

Identification_Information:

Citation:

Citation_Information:

Originator: U.S. Geological Survey

Publication_Date: 20070801

Title:

Lower Wilderness, Deadhorse, Gene Rush, Pruitt Complex, Buffalo Point Maint. Fires of Buffalo National River - 2007

Geospatial_Data_Presentation_Form:

Raster digital data.

Vector data are also available as ArcView Shape Files.

Publication_Information:

Publication_Place: Sioux Falls, South Dakota USA

Publisher: U.S. Geological Survey

Online_Linkage: <http://edc.usgs.gov>

Description:

Abstract:

The U.S. Geological Survey (USGS) has entered into a cooperative agreement with the National Park Service (NPS) to deliver satellite imagery and derivative products centered on major fires that impact national parks and other federal lands. This data set was compiled at the request of a federal land management agency and is part of a suite of products generated for a specific fire.

See the National Burn Severity Mapping web site at:

http://edc2.usgs.gov/fsp/severity/fire_main.asp

Purpose:

The purpose of this project is to develop a robust mapping methodology and consistent data products that allow federal land managers and fire ecologists to evaluate and compare burn severity within individual fires and between fires across various ecosystems. These products will help land managers to more effectively plan, implement and monitor fire recovery activities.

Supplemental_Information:

Fire Names: Lower Wilderness, Deadhorse, Gene Rush, Pruitt Complex, Buffalo Point Maint.

Agency: National Park Service

Land Management Unit: Buffalo National River

Date of Fires: 3/5/07, 2/9/07, 3/5/07, 2/20/07, 3/27/07

Type of assessment: Extended (all)

Acres within Fire Perimeters: 11260, 560, 1220, 880, 700

Landsat Path and Row: 25/35

Pre-Fire Landsat Date/Scene ID:

Landsat 5; July 26, 2005/LT5025035000520710

Post-Fire Landsat Date/Scene ID:

Landsat 5; Aug. 1, 2007/LT5025035000721310

Output Dataset Projection: UTM

UTM Zone: 15

Datum Name: NAD83

Spheroid Name: GRS80

Image subset Corner Coordinate (center of upper left pixel, projection meters)

ULX: 458160 LRX: 562980

ULY: 4009560 LRY: 3966600

Image subset size:

#Rows: 1433

#Columns: 3495

Pixel size: 30 meters

Bounding Box:

North Lat: 36 13 52 N

South Lat: 35 50 40 N

East Long: 92 18 01 W

West Long: 93 27 59 W

Latitude and Longitude within Fire Perimeter:

Lower Wilderness Lat: 36 07 15 N Long: 92 27 09 W

Deadhorse 36 07 24 N 92 28 32 W

Gene Rush 35 58 02 N 93 02 21 W

Pruitt Complex 36 03 08 N 93 07 31 W

Buffalo Point Maint. 36 04 38 N 92 34 41 W

Fire Perimeters: Provided by park personnel.

For further information on NLAPS and Landsat TM data, please refer to the metadata documentation found on the USGS Clearinghouse website at:

<http://www.fgdc.gov/clearinghouse/clearinghouse.html>

Product List:

buff07b_pretm.tif

July/2005 Pre-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

buff07b_postm.tif

August/2007 Post-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

buff07b_dnbr

Differenced Normalized Burn Ratio (DNBR) subset (16 bit ArcInfo GRID)

buff07b_pi

Fire Perimeter (shape file)(Includes cloud mask)

buff07b_hist.xls

DNBR pixel count within the fire perimeter (excel file)

d253507050807

07/05 - 08/07 Full Scene DNBR (16 bit ArcInfo GRID)

Also See the Burn Severity Website:

http://burnseverity.cr.usgs.gov/fire_main.asp

Time_Period_of_Content:

Time_Period_Information:

Multiple_Dates/Times:

Single_Date/Time:

Calendar_Date: 20050726 (pre-fire image)

Single_Date/Time:

Calendar_Date: 20070305 (date Lower Wilderness Fire began)

Single_Date/Time:

Calendar_Date: 19780209 (date Deadhorse Fire began)

Single_Date/Time:

Calendar_Date: 20070305 (date Gene Rush Fire began)

Single_Date/Time:

Calendar_Date: 20070220 (date Pruitt Complex Fire began)

Single_Date/Time:

Calendar_Date: 20070327 (date Buffalo Point Maint. Fire began)

Single_Date/Time:

Calendar_Date: 20070801 (post-fire image)

Currentness_Reference: ground condition

Status:

Progress: Complete

Maintenance_and_Update_Frequency: as needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -93.27.59

East_Bounding_Coordinate: -92.18.01

North_Bounding_Coordinate: 36.13.52

South_Bounding_Coordinate: 35.50.40

Keywords:

Theme:

Theme_Keyword_Thesaurus: none

Theme_Keyword: burn mapping

Theme_Keyword: imagery

Theme_Keyword: fire

Theme_Keyword: Landsat

Theme_Keyword: National Park Service

Place:

Place_Keyword_Thesaurus: none

Place_Keyword: Buffalo National River

Place_Keyword: Lower Wilderness

Place_Keyword: Deadhorse

Place_Keyword: Gene Rush

Place_Keyword: Pruitt Complex

Place_Keyword: Buffalo Point Maint.

Place_Keyword: Arkansas

Access_Constraints: FTP data sets are available to any user.

