Final land cover classification for the Fort Cobb Reservoir watershed, 2006

Metadata:

Identification Information:

Citation:
Citation Information:
Originator: Carol S Mladinich, USGS Geosciences and Environmental Change
Publication Date: 01/15/2008
Title: Final land cover classification for the Fort Cobb Reservoir watershed, 2006
Geospatial Data Presentation Form: Raster Digital Data Set
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Larger Work Citation:
Citation Information:
Publication Date: 2011
Title: Assessment of Conservation Practices in the Fort Cobb Reservoir
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Series Information:
Series Name: USGS Scientific Investigations Report
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Publication Place: Reston, VA
Publisher: U.S. Geological Survey
Online Linkage: http://pubs.usgs.gov/sir/2010/5257/

Description:
Abstract:

Land-cover data is a key input to understanding the effects of conservation practices on the Fort Cobb Reservoir watershed in southwestern Oklahoma. Land use in this watershed is predominantly agriculture and a multidate, multisensory set of satellite images for 2006 was obtained to map the land cover in the watershed using an objectoriented approach with the Definiens Professional software. An object oriented approach segmented the data into features including agricultural fields, tree stands, riparian vegetation, water bodies, and some anthropogenic features such as buildings and some road segments. The software also enabled simultaneous processing of all the imagery in spite of the different spatial and radiometric resolutions and geographic areal extents. A common practice by image analysts of incorporating previous land-cover classifications to aid interpretation was not used because of the changing character of

agriculture in the watershed. The classification of land cover to the level of crop types was only partially successful due to limited groundreference data. Winter wheat, summer crops, fallow fields, and areas of natural vegetation were identified with accuracies in the 90 percent range and were comparable to a 2005
land-cover classification produced by the U.S. Department of Agriculture, Agricultural Research Service Grazinglands Research Laboratory in Oklahoma.

Purpose:

The data was collected as part of a larger assessment of conservation practices in the Fort Cobb Reservoir watershed in southwestern Oklahoma by the USGS and USDA Agricultural Research Service. The Fort Cobb Reservoir watershed encompasses about 813 square kilometers of rural farm land in Caddo, Custer, and Washita Counties in southwestern Oklahoma. The Fort Cobb Reservoir and six stream segments were identified on the Oklahoma 1998 303(d) list as not supporting designated beneficial uses because of impairment by nutrients, suspended solids, sedimentation, pesticides, and unknown toxicity. As a result, State and Federal agencies, in collaboration with conservation districts and landowners, started conservation efforts in 2001 to decrease erosion and transport of sediments and nutrients to the reservoir and improve water quality in tributaries. The U.S. Department of Agriculture selected the Fort Cobb Reservoir watershed in 2003 as 1 of 14 benchmark watersheds under the Conservation Effectiveness Assessment Project with the objective of quantifying the environmental benefits derived from agricultural conservation programs in reducing inflows of sediments and phosphorus to the reservoir. In November 2004, the Biologic, Geographic, Geologic, and Water Disciplines of the U.S. Geological Survey, in collaboration with the Agricultural Research Service, Grazinglands Research Laboratory in El Reno, Oklahoma, began an interdisciplinary investigation to produce an integrated publication to complement
this program.
This publication is a compilation of 10 report chapters describing land uses, soils, geology, climate, and water quality in streams and the reservoir through results of field and remote sensing investigations from 2004 to 2007. The investigations indicated that targeting best-management practices to small intermittent streams draining to the reservoir and to the Cobb Creek subwatershed may effectively augment efforts to improve eutrophic to hypereutrophic conditions that continue to affect the reservoir. The three major streams flowing into the reservoir contribute nutrients causing eutrophication, but minor streams draining cultivated fields near the reservoir appeared to be disproportionate contributors of nutrients. Increasing conservation practices on small streams may have a greater effect in mitigating eutrophication in the reservoir than additional installation of such measures on the larger creeks.

Time Period of Content:

Time Period Information:

Multiple Dates/Times:

Single Date/Time:
Calendar Date: 04/15/2006

Single Date/Time:
Calendar Date: 04/21/2006

Single Date/Time:
Calendar Date: 06/06/2006

Single Date/Time:
Calendar Date: 07/01/2006

Single Date/Time:
Calendar Date: 09/26/2006

Single Date/Time:

Calendar Date: 10/24/2006

Currentness Reference:

ground condition

Status:

Progress:

Complete

Maintenance and Update Frequency: None planned

Spatial Domain:

Description of Geographic Extent:

Bounding Coordinates:

West Bounding Coordinate: -98.840779325

East Bounding Coordinate: -98.340927699

North Bounding Coordinate: 35.53749159

South Bounding Coordinate: 35.088741986

Keywords:

Theme:

Theme Keyword Thesaurus: None

Theme Keyword: land cover

Theme Keyword: Landsat

Theme Keyword: ALI

Theme Keyword: AWiFS

Theme Keyword: object oriented

Theme Keyword: eCognition

Theme Keyword: agriculture

Place:

Place Keyword Thesaurus: None

Place Keyword: Fort Cobb Reservoir

Place Keyword: Oklahoma

Access Constraints: None. Please see 'Distribution Info' for details.

