

Identification_Information:

Citation:

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Originator: U.S. Geological Survey

Publication_Date: 20050901

Title: Preacher and Middle Birch Fires of Yukon Flats National Wildlife Refuge - 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 Names: Preacher and Middle Birch

Agency: US Fish & Wildlife Service

Land Management Unit: Yukon Flats National Wildlife Refuge

Date of Fires: 06/14/2004, 06/14/2004

Type of assessment: Extended

Acres within Fire Perimeters: 255820 (parts 1 & 2, see notes below), 30020

Landsat Path and Row: 68/14

Pre-Fire Landsat Date/Scene ID:

Landsat 5; July 18, 2003 / LT5068014000319910

Post-Fire Landsat Date/Scene ID:

Landsat 7; Aug. 16, 2005 / LE7068014000522850

Output Dataset Projection: Alaska Albers Conical Equal Area

Datum Name: NAD83

Spheroid Name: GRS80

1st Standard Parallel: 55 00 00 N

2nd Standard Parallel: 65 00 00 N

Central Meridian: 154 00 00 W

Latitude of Origin: 55 00 00 N

False E: 0

False N: 0

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

ULX: 370740 LRX: 450450

ULY: 1837020 LRY: 1775160

Image subset size:

#Rows: 2063

#Columns: 2658

Pixel size: 30 meters

Bounding Box:

North Lat: 66 17 00 N

South Lat: 65 38 09 N

East Long: 143 59 41 W
West Long: 145 54 41 W
Latitude and Longitude within Fire Perimeters:
 Latitude Longitude
Preacher: 65 59 52 N 145 07 27 W
Middle Birch: 65 58 15 N 144 20 36 W

Fire Perimeter: Manually digitized from Landsat imagery. Note 1: Used Refuge-provided perimeter to locate common boundary between each fire. Note 2: The Preacher perimeter was extended to the south west based upon browse imagery from September 2004. This extension was added as an additional polygon (part 2) while retaining original boundary (part 1).

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:

prmi04b_pretm.tif
July 2003 Pre-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

prmi04b_postm.tif
August 2005 Post-Fire Landsat data subset (bands 1-5,7 Geo-TIFF format)

prmi04b_dnbr
July03 - August05 dNBR subset (16 bit ArcInfo GRID)

prmi04b_pi
Fire Perimeter (shape file)
includes polygons for Preacher (parts 1&2) and Middle Birch

prmi04b_hist.xls
DNBR pixel count within the fire perimeters (excel file)

d681407030805
Full Scene DNBR July03 - August05 (16 bit ArcInfo GRID)

Time_Period_of_Content:

Time_Period_Information:
Multiple_Dates/Times:
 Single_Date/Time:
 Calendar_Date: 20030718 (pre-fire image)
 Single_Date/Time:
 Calendar_Date: 20040614 (date fires began)
 Single_Date/Time:
 Calendar_Date: 20050816 (post-fire image)

Currentness_Reference: ground condition

Status:

Progress: Complete
Maintenance_and_Update_Frequency: as needed

Spatial_Domain:

Bounding_Coordinates:
 West_Bounding_Coordinate: -145.54.41
 East_Bounding_Coordinate: -143.59.41
 North_Bounding_Coordinate: 66.17.00
 South_Bounding_Coordinate: 65.38.09

Keywords:

Theme:
 Theme_Keyword_Thesaurus: none
 Theme_Keyword: burn mapping
 Theme_Keyword: imagery

Theme_Keyword: fire
Theme_Keyword: Landsat
Theme_Keyword: US Fish & Wildlife Service

Place:

Place_Keyword_Thesaurus: none
Place_Keyword: Yukon Flats National Wildlife Refuge
Place_Keyword: Preacher
Place_Keyword: Middle Birch
Place_Keyword: Alaska

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: 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: 20050915

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

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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