37 mb.
- k. Symbology
 - None

2. Attribute Data Format

- a. Format Name
 - ESRI shapefiles
- b. Database Size
 - About 37 mb.

3. Data Model

- a. Geospatial Data Structure
 - The MLRA consists of polygons in a seamless, consistent dataset for the nation, in ESRI shapefile format.
- b. Attribute Data Structure
 - ESRI shapefiles
- c. Database Table Definition
 - ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf
- d. Data Relationship Definition
 - ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf
- e. Data Dictionary
 - ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf

D. Policies

- 1. Restrictions
 - a. Use Constraints

None

b. Access Constraints

None

c. Certification Issues

None

2. Maintenance

a. Temporal Information

Version 4.2 - 2006

b. Average Update Cycle

As needed.

E. Acquisition Cost

1. Cooperative Agreement

a. Description of Agreement

None

b. Status of Agreement

None

2. Cost to Acquire Data

None

III. Integration

A. Value Added Process

1. Benefit to the Service Center

The MLRA layer is used as a basis for decisions regarding national and regional land resource issues targeting efforts in education, finance, and technical services. It is also used to identify needs for research and additional inventories, as well as a vehicle for extrapolating research results across political boundaries. We are simply making the layer easily available to order, by State, thru the Data Gateway.

2. Process Model

a. Flow Diagram

Import data into SDE, add ST field (State), populate ST field, serve on Data Gateway, orderable by State. See Process Description for details.

b. Process Description

1. Data Loading Steps

a. Copy MLRA shapefile to a folder on a server that has SDE.

- b. Open a command prompt and navigate to the folder where the shapefile is located.
 - c. Run the SDE Import command.
 - d. Verify data has been imported into the feature layer by testing at random.
 - e. Download reference layer for populating layer for State FIPS codes in the ST field.
2. Populate Feature Classes with Index values
Since the data is served by State, the ST field is created and populated.
- a. Ensure that target layer (MLRA) is not registered as version in SDE. If it is versioned, click on unregister as version.
 - b. Right click on target layer (MLRA), open attribute table, choose options button, and choose 'Add Field' command to add the identifier field ST. Set the new column to be text and a width of at least 25 characters.
 - c. To begin, on the toolbar developed by Ravi Kaushika (Ravi.Kaushika@ftw.usda.gov) click on 'IDS for GDW' command button to open 'Populate Layers with Identifiers 4 Data Gateway' gateway window.
 - d. Enter information in 'Populate Layers with Identifiers 4 Data Gateway'. Identifier range text boxes are provided to provide the ability to populate target layers into different batches of FIPS or HUC_8 codes. Select the identifier reference layer from the drop down.
 - e. Select the target layer (MLRA) that requires the identifiers to be populated.
 - f. Click on 'Populate Layers' button to begin and complete the population process.
3. Gateway Preparation and Loading
- a. Run DataServices_Driver and generate the MLRA state shape files
 - b. Run CatalogFP_Maker and generate the catalog shape files.
 - c. Create the Status Maps (link from "Status Maps" page)
 - d. Run MakePreviews for Images.
 - e. Make a gateway News file.
 - f. Notify gateway Fort Collins team to load the catalogs, status maps and news

3. Technical Issues

- a. Tiling
 - None
- b. Compression
 - None
- c. Scale
 - 1:250,000 (except in Alaska – 1:1,000,000)
- d. Tonal Matching
 - None

- e. Edge-matching

None

4. Quality Control

- a. Procedures

Visual quality check

- b. Acceptance Criteria

Visual quality check

5. Data Steward

- a. Name and Organization

Steve Peaslee – GIS Specialist
National Soil Survey Center
Lincoln, Nebraska
(402) 437-4084

- b. Responsibilities

Storage and access of the data

B. Integrated Data Structure

1. Geospatial Data Format

- a. Format (raster, vector, etc.)

Vector

- b. Format Name

ESRI shapefile

- c. Data Extent

Same as source data

- d. Horizontal and Vertical Resolution

Same as source data

- e. Absolute Horizontal and Vertical Accuracy

Same as source data

- f. Nominal Scale

Same as source data

- g. Horizontal and Vertical Datum

Same as source data

- h. Projection
 - Geographic
- i. Coordinate Units
 - Degrees
- j. Symbology
 - None

2. Attribute Data Format

- a. Format Name
 - ESRI shapefile
- b. Database Size
 - ~37 mb

3. Data Model

- a. Geospatial Data Structure
 - ESRI ArcSDE
- b. Attribute Data Structure
 - ESRI ArcSDE
- c. Database Table Definition
 - See ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf
- d. Data Relationship Definition
 - See ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf
- e. Data Dictionary
 - See ftp://ftp-fc.sc.egov.usda.gov/NSSC/Ag_Handbook_296/Handbook_296_low.pdf

C. Resource Requirements

1. Hardware and Software

This is unknown at this time.

2. Staffing

This is unknown at this time.

D. Integration Cost

1. Hardware and Software

This is unknown at this time.

2. Staffing

This is unknown at this time.

IV. Delivery

A. Specifications

4. Directory Structure

a. Folder Theme Data is Stored In

F:/geodata

5. File Naming Convention

<http://www.itc.nrcs.usda.gov/scdm/scgdm.htm>

a. List of Theme Files and The File Naming Convention

mlra_a_<st> - Full US polygon data of Major Land Resource Areas (MLRA) inside, crossing or touching state.

B. User Information

1. Accuracy Assessment

a. Alignment with Other Theme Geospatial Data

These data have a scale dependency use constraint and should not be applied at map scales generally larger than 3,500,000. Original compilation scales included 1:250,000 USGS base maps for the conterminous United States and 1:1,000,000 USGS base maps for Alaska.

b. Content

These data have a scale dependency use constraint and should not be applied at map scales generally larger than 3,500,000.

2. Appropriate Uses of the Geospatial Data

a. Display Scale

The original data source scale or smaller, usually 1:250,000.

b. Plot Scale

The original data source scale or smaller, usually 1:250,000.

c. Area Calculations

Area Calculations are as accurate as the source data and capture scale and the algorithm used by ESRI software.

d. Decision Making

Area Calculations are as accurate as the source data and capture scale and the algorithm used by ESRI software.

C. Maintenance and Updating

1. Recommendations and Guidelines

a. Original data location and structure

USDA / National Soil Survey Center
Lincoln, NE 68508

ESRI shapefile

b. Update Cycle

TBD

c. Availability

When the source data is updated.

d. Change Control

This is to be determined.