

## Identification\_Information:

### Citation:

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Originator: U.S. Geological Survey

Publication\_Date: 20060801

Title: Big Creek, Laurel, PW-03, Wapama Fires of Yosemite National Park - 2005

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 Names: Big Creek, Laurel, PW-03, Wapama

Agency: National Park Service

Land Management Unit: Yosemite National Park

Dates of Fires:

Big Creek: 6/14/2005

Laurel: 9/26/2005

PW-03: 10/15/2005

Wapama: 9/26/2005

Type of assessment: Extended Assessment

Acres within Fire Perimeters:

Big Creek: 430

Laurel: 560

PW-03: 1880

Wapama: 1170

Landsat Path and Row: 42/34

Pre-Fire Landsat Date/Scene ID:

Landsat 5; July 14, 2004/LT5042034000419610

Post-Fire Landsat Date/Scene ID:

Landsat 5; July 20, 2006/LT5042034000620110

Output Dataset Projection: UTM

UTM Zone: 11  
Datum Name: NAD83  
Spheroid Name: GRS80  
Image subset Corner Coordinate (center of upper left pixel, projection meters)  
ULX: 238980 LRX: 283020  
ULY: 4217490 LRY: 4140480  
Image subset size:  
#Rows: 2568  
#Columns: 1469  
Pixel size: 30 meters  
Bounding Box:  
North Lat: 38 04 25 N  
South Lat: 37 22 50 N  
East Long: 119 27 48 W  
West Long: 119 57 39 W  
Latitude and Longitude within Fire Perimeter:  
Big Creek Lat: 37 31 51 N Long: 119 39 49 W  
Laurel Lat: 38 01 28 N Long: 119 46 24 W  
PW-03 Lat: 37 46 14 N Long: 119 47 27 W  
Wapama Lat: 37 58 35 N Long: 119 46 39 W

Fire Perimeter: Original perimeters provided by Yosemite National Park were edited based on DNBR and postfire imagery.

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:

yose05b\_pretm.tif  
Pre-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

yose05b\_postm.tif  
Post-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

yose05b\_dnbr  
Differenced Normalized Burn Ratio (DNBR) subset (ArcInfo GRID)

yose05b\_pi  
Fire Perimeter (shape file)  
Cloud Shadow (shape file)

yose05b\_hist.xls  
DNBR pixel count within the fire perimeter (excel file)

d423407040706  
Full Scene DNBR (ArcInfo GRID)

Time\_Period\_of\_Content:  
Time\_Period\_Information:  
Multiple\_Dates/Times:

Single\_Date/Time:

Calendar\_Date: 20040714 (pre-fire image)

Single\_Date/Time:

Calendar\_Date: 20050614 (date Big Creek fire began)

Single\_Date/Time:

Calendar\_Date: 20050926 (date Laurel fire began)

Single\_Date/Time:

Calendar\_Date: 20051015 (date PW-03 fire began)

Single\_Date/Time:

Calendar\_Date: 20050926 (date Wapama fire began)

Single\_Date/Time:

Calendar\_Date: 20060720 (post-fire image)

Currentness\_Reference: ground condition

Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: as needed

Spatial\_Domain:

Bounding\_Coordinates:

West\_Bounding\_Coordinate: -119.57.39

East\_Bounding\_Coordinate: -119.27.48

North\_Bounding\_Coordinate: 38.04.25

South\_Bounding\_Coordinate: 37.22.50

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: Yosemite National Park

Place\_Keyword: Big Creek

Place\_Keyword: Laurel

Place\_Keyword: PW-03

Place\_Keyword: Wapama

Place\_Keyword: California

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

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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:

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: 20060801

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](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](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: No charge

Ordering\_Instructions: <http://edc2.usgs.gov/fsp/severity/help.asp#ordering>

Turnaround: same day

Metadata\_Reference\_Information:

Metadata\_Date: 20060815

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

USGS EROS

City: Sioux Falls

State\_or\_Province: SD

Postal\_Code: 57198-0001

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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