Use_Constraints: There are no restrictions on use, except for reasonable and proper acknowledgement of information sources.

Point_of_Contact:

Contact_Information:

+001 605-594-6151 or (USA) 800-252-4547

Contact_Organization_Primary:

Contact_Organization: U.S. Geological Survey

Contact_Position: CSR

Contact_Voice_Telephone: +001 605-594-6151

Contact_Address:

Address_Type: physical and mailing address

Address: 47914 252nd Street

City: Sioux Falls

State_or_Province: SD

Postal_Code: 57198-0001

Country: USA

Contact_TDD/TTY_Telephone: +001 605-594-6933

Contact_Voice_Telephone: +001 605-594-6151

Contact_Facsimile_Telephone: +001 605-594-6589

Contact_Electronic_Mail_Address: fsedc@usgs.gov

Hours_of_Service: 0800 - 1600 CT, M-F, -6 h GMT

Contact_Instructions: http://edc2.usgs.gov/fsp/severity/contact_us.asp

Data_Set_Credit: USGS and NASA

Native_Data_Set_Environment: Oracle, ERDAS Imagine, & ArcInfo

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Three on-board calibrators (two solar, one internal) provide an absolute accuracy of 5 percent, excluding band 6.

Logical_Consistency_Report:

These Landsat data are collected from a nominal altitude of 705 kilometers in a near-polar, near-circular, sun-synchronous orbit at an inclination of 98.2 degrees, imaging the same 183-km swath of Earth's surface every 16 days.

The pixels representing the bands for the image are in the data set only once.

Completeness_Report: Fire perimeter was automated, (seed value 425, distance 325) with manual edits.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Energy reflected from Earth's surface passes through a whisk-broom scanning system and all-reflective optics before being collected by the solid-state detectors at the focal plane.

Lineage:

Process_Step:

Process_Description:

These data products are derived from Landsat Thematic Mapper data.

A pre-fire scene and a post-fire scene are analyzed to create a Differenced Normalized Burn Ratio (DNBR) image. The DNBR image portrays the variations of burn severity within the fire.

The Landsat images are terrain corrected and geometrically rectified to an Albers Conical Equal Area map projection using the National Landsat Archive Production System (NLAPS). The images are further processed to convert bands 1-5 and 7 to at-satellite-reflectance.

The Normalized Burn Ratio (NBR) is computed for each date of imagery using the following formula:

$$(\text{Band 4} - \text{Band 7}) / (\text{Band 4} + \text{Band 7}) = \text{NBR}$$

The differenced NBR is computed by subtracting the post-fire NBR from the pre-fire NBR:

$$\text{PreNBR} - \text{PostNBR} = \text{DNBR}$$

Higher DNBR values are correlated with more severe burns. The DNBR image is evaluated to determine the threshold value between burned and unburned areas. The perimeter of the fire is delineated using the DNBR

image. The DNBR image, the pre-fire and post-fire TM images, and a fire perimeter vector file are provided in digital format in the map projection used by the National Park Service.

Source_Used_Citation_Abbreviation: TM

Process_Date: 200708

Source_Produced_Citation_Abbreviation: DNBR

Cloud_Cover: 10

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: U.S. Geological Survey

Contact_Position:

Principal Scientist

Land Cover Applications

Contact_Address:

Address_Type: mailing and physical address

Address:

47914 252nd Street

USGS EROS

City: Sioux Falls

State_or_Province: SD

Postal_Code: 57198-0001

Country: USA

Contact_Voice_Telephone: +001 605-594-6151

Contact_TDD/TTY_Telephone: +001 605 594-6933

Contact_Facsimile_Telephone: +001 605 594-6589

Contact_Electronic_Mail_Address: fsedc@usgs.gov

Hours_of_Service: 0800 - 1600 CT, M-F, -6 h GMT

Contact_Instructions: http://edc2.usgs.gov/fsp/severity/contact_us.asp

Distribution_Liability:

No warranty expressed or implied is made by the USGS regarding the use of the data, nor does the act of distribution constitute any such warranty.

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: Geo-TIFF

Format_Version_Number: 1

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: http://edc2.usgs.gov/fsp/severity/download_data.asp

Digital_Form:

Digital_Transfer_Information:

Format_Name: DNBR ArcInfo GRID

Format_Version_Number: 1

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: http://edc2.usgs.gov/fsp/severity/download_data.asp

Digital_Form:

Digital_Transfer_Information:

Format_Name: shape file

Format_Version_Number: 1

Digital_Transfer_Option:

Online_Option:

Computer_Contact_Information:

Network_Address:

Network_Resource_Name: http://edc2.usgs.gov/fsp/severity/download_data.asp

Fees: No charge

Ordering_Instructions: <http://edc2.usgs.gov/fsp/severity/help.asp#ordering>

Turnaround: same day

Metadata_Reference_Information:

Metadata_Date: 20070815

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization:

USGS EROS

Science & Applications Branch

Contact_Position:

Principal Scientist

Land Cover Applications

Contact_Address:

Address_Type: mailing and physical address

Address:

47914 252nd Street

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Contact_Electronic_Mail_Address: fsdc@usgs.gov

Hours_of_Service: 0800 - 1600 CT, M-F, -6 h GMT

Contact_Instructions: http://edc2.usgs.gov/fsp/severity/contact_us.asp

Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Access_Constraints: none

Metadata_Use_Constraints: none