

Identification_Information:

Citation:

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Originator: U.S. Geological Survey

Publication_Date: 20050901

Title: Wash Ridge Fire of Great Smoky Mountains National Park - 2004

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 Name: Wash Ridge

Agency: National Park Service

Land Management Unit: Great Smoky Mountains National Park

Date of Fire: 4/7/2004

Type of assessment: Extended

Acres within Fire Perimeter: 600

Landsat Path and Row: 18/35

Pre-Fire Landsat Date/Scene ID:

Landsat 5; Aug. 2, 2002 / LT5018035000221410

Post-Fire Landsat Date/Scene ID:

Landsat 5; Aug. 7, 2004 / LT5018035000422010

Output Dataset Projection: UTM

UTM Zone: 17

Spheroid Name: Clarke 1866

Dataum Name: NAD27

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

ULX: 286290 LRX: 349230

ULY: 3974910 LRY: 3921360

Image subset size:

#Rows: 1786

#Columns: 2099

Pixel size: 30 meters

Bounding Box:

North Lat: 35 54 11 N

South Lat: 35 25 17 N

East Long: 82 39 59 W

West Long: 83 21 39 W

Latitude and Longitude within Fire Perimeter

Lat: 35 37 02 N

Long: 83 07 40 W

Fire Perimeter: Fire perimeter provided by Great Smoky Mountains.

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:

wari04b_pretm.tif
Pre-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

wari04b_postm.tif
Post-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

wari04b_dnbr
Differenced Normalized Burn Ratio (DNBR) (ArcInfo GRID)

wari04b_pi
Fire Perimeter (shape file)

wari04b_hist.xls
DNBR pixel count within the fire perimeter (excel file)

d183508020804
Full Scene DNBR (ArcInfo GRID)

Time_Period_of_Content:

Time_Period_Information:

Multiple_Dates/Times:

Single_Date/Time:

Calendar_Date: 20020802 (pre-fire image)

Single_Date/Time:

Calendar_Date: 20040407 (date fire began)

Single_Date/Time:

Calendar_Date: 20040807 (post-fire image)

Currentness_Reference: ground condition

Status:

Progress: Complete

Maintenance_and_Update_Frequency: as needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -83.21.39

East_Bounding_Coordinate: -82.39.59

North_Bounding_Coordinate: 35.54.11

South_Bounding_Coordinate: 35.25.17

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: Great Smoky Mountains National Park

Place_Keyword: Wash Ridge

Place_Keyword: North Carolina

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:

PreNBR - PostNBR = 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: 20050901

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

National Center 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: 20050922
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization:
USGS National Center EROS
Science & Applications Branch
Contact_Position:
Principal Scientist
Land Cover Applications
Contact_Address:
Address_Type: mailing and physical address
Address:
47914 252nd Street
National Center EROS
City: Sioux Falls
State_or_Province: SD
Postal_Code: 57198-0001
Country: USA
Contact_Voice_Telephone: +001 605-594-6151
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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
Metadata_Standard_Name: Content Standard for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Access_Constraints: none
Metadata_Use_Constraints: none