Use Constraints:

None. Users are advised to read the data set's metadata thoroughly to understand appropriate use and data limitations.

Point of Contact:

Contact Information:

Contact Organization Primary:

Contact Organization: U.S. Geological Survey, USGS Rocky Mountain Area

Contact Person: Carol S Mladinich

Contact Position: Research Physical Scientist

Contact Address:

Address Type: mailing address

Address: Mail Stop 980, West 6th Ave. & Kipling St., DFC Bldg. 25

City: Lakewood

State or Province: CO

Postal Code: 80225-0046

Country: US

Contact Voice Telephone: 303-236-1411

Contact Facsimile Telephone: 303-236-5349

Contact Electronic Mail Address: csmladinich@usgs.gov

Data Set Credit:

Set Credit: USDA NRCS Anadarko Field Service Center provided land-cover information for the selected points in Caddo county for the accuracy assessment.

Native Data Set Environment:

Environment as of Metadata Creation: Microsoft Windows 7 Version 6.1 (Build 7601) Service

Pack 1; ESRI ArcCatalog 10.2 (Build 3348) Service Pack [N/A] (Build [N/A])

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Data Quality Information:

Attribute Accuracy:

Attribute Accuracy Report:

Overall accuracy 94.85% Kappa 0.92

Producer's accuracy	User's accuracy
Other summer crop 100.00%	92.86%
Winter wheat 92.86%	96.30%
Natural vegetation 94.34%	94.34%
Fallow 100.00%	100.00%
Water 100.00%	100.00%

for complete report see: Mladinich, C.S., 2011, Terrestrial remote sensing of the Fort Cobb watershed, southwestern Oklahoma, ch 4, in Becker, C.J., ed., Assessment of conservation practices in the Fort Cobb Reservoir watershed, southwestern Oklahoma: Reston, VA, U.S. Geological Survey Scientific Investigations Report 2010-5257, p. 12.

Logical Consistency Report:

Not applicable, raster data set

Completeness Report:

Data set is considered complete for the information presented, as described in the abstract. Users are advised to read the rest of the metadata record carefully for additional details.

Positional Accuracy:

Horizontal Positional Accuracy:

Horizontal Positional Accuracy Report:

A formal accuracy assessment of the horizontal positional information in the data set has not been conducted.

Vertical Positional Accuracy:

Vertical Positional Accuracy Report:

A formal accuracy assessment of the vertical positional information in the data set has either not been conducted, or is not applicable. All data sets were received independently georeferenced, for more accurate multi-date analysis the data sets were then vertically or co-registered to the 10m pansharpened ALI data set.

Lineage:

Source Information:

Source Citation:

Citation Information:

Publication Date: 2011

Geospatial Data Presentation Form: Digital and/or Hardcopy Resources

Publication Information:

Type of Source Media: Digital and/or Hardcopy Resources

Source Time Period of Content:

Time Period Information:

Single Date/Time:

Calendar Date:

Source Currentness Reference:

Source Citation Abbreviation:

Source Input 1

Source Contribution:

for complete set of inputs see: Mladinich, C.S., 2011, Terrestrial remote sensing of

the Fort Cobb watershed, southwestern Oklahoma, ch 4, in Becker, C.J., ed., Assessment of conservation practices in the Fort Cobb Reservoir watershed, southwestern Oklahoma: Reston, VA, U.S. Geological Survey Scientific Investigations Report 2010-5257, p. 12.

Process Step:

Process Description:

for complete report on data processing see: Mladinich, C.S., 2011, Terrestrial remote sensing of the Fort Cobb watershed, southwestern Oklahoma, ch 4, in Becker, C.J., ed., Assessment of conservation practices in the Fort Cobb Reservoir watershed, southwestern Oklahoma: Reston, VA, U.S. Geological Survey Scientific Investigations Report 2010-5257, p. 12.

Process Date: 01/15/2008

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Spatial Data Organization Information:

Direct Spatial Reference Method:

Raster

Raster Object Information:

Raster Object Type: Grid Cell
Row Count: 4905
Column Count: 4374
Vertical Count: 1

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Spatial Reference Information:

Horizontal Coordinate System Definition:

Planar:

Map Projection:

Map Projection Name: Albers Conic Equal Area (ESRI Full Name: Albers_Conic_Equal_Area)

Albers Conical Equal Area:

Standard Parallel: 29.5
Standard Parallel: 45.5
Longitude of Central Meridian: -96.0
Latitude of Projection Origin: 23.0
False Easting: 0.0
False Northing: 0.0

Planar Coordinate Information:

Planar Coordinate Encoding Method: row and column

Coordinate Representation:

Abscissa Resolution: 10.0
Ordinate Resolution: 10.0

Planar Distance Units: Meter

Geodetic Model:

Horizontal Datum Name: D_North_American_1983
Ellipsoid Name: GRS_1980

Semi-major Axis: 6378137.0
Denominator of Flattening Ratio: 298.257222101

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Entity and Attribute Information:

Detailed Description:
Entity Type:
Entity Type Label: Attribute Table
Entity Type Definition:
Table containing attribute information associated with the data set.
Entity Type Definition Source:
Producer defined
Attribute:
Attribute Label: Value
Attribute Definition:
Classification pixel value
Attribute Definition Source:
Producer defined
Attribute Domain Values:
Range Domain:
Range Domain Minimum: 0
Range Domain Maximum: 33
Attribute:
Attribute Label: Count
Attribute Definition:
Number of pixels with Value
Attribute Definition Source:
Producer defined
Attribute Domain Values:
Range Domain:
Range Domain Minimum: 38023
Range Domain Maximum: 7540148
Attribute:
Attribute Label: Name
Attribute Definition:
Class value assignment
Attribute Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: {Null Value / Empty Field Entry}
Enumerated Domain Value Definition:
Unknown
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-02
Enumerated Domain Value Definition:
corresponds to Value number durning classification

Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-04
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-05
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-06
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-07
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-11
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-15
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-17
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:

Enumerated Domain Value: Class-26
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-31
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Class-33
Enumerated Domain Value Definition:
corresponds to Value number durning classification
Enumerated Domain Value Definition Source:
Producer defined

Attribute:
Attribute Label: Class_Name
Attribute Definition:
Class name assignment
Attribute Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: {Null Value / Empty Field Entry}
Enumerated Domain Value Definition:
Unknown
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Ag spring/summer
Enumerated Domain Value Definition:
corresponds to class name identified durning classification interpretation identified as having growth in both spring and summer
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Ag spring/summer/fall
Enumerated Domain Value Definition:
corresponds to class name identified durning classification interpretation identified as having growth in spring, summer, and fall
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Ag summer
Enumerated Domain Value Definition:
corresponds to class name identified durning classification

interpretation identified as having growth in only summer

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Ag summer/fall

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretationidentified as having growth in both summer and fall

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Developed

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretation identified as developed

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Fallow

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretation, fallow during spring/summer/fall

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Grass

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretation identified as grass/pasture

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Natural vegetation

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretation, mixed natural vegetation

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Natural vegetation (trees)

Enumerated Domain Value Definition:

corresponds to class name identified durning classification interpretation, predominantly trees

Enumerated Domain Value Definition Source:

Producer defined

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Water
Enumerated Domain Value Definition:
corresponds to class name identified durning classification interpretation
Enumerated Domain Value Definition Source:
Producer defined
Attribute Domain Values:
Enumerated Domain:
Enumerated Domain Value: Winter wheat
Enumerated Domain Value Definition:
corresponds to class name identified durning classification interpretation identified as winter wheat - growth in fall and spring
Enumerated Domain Value Definition Source:
Producer defined
Overview Description:
Entity and Attribute Overview:
The entity and attribute information provided here describes the tabular data associated with the data set. Please review the detailed descriptions that are provided (the individual attribute descriptions) for information on the values that appear as fields/table entries of the data set.
Entity and Attribute Detail Citation:
The entity and attribute information was generated by the individual and/or agency identified as the originator of the data set. Please review the rest of the metadata record for additional details and information.

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Distribution Information:

Distributor:
Contact Information:
Contact Organization Primary:
Contact Organization: U.S. Geological Survey, USGS Rocky Mountain Area
Contact Person: Carol S Mladinich
Contact Position: Research Physical Scientist
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Address Type: mailing address
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State or Province: CO
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Country: US
Contact Voice Telephone: 303-236-1411
Contact Facsimile Telephone: 303-236-5349
Contact Electronic Mail Address: csmladinich@usgs.gov
Distribution Liability:
Distributor assumes no liability for misuse of data.
Standard Order Process:
Digital Form:
Digital Transfer Information:
Format Name: Raster Digital Data Set
Digital Transfer Option:

Online Option:
Computer Contact Information:
Network Address:
Network Resource
*Name:*http://pubs.usgs.gov/sir/2010/5257/fc_landcover_2006.zip
Fees: None. No fees are applicable for obtaining the data set.

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Metadata Reference Information:

Metadata Date: 02/12/2014
Metadata Contact:
Contact Information:
Contact Person Primary:
Contact Person: Carol S Mladinich
Contact Organization: U.S. Geological Survey, USGS Rocky Mountain Area
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City: Lakewood
State or Province: CO
Postal Code: 80225-0046
Country: US
Contact Voice Telephone: 303-236-1411
Contact Facsimile Telephone: 303-236-5349
Contact Electronic Mail Address: csmladinich@usgs.gov
Metadata Standard Name: FGDC Content Standard for Digital Geospatial Metadata
Metadata Standard Version: FGDC-STD-001-1998

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