

Identification\_Information:

Citation:

Citation\_Information:

Originator: U.S. Geological Survey

Publication\_Date: 20020601

Title: Green Mountain Fire of Great Smokey Mountain National Park - 2001

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](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: Green Mountain

Park: Great Smokey Mountain

Date of Fire: 11/20/2001

Type of assessment: Initial

Acres within Fire Perimeter: 2260

Landsat Path and Row: 19/35

Pre-Fire Landsat Date/Scene ID: Landsat 7;

December 1, 2000 / LE7019035000033650

Post-Fire Landsat Date/Scene ID: Landsat 7;

December 4, 2001 / LE7019035000133850

Output Dataset Projection: UTM

Zone 17

NAD 27

Clarke1866

Image subset Corner Coordinate

(center of upper left pixel, projection meters)

ULX: 293311 LRX: 310171

ULY: 3975074 LRY: 3957884

Image subset size:

#Rows 574

#Columns 563

Pixel size: 30 meters

Bounding Box:

North Lat: 35 54 12 N

South Lat: 35 44 43 N

East Long: 83 05 57 W

West Long: 83 17 25 W

Latitude and Longitude within Fire Perimeter:

Lat (N) Long (W)  
35 48 45 83 11 34

Fire Perimeter: Manually digitized. Interpretation of burn perimeter was difficult.

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>

Information on Landsat 7 can be found at the Clearinghouse site and also at: <http://landsat7.usgs.gov/>

Product list:

grmt01apretm.tif  
Pre-Fire Landsat TM Color Composite Image subset  
(bands 1,2,3,4,5,7 Geo-TIFF)

grmt01apostm.tif  
Post-Fire Landsat TM Color Composite Image subset  
(bands 1,2,3,4,5,7 Geo-TIFF)

grmt01a\_dnbr  
Differenced Normalized Burn Ratio (DNBR) subset (ArcInfo GRID)

grmt01ap  
Fire Perimeter (shape file)

dnbra\_19-35  
Full Scene DNBR (ArcInfo GRID)

Time\_Period\_of\_Content:

Time\_Period\_Information:

Multiple\_Dates/Times:

Single\_Date/Time:

Calendar\_Date: 20001201 (pre-fire image)

Single\_Date/Time:

Calendar\_Date: 20011120 (date fire began)

Single\_Date/Time:

Calendar\_Date: 20011204 (post-fire image)

Currentness\_Reference: ground condition

Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: as needed

Spatial\_Domain:

Bounding\_Coordinates:

West\_Bounding\_Coordinate: -83.17.25

East\_Bounding\_Coordinate: -83.05.57

North\_Bounding\_Coordinate: 35.54.12

South\_Bounding\_Coordinate: 35.44.43

Keywords:

Theme:

Theme\_Keyword\_Thesaurus: none

Theme\_Keyword: burn mapping

Theme\_Keyword: imagery

Theme\_Keyword: fire

Theme\_Keyword: Landsat

Place:

Place\_Keyword\_Thesaurus: none

Place\_Keyword: Great Smokey Mountain National Park

Place\_Keyword: Green Mountain

Place\_Keyword: Tennessee

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

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Contact\_Voice\_Telephone: +001 605-594-6151

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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](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:

Landsat-7 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 manually digitized; interpretation of burn perimeter was difficult.

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: 20020601

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

EROS Data Center

City: Sioux Falls

State\_or\_Province: SD

Postal\_Code: 57198-0001

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Contact\_TDD/TTY\_Telephone: +001 605 594-6933

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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](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. The USGS will warrant the delivery of this product and will offer appropriate adjustment of credit when the product is determined unreadable, or when the physical medium is delivered in damaged condition. Requests for adjustment of credit must be made within 60 days from the date of this shipment from the order site.

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](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](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](http://edc2.usgs.gov/fsp/severity/download_data.asp)  
Fees: [http://edc2.usgs.gov/fsp/severity/fire\\_main.asp](http://edc2.usgs.gov/fsp/severity/fire_main.asp)  
Ordering\_Instructions: <http://edc2.usgs.gov/fsp/severity/help.asp#ordering>  
Turnaround: same day  
Metadata\_Reference\_Information:  
  Metadata\_Date: 20020703  
  Metadata\_Contact:  
    Contact\_Information:  
      Contact\_Organization\_Primary:  
        Contact\_Organization:  
          USGS EROS Data Center  
          Science & Applications Branch  
    Contact\_Position:  
      Principal Scientist  
      Land Cover Applications  
    Contact\_Address:  
      Address\_Type: mailing and physical address  
      Address:  
        47914 252nd Street  
        EROS Data Center  
      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](mailto: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](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